# Performing while transforming

bp Annual Report and Form 20-F 2022

# bp is performing while *transforming*

As an integrated energy company, we believe we are set up to help deliver energy security and affordability today, as well as helping to accelerate the energy transition.

In the three years since we first set out our strategy, our track record of delivery has given us increased confidence as we invest in bp's transition and the energy transition.

## Our strategy is working

Our businesses are performing well. We are reducing emissions and we are growing value, see page 20.

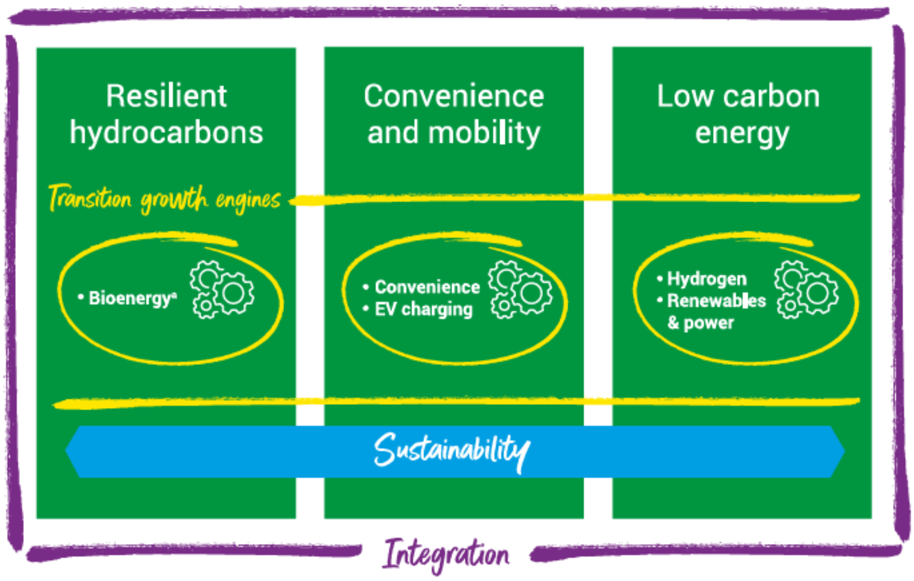
## Leaning further into our strategy

We are planning to invest more into our transition growth engines and invest more into today's oil and gas system, see page 10.

## Delivering for shareholders

In 2022 we have grown distributions through an increase in our dividend and delivery of a material share buyback programme, see page 24.

Our three-pillar strategy is unchanged – it is focused on investing in our transition growth engines and, at the same time, investing in today's energy system. And integration connects it all.




**More information**

Our strategy and transition growth engines, page **10**
Progress against our strategy, page **11**
Sustainability, page **45**

a Bioenergy includes customer-facing and midstream biofuels activities that form part of convenience and mobility.

# About bp

We deliver energy products and services to our customers around the world, and we plan to do so increasingly in ways that we believe will help drive the transition to a lower carbon future.

We have operations in Europe, North and South America, Australasia, Asia and Africa.

| | | |
|---|---|---|
| **$60.7bn** adjusted EBITDA★ | **$(1.4)bn** loss for the year | **$40.9bn** operating cash flow★ |
| **~21%** dividend growth since 4Q21[a] | **30.5%** ROACE★ | **(3.0)%** loss for the year attributable to bp shareholders divided by total equity |
| **$11.25bn** share buybacks[b] | **$21.4bn** net debt★ | **$46.9bn** finance debt |

a 4Q 2022 vs 4Q 2021 growth in dividend per ordinary share.
b Share buybacks announced from 2022 surplus cash flow★.

**Online quick read**
A concise summary of the bp annual report, highlighting strategy, performance and sustainability information.

bp.com/annualreport

**Online reporting centre**
All our bp corporate reports, including the sustainability report, the net zero ambition progress update and the bp energy outlook.

bp.com/reportingcentre

**Glossary**
Words and terms marked with ★ are defined in the glossary.

See page 389

**Task Force on Climate-related Financial Disclosures (TCFD)**
Information that supports TCFD Recommendations and Recommended Disclosures in relation to Metrics & Targets is indicated with T.

**Engaging with our stakeholders**
We indicate examples of how we have engaged with our stakeholders throughout this report using the following icons:

- C Customers
- E Employees
- G Governments and regulators
- I Investors and shareholders
- P Partners and suppliers
- S Society

**Strategic report**



**Corporate governance**



**Financial statements**

# 2022 at a glance

## In numbers

As at 31 December 2022

### Scale

67,600

**employees**
(2021 65,900)

62

**countries of operation**
(2021 >65)

2.3

**million barrels of oil equivalent – upstream★ production**
(2021 2.2mmboe/d)

20,650

**retail sites★**
(2021 20,500)

~22,000

**electric vehicle charge points★**
(2021 13,100)

### Strategy

2,400

**strategic convenience sites★**
(2021 2,150)

5.8GW

**developed renewables to FID★**
(2021 4.4GW)

$6.07/boe

**upstream★ unit production costs★**
(2021 $6.82/boe)

### Safety and sustainability

50

**tier 1 and 2 process safety events★**
(2021 62)

1.5

**million tonnes of $CO_2$ equivalent – sustainable GHG emissions reductions★**
(2021 1.6/Mt$CO_2$e)

### Performance

$(2.5)bn

**loss for the year attributable to bp shareholders**
(2021 profit $7.6bn)

$27.7bn

**underlying replacement cost (RC) profit★**
(2021 $12.8bn)

96.0%

**bp-operated upstream plant reliability★**
(2021 94.0%)

94.5%

**bp-operated refining availability★**
(2021 94.8%)

**Key**

A strategic metric, see page 11

A key performance indicator, see page 20

For more information on group performance see page 32

# Financial reporting segment performance

At 31 December 2021, the group's reportable segments were gas & low carbon energy, oil production & operations, customers & products and Rosneft. The group has ceased to report Rosneft as a separate segment in the group's financial reporting for 2022. For more information see Financial statements – Note 1. From the first quarter of 2022, the group's reportable segments are gas & low carbon energy, oil production & operations and customers & products. Each are managed separately, with decisions taken for the segment as a whole, and represent a single operating segment that does not result from aggregating two or more segments (see Financial statements – Note 5). For the period from 1 January 2022 to 27 February 2022, net income from Rosneft is included in other businesses & corporate and classified as an adjusting item.

## Gas & low carbon energy[a]

Comprises our gas & low carbon businesses. Our gas business includes regions with upstream activities that predominantly produce natural gas, integrated gas and power, and gas trading. Our low carbon business includes solar, offshore and onshore wind, hydrogen and carbon capture and storage (CCS), power trading and our share in bp Bunge Bioenergia[b]. Power trading includes trading and marketing of both renewable and non-renewable power.

a The AGT and Middle East regions have been further subdivided by asset.
b From the first quarter of 2023, bp Bunge Bioenergia will be reported within customers & products.

**$14.7bn**

**RC profit before interest and tax[c]**
(2021 $2.1bn)

**$16.1bn**

**Underlying RC profit before interest and tax★**
(2021 $7.5bn)

See page 36

## Oil production & operations[a]

Comprises regions with upstream activities that predominantly produce crude oil, including bpx energy.

**$19.7bn**

**RC profit before interest and tax[c]**
(2021 $10.5bn)

**$20.2bn**

**Underlying RC profit before interest and tax**
(2021 $10.3bn)

See page 39

## Customers & products

Comprises customer-focused businesses, which include convenience and retail fuels, EV charging, as well as *Castrol*, aviation and B2B and midstream. It also includes our products businesses, refining & oil trading, as well as our bioenergy businesses.

**$8.9bn**

**RC profit before interest and tax[c]**
(2021 $2.2bn)

**$10.8bn**

**Underlying RC profit before interest and tax**
(2021 $3.3bn)

See page 41

## Other businesses & corporate

Comprises innovation & engineering; bp ventures; launchpad; regions, corporates & solutions; our corporate activities and functions; and any residual costs of the Gulf of Mexico oil spill. From the first quarter 2022 the results of Rosneft, previously reported as a separate segment, are also included in other businesses & corporate. Comparative information for 2021 has been restated to reflect the changes in reportable segments. For more information see Financial statements – Note 1 – Significant accounting policies, judgements, estimates and assumptions – Investment in Rosneft.

**$(26.7)bn**

**RC loss before interest and tax[c]**
(2021 loss $(0.3)bn)

**$(1.2)bn**

**Underlying RC loss before interest and tax**
(2021 profit $1.3bn)

See page 43

c IFRS requires that the measure of profit or loss disclosed for each operating segment is the measure that is provided regularly to the chief operating decision maker. For bp, this measure of profit or loss is replacement cost profit before interest and tax which reflects the replacement cost of inventories sold in the period and is arrived at by excluding inventory holding gains and losses from profit before interest and tax. Replacement cost profit for the group is not a recognized measure under IFRS. For further information see Financial statements – Note 5.

★ See glossary on page 389

# Delivering today, transforming for tomorrow

**Nearest GAAP equivalent measures**

$(2.5)bn

Loss for the year attributable to bp shareholders[a]

(3.0)%

Loss for the year attributable to bp shareholders divided by total equity[b]

$46.9bn

Finance debt at 31 December 2022[c]

## Dear shareholder,

It is now a little over three years since bp's board and leadership team set a new direction for the company – beginning the transformation of bp from international oil company to an integrated energy company.

Since February 2020, the world has seen a pandemic, a war, and a cost-of-living crisis. And now – as we write – our thoughts are with colleagues and all those in Türkiye and Syria following the terrible earthquakes recently.

We take this opportunity to offer joint reflections on what bp has delivered during this time. We do so mindful of the different roles and responsibilities we each perform, but with a shared belief that by working closely together we can continue to deliver value for you, the owners of the company.

## Safety above all

The progress we summarize below is built on a recognition that nothing is more important than safe and reliable operations.

While we have made some improvements, for example, seeing 19% fewer tier 1 and 2 process safety events★, we have also had challenges. Tragically, four people lost their lives while working for bp last year, and a pedestrian was killed in a collision with one of our vehicles.

bp continues to focus on actions to maintain and enhance the effectiveness of the safety processes and procedures at bp operations, including supporting a culture of care for others. We firmly believe that when colleagues care deeply about each other, then they really look out for each other, and everyone is safer.

## Performing while transforming

Guided by our purpose – to reimagine energy for people and our planet – bp's focus has been to perform while transforming. Put another way – on delivering the energy the world wants and needs today and tomorrow while creating long-term sustainable value for shareholders. It is still early in our transformation, but we believe the company has made substantial progress. We are a stronger bp today.

In 2022 bp delivered its highest upstream plant reliability★ on record and its lowest per-barrel production costs★ since 2006. These two performance measures, combined with high commodity prices, contributed towards operating cash flow★ of $40.9 billion for the year, an underlying replacement cost profit[a] of $27.7 billion, ROACE[b] of 30.5% and net debt[c] of $21.4 billion at the end of the year.

In a sign of increasing confidence in our strategy, the board decided to increase the dividend per ordinary share by 21% through the year and we announced a total of $11.25 billion to shareholders in buybacks from 2022 surplus cash flow★. We are delivering for shareholders by executing our clear, consistent and disciplined financial frame.

a Nearest GAAP equivalent measure to underlying replacement cost profit ★ of $27.7 billion, which is loss for the year adjusted for inventory holding gains and net of adjusting items.
b Nearest GAAP equivalent measure to ROACE ★ of 30.5%. Numerator: loss for the year attributable to bp shareholders adjusted for inventory holding gains, net of adjusting items, adding back non-controlling interest and interest expense net of tax. Denominator: the average of the beginning and ending balances of total equity plus finance debt, excluding cash and cash equivalents and goodwill as presented on the group balance sheet over the periods presented.
c Nearest GAAP equivalent measure to net debt ★ of $21.4 billion, which is finance debt adjusted for the fair value of associated derivative financial instruments and cash and cash equivalents.



★ See glossary on page 389 and non-GAAP measure reconciliations on page 398 for more information

In terms of transformation, the proportion of bp's total capital investment in what we call our transition growth★ engines has risen from around 3% in 2019 to around 30% in 2022. This included:

- The acquisition in 2022 of Archaea Energy, a leading US producer of renewable natural gas, accelerating the growth of our bioenergy business.
- The establishment of new businesses in offshore wind and hydrogen.
- A tripling in the number of bp pulse EV charge points★ globally, from more than 7,500 in 2019, to around 22,000.
- The addition of more than 750 strategic convenience sites★ to our global retail network since 2019.

Since 2019, bp has also reduced emissions from our oil and gas operations and production, further rationalized the portfolio and started up 13 major projects★.

## The energy trilemma

Recent events have made it clear that the world wants and needs a better and more balanced energy system, delivering energy that is not only lower carbon, but secure and affordable too – this is known as the energy trilemma.

Transforming today's global energy system so that it can consistently deliver all three is a complex challenge. To tackle it, the energy transition must accelerate. When bp published the *Energy Outlook 2023* earlier this year, one of its insights was that Russia's war in Ukraine is likely to accelerate that transition. At the same time, the energy transition needs to be orderly – decarbonizing rapidly while maintaining the balance of supply and demand that's needed to help avoid, as best as possible, the energy shortages and price rises that have been so difficult for people and businesses.

bp's integrated energy company strategy is deliberately designed to help on both counts: contributing to the energy transition and keeping energy flowing today.

## Leaning in further

The increasing confidence we have in bp's strategy – along with how the world has changed – are what in February convinced us to lean further into our strategy.

First, by planning to invest more into our transition growth engines through this decade than under our previous plans – up to $8 billion more by 2030. That includes making investments that can help people decarbonize their lives and their businesses sooner – such as EV charging, sustainable aviation fuels and hydrogen for hard-to-abate industries. Our cumulative investment in these transition growth engines is expected to be in a range of $55-65 billion between 2023 and 2030.

Second, by planning to invest more into oil and gas – again, up to $8 billion more by 2030. With investments into resilient, high-quality oil and gas projects – prioritizing where we can deliver quickly and efficiently, and in ways that minimize additional emissions and maximize our contribution to energy security.

As a result of these changes, bp is aiming for its oil and gas production to be around two million barrels a day by 2030. This is around 25% lower than in 2019, but higher than our previous aim of around a 40% reduction by 2030. With this in mind, bp's aim to lower the emissions from the use of its production has been adjusted to 20-30% by 2030. That is lower than our previous aim of 35-40% by 2030, but still significant. Taken in its entirety, we believe bp's strategy – including its specific net zero aims across operations, production and sales – remains consistent with the Paris goals.

## Plan for growth

This is a plan for delivery, for growth and for value creation. And as bp's earnings grow, we can:

- Invest more in bp's transition and in the energy transition.
- Invest more in today's energy's security.
- Create more value for bp's shareholders.
- Benefit governments and society with the taxes and revenues generated by bp's increased earnings.

We have a plan. The strategy is working, and our people are fully behind it. Now it is about execution – operationally and strategically.

## Closing thanks

Your company is running well. It continues to build capability and skills, including attracting talent to bp from a broad range of sectors. And it is becoming more diverse, and stronger for that.

Thank you – as always – for your support. In a challenging year, some of our most rewarding moments were the many meetings we enjoyed with shareholders. Whether you are a long-term bp shareholder or a recent investor, we thank you for the faith you have placed in bp.

Finally, we thank bp's employees for all their work during 2022. Quite simply, they have been outstanding.

[redacted]

10 March 2023

[redacted]

## Energy markets

# Global context

Energy markets have been volatile, largely driven by the effects of the Russia-Ukraine war. Concerns about energy security, fuel prices and emissions are boosting prospects for non-fossil fuels – especially renewables – as the world transitions towards a lower carbon future.

2.3%

**year-on-year increase in global oil consumption in 2022[a]**

(0.8)%

**estimated decrease in global gas consumption in 2022[b]**

10.8%

**expected year-on-year increase in renewable electricity capacity in 2022[c]**

The global economy experienced a broad-based slowdown in 2022, following a post-COVID-19 lockdown economic rebound in 2021.

Soaring energy prices, multi-decade high inflation levels, tightening monetary policy conditions, the Russia-Ukraine war, and COVID-19 contributed to a below-average growth rate of 3.4% for the global economy in 2022[d].

Growth in advanced economies was 2.7%, following falls in GDP in the US during the first half of the year, and an economic slowdown in the euro area in the second half. Growth in emerging markets slowed to 3.9%, with eastern Europe hit hard by the Russia-Ukraine war and China experiencing extended COVID-19 lockdowns and a slowdown in the property sector.

### Oil

Global oil production increased by 4.7mmb/d in 2022 (+4.9%)[a]. Despite western sanctions on Russian oil exports, Russian export volumes remained at 97% of pre-invasion levels, as oil shipments to the EU and OECD Asian countries are redirected to China, India, and Türkiye.

The EU imported 2.1mmb/d of crude and products in December 2022, ahead of the products-related embargo coming into effect in early February 2023.

Global oil demand continued its post-COVID-19 recovery[a], increasing by 2.2mmb/d in 2022 (+2.3%). Europe's energy crisis, a strong US dollar, and persistent COVID-19 lockdowns in China all contributed to slower energy demand growth and weaker oil demand growth. Brent increased by $30.4/bbl in 2022 as a result of the rebound in oil demand and the oil risk premium associated with the Russia-Ukraine war.

### Natural gas

The loss of Russian pipeline gas supply to the EU in 2022 – equivalent to around 20% of EU gas consumption in 2021 – following Russia's invasion of Ukraine, drove European gas and Asian LNG prices to record-high levels.[e]

European efforts to replace Russian gas supply and recover storage stocks in time for winter led to fierce global competition for spot LNG cargoes, as Europe priced up to attract LNG supply away from other demand regions.

In Asia, spot LNG prices increased to encourage fuel switching and minimize LNG demand. COVID-19 measures suppressed gas demand in China and, combined with higher gas supply from other sources, saw Chinese LNG demand drop -22bcm, equivalent to around a third of the year-on-year increase in LNG imports to the EU and UK in 2022.[f]

In Europe, in addition to higher LNG imports, a reduction in natural gas demand also helped offset the loss of Russian gas pipeline supply to the EU. Fuel switching, efficiency improvements and imported product substitution supported lower gas demand in industry. A mild start to winter significantly reduced gas demand, limiting the need for storage withdrawals in the fourth quarter of 2022. EU storage stocks exited the year 83% full[g], 13% above the five-year average.

In the US, average Henry Hub gas prices increased to levels not seen since before the 'shale revolution' on tightening factors across demand as well as supply fundamentals.

US gas consumption is estimated to have increased 6% in 2022[h], in part due to higher heating demand in the first half of the year as well as heatwaves in the summer, which increased power demand for cooling. Gas-fired generation was used to fill more of the thermal gap as coal-fired generation was constrained by weak coal supply and low coal stockpiles. US LNG exports grew with the ramp-up of new export capacity, increasing gas demand for LNG feedgas (partially offset by an outage at one of the LNG export facilities through the second half of the year). On supply, gas production growth remained subdued due to capital discipline constraints and supply chain bottlenecks through most of the year, before increasing to record high levels at the end of the summer.

| Market activity | 2022 | 2021 |
|---|---|---|
| Global oil consumption[a] | **99.9mmb/d** | 97.7mmb/d |
| Global oil production[a] | **100.1mmb/d** | 95.3mmb/d |
| Natural gas consumption[b] | **4,071bcm** | 4,103bcm |
| Natural gas production[b] | **4,089bcm** | 4,109bcm |
| Dated Brent average[i] | **$101.32/bbl** | $70.91/bbl |
| West Texas Intermediate (WTI)★ average[j] | **$94.58/bbl** | $68.10/bbl |
| Urals average[k] | **$74.16/bbl** | $68.65/bbl |
| Henry Hub average[l] | **$6.41/mmBtu** | $3.86/mmBtu |
| Dutch Title Transfer Facility (TTF)★ average[m] | **123.1 euros per MWh ($37.7/mmBtu)** | 46.9 euros per MWh ($16.0/mmBtu) |
| Japan-Korea (Asian) LNG average[n] | **$34.0/mmBtu** | $18.59/mmBtu |
| Refining marker margin★[o] | **$33.1/bbl** | $13.6/bbl[p] |

## Refining marker margin

We track the refining margin environment using a global refining marker margin (RMM).

Global refining margins rose sharply in 2022 as Russia's invasion of Ukraine affected oil and natural gas markets. RMM values averaged a record $33.1/bbl for 2022, which was $13/bbl higher than the previous record in 2012 and around $20/bbl higher than 2021. As countries began to avoid taking Russian oil and refined products, especially diesel, middle distillate cracks rose significantly. Refining operating costs climbed steeply on the back of an increase in natural gas and electricity prices.

## Power and renewables

Total renewable capacity additions in 2022 are expected to total over 350GW, 65GW more than 2021[c]. This was mainly driven by an increase in solar PV and wind installations in China and Europe. Although on average and globally, the unit cost of renewable capacity increased in 2022, driven by higher commodity, freight, and energy prices, the price of natural gas, oil and coal rose much faster, helping to improve the competitiveness of renewable energy sources such as solar, wind and hydropower.

2022 saw a significant step change in the scale of policy support for renewables and low carbon energy in some regions, including the Inflation Reduction Act (IRA) – the single largest investment in climate and energy in US history – and the RepowerEU plan, which aims to diversify Europe's energy supply and speed up the roll-out of renewables.

In Europe, high natural gas prices caused power prices to reach record highs, leading to some European countries to implement caps on the price of wholesale electricity, and support packages to help protect consumers from the increase in the cost of living. High European power prices also led to an increase in coal consumption and temporary lifetime extensions for coal-fired power plants. And a global resurgence in nuclear energy occurred, with Japan committing to restart idled nuclear reactors and some EU countries postponing reactor closures.

## Hydrogen and carbon capture and storage (CCS)

Global momentum behind hydrogen's role in decarbonizing hard-to-abate sectors is accelerating, notably in industry and long-distance transportation. Several countries have published national hydrogen strategies and this is increasingly being followed by announcements of policy support. 2022 was a significant year in terms of policy support for hydrogen production.

Hydrogen and CCS tax credits in the IRA and the additional renewables tax credits accessible by green hydrogen★ projects allow blue and green hydrogen to compete with grey hydrogen★ in the near to medium term.

RepowerEU outlined hydrogen production targets and allocated several billion euros in subsidies for low carbon hydrogen projects.

The pipeline of announced projects has continued to scale rapidly with cumulative clean hydrogen production capacity in 2030 projected to be 26Mtpa[q].

Momentum also grew for CCS in 2022, in part driven by governments providing additional incentives. Interest in CCS has been bolstered by the need to abate process emissions from heavy industries such as cement and steel manufacture, together with a growing acknowledgement of the need for negative emissions to meet the Paris goals.

a IEA Oil Market Report, January 2023.
b IEA Gas Market Report, Q4 2022.
c IEA Renewables Report, December 2022.
d IMF World Economic Outlook, January 2023 update.
e EU Directorate-General for Energy, European Transmission System Operator data, bp *Statistical Review of World Energy 2022*.
f S&P Global, LNG Waterborne Trade data.
g GIE (Gas Infrastructure Europe).
h EIA (Energy Information Administration).
i Refinitiv Data Service (Dated Brent spot price).
j Refinitiv Data Service (West Texas Intermediate).
k Refinitiv Data Service (Urals CIF Rotterdam).
l Platts Henry Hub cash price.
m Platts Dutch TTF Day Ahead price.
n Platts JKM spot price.
o The RMM may not be representative of the margin achieved by bp in any period because of bp's particular refinery configurations and crude and product slates. In addition, the RMM does not include estimates of energy or other variable costs.
p This number is updated from 13.2/bbl as stated in the bp *Annual Report and Form 20-F 2021* to reflect the 2022 RMM, which has been updated to reflect changes in bp's portfolio.
q Hydrogen Council.

★ See glossary on page 389

# Energy *outlook*

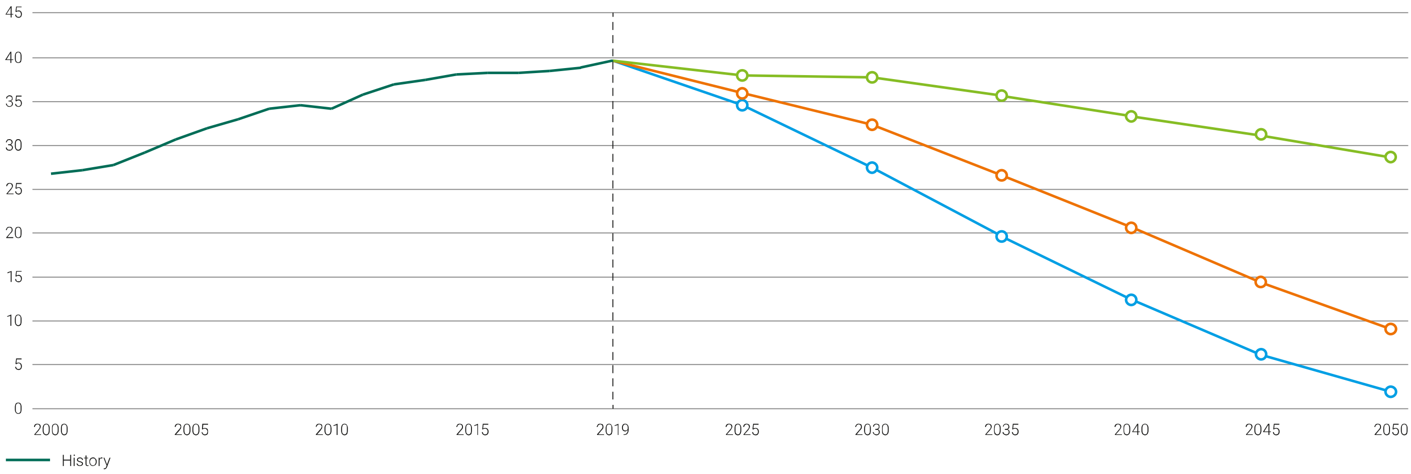
The *bp Energy Outlook 2023* explores the trends and uncertainties surrounding the energy transition out to 2050. It helps inform bp's core beliefs about the energy transition.

The scenarios explore the possible implications of different judgements and assumptions concerning the nature of the energy transition. The uncertainty associated with the transition is substantial, and these scenarios are not predictions of what is likely to happen or what bp would like to see happen.

We use the output from these scenarios to inform our strategic thinking.

## Three scenarios to explore the energy transition

**Carbon emissions** Gt of $CO_2e$[a]




**New momentum**

Captures the broad trajectory of the current global energy system. Places weight on the marked increase in global ambition for decarbonization in recent years, as well as on the manner and speed of decarbonization seen over the recent past. $CO_2$-equivalent ($CO_2e$) emissions peak in the late 2020s and by 2050 are around 30% below 2019 levels. This scenario is not considered to be a Paris-consistent pathway[b].

**Net zero**

A shift in societal behaviour and preferences supports gains in energy efficiency and the adoption of low carbon energy, with global energy system $CO_2e$ emissions falling by more than 95%, relative to 2019 levels. This scenario is considered consistent with Paris, broadly aligning with pathways maintaining global temperature rises below 1.5°C.

**Accelerated**

Explores what elements of the energy system might need to change if the world collectively takes action for $CO_2e$ to fall by around 75% by 2050, relative to 2019 levels. This scenario is considered consistent with Paris, broadly aligning with a well-below-2°C pathway.

a Carbon emissions include $CO_2$ emissions from energy use, industrial processes, natural gas flaring and methane emissions from energy production.
b For more information on Paris-consistent pathways, see page 26.

## 2023 Energy Outlook updates

The scenarios in the *bp Energy Outlook 2023 (2023 Outlook)* have been updated to account for two major developments: the Russia-Ukraine war and the passing of the US Inflation Reduction Act[a].

**Russia-Ukraine war:** The Russia-Ukraine war is likely to have a persistent effect on the future path of the global energy system. The *2023 Outlook* models this impact through three main channels:

- **Energy security:** The increased focus on energy security triggered by concerns about energy shortages and vulnerability to geopolitical events is assumed to increase countries' and regions' preference for energy produced domestically rather than imported.
- **Economic growth:** The higher food and energy prices associated with the Russia-Ukraine war have contributed to a sharp slowing in global economic growth. Further out, the war is assumed to reduce somewhat the pace of global integration and trade.
- **Composition of global energy supplies:** The scenarios in the *2023 Outlook* assume there is a persistent reduction in Russian exports of hydrocarbons.

**US Inflation Reduction Act (IRA):** Also included in the modelling is the IRA, which includes a package of largely supply-side measures supporting low carbon energy sources and decarbonization technologies in the US.

The impact of the IRA is concentrated in the New Momentum scenario, which represents the current pace of the energy transition and acknowledges ambition from governments and the corporate sector. In this scenario emissions are predicted to fall from 40Gt of $CO_2e$ in 2019 to 29Gt of $CO_2e$ by 2050.

The Accelerated and Net Zero scenarios are less affected by the IRA given the scale of policy support already embodied in these scenarios.

Net Zero delivers emissions reductions of 95% by 2050 versus 2019, in line with a 1.5 degrees rise. In Accelerated, emissions are reduced by around 75% by 2050 and can be considered consistent with a well-below-2°C rise pathway.

For more information see **bp.com/energyoutlook**

## Scenarios for strategic decision making

We use scenarios to inform strategy, manage risk, and improve decision making.

The scenarios we used to inform our ambition and strategy, which we set out in 2020, were based on a collaborative approach between our economists, strategists and extended leadership team and board.

Some scenarios start from today and project forward over a timeframe in which the current structure of the energy system helps to inform the pace and nature of the transition path. Others start in the future, breaking free from the inherent inertia in the energy system and look back to the present from that new perspective.

In thinking about appropriate scenarios to inform our strategy, we used both approaches.

### How scenarios inform our strategy

The use of scenarios described in the *2023 Outlook*, and from other organizations, aids our understanding of the energy transition and helps us to think about how different outcomes might impact our strategy.

The use of a broad range of scenarios to inform our strategy supports our efforts to make it robust and resilient to the range of uncertainty we face. Given that, we believe that it is neither useful nor sensible to try to identify one scenario as being more or less likely than another.

By considering various time horizons, we can identify key milestones or signposts which might emerge over the next five, 10 or 30 years and inform our view of the key sources of uncertainty affecting the global energy system.

We actively monitor for changes in the external environment, and refresh or review our scenarios as needed in response to these signals, as we have done with the Russia-Ukraine war and the IRA.

For the purposes of testing the resilience of our strategy to the range of uncertainty in the energy transition we have used scenarios drawn from the World Business Council for Sustainable Development (WBCSD) 'Climate Scenario Analysis Reference Approach for Companies in the Energy System'.

For more on our resilience analysis and the outcome of that work, see page **58**

### How we create scenarios

We quantify a range of scenarios in the *2023 Outlook* using our global energy modelling system. This comprises a suite of models developed over the past 10 years to help us understand the supply and demand dynamics of the global energy system as well as production in intermediate sectors.

The modelling framework uses historical data based on the *bp Statistical Review of World Energy*, the International Energy Agency (IEA) and a range of other data sets.

Each scenario is determined by a set of key assumptions including population and economic growth, pace of technological change, resource constraints and government policies. These are informed by expert views from external organizations including United Nations, Oxford Economics, Rystad Energy and a proprietary integrated assessment model. We benchmark our scenarios against external organizations including the IEA, the Intergovernmental Panel on Climate Change (IPCC), IHS Markit and the WBCSD.

Prices are used to balance supply and demand. The modelling techniques used vary by sector and include a combination of econometric modelling, least-cost optimization, adoption curves and consumer choice modelling.

a Analysis contained in the *bp Energy Outlook 2023* should be treated as subject to change, depending on future developments.

## Our strategy

# Transforming to an integrated energy company

We remain focused on transforming to an integrated energy company. Our three-pillar strategy includes our five transition growth engines, and integration underpins and connects it all.

### Three strategic focus areas

Our strategy is focused on three key areas of activity. These remain unchanged.

### Five transition growth engines

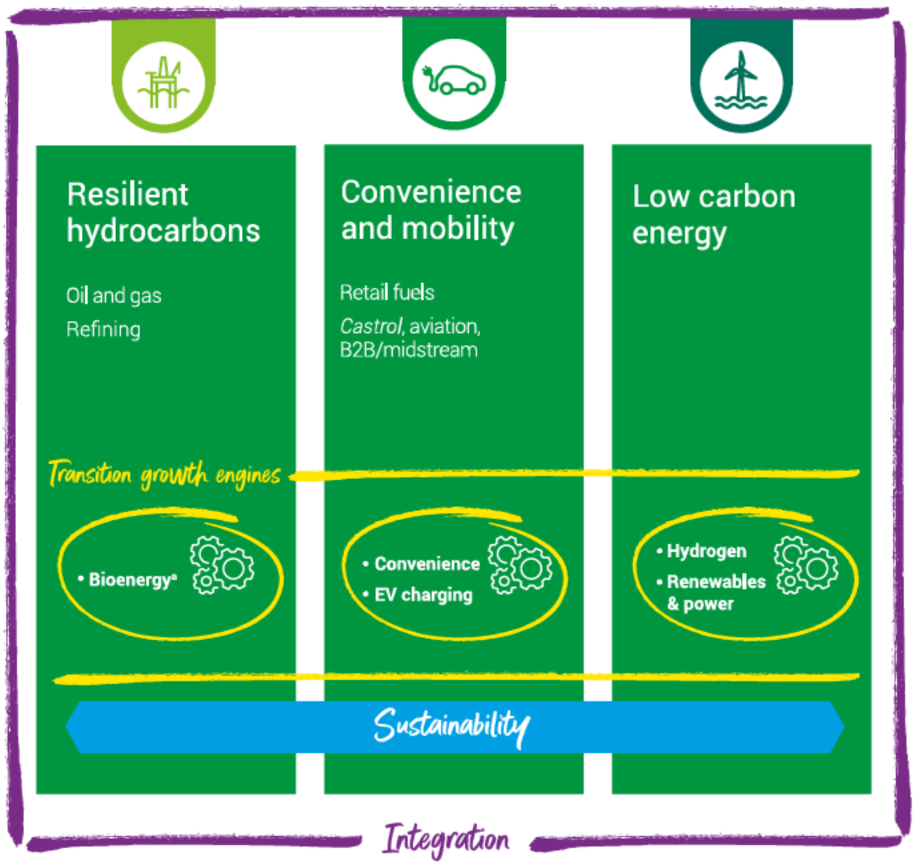
We are investing more to accelerate our transition growth★ engines.

See pages 14, 16 and 18

### Growth to 2030[b]

We aim to generate adjusted EBITDA★ of $51-56 billion[c] in 2030. The aims underpinning this include:

- Growing adjusted EBITDA from resilient hydrocarbons to $39-42 billion[c].
- More than doubling adjusted EBITDA versus 2019 in convenience and mobility to $9-11 billion[d].
- Delivering $2-3 billion[d] of adjusted EBITDA from low carbon energy, while establishing the foundations of a material business for the decades to come.
- Delivering between $10-12 billion[c] of adjusted EBITDA from transition growth engines.




### Sustainability

Embedded across our strategy is our sustainability frame, which sets out our aims for getting to net zero, improving people's lives and caring for our planet.

For more about sustainability at bp, see page 45

For our climate-related financial disclosures, see page 50

### Integration

Connecting our strategic focus areas together is integration. We believe we are distinctively set up to create integrated energy solutions for customers and generate attractive returns.

For more on how we are integrating energy systems, see pages 15, 17 and 19

a Bioenergy includes customer-facing and midstream biofuels activities that form part of convenience and mobility.
b This does not form part of bp's Annual Report on Form 20-F as filed with the SEC.
c At Brent $70/bbl 2021 real and bp planning assumptions, and at the upper end of the relevant capital expenditure★ range.
d At the upper end of the relevant capital expenditure range.

## Progress against our strategy

We have set targets and aims against our strategic focus areas out to 2025 and 2030. Examples of our progress in 2022 are detailed on pages 14-19.

| | Metrics | 2022 | 2025 target | 2030 aim |
|---|---|---|---|---|
| **Resilient hydrocarbons** | Upstream★ unit production costs★ | $6.07/boe<br>2021 $6.82/boe | ~$6/boe | – |
| | Upstream production[a] | 2.3mmboe/d<br>2021 2.2mmboe/d | ~2.3mmboe/d | ~2mmboe/d |
| | bp-operated upstream plant reliability★ | 96%<br>2021 94% | 96% | > 96% |
| | bp-operated refining availability★ | 94.5%<br>2021 94.8% | ~96% | >96% |
| | Biofuels production | 27kb/d<br>2021 26kb/d | ~50kb/d | ~100kb/d |
| | Biogas supply volumes | 12mboe/d[b]<br>2021 9mboe/d | ~40mboe/d[c] | ~70mboe/d[c] |
| | LNG portfolio★ | 19Mtpa<br>2021 18Mtpa | 25Mtpa | 30Mtpa |
| **Convenience and mobility** | Customer touchpoints★ per day | ~12 million<br>2021 >12 million | >15 million | >20 million |
| | Strategic convenience sites[d]★ | 2,400<br>2021 2,150 | ~3,000 | ~3,500 |
| | Electric vehicle charge points★ | ~22,000<br>2021 13,100 | >40,000 | >100,000 |
| **Low carbon energy** | Hydrogen production (net) | – | – | 0.5-0.7Mtpa |
| | Developed renewables to final investment decision★ | 5.8GW<br>2021 4.4GW | 20GW | 50GW |
| | Installed renewables capacity★ (net) | 2.2GW<br>2021 1.9GW | – | ~10GW |

Our targets and aims across our strategic focus areas have been revised from those set out in the *bp Annual Report and Form 20-F 2021* to reflect and more closely align with the strategy update announced in February 2023. The revisions include new targets and aims for biofuels and biogas to replace the previous ones for bioenergy production; new metrics: installed renewables capacity and hydrogen production; and we have retired targets and aims for refining throughput, retail sites in growth markets, *Castrol* sales and other operating revenues, margin share from convenience and electrification and traded electricity.

a Relative to 2019, we expect our hydrocarbon production to be around 25% lower by 2030 reflecting active management and high-grading of the portfolio, including divestment of non-core assets.
b Excludes Archaea.
c Includes Archaea.
d Reported to the nearest 50.

★ See glossary on page 389

# What makes us *different*

We believe we have the scale, global presence and expertise to navigate complex markets and manage increasingly integrated energy systems.

For more information on how integration is helping us deliver against our strategic priorities see pages 15, 17 and 19

## People and resources

These are some of the people and resources in our business model that support how we create and preserve value for our stakeholders. Data as at 31 December 2022.

### Energy sector experience

>110 years — in energy

13 years — *bp Energy Outlook* publication

Global context, see page 6

### Incumbent capability

~10,600 — engineers

~1,700 — traders

Sustainability in bp, see page 45

### Research & development

$274m — invested in research and development

~3,100 — granted and pending patent applications held by bp and its subsidiaries

See page 213

### Energy resources

7,183 mmboe — proved hydrocarbon reserves for the group[a]

5.8GW — developed renewables to FID★

Gas & low carbon energy, see page 36
Supplementary information on oil and natural gas, see page 263

### Financial resources

$16.3bn — capital expenditure★

$40.9bn — operating cash flow★

Group performance, see page 32

### Our purpose

Guiding what we do and how we operate, our purpose is: **Reimagining energy for people and our planet.**

### Our culture frame

'Who we are' is our three core beliefs that aim to inspire each of us at bp to be our best every day.

- Live our purpose
- Play to win
- Care for others

Our people, see page 66

## Financial reporting segments

**Reconciling strategic focus areas to our reporting segments[b]**

From the first quarter of 2022, the group's reportable segments were gas & low carbon energy, oil production & operations, and customers & products. We reconcile these to our business activities and strategic focus areas in the table.

| Strategic focus areas | Gas & low carbon energy | Oil production & operations | Customers & products |
|---|---|---|---|
| Resilient hydrocarbons | Gas regions<br>Gas marketing and trading | Oil regions | Refining and oil trading<br>Bioenergy ⚙ |
| Convenience and mobility | | | Convenience ⚙<br>Fuels<br>EV charging ⚙<br>*Castrol*, aviation, B2B/midstream[c] |
| Low carbon energy | Renewables & power ⚙<br>Hydrogen ⚙ | | |

⚙ Denotes transition growth engine.

Performance against our strategic focus areas in 2022, pages 11, 14, 16 and 18
Financial segment performance in 2022, see pages 36-43

a On a combined basis of subsidiaries and equity-accounted entities.
b bp reporting segments also included other businesses & corporate in 2022.
c Includes customer-facing and midstream biofuels activities that form part of the bioenergy transition growth engine.

## Our business groups

This is how we are organized to deliver our strategy and grow long-term shareholder value. Our three business groups are supported by four integrators to facilitate collaboration and unlock value (innovation & engineering; regions, corporates & solutions; strategy, sustainability & ventures; and trading & shipping), and three teams that serve as enablers of business delivery (finance; legal; and people & culture).

### Gas & low carbon energy

Creating low carbon energy solutions. Integrating our existing natural gas capabilities with power trading and growth in low carbon businesses and markets, including wind, solar, hydrogen and carbon capture and storage (CCS).

**Creating value through**

- Integrated gas and LNG businesses.
- Onshore and offshore wind.
- Our 50% stake in Lightsource bp.
- Hydrogen and CCS.
- Gas trading and power trading, and marketing of both renewable and non-renewable power.

See page 36

Alignment with our strategic focus areas

### Production & operations

The operational heart of bp, producing the hydrocarbon energy and products the world wants and needs – safely and efficiently.

**Creating value through**

- Finding and developing hydrocarbon resources, with selective exploration mostly focused near our existing hubs.
- Operating oil and gas production assets.
- Operating refineries, terminals and pipelines.
- Deploying technical capability across hydrocarbons and low carbon businesses.

See page 39

Alignment with our strategic focus areas

### Customers & products

Focusing on customers as the driving force for innovating new business models and service platforms to deliver the convenience, mobility and energy products and services of today and the future.

**Creating value through**

- Differentiated convenience and fuel offers at our retail sites*, including snacks, ready meals and coffee.
- Our EV charging businesses.
- Our *Castrol* lubricants and e-fluids brand sold through numerous channels.
- Our aviation business.
- Our B2B and midstream businesses.
- Refining & oil trading – our products businesses.
- Bioenergy – our biogas and biofuels businesses.
- Optimizing across integrated fuels value chain.

See page 41

Alignment with our strategic focus areas

Our strategy, see page 10

## Delivering value for stakeholders

We are committed to delivering long-term value for stakeholders.

### Investors and shareholders (I)

Includes our institutional and retail investors.

$4.4bn

**total dividends distributed to bp shareholders (2021 $4.3bn)**

See page 24

### Employees (E)

Our 67,600 people worldwide.

70%

**employee engagement score – 'Pulse' survey (2021 64%)**

See page 67

### Government and regulators (G)

In the countries where we have existing or planned activities.

$12.5bn

**corporate income tax and production tax paid (2021 $5.4bn)**

See page 68 and bp.com/tax

### Society (S)

The people, businesses and environment in the communities where we work.

$93m

**supporting additional initiatives to benefit the communities where we operate (2021 $51m)**

See page 63

### Customers (C)

Including end-use consumers, B2B customers, and distributors.

~12m

**customer touchpoints* per day (2021 >12m)**

See page 41

### Partners and suppliers (P)

Includes relationships with academia, industry and cities.

$174bn

**sourcing goods and services from 39,000 suppliers (2021 $122.2bn)**

See page 63

* See glossary on page 389

## Progress against our strategy

# *Resilient* hydrocarbons

Our focus remains on safely delivering value, maximizing returns and cash flow and reducing emissions. Having grown production in 2022, we plan to grow underlying production★ to 2025, and hold broadly flat to 2030, relative to 2022. In the second half of the decade, we have options to progress several new hub opportunities in our existing operating areas.

Our plan is underpinned by a high-quality hopper of options, with 18 billion barrels currently planned for development. We will drive value through continued high-grading to ensure only the highest quality barrels are developed.

We also plan to sustain operational cost efficiency and reliability improvements. 2022 performance demonstrates our focus here; with our lowest unit production cost since 2006 and the highest plant reliability on record.

**Key**

- C Customers
- E Employees
- G Governments and regulators
- I Investors and shareholders
- P Partners and suppliers
- S Society

### Transition growth engines

**Bioenergy:** we have established global biogas and biofuel businesses that are positioned in an increasingly supportive macro environment of rapidly growing demand, with attractive fiscal incentives. And our trading capabilities enable us to integrate supply volumes to capture enhanced value.

### Keeping North Sea *energy* flowing

We're in action to boost home-grown energy in the UK.

Seagull and Murlach (our new North Sea major projects★) will tap into existing oil and gas infrastructure, removing the need to build new production facilities. We plan for Seagull to come online in 2023, and Murlach is currently in the planning phase.

We've also secured planning permission for a 1.25km pipeline at Sullom Voe terminal, Shetland, to help provide the UK with a long-term reliable gas supply from our Clair field.

~30mboe/d

**Seagull's expected peak annual average production (gross)**

Clair Ridge is the second phase development of the giant Clair field, located 75km west of the Shetland Islands.

Location: UK North Sea

## Going big in *bioenergy*

We made significant progress in 2022, as we work to help meet increased global demand for biogas and biofuels.

**Archaea Energy:** we acquired Archaea Energy, a leading US renewable natural gas (RNG) producer. Archaea builds out our existing biogas business – helping us expand into the fast-growing US biogas market. As a result of the acquisition, we have doubled our adjusted EBITDA★ aim for biogas in 2030.

**Nuseed Carinata:** we entered into a 10-year strategic agreement with Nuseed to accelerate the expansion of Nuseed Carinata oil, a non-food cover crop used to produce low carbon biofuel feedstock. Working with Nuseed can help us advance decarbonization efforts in hard-to-abate transportation sectors like aviation by supporting production of sustainable aviation fuel (SAF) and other biofuels.

## *Integrating* along value chains

We're looking to create value by integrating Nuseed Carinata and Archaea Energy with our trading and shipping (T&S) capabilities and customer relationships.

- We'll use the global reach of the T&S team to help accelerate market adoption of Nuseed Carinata as a sustainable biofuel feedstock.
- We plan to integrate Archaea with our broad customer base. bp is a leading marketer of natural gas in the US as many customers look to decarbonize.

As demand for bioenergy diversifies, we also see opportunities for growth into LNG, renewable hydrogen, and power for EV charging.

C P

Archaea's operations process biogas that would have been flared or vented to produce pipeline-quality RNG and generate power.

Location: Project Assai, Pennsylvania, US

## *Successful* Gulf of Mexico start-up

The Herschel Expansion project was our first major project to come online in 2022. The team got the development started-up ahead of schedule, with no safety incidents recorded.

Phase 1 of the project involved developing a new subsea production system and the first of up to three wells tied to the Na Kika platform.

Herschel is a high-return tieback that allows us to rapidly access and deliver new barrels at low cost. The project team maximized the use of existing facilities, which can help to lower the carbon intensity of the barrels produced. And they worked with ongoing projects to expedite delivery and minimize costs.

Zero safety incidents

**recorded during the 300,000 hours worked on the project**

## *Azule Energy* goes live

Angola's largest independent oil and gas company – our joint venture★ with Eni – is now fully operational. Azule Energy has exploration and production activities in 16 licensed blocks, and produces approximately 200mboe/d of oil.

### Our people in the field

"I help to bridge the gap between the drilling phase and the production phase. Once drilling is complete, my team designs the well, seeking maximum efficiency and minimum risk to mitigate interventions once production starts."

[redacted]

[redacted]

Scan to read [redacted] story

## *Expanding* in Indonesia

Our energy contributions in Indonesia range from hydrocarbon production & operations to energy trading & shipping and retail products.

**Progress in 2022**

- We signed 30-year production-sharing contracts★ with the Indonesian government, paving the way for exploration activities in the Agung I and II offshore gas blocks.
- We participated in the Timpan-1 discovery and will evaluate potential development options with Harbour Energy, who operate the Andaman II licence.
- The government of Indonesia granted a 20-year extension of the Tangguh production sharing contract.
- And we plan for the Tangguh expansion project to start-up in 2023.

G

★ See glossary on page 389

# Convenience and mobility

By bringing our capabilities and reach in convenience together with EV charging, we can provide customer-focused, lower carbon transport solutions over time. We are also focused on growth in our differentiated fuels, *Castrol*, aviation, B2B and midstream including biofuels businesses.

## Transition growth engines

**Convenience:** in the growing convenience sector, our combination of local strategic partnerships and global reach enables us to deliver leading offers for our customers.

**EV charging:** is moving at pace, and we see significant value through our focus on fleets and fast[a] charging to on-the-go customers. Major corporations are increasingly demanding decarbonization solutions, driving strong momentum in fleets.

a 'Fast' charging comprises rapid charging ≥50kW and ultra-fast charging ≥150kW.

### Leaning into convenience and mobility

We agreed to purchase[b] TravelCenters of America (TA) in February 2023. It is one of the biggest networks of roadside travel centres in the US and is expected to add around 280 sites to our retail network. TA sites are strategically located on major highways in 44 states across the country. TA's nationwide network of on-highway locations complement bp's more than 8,000 off-highway locations and have the potential to offer travellers and professional drivers a seamless experience for decades to come. C

Jio-bp mobility stations bring together a range of services for consumers on the move – including EV charging, refreshments and food, and additivized fuels.

Location: Navi Mumbai, India

### Decarbonizing transport

Air bp signed a strategic collaboration agreement with DHL Express to supply sustainable aviation fuel (SAF) until 2026, and a SAF supply contract with Rolls-Royce in the UK and Germany.

And we're building Europe's first public charging corridor for E-trucks. We're opening eight dedicated E-truck charging stations at key sites in Germany along the Rhine-Alpine corridor – one of Europe's busiest road freight routes. These ultra-fast★ 300kW electric chargers are capable of adding up to 200km of range to medium and heavy-duty vehicles in 45 minutes. C P

### Partnering with Uber

We've signed a new global strategic convenience partnership with Uber, responding to growing demand for food, groceries and everyday essentials brought to the door. We aim for ~3,000 retail sites to be available on Uber Eats by 2025.

C P

b This is subject to regulatory and shareholder approval.

# Supercharging EVs

In 2022 we focused on accelerating EV charging around the world, rapidly expanding charging networks in key markets.

- **In Spain and Portugal:** we're teaming up with Iberdrola to grow EV charging infrastructure. We plan to jointly invest up to €1 billion into ~11,000 fast* charge points by 2030.
- **In the US:** we're collaborating with Hertz, with plans to install and manage a network of EV charging solutions, powered by bp pulse. We aim to help Hertz's growing fleet of electric rental cars recharge quickly and efficiently.
- And we're planning to establish a bp pulse Gigahub network – a series of large, EV fast* charging hubs designed to serve ridehail and taxi fleets, near US airports and high-demand locations.
- **In China:** we signed an agreement with AVATR Technology to accelerate the development of an ultra-fast charging network, with intent to roll out around 100 charging hubs in 15 cities.

C P

# Integrated offers with our partners

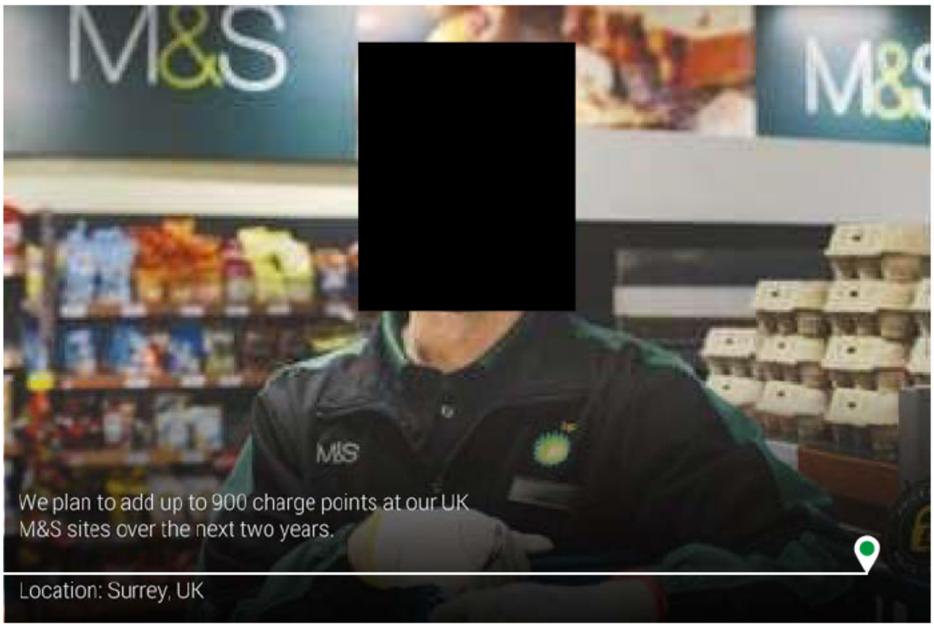
We are expanding our strategic partnership with leading retailer REWE in Germany, to install fast*, reliable, convenient charging for customers at up to 180 of their sites.

And we announced an exclusive agreement in the UK with our convenience partner M&S for bp pulse to install fast* charge points in around 70 of their stores, with an initial ambition to add up to 900 charge points within the next two years.

C P

>65%

**more charge points globally than in 2021**




We plan to add up to 900 charge points at our UK M&S sites over the next two years.

Location: Surrey, UK

# Growing mobility

We've signed a new supply contract and brand partnership with Julius Stiglechner, to establish the bp brand in the majority of the 160 Stiglechner filling station network by the end of 2023 and to further strengthen the bp brand in Austria.

P

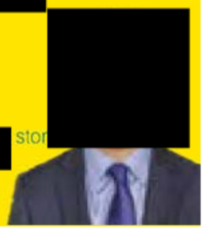
## Our people in the field

"I help countries around the world where bp is active with decarbonizing mobility – from advising on EV infrastructure roll-out in the US, to working with the European Commission on how to support the uptake of sustainable aviation fuels."

[redacted]

Scan to read

[redacted] stor[redacted]



# Investing in the UK

We've announced plans to invest up to £1 billion in UK EV charging infrastructure over the decade, supporting the rapid roll-out of fast, convenient charging across the country.

The investment supports our plans to:

- Meet the UK's fast-growing demand for EV charging.
- Approximately triple the number of public charge points in our UK network by 2030.
- Accelerate the roll-out of 300kW and 150kW ultra-fast charge points.
- Support the UK's transition to low carbon transportation for consumers and fleet vehicles.
- Upgrade our current EV charging technology across our public charging network to improve reliability.

C G

up to £1 billion

**investment in UK EV charging infrastructure over 10 years**

* See glossary on page 389

## **Progress against our strategy** continued

# *Low carbon* energy

We plan to create integrated regional hubs, enabled by two of our transition growth engines in high-growth sectors: hydrogen and renewables & power.

### Transition growth engines

**Hydrogen:** we plan to use our refineries as demand anchors, and to scale these up to regional hubs providing low carbon solutions for customers, particularly in hard-to-abate sectors, such as steel. In parallel, as markets evolve, we expect to invest to build global export hubs for hydrogen and hydrogen derivatives. These are in advantaged geographies where we have an established presence.

**Renewables & power:** we are focusing our investment in renewables on opportunities where we can create integration value, and enhance returns. We aim to do this with focused investment to build out a renewables portfolio in service of green hydrogen★, green and e-fuels, EV charging, and power trading. This includes building a global position in offshore wind, enabled by our capabilities in large-scale, complex offshore projects. By integrating our power trading and marketing activities into this growth engine, we can integrate through the value chain from generation to customer, enhancing returns, building market position and supporting the decarbonization of electricity.

### **Boosting** *hydrogen* **and** *renewables* **in Asia-Pacific**

We've acquired a 40.5% stake and operatorship of the Australian Renewable Energy Hub (AREH) project in Western Australia. At full scale, if all of its planned renewable capacity is used for green hydrogen or ammonia production AREH could produce 1.6 million tonnes (gross) of green hydrogen or 9 million tonnes (gross) of green ammonia per year – making it one of the largest green hydrogen projects in the world.

>26GW

**planned development of solar and wind power generating capacity (gross)**

Our planned energy hub at our former refinery site in Kwinana includes plans for green hydrogen and renewable fuels production. It brings together a unique combination of existing infrastructure, concentrated industrial demand, and strong connections to one of Australia's largest industrial hubs.

Location: Kwinana, Western Australia

## Harnessing *hydrogen* for decarbonization

We are progressing a major CCS project to advance decarbonization efforts across the Texas Gulf Coast.

The project aims to store the equivalent $CO_2$ of removing 3 million cars from the road a year.

- Third party emitters will capture $CO_2$ from their facilities to produce low carbon hydrogen.
- As part of the project, bp will appraise, develop and permit sites to permanently store the $CO_2$.

And we're joining forces with ADNOC and Masdar on hydrogen, bringing international investment into the UK's hydrogen sector and strengthening the country's leadership in low carbon.

- ADNOC has signed a joint development agreement working with bp on our blue hydrogen★ project H2Teesside.
- Masdar has signed a memorandum of understanding to join bp's HyGreen Teesside green hydrogen project.

Together, these two projects could deliver 15% of the UK government's recently expanded 10GW target for low carbon hydrogen production capacity by 2030.

P G

H2Teesside is being designed to store 2Mt$CO_2$ per year, equivalent to the emissions produced by heating one million households in the UK.

Location: Teesside, UK

## Building scale in *renewables*

bp and EnBW were awarded a ~860km² lease option off the east coast of Scotland to develop a major offshore wind project, Morven.

We expect Morven to have a total generating capacity of around 2.9GW – enough to power the equivalent of more than 3 million homes.

bp and EnBW are also jointly developing up to 3GW of offshore wind in the Irish Sea – the Morgan and Mona projects.

**Supporting local jobs and reskilling workers:** As part of our commitment to support oil and gas workers through employment and provide opportunities for reskilling in renewables, bp and EnBW have committed more than £1 million to X-Academy in Scotland. This will help to support both reskilling experienced workers and the creation of entry-level energy transition roles.

We have signed an agreement with the Port of Leith to help it transform into Scotland's largest offshore wind hub, with potential to create around 3,000 direct and indirect jobs.

And we're establishing our global offshore wind centre of excellence for operations and maintenance in Aberdeen, creating up to 120 jobs.

## *Integrating* energy systems

Our Morven project is expected to support up to £10 billion of investment in offshore wind and aims to go further than generating wind power. Investments include significant expansion of EV charging infrastructure, Scottish ship-building, port redevelopment and green hydrogen production, helping to support Scotland to become a global leader in offshore wind.

G E

**5.9GW**

**combined offshore wind to be developed with EnBW**

## *Acquiring* EDF Energy Services

EDF Energy Services (EDF ES) is a leading, US-based retail power and gas provider. We plan to tap into EDF ES' wide geographical reach and diverse customer base to deliver energy solutions directly to large end-user customers in new and existing markets.

### Our people in the field

"Partnerships and collaborative work are essential to our net zero ambition. Everyone brings different strengths and working as a team towards a common goal is highly motivating."

[redacted]

[redacted]

Scan to read [redacted] story

[redacted]

## Key performance indicators

# Measuring our *progress*

We assess the performance of the group across a wide range of measures and indicators that are consistent with our strategy and investor proposition.

Our key performance indicators (KPIs) provide a balanced set of metrics that give emphasis to both financial and non-financial measures. These help the board and leadership team assess bp's performance. Our leadership team uses these measures to evaluate operating performance and inform its financial, strategic and operating decisions.

### Remuneration

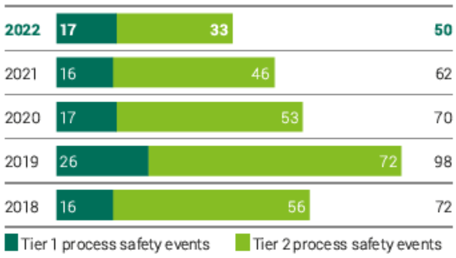
To help align the focus of our board and executive management with the interests of our shareholders, certain measures are used for executive remuneration.

See page 112

## Safety

### Tier 1 and 2 process safety events★[a]

We track tier 1 and tier 2 events and report the aggregated outcome. Tier 1 events are losses of primary containment from a process of greatest consequence – causing harm to a member of the workforce, damage to equipment from a fire or explosion, a community impact or exceeding defined quantities (per API RP 754 tier 1 definitions). Tier 2 events are those of lesser consequence (per API RP 754 tier 2 definitions).

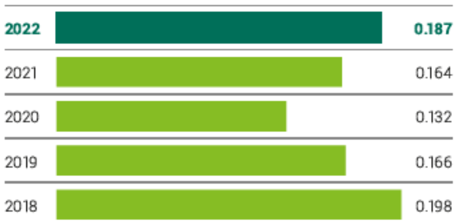



**2022 performance**

Our combined process safety events (PSEs) have generally decreased over the last 10 years, apart from in 2019. This downward trend continued in 2022 with 12 fewer (19%) reported compared to 2021, mainly due to a 28% reduction in tier 2 PSEs.

### Reported recordable injury frequency[a]

Reported recordable injury frequency (RIF) measures the number of reported work-related employee and contractor incidents that result in a fatality or injury per 200,000 hours worked.




**2022 performance**

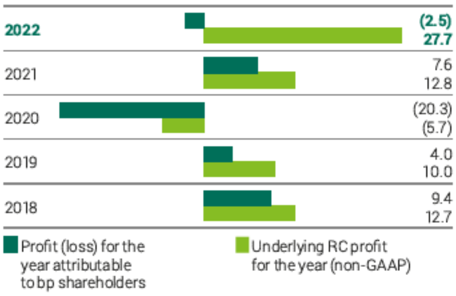
Our RIF increased by 14% compared with 2021. The unique impact of the COVID-19 pandemic on personal safety was reflected in a lower RIF for 2020, which continued into 2021. See Safety on page 65 for more information.

a It includes reported process safety events occurring within bp's operational HSSE reporting boundary. That boundary includes bp's own operated facilities and joint ventures where bp is the operator. In some cases, we may also provide information about some of our joint venture activities where we are not the operator.

## Financial

### Underlying replacement cost (RC) profit ($ billion)

Underlying RC profit★ (non-GAAP) is a useful measure for investors because it is one of the profitability measures bp management uses to assess performance. It assists management in understanding the underlying trends in operational performance on a comparable year-on-year basis. It reflects the replacement cost of inventories sold in the period and is arrived at by adjusting for inventory holding gains and losses,★ net impact of adjusting items★ and related taxation from profit or loss attributable to bp shareholders.

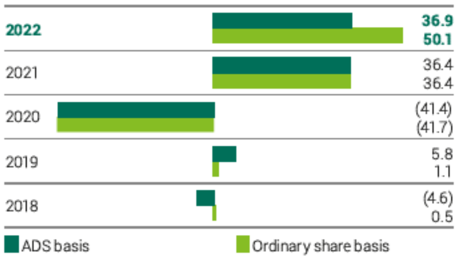



**2022 performance**

Loss attributable to bp shareholders for 2022 includes a pre-tax charge of $24.0 billion, classified as an adjusting item, as a result of the loss of significant influence over Rosneft combined with the market impacts on Russian assets. Underlying RC profit improved as a result of higher gas and liquids realizations and higher refining margins. See Group performance on page 32 and Adjusting items on page 353 for more information.

### Total shareholder return (%)

Total shareholder return (TSR) represents the change in value of a bp shareholding over a calendar year (ADS in USD, ordinary share in GBP). It assumes that dividends are reinvested to purchase additional shares at the closing price on the ex-dividend date.

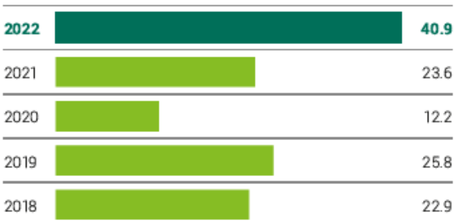



**2022 performance**

Improvement in TSR in 2022 reflects an increase in both the share price and the dividend per share.

### Operating cash flow ($ billion)

Operating cash flow is net cash flow provided by operating activities, as reported in the group cash flow statement.

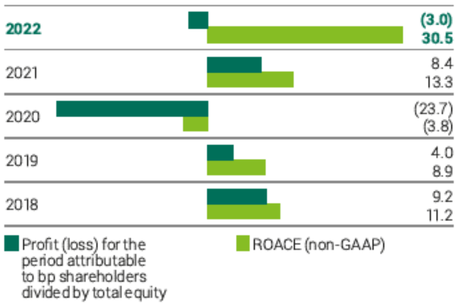



**2022 performance**

2022 reflects higher profits from operations partly offset by working capital movements and higher tax payments.

### Return on average capital employed (%)

Return on average capital employed (ROACE)★ (non-GAAP) gives an indication of a company's capital efficiency, dividing the underlying RC profit (loss) after adding back non-controlling interest and interest expense net of tax by the average of the beginning and ending balances of total equity plus finance debt, excluding cash and cash equivalents and goodwill as presented on the group balance sheet over the periods presented (see page 399).




**2022 performance**

Loss for 2022 attributable to bp shareholders was $2.5 billion and total equity at 31 December 2022 was $83.0 billion. The increase in ROACE reflects strong operational delivery and disciplined delivery of our financial frame.

**Key**

- Used for remuneration policy
- A strategy metric, see page 11
- T TCFD Recommendations and Recommended Disclosures

★ See glossary on page 389

# **Key performance indicators** continued

## Sustainable operations

### Refining availability (%)

bp-operated refining availability represents Solomon Associates' operational availability for bp-operated refineries. The measure shows the percentage of the year that a unit is available for processing after subtracting the annualized time lost due to turnaround activity and all planned mechanical, process and regulatory downtime.

Refining availability is an important indicator of the operational performance of our downstream businesses.

| | |
|---|---|
| **2022** | **94.5** |
| 2021 | 94.8 |
| 2020 | 96.0 |
| 2019 | 94.9 |
| 2018 | 95.0 |

**2022 performance**

bp-operated refining availability★ in 2022 was similar to 2021.

### Major project delivery

We monitor the progress of our major projects to gauge whether we are delivering our core pipeline of projects under construction on time.

Projects take many years to complete, requiring differing amounts of resource, so a smooth or increasing trend should not be anticipated.

Major projects are defined as those with a bp net investment of at least $250 million, or considered to be of strategic importance to bp, or of a high degree of complexity.

| | |
|---|---|
| **2022** | **2** |
| 2021 | 7 |
| 2020 | 4 |
| 2019 | 5 |
| 2018 | 6 |

**2022 performance**

We started up two major projects in 2022 – Herschel Expansion in the US Gulf of Mexico and Cassia Compression off the south-east coast of Trinidad. We're aiming for ~200mboe/d production from nine high-margin major project start-ups by end-2025.

### Upstream★ plant reliability (%)

bp-operated upstream plant reliability is calculated taking 100% less the ratio of total unplanned plant deferrals divided by installed production capacity, excluding non-operated assets and bpx energy. Unplanned plant deferrals are associated with the topside plant and, where applicable, the subsea equipment (excluding wells and reservoir). Unplanned plant deferrals include breakdowns, which does not include Gulf of Mexico weather-related downtime.

| | |
|---|---|
| **2022** | **96.0** |
| 2021 | 94.0 |
| 2020 | 94.0 |
| 2019 | 94.4 |
| 2018 | 95.7 |

**2022 performance**

Upstream plant reliability increased to 96% in 2022, our strongest plant reliability on record.

### Upstream unit production costs ($/boe)

The upstream unit production cost is calculated as production cost divided by units of production. Production cost does not include ad valorem and severance taxes. Units of production are barrels for liquids and thousands of cubic feet for gas. Amounts disclosed are for bp subsidiaries only and do not include bp's share of equity-accounted entities.

| | |
|---|---|
| **2022** | **6.07** |
| 2021 | 6.82 |
| 2020 | 6.39 |
| 2019 | 6.84 |
| 2018 | 7.15 |

**2022 performance**

Unit production costs decreased to their lowest since 2006. The decrease reflects higher volumes and lower costs including the impact of conversion to equity-accounted entities.

## Non-financial

### Greenhouse gas emissions[a] – operational control ($MtCO_2e$)

We report Scope 1 and Scope 2 greenhouse gas (GHG) emissions material to our business on a carbon dioxide-equivalent basis. This KPI comprises Scope 1 (from running the assets within our operational control boundary) and Scope 2 (associated with importing the electricity, heating and cooling that is bought in to run those operations) data covered by aim 1 (to be net zero across our operations by 2050 or sooner). It comprises 100% of Scope 1 and 2 emissions or activities within bp's operational control boundary.

| | Scope 1 (direct) emissions | Scope 2 (indirect) emissions | Total |
|---|---|---|---|
| **2022** | **30.4** | **1.5** | **31.9** |
| 2021 | 33.2 | 2.4 | 35.6 |
| 2020 | 41.7 | 3.8 | 45.5 |
| 2019 | 49.2 | 5.2 | 54.5 |
| 2018 | 48.8 | 5.4 | 54.2 |

**2022 performance**

Scope 1 (direct) emissions, covered by aim 1, were 30.4$MtCO_2e$ – a decrease of 8% from 33.2$MtCO_2e$ in 2021. Of these Scope 1 emissions, 29.7$MtCO_2e$ were $CO_2$ and 0.7MtCO2e methane[b]. Emissions decreased due to divestments, delivery of Sustainable emissions reductions (SERs)★ and other temporary operational changes. Scope 2 (indirect) emissions decreased by 0.9$MtCO_2e$, to 1.5$MtCO_2e$, a 38% reduction compared with 2021. This decrease resulted from lower carbon power agreements, including those at our Gelsenkirchen, Cherry Point and Rotterdam sites.

### Methane intensity (%)

We define methane intensity as the amount of methane emissions from our upstream oil and gas operations as a percentage of the gas that goes to market from those operations. This applies to methane emissions within our operational control boundary, where we have the highest degree of control. Methane emissions from non-producing activities, such as exploration drilling, are excluded. The 2022 methane intensity is calculated using existing methodology and, while it reflects progress in reducing methane emissions, it will not directly correlate with progress towards delivering the 2025 target under aim 4.

| | |
|---|---|
| **2022** | **0.05** |
| 2021 | 0.07 |
| 2020 | 0.12 |
| 2019 | 0.14 |

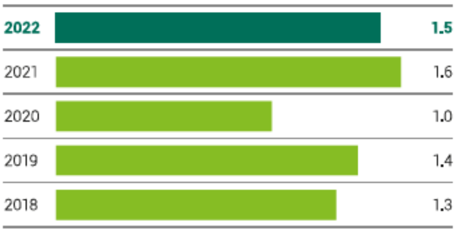
**2022 performance**

Our methane intensity in 2022 was 0.05%, an improvement from 0.07% in 2021[b]. Methane emissions from upstream operations, used to calculate our intensity, continued on the declining trend they have followed since 2016, when we reported 111kt, decreasing by 35% to around 28kt, from 43.0kt in 2021.

**Key**
- Used for remuneration policy
- Strategy metric
- T TCFD Recommendations and Recommended Disclosures

## Sustainable GHG emissions reductions (SERs) ($MtCO_2e$)

This measure includes actions taken by our businesses to improve energy efficiency and reduce methane emissions and flaring – all leading to ongoing, quantifiable GHG reductions. These refer to the GHG emissions on an operational control basis, which comprise 100% of emissions from activities that are operated by bp and would have occurred had we not made the change – they are absolute in nature. Since 2019 progress against this target has been used as a factor in determining bonuses for eligible employees[c], including executives.




### 2022 performance

We delivered $1.5MtCO_2e$ of SERs from reductions projects including reducing Scope 2 emissions from purchased electricity by $662ktCO_2e$ at our Gelsenkirchen, Cherry Point and Rotterdam refineries and Gelsenkirchen Chemicals through further lower carbon power agreements and reducing operational emissions by $351ktCO_2e$ at bpx energy through projects including further electrification, the introduction of new technologies such as at the Grand Slam facility, and the installation of vapour recovery in Eagle Ford.

## Employee engagement

We conduct an annual employee survey to understand and monitor levels of employee engagement and identify areas for improvement.

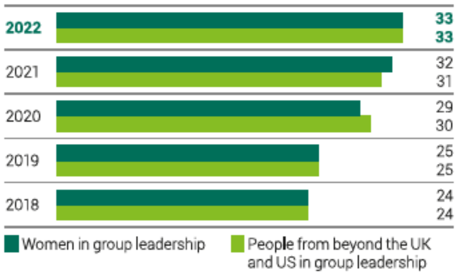

### 2022 performance

Employee engagement increased to 70% (2021 64%), while pride in working for bp increased to a record 78% (2021 73%). Both numbers are notable given that participation was the highest since the survey began, with an 80% response rate. We continue to build engagement plans based on survey feedback and on real-time updates from our monthly snapshot.

## Diversity and inclusion[d] (%)

Our people are crucial to delivering our purpose and strategy. We aim to recruit talented people from diverse backgrounds, invest in their development and promote an inclusive culture.

Each year we report the percentage of women and individuals from countries other than the UK and the US among bp's group leaders.




### 2022 performance

The percentage of women and people from beyond the UK and the US in group leadership increased in 2022, continuing an upward trend over the past five years.

a Total (100%) Scope 1 (direct) GHG emissions from source activities operated by bp or otherwise within bp's operational control boundary. bp's reported GHG emissions include CH4 and $CO_2$. Other GHGs are not included as they are not material to our operations.
b The methane intensity is calculated using existing methodology and, while it reflects progress in reducing methane emissions, will not directly correlate with progress towards delivering the 2025 target under aim 4.
c 32,000 employees were eligible for a cash bonus in 2022, (2021 30,000).
d Relates to bp employees.

★ See glossary on page 389

# Operating within a *resilient* and *disciplined* financial frame

We are performing while transforming by delivering returns for shareholders today as we transform bp for tomorrow.

## Continued discipline in executing the financial frame

| Resilient dividend | Strong investment grade credit rating | Disciplined investment allocation | | Share buybacks |
|---|---|---|---|---|
| 6.610¢ | 40% | $16-18bn | | 60% |
| **per ordinary share for 4Q22** **Resilient $40/bbl cash balance point[a]★** | **2023 surplus cash flow★** **Target further progress within an 'A' grade credit rating** | **2023 capital expenditure★** **2024-2030: $14-18bn p.a.** | | **2023 surplus cash flow[bc]** **Commitment to allocate ≥60% surplus cash flow[b] to share buybacks** |
| Capacity for annual increase of the dividend per ordinary share of ~4% at ~$60/bbl | Intend to allocate 40% 2023 surplus cash flow to further strengthen the balance sheet | Transition growth engines | Oil, gas, refining and other businesses | Expect ~$4.0bn p.a. at ~$60/bbl at the lower end of the capital investment range |
| #1 | #2 | #3 | #4 | #5 |

a Cash balance point $40/bbl Brent, $11/bbl RMM, $3/mmBtu Henry Hub, all 2021 real.
b Subject to maintaining a strong investment grade credit rating.
c In addition, we intend to execute share buybacks to offset expected dilution from vesting of awards under employee schemes during 2023.

### A hierarchy of priorities

To deliver our strategy, we must continue to operate within a resilient and disciplined financial frame.

Our financial frame comprises a hierarchy of priorities governing how we intend to allocate the cash flow that we generate to strengthen our finances, grow distributions to shareholders and invest to create value through our strategic transformation.

### #1 Resilient dividend

A resilient dividend is our first priority within our disciplined financial frame. It is underpinned by a cash balance point of around $40 per barrel Brent, $11 per barrel RMM and $3 per mmBtu Henry Hub (all 2021 $ real). For the second quarter of 2022 bp announced a 10% increase in its quarterly dividend per ordinary share. This increase reflected the underlying performance and cash generation of the business which has enabled strong progress in delivering share buybacks and net debt reduction.

For the fourth quarter of 2022 bp announced a further ~10% increase in the dividend per ordinary share. This increase is underpinned by strong underlying performance and supported by the confidence we have in delivering higher adjusted EBITDA as a result of our updated investment plans. As a result, the announced dividend per ordinary share of 6.61 cents for the fourth quarter 2022 is 21% above the level announced for the fourth quarter 2021.

Based on our current forecasts, at around $60 per barrel Brent and subject to the board's discretion each quarter, we expect to have capacity for an annual increase in the dividend per ordinary share of around 4% per annum.

### #2 Strong investment grade credit rating

bp is committed to maintaining a strong investment grade credit rating, targeting further progress within the 'A' grade credit rating. For the full year 2022 we reduced net debt by $9.2 billion to $21.4 billion – the lowest since the third quarter of 2013. And since the start of 2020 we have now increased the duration of our debt book to over 10 years and have increased the proportion of fixed rate debt to over 60%.

For 2023 we intend to allocate 40% of 2023 surplus cash flow to further strengthen the balance sheet.

### Disciplined investment allocation

We are focused on the disciplined allocation of capital to deliver on our strategic objectives. In 2022 capital expenditure was $16.3 billion. We expect capital expenditure to be in a range of $16-18 billion in 2023 and $14-18 billion per annum between 2024-30. This includes expenditure on inorganic opportunities.

Investment is allocated across our businesses based on a set of criteria that balances strategic alignment, stringent hurdle rates, volatility, integration value, sustainability and risk.

### #3 Investing to grow our transition growth engines

Within our $14-18 billion range (2023 $16-18 billion range) for capital expenditure, we plan to allocate $6-8 billion in 2025 rising to $7-9 billion in 2030 to our transition growth engines. This equates to over 40% of 2025 capital expenditure rising to around 50% of 2030 capital expenditure. Our cumulative investment in these transition growth engines is expected to be in a range of $55-65 billion between 2023 and 2030.

In bioenergy – biofuels and biogas – we expect cumulative capital expenditure of around

$15 billion between 2023 to 2030 with expected internal rate of returns (IRR) of over 15%. In convenience and EV charging we expect cumulative capital expenditure of around $15 billion between 2023 to 2030 with combined expected IRR of over 15%. In hydrogen and renewables & power we expect cumulative capital expenditure of around $30 billion between 2023 to 2030. In hydrogen we expect double-digit unlevered IRR and in renewables we expect 6-8% unlevered IRR.

## #4 Investing to drive returns in resilient hydrocarbons

The balance of our capital expenditure will be invested outside our transition growth engines – into our oil, gas, refining and other businesses.

As we invest, our balanced investment criteria for final investment decisions (see page 32) include:

- Seeking a payback of less than 10 years for investments in upstream oil and refining.
- Seeking a payback of less than 15 years for upstream gas.
- Testing against 15-20% investment hurdle rates in oil & gas at $60 per barrel.

This focused and disciplined capital frame is coupled with a deep hopper of attractive investment opportunities in oil and gas.

## #5 Share buybacks

We are committed to returning at least 60% of surplus cash flow through share buybacks, subject to maintaining a strong investment grade credit rating. In considering the quantum of share buybacks and in setting the dividend per ordinary share each quarter, the board will take account of factors including the cumulative level of, and outlook for, surplus cash flow, the cash balance point and the maintenance of a strong investment grade credit rating.

For 2022 we announced share buybacks of $11.25 billion from surplus cash flow. We have now announced share buybacks from 2021 and 2022 surplus cash flow of $15.4 billion.

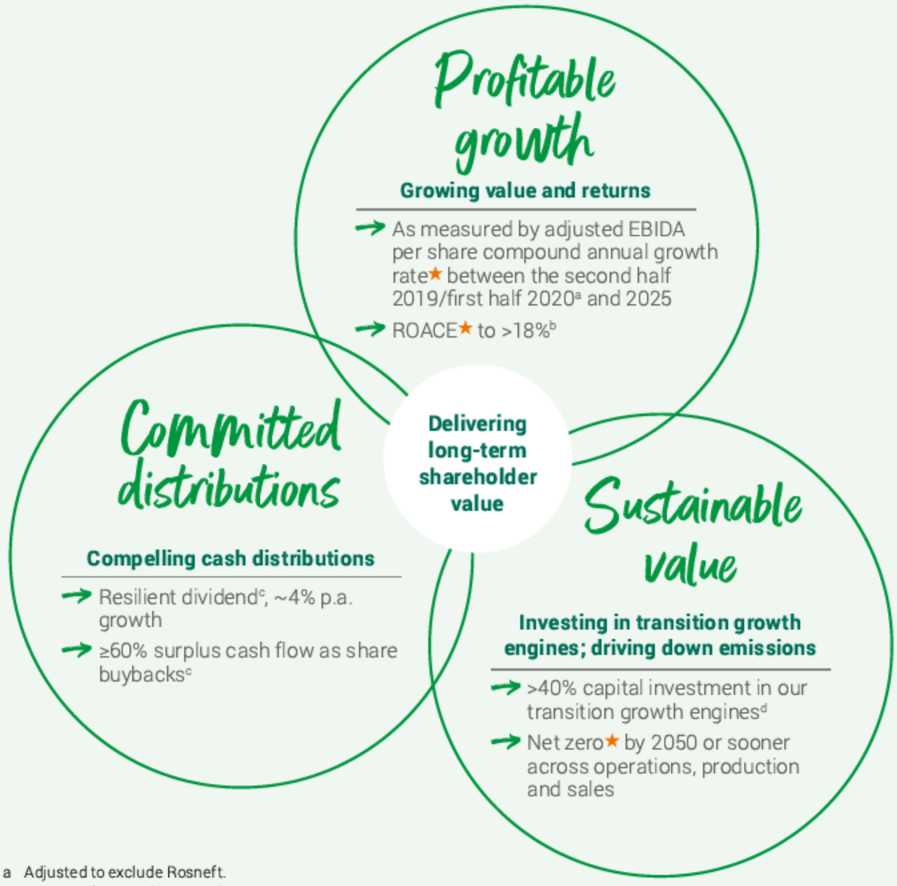
For 2023, and subject to maintaining a strong investment grade credit rating, we are committed to using 60% of surplus cash flow for share buybacks.

Based on our current forecasts, at around $60 per barrel Brent and at the lower end of the capital expenditure range, we expect to be able to deliver buybacks of around $4.0 billion per annum, subject to the board's discretion each quarter.

In addition to the commitment to share buybacks from surplus cash flow, we intend to offset the expected dilution from vesting of awards under employee share schemes through share buybacks. During the first quarter 2022 we executed a $500-million share buyback to offset the expected dilution from the 2022 vesting of awards under employee share schemes.

## Our investor proposition

Our strategy and financial frame together underpin our investor proposition of delivering long-term value for shareholders.




a Adjusted to exclude Rosneft.
b By 2025, $70/bbl (2021 real), at bp planning assumptions.
c On average, based on bp's current forecasts, at around $60 per barrel Brent and subject to the board's discretion each quarter, bp expects to be able to deliver buybacks of around $4 billion per annum and have capacity for an annual increase in the dividend per ordinary share of around 4%.
d By 2025.

## 2023 guidance

| | 2022 actual | 2023 guidance |
|---|---|---|
| Upstream★ reported production (guidance is both reported and underlying production★) | 2.3mmboe/d | Expected to be broadly flat vs 2022 |
| Total capital expenditure★ | $16.3bn | $16-18bn |
| Depreciation, depletion and amortization | $14.3bn | Slightly above 2022 |
| Divestments and other proceeds[a] | $3.1bn | $2-3bn |
| Gulf of Mexico oil spill payments[b] (pre-tax) | $1.4bn | ~$1.3bn |
| Other businesses and corporate underlying annual charge | $1.2bn | $1.1-1.3bn |
| Underlying effective tax rate★ | 34%[c] | Expected to be around 40% |

a Divestment proceeds are disposal proceeds as per the group cash flow statement. See page 355 for more information on divestment and other proceeds.
b See Financial statements – Note 22 for more information on payables related to the Gulf of Mexico oil spill.
c **Nearest equivalent GAAP measure:** effective tax rate 109%.

★ See glossary on page 389

# Pursuing a strategy that is consistent with the Paris goals

## What we mean by Paris-consistent

As a reminder, the CA100+ 2019 resolution★ requires us to disclose the strategy that the board considers in good faith to be consistent with the Paris goals.

When we refer to 'consistency with Paris' we consider this to mean consistency with the world meeting the goals set out in Articles 2.1(a) and 4.1 of the Paris Agreement on Climate Change★.

Both the Sharm el-Sheikh Implementation Plan agreed by the Parties at COP27 in November 2022 and the Glasgow Climate Pact agreed by the Parties at COP26 in November 2021 reaffirmed the temperature goal set out in Article 2 of the Paris Agreement.

We believe the world is on an unsustainable path – we support the Paris goals, and the carbon budget to meet those goals is running out.

bp's strategy is informed by all these considerations. It is designed to create long-term value for shareholders, while enabling delivery of our net zero ambition – to become a net zero company by 2050 or sooner, and to help the world get to net zero. It is designed to be resilient to the uncertainty of the energy transition across many different potential pathways, including various Paris-consistent pathways.

In the *bp Annual Report and Form 20-F 2021* we set out, based on three key principles, why the board considers our strategy to be consistent with the Paris goals.

Here we set out, on the same three grounds, why the board continues to consider this to be the case.

### Informed by Paris-consistent energy transition scenarios

We use scenarios described in the *bp Energy Outlook* and from other organizations to inform our core beliefs about the energy transition.

We believe that it is generally neither useful nor sensible to identify one scenario as being more or less likely than another. Therefore, considering a broad range of scenarios from multiple sources to develop and test our strategic thinking helps to reinforce our confidence in the robustness and resilience of our strategy to the range of uncertainty we face.

We are confident that our approach is science-based. We see the Intergovernmental Panel on Climate Change (IPCC) as the most authoritative source of information on the science of climate change and we use it and other sources to inform our strategy. The IPCC highlights that there are a range of global pathways by which the world can meet the Paris goals, with differing implications for regions, industry sectors and sources of energy.

The *bp Energy Outlook 2023* has been updated to reflect the significant developments in global energy markets over the past year, including the possible impact of the Russia-Ukraine war on the pace of the energy transition. It includes three main scenarios – two of which we regard as Paris-consistent (Accelerated and Net Zero) – that we use to inform our strategy.

See Energy outlook, page **8** and **bp.com/energyoutlook**

### Strategic resilience

We believe our strategy positions bp for success and resilience in a Paris-consistent world – a world that is progressing on one of the many global trajectories considered to be Paris-consistent, and ultimately meets the Paris goals.

The strategy diversifies bp's portfolio and business interests, reducing the risk that challenges facing a single business area might adversely affect bp's strategic resilience. In addition, within the inevitable constraints associated with factors such as long-term capital investments, contractual commitments and organizational capabilities at any given time, bp's ability to maintain its strategic resilience rests, in part, on the governance used to keep the strategy and associated targets and aims under review in light of new information and changes in circumstances.

In our climate-related financial disclosures on page 58, we describe how we have conducted an analysis to test our view of the resilience of our strategy to different climate-related scenarios, using the update on strategic progress presented in February 2023. This includes scenarios that are classified by the World Business Council for Sustainable Development (WBCSD) to be consistent with well-below 2°C and 1.5°C outcomes[a].

As further explained on page 58, while the results of any such analysis must be treated with caution overall, this resilience test again reinforced our confidence in the resilience of our strategy to a wide range of ways in which the energy system could evolve throughout this decade, including in scenarios consistent with limiting temperature rise to 1.5°C.

The analysis also highlighted that, while WBCSD data may point towards a broad directional correlation between oil price and the temperature goal with which scenarios are associated, there is considerable uncertainty as to the extent of this correlation. This is demonstrated by the range within, and overlap between, the prices indicated for each scenario family.

In the version of the WBCSD catalogue used for the analysis, the lowest oil price is associated with a 1.5°C scenario, however a number of the 1.5°C and well-below 2°C scenarios have oil prices in 2030 that are substantively higher. And when compared to bp's own oil price planning assumption for 2030, the oil price in a number of the 1.5°C and well-below 2°C scenarios is also higher, supporting our view that our oil price planning assumption is broadly consistent with Paris-consistent scenarios.

### Contributes to net zero

We believe that our strategy enables bp to make a positive contribution to the world achieving net zero GHG emissions and meeting the Paris temperature goals – outcomes which we believe to be in the best interests of bp as well as beneficial to society generally.

We see huge opportunity in the energy transition – the transformation of the energy system that we believe to be a necessary feature of the world's efforts to meet the Paris goals. There are many ways a company at the heart of the energy sector can make a meaningful contribution to the world getting to net zero. These include: policy advocacy and seeking to use the company's influence with trade associations (who conduct climate-related advocacy); low carbon collaboration and support for others in their own decarbonization efforts (such as cities and companies); and investment in low carbon and technology development. bp seeks to advance these areas through our aims in support of our net zero ambition, including aims 6-10 which are focused on activities which can help the world get to net zero, see page 47.

And, as we pursue our strategy, our diversification and the growth of our low carbon businesses may also contribute to helping the world get to net zero. For example, in Teesside in the UK, we have worked to advance components of the East Coast Cluster – a vision for decarbonizing local heavy industries at scale, with $CO_2$ from their emissions taken offshore for permanent storage through Northern Endurance Partnership's carbon capture and storage facilities. This has the potential to store up to 27 million tonnes of $CO_2$ emissions a year by 2030.

Some ways of contributing are more readily measured by quantitative metrics than others – but all can be important, whether or not they translate into GHG reductions for bp.

To illustrate this, in terms of low carbon investment★, by 2030 we aim to increase to 50GW the amount of developed renewables to FID★, supported by the capital expenditure we plan to invest in our transition growth engines. This aim supports the Paris goals by increasing the low carbon options available to energy consumers. However, it does not reduce our Scope 1, 2 or 3 emissions. And it may not result in a decrease in the overall carbon intensity of bp's sold products, because that is dependent on the extent to which we – rather than another party such as a buyer of the developed project – market the resulting renewable power, which is a commercial consideration. Where we do not sell that power, our development of the renewables is effectively 'invisible' in terms of our GHG metrics.

As another example, our aim 6 is to more actively advocate for policies that support net zero, including carbon pricing. Helping policymakers to design and put in place low carbon policies can help deliver our strategy and capitalize on the huge opportunities associated with achieving the Paris goals, but the benefit of such advocacy, if successful, extends well beyond any implications for bp's own GHG metrics. That is because well-designed low carbon policies can also advance the decarbonization of a whole economy – something potentially of far greater impact than anything a single company can achieve through its own portfolio. We publish examples of our activity in support of aim 6 online at *bp.com/advocacyactivities*.

## Responding to increased shareholder interest on Paris consistency

In 2019 the board recommended that shareholders support a special resolution requisitioned by Climate Action 100+ (CA100+) on climate change disclosures. The CA100+ resolution passed with more than 99% of the vote. This is the fourth year we have included responses throughout the annual report. We have adopted a similar approach to that taken in the *bp Annual Report and Form 20-F 2020* and *2021*.

The CA100+ resolution, which includes safeguards such as protections for commercially confidential and competitively sensitive information, is on page 389. Key terms related to this resolution response are indicated with ★ and defined in the glossary on page 389. These should be reviewed with the following information.

| Element of the CA100+ resolution | Related content | Where |
|---|---|---|
| Strategy that the board considers in good faith to be consistent with the Paris goals. | Our strategy and business model<br>Pursuing a strategy that is consistent with the Paris goals | 10<br>26 |
| How bp evaluates each new material capex investment★ for consistency with the Paris goals and other outcomes relevant to bp strategy. | Our investment process | 28 |
| Disclosure of bp's principal metrics and relevant targets or goals over the short, medium and long term, consistent with the Paris goals. | Key performance indicators<br>Sustainability: net zero targets and aims<br>See 'TCFD metrics and targets' for an overview | 20<br>45<br>62 |
| Anticipated levels of investment in:<br>(i) Oil and gas resources and reserves.<br>(ii) Other energy sources and technologies. | Financial frame: disciplined investment allocation<br>Investment in non-oil and gas | 24<br>29 |
| bp's targets to promote operational GHG reductions. | Sustainability: net zero targets and aims (in table) | 45 |
| Estimated carbon intensity of bp's energy products and progress over time. | Sustainability: aim 3 | 46 |
| Any linkage between above targets and executive pay remuneration. | Directors' remuneration report<br>2022 annual bonus outcome<br>2023 remuneration policy | 112<br>120<br>128 |

a For the purposes of our scenario analysis exercise, we drew on the WBCSD 'Climate Scenario Catalogue' version 1.0, published on 23-03-2022, which includes scenarios considered to be consistent with well-below 2°C and 1.5°C outcomes.

# Our *investment* process

## How we use price assumptions

Our price assumptions are used for our investment appraisal processes. They are also used to inform decisions about internal planning and the value-in-use impairment testing of assets for financial reporting.

### The role of price assumptions

As part of our regular review of strategy, we consider our portfolio and capital requirements to deliver our strategy. This work (and, where applicable, our decisions on individual investments) is informed by our view of the price environment and considers the balanced investment criteria discussed below. Together, these create a framework that seeks to ensure investments align with our strategy and add shareholder value.

Our price assumptions continue to reflect a range of possibilities, including that the transition to a lower carbon economy and energy system could accelerate. They also now reflect new supply side constraints that have emerged a result of the Russia-Ukraine war.

2022 was a particularly volatile year for energy markets. Our investment appraisal assumptions, which take a long-term perspective, allow us to look past near-term volatility and focus on the fundamental trends affecting the energy sector and our businesses when we make our investment decisions.

Throughout 2022 we held our key investment appraisal price assumptions constant at the levels set out in the *bp Annual Report and Form 20-F 2021*. For relevant investment cases assessed in 2023, we have applied and plan to continue to apply the prices shown in the key investment appraisal assumptions table (right) for our central price case. Brent oil and Henry Hub gas assumptions average around $61/bbl and $3.8/mmBtu respectively (2021 $ real) from 2023 to 2050. We consider these prices to be broadly consistent with a range of transition paths compatible with meeting the Paris goals, but they do not correspond to any specific Paris-consistent scenario. We also consider a range of other price assumptions for our investment appraisal.

We continue to apply carbon prices rising to $100/t$CO_2$e in 2030 and $250/t$CO_2$e by 2050 (2021 $ real) for operational greenhouse gas (GHG) emissions in certain investment cases, as explained on page 30.

### Impairment testing

Our best estimate of future prices for use in value-in-use impairment testing continues to be based on our investment appraisal price assumptions, with quarterly review of near-term prices to confirm that the assumptions appropriately reflect any changes to expectations due to short-term market trends.

Impairment price assumptions were held constant in 2022 at the levels disclosed in the *bp Annual Report and Form 20-F 2021* until the fourth quarter, when the updated investment appraisal price assumptions shown below were used for value-in-use impairment testing, with the exception that the Brent price assumption used for 2023 was $77/bbl (2021 $ real).

For investment appraisal, potential future operational emissions costs that may be borne by bp are included as bp costs, as described in the next section (generally without assuming incremental revenue), in order to incentivize engineering solutions that reduce carbon emissions on projects.

For the treatment of emission cost assumptions in value-in-use impairment testing, see Financial statements – Note 1.

### Key investment appraisal assumptions[a] T

2021 $ real

| | 2023 | 2025 | 2030 | 2040 | 2050 |
|---|---|---|---|---|---|
| Brent oil ($/bbl) | 70 | 70 | 70 | 58 | 45 |
| Henry Hub gas ($/mmBtu) | 4.0 | 4.0 | 4.0 | 3.5 | 3.5 |
| Refining marker margin[b]★ ($/bbl) | 14 | 14 | 14 | 11 | 8.5 |

In addition to the prices shown we also test whether investments meet our return expectations (see page 30) using other prices, including a $60/bbl Brent oil price series.

### Carbon price (US$/t$CO_2$e) T

2021 $ real

| | 2023 | 2025 | 2030 | 2040 | 2050 |
|---|---|---|---|---|---|
| Carbon | 50 | 50 | 100 | 200 | 250 |

### Investment process price assumptions

All investments are evaluated against relevant price assumptions for oil, natural gas, refining margins and other commodities across a range of alternative price series (central, upper and lower). In addition, all investment cases with anticipated annual GHG emissions from operations above 20,000 tonnes of $CO_2$ equivalent (bp net basis) must estimate those anticipated GHG emissions and include an associated carbon cost in the investment economics.

Our investment price assumptions place some weight on scenarios in which the transition to a low carbon energy system is sufficiently rapid to meet the goals of the Paris Agreement, as well as scenarios in which the transition may not be sufficiently rapid. They also place some weight on a range of other factors that can drive prices, and which are not directly related to the Paris goals.

These price assumptions do not link to specific scenarios or outcomes, but instead try to capture the range of different possibilities surrounding the future path of the global energy system. The nature of the uncertainty means that the price ranges inevitably reflect considerable judgement. The ranges are reviewed and updated as necessary, as our understanding of and judgements about the energy transition evolve.

In addition to consideration of a range of price assumptions, investment cases are asked to assess the impact of alternative assumptions covering a range of other variables related to the economics of the investment. These variables may include cost, resource, policy changes and schedule, to assess the robustness of investment cases to a range of other factors.

a The values in the table represent the central case.
b The disclosed RMM assumption in this table excludes carbon pricing impacts and assumes a normalized cost of renewable identification numbers (RINs).

## Investment governance and evaluating consistency with the Paris goals

### Governance framework

bp's framework for investment governance seeks to ensure that investments align with our strategy, can be accommodated within our prevailing financial frame, and add shareholder value. It enables investments to be assessed in a consistent way against a range of criteria relevant to our strategy, including environmental and other sustainability criteria.

Investments follow an integrated stage-gate process designed to enable our businesses to choose and develop the most attractive investment cases. A balanced set of investment criteria is used, see page 30. This allows for the comparison and prioritization of investments across an increasingly diverse range of business models.

The governance framework specifies that proposed investments are evaluated using relevant assumptions, including carbon prices for projected operational emissions where applicable. It also sets out requirements for assurance by functions independent of the business before a final investment decision (FID) is taken.

### The role of the board

The board assesses capital allocation across the bp portfolio, including the level and mix of capital expenditures and divestments, strategic acquisitions, distribution choices and deleveraging, as well as reviewing certain investment cases for approval.

### Resource commitment meeting

For capital investments above defined financial thresholds for organic or inorganic spend, investment approval is conducted through the executive-level resource commitment meeting (RCM), which is chaired by the chief executive officer.

The RCM reviews the merits of each investment case against a balanced set of criteria and considers any key issues raised in the assurance process.

The CA100+ resolution★ requires bp to disclose how we evaluate the consistency of new material capex investments★ with (i) the Paris goals and (ii) a range of other outcomes relevant to bp's strategy.

bp's evaluation of the consistency of such investments with the Paris goals was undertaken by the RCM for new material capex investments sanctioned in 2022, see page 31.

bp's evaluation of an investment's consistency with 'a range of other relevant outcomes' is achieved by considering its merits against bp's balanced investment criteria, described on page 30.

**bp board**
Reviews and approves investment cases of more than $3 billion for resilient hydrocarbons, more than $1 billion for all transition or low carbon investments★ and any significant inorganic acquisition that is exceptional or unique in nature.

**Resource commitment meeting**
Forum for approval of investments related to existing and new lines of business above $250 million organic and $25 million inorganic, or which exceed the relevant EVP's financial authority, and any project considered strategically important such as a new market entry.

**Investment allocation committees**
EVP-level forums to review investment cases within a business group as per individual EVP financial authority (up to $250 million organic, $25 million inorganic capital investment).

**Business group investment governance meetings**
SVP-level forums which review investment cases within a business group, enabler or integrator up to the individual SVP's financial authority.

**Cross-group meetings and forums**
Meetings and forums to allow cross-group discussions and integration across wider strategic planning. The forums do not hold investment decision rights, but inform and underpin the decision-making process delivering integration opportunities across bp.

## Investment in non-oil and gas

Our aim 5 is to increase the proportion of investment we make into our non-oil and gas businesses. We have restated the scope of businesses included under aim 5 to align with our transition growth investment★. As a result, the proportion of capital expenditure which counts towards our aim 5 2025 target has changed from $3-4 billion in low carbon activity investment★ to transition growth investment of $6-8 billion, and our 2030 aim has changed from around $5 billion in low carbon investment capital spend (excludes cash costs) to $7-9 billion of transition growth investment. We expect more than 40% of total annual capital investment to be on transition growth engines by 2025, and are aiming for it to increase to around 50% in 2030. For more information see page 46.

**Bioenergy:** In October 2022 we announced our ~$3 billion deal to acquire Archaea Energy (see page 15), a leading US producer of renewable natural gas (RNG). This will expand bp's presence in the US biogas industry and accelerate our bioenergy transition growth engine.

**EVs:** Together with our strategic convenience site networks, our investment in EV charging will help us to offer low carbon solutions to customers. We believe that, for road transport to decarbonize at the pace and scale needed to achieve the goals of the Paris climate agreement, it is necessary for the roll-out of EV charging infrastructure and usage of electric vehicles to be scaled up in parallel with – or even ahead of – the decarbonization of electricity grids. As a result, in some geographies it may be some years before grid decarbonization begins to drive down the lifecycle carbon intensity of EV charging. In 2022 EV charge points installed and energy sold grew by more than 65% and around 150%, respectively, compared to 2021, with charge points now at ~22,000. See page 41 for more information.

**Convenience:** We have 2,400 strategic convenience sites and aim to grow this to around 3,000 by 2025 and to around 3,500 by 2030. In the UK, we negotiated an extension to our partnership with M&S until at least 2030, following a successful 16-year collaboration. See page 16 for more information, including our new global strategic partnership with Uber.

**Renewables & power:** In 2022, in offshore wind in the US, we progressed Empire Wind 1 and 2 projects with Equinor and development work continued on Beacon Wind. In January 2022, together with EnBW, we were awarded a 2.9GW gross offshore wind lease, under project Morven, located off the east coast of Scotland. In power, in December 2022, we completed the purchase of EDF Energy Services, which will expand bp's presence in the US commercial and industrial retail energy business (see page 19).

**Hydrogen:** We aim to build a leading position globally in hydrogen, initially supplying our own refineries, scaling up to meet growing customer demand and in parallel, as markets develop, developing global export hubs for hydrogen and its derivatives. In 2022 we progressed Net Zero Teesside and Northern Endurance Partnership projects. Both form part of the East Coast Cluster which aims to remove nearly 50% of all UK industrial cluster $CO_2$ emissions. In Western Australia we acquired a 40.5% interest and will operate the Australian Renewable Energy Hub, AREH (see page 18). The hub aims to supply renewable power and sustainable fuels to both local mining customers and export markets.

### Low carbon activity investment

In 2022 low carbon activity investment – a subset of our total aim 5 transition growth investment – accounted for more than 80% of our total aim 5 investment. It increased from $2.2 billion in 2021 to more than $4 billion. Most of this investment was in biogas, offshore wind, electric vehicle charging and hydrogen. Going forward, we anticipate that more than 80% of our 2030 transition growth investment★ being on low carbon activity★.

★ See glossary on page 389

# Our investment process continued

## Balanced investment criteria

All investment cases must set out their investment merits and are considered against a set of balanced investment criteria. This standardized approach is intended to create a level playing field for decision making and allows portfolio-wide comparisons of investment cases. The decision to endorse an investment based on the information provided represents our evaluation that it is consistent with what the 2019 CA100+ resolution★ refers to as "a range of other outcomes relevant to bp's strategy". In 2022 we further embedded sustainability into our investment governance process by developing our sustainability assessment template for investments linked to our sustainability frame, for use in all investment cases reviewed by RCM. The template provides information on a case's impact on our net zero aims 1-3, its expected GHG intensity, and significant impacts on or contribution to certain aims concerning people and planet. This helps to maintain the consistency of our investments with our strategy and sustainability aims.

When taking investment decisions, we consider six investment criteria, although these decisions may also take other factors into account as appropriate:

**Strategic alignment:** For all investment cases, we consider whether the investment supports delivery of our strategy, including our net zero aims. We also assess if the investment case involves distinctive capability that bp has, or intends to develop, and whether it adds to an existing 'scale' business within the portfolio or could help us create one.

**Safety and risks:** For all investment cases, we provide an assessment of the key risks to the investment that have a significantly higher probability than usual or have a significantly greater impact (relative to the size of the project) were they to occur. Safety risk management at bp is underpinned by our operating management system★ that is designed to help us sustainably deliver safe, reliable and compliant bp operations.

**Sustainability:** For all investment cases, we consider how any proposed business opportunity is connected to the energy transition, societal needs and the environment. This approach is underpinned by our purpose and sustainability frame. Investment cases above defined thresholds for anticipated annual GHG emissions from operations must estimate those anticipated emissions and incorporate carbon pricing for those emissions into the investment economics. All RCM cases must consider significant impacts of an investment on key sustainability aims, informed by the sustainability assessment template, referred to above.

**Investment economics:** For all investment cases, we consider investment economics against a range of relevant measures. Depending on the nature of the investment case, these may include internal rate of return (IRR), net present value, discounted payback, and profitability index, reflecting assumptions about relevant commodity prices, margins and carbon prices, see page 28. Investments are considered against differentiated return expectations, depending on business segment. We also refer to these expectations as hurdle rates, although as noted, each case is assessed according to its combined merit against our full set of balanced criteria.

1. For our resilient hydrocarbons portfolio, we seek a payback of less than 10 years for upstream oil and refining and 15 years for upstream gas; together with an IRR of 15-20%.
2. For bioenergy, we seek an IRR in excess of 15%.
3. For our convenience and EV charging businesses, we seek a portfolio-level IRR in excess of 15%.
4. For our hydrogen investments, we expect double-digit (unlevered) IRR.
5. For renewables & power investments, we seek an unlevered IRR of 6-8%.

For investments in our oil and gas and refined products businesses, as well as any other investments that do not fall within one of the specific hurdles set out above, we also compare the internal rate of return in our lower-price case to a cost of capital hurdle rate. For additional capital discipline for investments in oil and gas production, we also consider a case in which the Brent oil price starts at $60/bbl in 2023 and later declines to the level of our key appraisal assumptions by 2050 (see page 28).

**Volatility and rateability:** Our investment economics metrics also consider the degree of uncertainty of the cash flows when considering investment cases. For example, some cases have more certainty of future costs and revenue projections. Variations in net present values for the key variables in an investment case are quantified by sensitivity analysis to give a range of potential outcomes against our key investment hurdles.

**Optionality and integration:** Our assessment considers the degree of optionality offered by a project – the ability to adapt our business to changing circumstances. This could be an option to sell a product with a floor price, or the right to purchase additional equity in a joint venture at specific terms. Other types of options include the right to develop (or not develop) extensions to existing projects, or to change the course of a project's development depending on market circumstances. We likewise seek out integration along value chains across multiple products, services, geographies and customers. For example, our gas production can supply liquefaction plants whose LNG is monetized by our trading business. Likewise, future carbon sequestration projects may allow us to add value to our gas production by converting it to low carbon power.

## Paris consistency evaluation process

Our new material capex investments★ are intended to support the delivery of bp's strategy.

For evaluations conducted in 2022, investments in scope for evaluation were defined as:

- **New:** investment in a new project or extension of an existing project/asset or share of an entity that is new to bp or a substantial increase in bp's share.
- **Material:** more than $250 million capex investment.

We evaluated new material capex investment using our central price assumptions (see page 28), and, where applicable, using our lower-price case. Where relevant the evaluation also incorporated our carbon price assumptions, applied to the anticipated operational GHG emissions associated with the investment, through 2050 (see page 31).

### Quantitative evaluations T

For our investment economics and sustainability investment criteria we considered quantitative guide levels, as set our below, to inform the evaluation of each investment's consistency with the goals of the Paris Agreement. As was the case last year, we have again lowered our operational carbon intensity guide level in line with our decreasing portfolio average. As our approach matures with experience, we may continue to adjust or supplement our methodology. There may be instances when new material capex investments are evaluated as consistent with the Paris goals despite either the economic or sustainability guide levels not being met. The RCM may also take account, in its Paris consistency evaluation, of the six balanced investment criteria (above) using qualitative assessments.

**Investment economics:** We calculate economic indicators using our central price, and where applicable, our lower-price cases and applying our carbon price assumptions to relevant operational GHG emissions (for our key central case oil and natural gas price assumptions, see page 28 where we also set out our view on their consistency with achieving Paris goals. We then compare the economic indicators to the relevant economic hurdles (see page 32), typically targeting a minimum threshold of >1.0x the relevant IRR guide levels, and <1.0x any relevant payback guide level.

**Sustainability:** Where appropriate, we compare the expected operational carbon intensity★ of the investment relative to that of the portfolio average shown in the *bp sustainability report 2021* for the segment or the related business activity (upstream and refining). We normally target a ratio of less than 100%, meaning that the investment is expected to reduce the average operational carbon intensity of that portfolio. The potential impact of new material capex investments on bp's net zero aims is a further consideration.

## Evaluation outcome

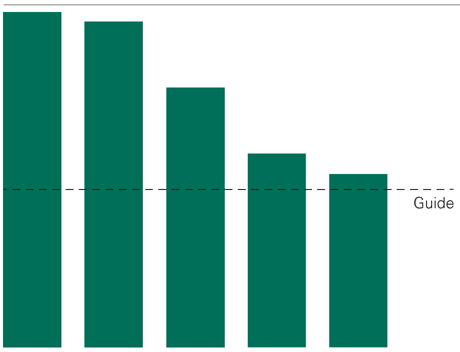
In 2022 five new material capex investments were approved. All were evaluated as being consistent with the Paris goals.

### Evaluation of investment performance against quantitative guide levels[a]

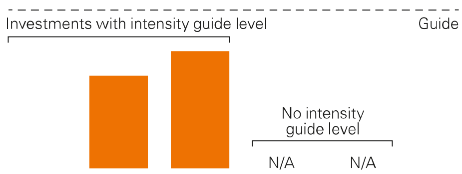
All five investments met the relevant IRR guide level, as shown in the chart. The guide level shown in the chart is typically based on the IRR hurdle for the central-price case, except where the investment case's business area does not have a specific hurdle rate assigned to it, in which case the guide level is based on our lower-price, cost-of-capital hurdle.

For three of the investment cases we have emissions intensity guide levels that were applied to the relevant expected operational carbon intensity. The carbon intensity of each evaluated investment was below the relevant guide level (one of the three had almost no incremental emissions, so no bar is visible). The other two investment cases were in transition growth businesses that do not have a carbon emissions intensity guide level.

**Investment economics**
Rate of return




**Sustainability**[b]
Carbon intensity (%)




a The 2022 investments have been compared to relevant guides (as applicable to the evaluation of each investment) and are presented here in order of the ratio to the relevant central-price case IRR or relevant carbon intensity guide level. As a result, the evaluations against the economic and sustainability benchmarks do not necessarily follow the same order.

b We applied the corresponding operational emissions intensity guide to the three investment cases with relevant guide levels.

## Decisions taken in 2022

In 2022 five new material capital expenditure investment decisions (more than $250 million) were evaluated for Paris consistency.

### Archaea Energy

bp acquired Archaea Energy, a leading US biogas producer focused on converting naturally occurring waste emissions from landfills and anaerobic digesters into low carbon biogas and electricity. The deal accelerates the growth of bp's strategic bioeneregy transition growth engine, advancing our ongoing transformation to an integrated energy company.

### EDF Energy Services energy supply

bp acquired EDF Energy Services, LLC (EDF ES), a US-based commercial and industrial retail energy supply business. The acquisition of EDF ES expands bp's reach down the power value chain, providing immediate scale and adjusted EBITDA★ contribution, and broadening our geographical reach. The acquisition supports our aim 3, delivering energy sales with a lifecycle carbon intensity below our current portfolio average to end-use customers.

### Cypre development

The Cypre development is a subsea tieback to the existing Juniper platform in Trinidad & Tobago. Cypre will access power from Juniper, eliminating the need for additional power generation, allowing increased production without any significant increase in bp Trinidad's operating emissions. Output from the project will go towards satisfying existing gas supply commitments.

### Angola New Gas Consortium

bp and Angola New Gas Consortium (NGC) partners are developing non-associated gas and condensate from the Quiluma and Maboqueiro fields. The project scope includes the installation of unmanned wellhead platforms and multiple production wells, as well as pipelines and an onshore gas treatment plant (GTP). bp's interest in Angola NGC has been transferred to the new Azule Energy joint venture.

### Kwinana renewable fuels

We approved investment in detailed engineering design and long-lead contracts for the Kwinana renewable fuels project at our former refinery site in Western Australia. The project aims to produce renewable diesel, sustainable aviation fuel and bio-naphtha. The integrated energy hub will support our net zero ambition.

★ See glossary on page 389

# Performing while *transforming*

"During 2022 we continued to deliver against our financial frame – raised our dividend by 21%, substantially reduced debt, invested $16.3 billion with discipline and announced $11.25 billion of share buybacks from 2022 surplus cash flow★. As we look to 2023, we continue to focus on the disciplined delivery of our financial frame, with its five priorities, underpinned by a $40/bbl balance point, unchanged."

[redacted]

**$(2.5)bn**
**loss attributable to bp shareholders**
(2021 profit $7.6bn)

**$27.7bn**
**underlying replacement cost (RC) profit★**
(2021 profit $12.8bn)

**$40.9bn**
**operating cash flow★**
(2021 $23.6bn)

## Financial and operating performance

| | $ million except per share amounts | | |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| **Sales and other operating revenues** | **241,392** | 157,739 | 105,944 |
| Profit (loss) before interest and tax | **18,039** | 18,082 | (21,740) |
| Finance costs and net finance expense relating to pensions and other post-retirement benefits | **(2,634)** | (2,855) | (3,148) |
| Taxation | **(16,762)** | (6,740) | 4,159 |
| Non-controlling interest | **(1,130)** | (922) | 424 |
| **Profit (loss) for the year attributable to bp shareholders** | **(2,487)** | 7,565 | (20,305) |
| Inventory holding (gains) losses★, before tax | **(1,351)** | (3,655) | 2,868 |
| Taxation charge (credit) on inventory holding gains and losses | **332** | 829 | (667) |
| Replacement cost (RC) profit (loss)★ | **(3,506)** | 4,739 | (18,104) |
| Net (favourable) adverse impact of adjusting items★[a], before tax | **29,781** | 8,697 | 16,649 |
| Total taxation charge (credit) on adjusting items | **1,378** | (621) | (4,235) |
| **Underlying RC profit (loss)** | **27,653** | 12,815 | (5,690) |
| **Adjusted EBIDA★** | **45,695** | 30,783 | 19,244 |
| **Adjusted EBITDA★** | **60,747** | 37,315 | 19,987 |
| **Dividend paid per ordinary share** (cents) | **22.93** | 21.42 | 31.50 |
| **Dividend paid per ordinary share** (pence) | **18.624** | 15.538 | 24.458 |
| **Profit (loss) per ordinary share** (cents) | **(13.10)** | 37.57 | (100.42) |
| **Profit (loss) per ADS** (dollars) | **(0.79)** | 2.25 | (6.03) |
| **Underlying RC profit (loss) per ordinary share★** (cents) | **145.63** | 63.65 | (28.14) |
| **Underlying RC profit (loss) per ADS★** (dollars) | **8.74** | 3.82 | (1.69) |
| **Adjusting items[a]** | | | |
| Gains on sale of businesses and fixed assets | **3,866** | 1,851 | 2,874 |
| Net impairment and losses on sale of businesses and fixed assets | **(5,920)** | 1,123 | (14,369) |
| Environmental and other provisions | **325** | (1,536) | (212) |
| Restructuring, integration and rationalization costs | **34** | (249) | (1,296) |
| Fair value accounting effects (FVAEs)[b] | **(3,501)** | (8,075) | (212) |
| Rosneft | **(24,033)** | (291) | (205) |
| Gulf of Mexico oil spill | **(84)** | (70) | (255) |
| Other | **(43)** | (668) | (2,349) |
| Total before interest and taxation | **(29,356)** | (7,915) | (16,024) |
| Finance costs | **(425)** | (782) | (625) |
| Total before taxation | **(29,781)** | (8,697) | (16,649) |
| Adjusting items total taxation | **(1,378)** | 621 | 4,235 |
| | **(31,159)** | (8,076) | (12,414) |

a See page 353 for more information.
b See page 354 for information on the cumulative impact of FVAEs.

At 31 December 2021, the group's reportable segments were gas & low carbon energy, oil production & operations, customers & products and Rosneft. The group has ceased to report Rosneft as a separate segment in the group's financial reporting for 2022. For more information see Financial statements – Note 1 Significant accounting policies, judgements, estimates and assumptions – Investment in Rosneft.

From the first quarter of 2022, the group's reportable segments are gas & low carbon energy, oil production & operations and customers & products. Each are managed separately, with decisions taken for the segment as a whole, and represent a single operating segment that does not result from aggregating two or more segments. See Financial statements – Note 5 Segmental analysis.

For the period from 1 January 2022 to 27 February 2022, net income from Rosneft is classified as an adjusting item. As the circumstances leading to this classification were not present prior to first quarter 2022 the net income from Rosneft has not been classified as an adjusting item for comparative periods.

### Results

The loss for the year ended 31 December 2022 attributable to bp shareholders was $2.5 billion, compared with a profit of $7.6 billion in 2021. Adjusting for inventory holding gains, RC loss was $3.5 billion, compared with a profit of $4.7 billion in 2021.

After adjusting RC profit for a net impact of items which bp has classified as adjusting of $31.2 billion (on a post-tax basis), underlying RC profit for the year ended 31 December 2022 was $27.7 billion. The result reflected higher gas and liquids realizations and higher refining margins, partially offset by higher tax and the absence of bp share of earnings from Rosneft.

For 2021, after adjusting RC profit for a net adverse impact of items, which bp has classified as adjusting of $8.1 billion (on a post-tax basis), underlying RC profit was $12.8 billion. The result reflected higher oil and gas prices and refining margins, and strong trading results.

For a discussion of bp's financial and operating performance for the year ending 31 December 2020 and 31 December 2021, see bp's *Annual Report and Form 20-F 2021*, pages 37-50.

### Adjusting items

In 2022 the net adverse pre-tax impact of items, which bp has classified as adjusting was $29.8 billion including:

- A pre-tax charge of $24.0 billion relating to bp's decision to exit its 19.75% shareholding in Rosneft.
- Adverse fair value accounting effects (FVAEs) relative to management's measure of performance of $3.5 billion primarily arising from an increase in forward gas prices during the year and the changes in the fair value of derivatives entered into by the group to manage currency exposure and interest rate risks relating to hybrid bonds. Under IFRS, reported earnings include the mark-to-market value of the hedges used to risk-manage LNG contracts, but not of the LNG contracts themselves. The underlying result includes the mark-to-market value of the hedges but also recognizes changes in value of the LNG contracts being risk managed. The impacts of FVAEs relative to management's internal measure of performance are provided on page 354.
- Net impairment charges of $4.8 billion principally as a result of expected portfolio changes in our oil production & operations segment, the annual review of price assumptions used for investment appraisal and value-in-use impairment testing and the annual review of discount rates used for impairment tests; partially offset by
- A non-taxable gain of $1.9 billion arising from the contribution of bp's Angolan business to Azule Energy.

In 2021 the net adverse pre-tax impact of items which bp has classified as adjusting was $8.7 billion including:

- Adverse fair value accounting effects relative to management's measure of performance of $8.1 billion primarily arising from the exceptional increase in forward gas prices.
- Net impairment reversals of $1.3 billion and $1.0 billion relating to a gain from the divestment of a 20% stake in Oman Block 61.

See Financial statements – Note 1 Significant accounting policies, judgements, estimates and assumptions – Investment in Rosneft and Note 4 for more information on impairments, and pages 353 and 354 for more information on adjusting items and fair value accounting effects.

### Taxation

The charge for corporate income taxes was $16,762 million in 2022 compared with $6,740 million in 2021. The increase mainly reflects higher taxable profits and the impact of the UK Energy Profits Levy. The effective tax rate (ETR) on the profit before taxation for the year in 2022 was 109%, compared with 44% in 2021. The ETR on the profit before taxation for the year in 2022 was impacted by the pre-tax charges relating to bp's decision to exit its shareholding in Rosneft, and the UK Energy Profits Levy. The ETR on the profit before taxation for the year in 2021 was impacted by fair value accounting effects. Excluding inventory holding impacts and adjusting items, the underlying ETR★ in 2022 was 34% compared with 32% in 2021. The underlying ETR★ in 2022 is higher due to the absence of equity-accounted earnings from Rosneft, and the UK Energy Profits Levy on North Sea profits, partly offset by changes in the geographical mix of profits. The underlying ETR for 2023 is expected to be around 40% but is sensitive to the impact that volatility in the current price environment may have on the geographical mix of the group's profits and losses. Underlying ETR is a non-GAAP measure. A reconciliation to GAAP information is provided on page 398.

### Outlook for 2023

#### Macro outlook

- We expect oil and gas prices and refining margins to remain elevated in 2023 as a result of the continuing impact of the war in Ukraine and the resulting energy supply repositioning.

#### 2023 guidance

- We expect both reported and underlying upstream★ production to be broadly flat compared with 2022. Within this, we expect underlying production★ from oil production & operations to be slightly higher and production from gas & low carbon energy to be lower. We expect the start-up of Mad Dog Phase 2 in the second quarter of 2023 and first gas from the Tangguh expansion and GTA Phase 1 Tortue projects in the fourth quarter of 2023.
- In our customers business, we expect inflationary cost pressures to continue and in *Castrol* base oil prices to remain high, although lower than in 2022.
- In products, we expect industry refining margins to remain elevated due to low product stocks and sanctioning of Russian crude and product, although uncertainty remains depending on the implementation and enforcement of the EU ban on Russian products.
- The other businesses & corporate underlying annual charge is expected to be in a range of $1.1-1.3 billion for 2023. The charge may vary from quarter to quarter.

# Group performance continued

### Cash flow and debt information

| | $ million | | |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| **Cash flow** | | | |
| Operating cash flow★ | **40,932** | 23,612 | 12,162 |
| Net cash used in investing activities | **(13,713)** | (5,694) | (7,858) |
| Net cash provided by (used in) financing activities | **(28,021)** | (18,079) | 3,956 |
| Cash and cash equivalents at end of year | **29,195** | 30,681 | 31,111 |
| **Capital expenditure★** | **(16,330)** | (12,848) | (14,055) |
| **Divestment and other proceeds[b]** | **3,123** | 7,632 | 6,586 |
| **Debt** | | | |
| Finance debt | **46,944** | 61,176 | 72,664 |
| Net debt★ | **21,422** | 30,613 | 38,941 |
| Net debt including leases★ | **29,990** | 39,411 | 48,196 |
| Finance debt ratio★ (%) | **36.1%** | 40.3% | 45.9% |
| Gearing★ (%) | **20.5%** | 25.3% | 31.3% |
| Gearing including leases★ (%) | **26.5%** | 30.4% | 36.0% |

a An analysis of capital expenditure by segment and region is provided on page 352.
b Divestment proceeds are disposal proceeds as per the group cash flow statement. See below for more information on divestment and other proceeds.

### Operating cash flow

Operating cash flow for the year ended 31 December 2022 was $40.9 billion, $17.3 billion higher than 2021. Compared with 2021, operating cash flows in 2022 reflected higher profits from operations partly offset by working capital movements and higher tax payments.

Movements in working capital★ adversely impacted cash flow in the year by $6.3 billion, including an adverse impact from the Gulf of Mexico oil spill of $1.3 billion. Other working capital effects were principally an increase in other current assets and inventory offset by an increase in other current liabilities. bp actively manages its working capital balances to optimize and reduce volatility in cash flow.

Operating cash flow for the year ended 31 December 2021 was $23.6 billion, $11.4 billion higher than 2020. Compared with 2020, operating cash flows in 2021 reflected higher oil and gas realizations and higher refining margins partly offset by higher tax payments.

Movements in working capital adversely impacted cash flow in 2021 by $0.6 billion, including an adverse impact on working capital from the Gulf of Mexico oil spill of $1.4 billion. Other working capital effects were principally an increase in other current assets and inventory offset by an increase in other current liabilities.

### Net cash used in investing activities

Net cash used in investing activities for the year ended 31 December 2022 increased by $8.0 billion compared with 2021.

The increase mainly reflected $3.0 billion for the acquisition of Archaea Energy, net of cash acquired, and $0.5 billion for the earlier than expected completion of the acquisition of EDF Energy Service, and lower divestment proceeds received in 2022.

Total capital expenditure for 2022 was $16.3 billion (2021 $12.8 billion), of which organic capital expenditure★ was $12.5 billion (2021 $11.8 billion). Sources of funding are fungible, but the majority of the group's funding requirements for new investment comes from cash generated by existing operations. For 2023 bp expects capital expenditure of $16-18 billion and for 2024-30 now expects capital expenditure in a range of $14-18 billion including inorganic capital expenditure★.

Total divestment and other proceeds for 2022 amounted to $3.1 billion including $0.7 billion relating to the formation of Azule Energy and $0.3 billion relating to the disposal of bp's interest in the Sunrise oil sands project in Canada. Other proceeds for 2022 consist of $0.6 billion of proceeds from the disposal of a loan note related to the Alaska divestment. The cash was received in the fourth quarter 2021, reported as a financing cash flow and was not included in other proceeds at the time due to potential recourse from the counterparty.

Total divestment and other proceeds for 2021 amounted to $7.6 billion, including $2.4 billion from the divestment of a 20% stake in Oman Block 61, $2.2 billion of proceeds relating to the 2020 divestment of bp's Alaska business to Hilcorp and the $1.0 billion final instalment for the sale of the petrochemicals business. Other proceeds for 2021 include $675 million from the sale of a 49% interest in a controlled affiliate holding certain refined product and crude logistics assets onshore US and this transaction was reported within financing activities in the group cash flow statement.

As at 31 December 2022, $15.9 billion of proceeds were received against our target of $25 billion of divestment and other proceeds between the second half of 2020 and 2025. bp now expects divestment and other proceeds of $2-3 billion in 2023.

### Net cash provided by (used in) financing activities

Net cash used in financing activities for the year ended 31 December 2022 was $28.0 billion, compared with $18.1 billion in 2021. Compared with 2021, financing cash flows in 2022 primarily reflected the increase in share buybacks, as part of the share buyback programme announced on 27 April 2021, and an increase in net payments related to short-term and long-term debt including $1.0bn related to the settlement of debt and warrant liabilities acquired with Archaea Energy.

In 2022, 1,900 million of ordinary shares (2021 707 million) were repurchased for cancellation for a total cost of $10.0 billion (2021 $3.2 billion), including transaction costs of $54 million (2021 $17 million).

Total dividends paid to shareholders in 2022 were 22.932 cents per share, 1.512 cents higher than 2021. This amounted to total dividends paid to shareholders of $4.4 billion in 2022 (2021 $4.3 billion). The board decided not to offer a scrip dividend alternative in respect of the 2022 and 2021 dividends.

### Debt

Finance debt at the end of 2022 decreased by $14.2 billion from the end of 2021 reflecting activity to manage the group's debt portfolio. The finance debt ratio at the end of 2022 decreased to 36.1% from 40.3% at the end of 2021.

Net debt at the end of 2022 decreased by $9.2 billion from the 2021 year-end position. Gearing at the end of 2022 decreased to 20.5% from 25.3% at the end of 2021. The decrease in net debt and gearing reflected strong operating performance and related cash flow generation during the year. Net debt and gearing are non-GAAP measures. See Financial statements – Notes 26 and 27 for further information on finance debt and net debt.

For information on financing the group's activities see Financial statements – Note 29 and Liquidity and capital resources on page 356.

### Group reserves and production[a]

| | 2022 | 2021 | 2020 |
|---|---|---|---|
| **Estimated net proved reserves** (net of royalties) | | | |
| Liquids (mmb) | **3,997** | 10,124 | 10,661 |
| Natural gas (bcf) | **18,481** | 39,615 | 42,467 |
| Total hydrocarbons (mmboe)[b] | **7,183** | 16,954 | 17,982 |
| *Of which*: | | | |
| Equity-accounted entities[b] | **1,381** | 10,065 | 10,100 |
| **Production** (net of royalties) | | | |
| Liquids (mb/d) | **1,214** | 1,951 | 2,106 |
| Natural gas (mmcf/d) | **7,101** | 7,915 | 7,929 |
| Total hydrocarbons (mboe/d) | **2,438** | 3,316 | 3,473 |
| *Of which*: | | | |
| Subsidiaries | **2,000** | 1,994 | 2,146 |
| Equity-accounted entities[c] | **439** | 1,322 | 1,326 |

a Because of rounding, some totals may not agree exactly with the sum of their component parts.
b 2021 and 2020 include bp's share of Rosneft and Russia joint ventures. See Supplementary information on oil and natural gas on page 263 for further information.
c Includes bp's share of Rosneft and Russia joint ventures (2022 193mboe/d). See Oil and gas disclosures for the group on page 364 for further information.

Total hydrocarbon proved reserves at 31 December 2022, on an oil equivalent basis including equity-accounted entities, decreased by 58% compared with 31 December 2021 (16% decrease for subsidiaries and 86% decrease for equity-accounted entities). Natural gas decreased by 53% (13% decrease for subsidiaries and 89% decrease for equity-accounted entities). This includes a 9,013mmboe reduction in our equity-accounted entities resulting from our decision to exit our Russia joint ventures and our shareholding in Rosneft.

Excluding the impact of our exit from Russia, there was a net decrease from acquisitions and disposals of 84mmboe (decrease of 434mmboe within our subsidiaries and increase of 350mmboe within our equity-accounted entities). Acquisition and divestment activity occurred in our equity-accounted entities in the Southern Cone and the North Sea, and divestment activity in our subsidiaries in Canada, the US and the North Sea. The creation of Azule Energy in Angola resulted in divestment of subsidiary entities and purchase of equity-accounted entities.

Total hydrocarbon production for the group was 26.5% lower compared with 2021. The decrease comprised a 0.2% decrease (6.1% decrease for liquids and 6.0% increase for gas) for subsidiaries and a 66.8% decrease (67.8% decrease for liquids and 63.5% decrease for gas) for equity-accounted entities. The production decrease in the equity-accounted entities is due to absence of bp share of production from Rosneft.

Excluding the impact of Rosneft, total hydrocarbon production for the group was 1.6% higher compared with 2021. The increase comprised a 0.2% increase (6.1% decrease for liquids and 6.0% increase for gas) for subsidiaries and a 13.5% increase (25.0% increase for liquids and 6.9% decrease for gas) for equity-accounted entities.

# Gas & low carbon energy

Gas & low carbon energy segment comprises our gas & low carbon businesses. Our gas business includes regions[a] with upstream activities that predominantly produce natural gas, integrated gas and power, and gas trading. Our low carbon business includes solar, offshore and onshore wind, hydrogen and CCS, power trading, and our share in bp Bunge Bioenergia[b]. Power trading and marketing includes trading of both renewable and non-renewable power.

## Financial and operating performance

| | $ million | | |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| **Sales and other operating revenues[c]** | **56,255** | 30,840 | 16,275 |
| Profit (loss) before interest and tax | **14,688** | 2,166 | (7,049) |
| Inventory holding (gains) losses★ | **8** | (33) | (19) |
| **RC profit (loss) before interest and tax** | **14,696** | 2,133 | (7,068) |
| Net (favourable) adverse impact of adjusting items★[d] | **1,367** | 5,395 | 7,757 |
| **Underlying RC profit before interest and tax★** | **16,063** | 7,528 | 689 |
| Taxation on an underlying RC basis | **(4,367)** | (1,677) | (773) |
| **Underlying RC profit (loss) before interest** | **11,696** | 5,851 | (84) |
| **Depreciation, depletion and amortization** | **5,008** | 4,464 | 3,457 |
| **Exploration write-offs[e]** | **2** | 43 | 1,741 |
| **Adjusted EBITDA★[f]** | **21,073** | 12,035 | 5,214 |
| **Capital expenditure★** | | | |
| Gas | **3,227** | 3,180 | 4,012 |
| Low carbon energy | **1,024** | 1,561 | 596 |
| | **4,251** | 4,741 | 4,608 |

a The AGT and Middle East regions have been further subdivided by asset to allow reporting in either gas & low carbon or oil production & operations as appropriate.
b From the first quarter of 2023, bp Bunge Bioenergia will be reported within customers & products.
c Includes sales to other segments.
d See page 354 for information on the cumulative impact of FVAEs.
e 2020 includes a write-off of $673 million which has been classified within the 'other' category of adjusting items.
f A reconciliation to RC profit before interest and tax is provided on page 400.

### Financial results

Sales and other operating revenues for 2022 were higher mainly due to higher realizations, higher gas marketing and trading revenues and higher volumes.

RC profit before interest and tax for 2022 was $14,696 million compared with $2,133 million for 2021.

Items which bp has classified as adjusting for 2022 had a net adverse impact of $1,367 million including adverse fair value accounting effects★ of $1,811 million, relative to management's view of performance, partially offset by a net impairment reversal.

After adjusting RC profit for the net impact of items which bp has classified as adjusting, underlying RC profit before interest and tax for 2022 was $16,063 million, compared with $7,528 million for 2021. The increase reflects higher realizations, higher production and an exceptional gas marketing and trading result.

Items which bp has classified as adjusting for 2021 had a net adverse impact of $5,395 million including adverse fair value accounting effects of $7,662 million (relative to management's view of performance) primarily arising from the exceptional increase in forward gas prices, partly offset by the gain on the partial divestment in Oman and net impairment reversals.

See Financial statements – Note 5 for further information on segmental analysis.

### Operational update

Reported production for 2022 was 957mboe/d, 4.9% higher than the same period in 2021. Underlying production★ for the full year was 4.9% higher due to the ramp-up of major projects★ partially offset by base decline.

Renewables pipeline★ at the end of the year was 37.2GW (bp net). In 2022 the pipeline grew by 14.1GW primarily as a result of bp and its partner EnBW being awarded a lease option off the east coast of Scotland to develop an offshore wind project (1.5GW bp net) in the first quarter of 2022, net additions to Lightsource bp's pipeline (3.8GW), and the additions to the renewables pipeline in the fourth quarter in support of hydrogen in Australia (10.3GW) offset by promotions of projects to final investment decision (FID).

In renewables by the end of 2022 we had brought 5.8GW developed renewables to FID★.

### Strategic progress

Gas

In Trinidad, we took the FID on the Cypre project offshore, our third subsea gas development, which is expected to start drilling in 2023, with first gas expected in 2025. The Cassia C compression platform safely delivered first gas in November. And we and the other shareholders reached an agreement to restructure Atlantic LNG with the Trinidad Ministry of Energy. The new structure is expected to be effective in October 2024 and will enable increased focus on operational efficiency and reliability and underpin future upstream investments.

In Indonesia, we participated in the Timpan-1 discovery offshore, the successful well was drilled in the Andaman II licence by Harbour Energy. We also extended the Tangguh PSC★ licence by 20 years to 2055, and signed 30-year PSC with the government of Indonesia for Agung I and II blocks.

In Egypt, we were awarded five exploration blocks in the Mediterranean Sea by the Egyptian Natural Gas Holding Company.

In Mauritania, we signed a 30-month exploration and production sharing agreement for the BirAllah resource. In January 2023, our floating production, storage and offloading (FPSO) vessel for GTA Phase 1 sailed away from China towards the project site in Mauritania and Senegal.

In February 2023 we completed the sale of bp's upstream business in Algeria to Eni, including the gas producing In Amenas and In Salah concessions.

### Integrated gas and power and LNG trading

- In February 2022, construction started on the Gas Natural Acu (GNA) 2 power plant at the Port of Acu, Rio de Janeiro state, Brazil. GNA 2 is expected to have an installed capacity of 1.7GW. bp is the exclusive LNG supplier for GNA 1 and GNA 2 which, together, are expected to achieve 3GW of installed capacity. GNA is a joint venture among bp, Prumo, Siemens and SPIC.
- In April bp and the Korea Gas Corporation (KOGAS) signed a long-term agreement to supply 1.58 million tonnes of LNG per year from 2025 to KOGAS through a new 18-year contract.

See Oil and gas disclosures for the group on page 358 for more information on oil and gas operations in the regions.

## Low carbon energy

### Hydrogen and carbon capture and storage

In Hydrogen and carbon capture and storage (CCS), we progressed 1.8mtpa net to bp of hydrogen opportunities to project pipeline (concept development stage).

Our progress in hydrogen is focused on growing scale in key regionally integrated markets, such as Europe and US, using our refineries as demand anchors. As hydrogen markets develop, we aim to create a portfolio of globally advantaged supply hubs.

- In the UK, in October, we submitted a bid to the UK government for our proposed green hydrogen★ project. HyGreen Teesside is one of the UK's largest proposed green hydrogen plants and aims to produce an initial 80 megawatts equivalent (MWe) of hydrogen by 2025 and 500MWe by 2030. In addition, we announced that Abu Dhabi's ADNOC will work with us in our blue hydrogen★ project H2Teesside, Masdar signed a memorandum of understanding to acquire a stake in bp's proposed HyGreen Teesside green hydrogen project, and that bp and ADNOC would commence a study for a new world-scale blue hydrogen project in Abu Dhabi.
- In Europe, in February 2022, jointly with HyCC we announced plans to develop H2-Fifty, a 250MWe green hydrogen production plant in the port area of Rotterdam. The facility could supply bp's refinery in the city and has the potential to reduce $CO_2$ emissions by up to 350,000 tonnes per year.
- In the US, in May 2022, we announced our plans to develop a major CCS project to advance decarbonization efforts to store up to 15 million metric tons of $CO_2$ across the Texas Gulf Coast. We expect that this project will enable low carbon hydrogen production and decarbonize bp facilities and third-party emitters.
- In Asia Pacific, in September 2022, we acquired a 40.5% equity stake in Australian Renewable Energy Hub (AREH) in the Pilbara region of Western Australia, which is one of the world's largest planned integrated green hydrogen hubs (InterContinental Energy 26.4%, CWP Global 17.8% and Macquarie Capital and Macquarie's Green Investment Group 15.3%).
- In January 2022, we and Oman's Ministry of Energy and Minerals signed a Strategic Framework Agreement (SFA) and a Renewables Data Collection Agreement which will support the potential development of a multiple gigawatt, world-class renewable energy and green hydrogen development in the country by 2030.
- In November and December 2022, we signed memoranda of understanding with the governments of Mauritania and Egypt, to explore the potential for establishing green hydrogen production facilities in the countries.

### Renewables and power

*Offshore wind*

In offshore wind, in 2022 we built scale and progressed projects in two of the most attractive markets, US and UK. These positions in offshore wind will enable us to leverage integration opportunities with green hydrogen, EV mobility and power trading as we build the business.

In January 2022 in partnership with EnBW we were awarded a lease option off the east coast of Scotland to develop a major offshore wind project with a total generating capacity of 2.9GW (1.45GW net).

In the US, bp and its partner Equinor signed a 25-year purchase and sales agreement with the New York State Energy Research and Development Authority (NYSERDA) for 2.5GW of power sale agreements for our Empire Wind II and Beacon Wind I projects.

We are building global presence in offshore wind. In March 2022 we announced a partnership with Marubeni to explore a selected offshore wind development opportunity in Japan. We have agreed to form a strategic partnership for offshore wind and potentially other decarbonization projects.

In February 2023, we formed a joint venture with Deep Wind Offshore to develop up to 6GW offshore South Korea. We acquired a 55% stake in Deep Wind Offshore's early-stage offshore wind portfolio, which includes four projects across the Korean peninsula.

*Onshore renewables*

In solar, we continue accelerating growth in our pipeline through our Lightsource bp partnership, projects in service of hydrogen and developing our portfolio of US solar projects acquired in July 2021.

- Lightsource bp brought 2.7GW to FID (1.3GW bp net) in full year 2022, an increase of 32% compared with 2.0GW (1.0GW bp net) in 2021. In addition, through Lightsource bp, we have 28GW (14GW bp net) of pipeline and additional 19GW (9.5GW bp net) of early stage opportunities in the hopper for a total of 47GW.
- In Australia, we have added 4GW bp net in support of hydrogen as part of the AREH project.
- We started construction in Arche, our first US solar 134MWdc (107MWac) project in Fulton County, Ohio; Power Purchase Agreement secured with Meta.

In onshore wind, we agreed with our Flat Ridge 2 joint venture partner to purchase their 50% ownership in that wind farm. Since December, we own 100%, adding an additional 235MW of capacity to bp's renewables portfolio. We added 6.3GW to our pipeline in Australia in support of the hydrogen project as part of AREH.

*Power trading*

We acquired EDF Energy Services, expanding bp's presence in the US commercial and industrial retail power and gas business.

★ See glossary on page 389

# Gas & low carbon energy continued

## Estimated net proved reserves and production[a] (net of royalties)

| | 2022 | 2021 | 2020 |
|---|---|---|---|
| **Estimated net proved reserves** (net of royalties) | | | |
| Crude oil[b] (mmb) | **151** | 228 | 292 |
| Natural gas liquids (mmb) | **9** | 32 | 37 |
| Total liquids ★[c] | **160** | 260 | 329 |
| Natural gas[c] (bcf) | **9,708** | 11,882 | 15,367 |
| Total hydrocarbons ★[c] (mmboe) | **1,834** | 2,309 | 2,979 |
| *Of which equity-accounted entities*[d]: | | | |
| Liquids (mmb) | **—** | — | — |
| Natural gas (bcf) | **—** | — | — |
| Total hydrocarbons (mmboe) | **—** | — | — |
| **Production** (net of royalties) | | | |
| Crude oil[b] (mb/d) | **103** | 97 | 77 |
| Natural gas liquids (mb/d) | **15** | 16 | 19 |
| Total liquids (mb/d) | **118** | 113 | 96 |
| Natural gas (mmcf/d) | **4,866** | 4,632 | 4,379 |
| Total hydrocarbons (mboe/d) | **957** | 912 | 851 |
| *Of which equity-accounted entities*[de]: | | | |
| Liquids (mb/d) | **2** | 3 | 2 |
| Natural gas (mmcf/d) | **—** | — | — |
| Total hydrocarbons (mboe/d) | **2** | 3 | 2 |
| **Average realizations** ★[f] | | | |
| Liquids ($/bbl) | **89.86** | 63.60 | 35.63 |
| Natural gas ($/mcf) | **8.91** | 5.11 | 3.25 |
| Total hydrocarbons ($/boe) | **56.34** | 33.75 | 20.71 |

a Because of rounding, some totals may not agree exactly with the sum of their component parts.
b Includes condensate and bitumen.
c Includes 3 million barrels of total liquids (10 million barrels at 31 December 2021 and 11 million barrels at 31 December 2020) and 547 billion cubic feet of natural gas (690 billion cubic feet at 31 December 2021 and 1,059 billion cubic feet at 31 December 2020) in respect of the 30% non-controlling interest in BP Trinidad & Tobago LLC.
d bp's share of reserves of equity-accounted entities in the gas & low carbon energy segment.
e bp's share of production of equity-accounted entities in the gas & low carbon energy segment.
f Realizations are based on sales by consolidated subsidiaries only – this excludes equity-accounted entities.

## Renewables

| | 2022 | 2021 | 2020 |
|---|---|---|---|
| **Renewables** (bp net, GW) | | | |
| Installed renewables capacity | **2.2** | 1.9 | 1.5 |
| Developed renewables to FID | **5.8** | 4.4 | 3.3 |
| Renewables pipeline | **37.2** | 23.1 | 10.9 |
| *of which by geographical area:* | | | |
| Renewables pipeline – Americas | **17.0** | 16.2 | 6.3 |
| Renewables pipeline – Asia Pacific | **11.8** | 1.4 | 0.8 |
| Renewables pipeline – Europe | **8.3** | 5.3 | 3.7 |
| Renewables pipeline – Other | **0.1** | 0.2 | 0.1 |
| *of which by technology:* | | | |
| Renewables pipeline – offshore wind | **5.2** | 3.7 | 2.2 |
| Renewables pipeline – onshore wind | **6.3** | — | — |
| Renewables pipeline – solar | **25.7** | 19.4 | 8.7 |
| **Total developed renewables to FID and renewables pipeline** | **43.0** | 27.5 | 14.1 |

# Oil production & operations

Oil production & operations segment comprises regions[a] with upstream activities that predominantly produce crude oil, including bpx energy.

## Financial and operating performance

| | $ million | | |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| **Sales and other operating revenues[b]** | **33,193** | 24,519 | 17,234 |
| Profit (loss) before interest and tax | **19,714** | 10,509 | (14,585) |
| Inventory holding (gains) losses★ | **7** | (8) | 2 |
| **RC profit (loss) before interest and tax** | **19,721** | 10,501 | (14,583) |
| Net (favourable) adverse impact of adjusting items★ | **503** | (209) | 8,695 |
| **Underlying RC profit (loss) before interest and tax★** | **20,224** | 10,292 | (5,888) |
| Taxation on an underlying RC basis | **(9,143)** | (4,123) | 70 |
| **Underlying RC profit (loss) before interest** | **11,081** | 6,169 | (5,818) |
| **Depreciation, depletion and amortization** | **5,564** | 6,528 | 7,787 |
| **Exploration write-offs[c]** | **383** | 125 | 8,179 |
| **Adjusted EBITDA★[d]** | **26,171** | 16,945 | 8,777 |
| **Capital expenditure★** | **5,278** | 4,838 | 5,829 |

a The AGT and Middle East regions have been further subdivided by asset to allow reporting in either gas & low carbon or oil production & operations as appropriate.
b Includes sales to other segments.
c 2020 includes a write-off of $1,301 million which has been classified within the 'other' category of adjusting items.
d A reconciliation to RC profit before interest and tax is provided on page 400.

### Financial results

Sales and other operating revenues for 2022 were higher than 2021 mainly due to higher realizations offset by lower volumes.

RC profit before interest and tax for 2022 was $19,721 million compared with $10,501 million for 2021.

Adjusting items for 2022 had a net adverse impact of $503 million principally relating to impairments as a result of expected portfolio changes, partially offset by gains on disposals, mainly arising from the contribution of bp's Angolan business to Azule Energy.

After adjusting RC profit for the net adverse impact of adjusting items, underlying RC profit before interest and tax for 2022 was $20,224 million, compared with $10,292 million for 2021. The higher profit reflects primarily higher realizations.

Adjusting items for 2021 had a net favourable impact of adjusting items of $209 million primarily relating to gains on sales of businesses and net impairment reversals, partly offset by updates to decommissioning provisions related to previously sold assets.

See Financial statements – Note 5 for further information on segmental analysis.

### Operational update

Reported production for 2022 was 1,297mboe/d, 0.8% lower than the same period of 2021. Underlying production★ for the year was 2.1% higher compared with the same period of 2021 reflecting bpx energy performance, major projects★ and reduced weather impacts in the US Gulf of Mexico partly offset by base performance.

Progressed operational performance in upstream★ in 2022, delivering the highest bp-operated upstream plant reliability★ on record at 96%.

### Strategic progress

- In 2022 we started up a major project – Herschel Expansion in the US deepwater Gulf of Mexico.
- We completed the creation of Azule Energy, a 50:50 joint venture combining our Angolan assets with those of Eni.
- bp has strengthened its renewal options partnering with Petrobras in a successful drill stem test at the Cabo Frio discovery in the Campos Basin offshore Brazil.
- The transaction to sell bp's 50% interest in the Sunrise oil sands project in Alberta, Canada, to Calgary-based Cenovus Energy completed in August. As part of the deal, bp acquired Cenovus's interest in the Bay du Nord project in eastern Canada, adding to its sizeable acreage position offshore Newfoundland and Labrador.
- bp expects the start-up of the Mad Dog Phase 2 project in the Gulf of Mexico in the second quarter of 2023 (bp operator 60.5%, Woodside Energy 23.9%, Chevron 15.6%).
- bp was awarded operatorship of the Bumerangue block, in the Santos Pre Salt Basin, in Brazil.
- The National Agency for Petroleum, Gas and Biofuels (ANPG), ExxonMobil Angola and the Angola Block 15 partners announced a new discovery at the Bavuca South-1 exploration well. Azule Energy, the bp and ENI 50:50 joint venture, owns 42% of block 15.
- In the Permian, methane flaring intensity averaged <0.5% in 2022, the lowest recorded in bpx energy.

See Oil and gas disclosures for the group on page 358 for more information on oil and gas operations in the regions.

★ See glossary on page 389

# Oil production & operations continued

## Estimated net proved reserves and production[a] (net of royalties)

| | 2022 | 2021 | 2020 |
|---|---|---|---|
| **Estimated net proved reserves** (net of royalties) | | | |
| Crude oil[b] (mmb) | **3,380** | 3,872 | 4,287 |
| Natural gas liquids (mmb) | **457** | 361 | 361 |
| Total liquids | **3,836** | 4,234 | 4,648 |
| Natural gas (bcf) | **8,774** | 11,499 | 10,776 |
| Total hydrocarbons★ (mmboe) | **5,349** | 6,216 | 6,506 |
| *Of which equity-accounted entities*[c]: | | | |
| Liquids (mmb) | **968** | 795 | 782 |
| Natural gas (bcf) | **2,394** | 4,880 | 4,758 |
| Total hydrocarbons (mmboe) | **1,381** | 1,637 | 1,602 |
| **Production** (net of royalties) | | | |
| Crude oil[b] (mb/d) | **866** | 898 | 1,041 |
| Natural gas liquids (mb/d) | **86** | 81 | 93 |
| Total liquids (mb/d) | **952** | 978 | 1,133 |
| Natural gas (mmcf/d) | **1,998** | 1,903 | 2,264 |
| Total hydrocarbons (mboe/d) | **1,297** | 1,307 | 1,524 |
| *Of which equity-accounted entities*[d]: | | | |
| Liquids (mb/d) | **176** | 140 | 143 |
| Natural gas (mmcf/d) | **436** | 468 | 480 |
| Total hydrocarbons (mboe/d) | **251** | 221 | 226 |
| **Average realizations**★[e] | | | |
| Liquids ($/bbl) | **89.62** | 62.57 | 36.21 |
| Natural gas[f] ($/mcf) | **10.46** | 5.49 | 1.53 |
| Total hydrocarbons[f] ($/boe) | **82.23** | 55.65 | 29.88 |

a Because of rounding, some totals may not agree exactly with the sum of their component parts.
b Includes condensate and bitumen.
c bp's share of reserves of equity-accounted entities in the oil production & operations segment, which includes bp's share of reserves of Russia joint ventures in 2020 and 2021. During 2022 gas operations in Angola, Argentina, Bolivia, Mexico and Norway were conducted through equity-accounted entities.
d bp's share of production of equity-accounted entities in the oil production & operations segment. Includes bp's share of production of Russia joint ventures.
e Realizations are based on sales by consolidated subsidiaries only – this excludes equity-accounted entities.
f Realizations calculation methodology has been changed to reflect gas price fluctuations within the North Sea region. 2021 was restated. There is no impact on financial results.

# Customers & products

Customers & products segment comprises our customer-focused businesses, which include convenience and retail fuels, EV charging, as well as *Castrol*, aviation and B2B and midstream. It also includes our products businesses, refining & oil trading, as well as our bioenergy businesses.

## Financial and operating performance

| | $ million | | |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| **Sales and other operating revenues**[a] | **188,623** | 130,095 | 90,744 |
| Profit before interest and tax | **10,235** | 5,563 | 622 |
| Inventory holding (gains) losses★ | **(1,366)** | (3,355) | 2,796 |
| **Replacement cost (RC) profit before interest and tax** | **8,869** | 2,208 | 3,418 |
| Net (favourable) adverse impact of adjusting items★[b] | **1,920** | 1,044 | (330) |
| **Underlying RC profit before interest and tax★** | **10,789** | 3,252 | 3,088 |
| *Of which*: | | | |
| customers – convenience & mobility | **2,966** | 3,052 | 2,883 |
| *Castrol – included in customers* | **700** | 1,037 | 818 |
| products – refining & trading | **7,823** | 200 | (28) |
| petrochemicals | **–** | – | 233 |
| Taxation on an underlying RC basis | **(2,308)** | (1,210) | (537) |
| **Underlying RC profit before interest** | **8,481** | 2,042 | 2,551 |
| **Depreciation, depletion and amortization** | **2,870** | 3,000 | 2,990 |
| *Of which*: | | | |
| customers – convenience & mobility | **1,286** | 1,306 | 1,200 |
| *Castrol – included in customers* | **153** | 150 | 161 |
| products – refining & trading | **1,584** | 1,694 | 1,686 |
| petrochemicals | **–** | – | 104 |
| **Adjusted EBITDA★**[c] | **13,659** | 6,252 | 6,078 |
| *Of which*: | | | |
| customers – convenience & mobility | **4,252** | 4,358 | 4,083 |
| *Castrol – included in customers* | **853** | 1,187 | 979 |
| products – refining & trading | **9,407** | 1,894 | 1,658 |
| petrochemicals | **–** | – | 337 |
| **Capital expenditure★** | **6,252** | 2,872 | 3,315 |
| *Of which*: | | | |
| customers – convenience & mobility | **1,779** | 1,564 | 2,157 |
| *Castrol – included in customers* | **235** | 173 | 173 |
| products – refining & trading | **4,473** | 1,308 | 1,067 |
| petrochemicals | **–** | – | 91 |

a Includes sales to other segments.
b See page 354 for information on the cumulative impact of FVAEs.
c A reconciliation to RC profit before interest and tax by business is provided on page 367.

### Financial results

Sales and other operating revenues in 2022 were higher than in 2021, due to higher oil and product prices.

RC profit before interest and tax for 2022 was $8,869 million, compared with $2,208 million for 2021.

Items which bp has classified as adjusting for 2022 had a net adverse impact of $1,920 million (including favourable fair value accounting effects of $309 million – relative to management's view of performance), principally relating to net impairments arising from changes in economic assumptions in the products business and announced portfolio changes.

After adjusting RC profit for the net adverse impact of items, which bp classified as adjusting, underlying RC profit before interest and tax was $10,789 million, compared with $3,252 million for 2021. The higher result reflects a stronger performance in refining and oil trading.

Items which bp has classified as adjusting for 2021 had a net adverse impact of $1,044 million (including favourable fair value accounting effects of $436 million – relative to management's view of performance), principally relating to impairment charges arising due to increased future expenditure and anticipated portfolio changes in the products business (see Financial statements – Note 4).

Customers – the convenience and mobility result, excluding *Castrol,* for 2022 was higher than 2021. The result benefited from stronger convenience, retail fuels, aviation and midstream, including biofuels performance. The full-year results were partially offset by inflationary cost pressures and adverse foreign exchange impacts.

*Castrol* result for 2022 was lower than 2021, due to higher input costs, ongoing COVID-19 restrictions, notably in China, and adverse foreign exchange impacts.

# **Customers & products** continued

Products – the result for 2022 was higher than 2021. In refining, the result for the full year was higher due to higher realized margins, partially offset by higher energy costs, and turnaround and maintenance activity. The result for the full year also reflected an exceptionally strong oil trading performance in the first half of 2022.

### Operational update

bp-operated refining availability★ for the full year was 94.5%, compared with 94.8% in 2021. Refinery utilization for the full year was similar to 2021.

### Strategic progress

#### Convenience & retail fuels

Strong convenience performance despite a challenging environment, with 9% convenience gross margin★ growth in 2022, compared to 2021 at constant foreign exchange. Strategic convenience sites★ grew to 2,400, an increase of more than 250 compared to 2021.

- In March 2022, bp announced a global convenience partnership with Uber, aiming to make around 3,000 retail locations available on Uber Eats by 2025.
- In March 2022, bp completed the sale of its retail assets in Switzerland to Oel Pool AG, who will continue to operate the retail sites under the bp brand.
- On 5 April 2022, bp completed the acquisition of the public units of BP Midstream Partners LP (BPMP) which has resulted in BPMP becoming a wholly-owned subsidiary of bp.
- In July 2022, bp signed a new supply contract and brand partnership with Julius Stiglechner GmbH, in Austria, to establish the bp brand in the majority of the 160 Stiglechner filling station network by the end of 2023.
- In February 2023, bp announced the agreement to purchase TravelCenters of America. It is one of the biggest networks of roadside travel centres in the US and is expected to add around 280 sites to our retail network, strategically located on major highways in 44 states in the US. To support growing demand for lower carbon mobility solutions, over time we plan to expand and develop new offers, such as electric vehicle (EV) charging, biofuels, renewable natural gas and hydrogen. This deal is subject to regulatory and shareholder approval.

#### EV charging

EV charge points installed and energy sold grew by more than 65% and around 150%, respectively, compared to 2021, with charge points now at around 22,000. In addition:

- In March 2022, bp announced plans to invest £1 billion over the next 10 years to support the roll-out of fast, convenient charging infrastructure across the UK and to nearly triple our number of UK public charge points.
- In June 2022, bp signed a contract with Shenzhen Huize New Energy Co. Ltd to operate China's largest fast[a] EV charging hub, in Shenzhen, offering charging options for consumers, fleets and heavy-duty truck users.
- In July 2022, bp and Iberdrola announced their intent to form a strategic collaboration to accelerate EV charging infrastructure roll-out. This includes plans to install 5,000 fast[a] EV charge points by 2025 and up to a total of 11,000 by 2030 in Spain and Portugal.
- In August 2022, bp and Hertz signed a memorandum of understanding (MOU) for the development of a national network of EV charging solutions across North America powered by bp pulse.
- In August 2022, bp and AVATR technology Co. Ltd. signed a strategic collaboration agreement to accelerate the development of an EV ultra-fast charging network in China, with the intent to roll out around 100 charging hubs in 15 cities.
- In October 2022, bp announced the expansion of its strategic partnership with leading retailer REWE in Germany, to install fast, reliable, convenient charging for customers at up to 180 of their sites.
- In October 2022, bp announced plans to establish a bp pulse Gigahub network, a series of large, EV fast[a] charging hubs designed to serve ridehail and taxi fleets, near US airports and high-demand locations, with an initial location near Los Angeles Airport in collaboration with Hertz.
- In December 2022, bp announced an exclusive agreement in the UK with its convenience partner M&S for bp pulse to install fast[a] charge points in around 70 of their stores, with initial ambition to add up to 900 charge points within the next two years.

#### *Castrol*

Extended our *Castrol* branded service and maintenance offers globally, we now have 30,000 independent branded car workshops. In addition:

- In January 2022, *Castrol* and BYD, a leading new energy vehicle brand in China, signed a strategic cooperation agreement for the supply of the *Castrol ON* range of EV fluids.
- In January 2022, *Castrol* signed a new commercial agreement with Tesco, the UK's largest supermarket chain, to stock a range of *Castrol* products.
- In June 2022, *Castrol*, signed a memorandum of understanding with Submer, liquid cooling specialists, to accelerate the adoption of liquid immersion coolants for data centres.
- In August 2022, bp announced plans to invest around $60 million in a new, state-of-the-art EV battery testing centre and analytical laboratory in Pangbourne, UK. The new facilities will help advance the development of engineering, battery technology and fluid technology into new applications such as electric vehicles, charging and data centres.
- In September 2022, *Castrol* and Renault Group announced the extension of their lubricants aftermarket supply partnership until 2027.
- In November 2022, *Castrol* announced an investment in Ki Mobility Solutions (KMS) to create a co-branded service and maintenance network in India, supported by KMS's digitally integrated multi-brand service platform. The investment supports *Castrol's* aim to grow its presence in service and maintenance for both EV and non-EV vehicles.

#### Bioenergy

In December 2022, bp completed its purchase of Archaea Energy Inc., a leading US provider of renewable natural gas, rapidly advancing our access to feedstock, and marking a milestone in the growth of bp's strategic bioenergy business. In addition:

- In February 2022, bp announced it had acquired a 30% stake in Green Biofuels Ltd, the UK's largest provider of low emission hydrogenated vegetable oil fuels. This investment will expand bp's global biofuels portfolio and its lower carbon solutions for UK customers.
- In March 2022, Air bp signed a strategic collaboration agreement with DHL Express to supply SAF until 2026, and also signed a SAF supply contract with Rolls-Royce in the UK and Germany.
- In September 2022, Air bp signed an MoU with China National Aviation Fuel (CNAF) to explore opportunities to help decarbonize the aviation sector, and in October made its first commercial delivery of sustainable aviation fuel to Aberdeen International Airport.
- In November 2022, bp announced its Cherry Point refinery in the US had doubled its renewable diesel production capacity compared to the fourth quarter in 2021. The refinery now has the capability to co-process more than 7,000 barrels a day of renewable diesel.

#### Refining

We continue to high grade our portfolio:

- In February 2022, SAPREF shareholders (bp and Shell) announced the pause of refinery operations in South Africa for an indefinite period from the end of March 2022.
- In April 2022, the New Zealand Whangarei refinery, in which bp holds a share, converted to an import-only terminal.
- On 28 February 2023, bp completed the sale of its 50% interest in the bp-Husky Toledo refinery in Ohio, US, to Cenovus Energy, its partner in the facility.

a 'Fast charging' comprises rapid charging ≥50kW and ultra-fast charging ≥150kW.

# Other businesses & corporate

Other businesses & corporate comprises innovation & engineering, bp ventures, Launchpad, regions, corporates & solutions, our corporate activities & functions and any residual costs of the Gulf of Mexico oil spill. From the first quarter 2022 the results of Rosneft, previously reported as a separate segment, are also included in other businesses & corporate. Comparative information for 2021 and 2020 has been restated to reflect the changes in reportable segments. For more information see Financial statements – Note 1 Significant accounting policies, judgements, estimates and assumptions – Investment in Rosneft.

## Financial and operating performance

| | $ million | | |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| **Sales and other operating revenues**[a] | **2,299** | 1,724 | 1,666 |
| Profit (loss) before interest and tax | **(26,737)** | (89) | (817) |
| Inventory holding (gains) losses★ | **–** | (259) | 89 |
| **Replacement cost (RC) profit (loss) before interest and tax** | **(26,737)** | (348) | (728) |
| Net (favourable) adverse impact of adjusting items★[b] | **25,566** | 1,685 | (98) |
| **Underlying RC profit (loss) before interest and tax★** | **(1,171)** | 1,337 | (826) |
| Taxation on an underlying RC basis | **439** | 25 | 34 |
| **Underlying RC profit (loss) before interest** | **(732)** | 1,362 | (792) |
| **Depreciation, depletion and amortization** | **876** | 813 | 655 |
| **Capital expenditure★** | **549** | 397 | 303 |

a Includes sales to other segments.
b See page 354 for information on the cumulative impact of FVAEs.

### Financial results

RC loss before interest and tax for 2022 was $26,737 million, compared with $348 million for 2021.

Adjusting items for 2022 had a net adverse impact of $25,566 million mainly relating to bp's decision to exit its 19.75% shareholding in Rosneft and including adverse fair value accounting effects of $1,381 million.

Adjusting items for 2021 had a net adverse impact of $1,685 million, including adverse fair value accounting effects of $849 million and $113 million restructuring costs.

After adjusting RC profit for the adjusting items, underlying RC loss before interest and tax for 2022 was $1,171 million, compared with a profit of $1,337 million for 2021 which includes a profit of $2,720 million from Rosneft.

Compared with 2020, the underlying RC loss before interest and tax for 2021 for other businesses & corporate reflected lower uplifts in valuation of ventures investments, and underlying RC profit before interest and tax for Rosneft primarily reflected higher oil prices and favourable foreign exchange effects.

### Strategic progress

In 2022 we made progress in the following areas, partnering with countries, cities and corporates as they shape their own paths to net zero.

- On 5 July bp and Thyssenkrupp Steel signed a memorandum of understanding (MoU) focused on the development of long-term supply of low carbon hydrogen and renewable power to support decarbonization of steel.
- On 8 April bp and AENA signed an agreement to work on the decarbonization of the energy and mobility system of the airports operated by AENA, starting with Valencia airport.
- On 19 April the Australian Federal Government announced that bp's Kwinana Integrated Clean Energy Hub project in Perth, Western Australia had been awarded up to A$70 million (US$52 million) of grant funding.

In addition, on 2 February 2023, bp and Chubu Electric signed an MoU to explore opportunities for decarbonization in Japan and the wider Asia region, including plans for a feasibility study for a carbon capture, utilization and storage (CCUS) hub in the Nagoya port area.

bp continued to invest in a portfolio of technology businesses, which we see as having the potential for high growth and to benefit and extend our core businesses, through bp ventures. Our main investments in 2022 were:

- Freebee, an all-electric ride-hailing business, which, provides free, on-demand, 100% electric transportation in the US as part of the public transit network of many municipalities, colleges and universities, and private entities such as corporate business parks and hotels and resorts, on 20 September.
- 5B Holdings Pty Ltd, an Australian renewables company with technology that enables rapid deployment of solar power at scale, in December.

We have taken the decision to no longer seek new companies for bp's Launchpad accelerator, with our focus now to scale and build businesses within our five transition growth engines – bioenergy, convenience, EV charging, renewables & power and hydrogen.

★ See glossary on page 389

# Other businesses & corporate continued

### Other businesses & corporate excluding Rosneft

| | $ million | | |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Profit (loss) before interest and tax | **(2,704)** | (2,777) | (579) |
| Inventory holding (gains) losses | **–** | – | – |
| **Replacement cost (RC) profit (loss) before interest and tax** | **(2,704)** | (2,777) | (579) |
| Net (favourable) adverse impact of adjusting items | **1,533** | 1,394 | (303) |
| **Underlying RC profit (loss) before interest and tax** | **(1,171)** | (1,383) | (882) |
| Taxation on an underlying RC basis | **439** | 294 | 37 |
| **Underlying RC profit (loss) before interest** | **(732)** | (1,089) | (845) |

### Rosneft

| | $ million | | |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Profit (loss) before interest and tax | **(24,033)** | 2,688 | (238) |
| Inventory holding (gains) losses | **–** | (259) | 89 |
| **Replacement cost (RC) profit (loss) before interest and tax** | **(24,033)** | 2,429 | (149) |
| Net (favourable) adverse impact of adjusting items | **24,033** | 291 | 205 |
| **Underlying RC profit (loss) before interest and tax** | **–** | 2,720 | 56 |
| Taxation on an underlying RC basis | **–** | (269) | (3) |
| **Underlying RC profit (loss) before interest** | **–** | 2,451 | 53 |

| | **2022** | 2021 | 2020 |
|---|---|---|---|
| **Estimated net proved reserves** (net of royalties) (bp share) | | | |
| Crude oil[a] (mmb) | **–** | 5,490 | 5,533 |
| Natural gas liquids (mmb) | **–** | 140 | 151 |
| Total liquids ★[b] | **–** | 5,630 | 5,683 |
| Natural gas[c] (bcf) | **–** | 16,233 | 16,324 |
| Total hydrocarbons ★ (mmboe) | **–** | 8,429 | 8,498 |
| **Production[d]** (net of royalties) | | | |
| Crude oil[a] (mb/d) | **144** | 857 | 873 |
| Natural gas liquids (mb/d) | **–** | 3 | 3 |
| Total liquids (mb/d) | **144** | 860 | 877 |
| Natural gas (mmcf/d) | **238** | 1,380 | 1,286 |
| Total hydrocarbons (mboe/d) | **185** | 1,098 | 1,098 |

a Includes condensate.
b Includes 396mmb at 31 December 2021 for the 7.04% non-controlling interest and 405mmb at 31 December 2020 for the 7.12% non-controlling interest in Rosneft held assets in Russia including 22 million barrels at 31 December 2021 and 19mmb at 31 December 2020 held through bp's interests in Russia other than Rosneft.
c Includes 1,656bcf at 31 December 2021 and 1,640bcf at 31 December 2020 for the 10.01% non-controlling interest in Rosneft held assets in Russia including 621bcf at 31 December 2021 and 614bcf at 31 December 2020 held through bp's interests in Russia other than Rosneft.
d 2022 reflects bp's estimated share of Rosneft production for the period 1 January to 27 February only. The estimated share of production for that period has been averaged over the full year.

# Sustainability at bp

Our sustainability frame links our strategy to our purpose – to reimagine energy for people and our planet. It focuses on three areas – getting to net zero, improving people's lives and caring for our planet.

## Reporting on sustainability

For the purposes of this section, we have covered selected sustainability issues – informed by our sustainability report materiality assessment, which took into account external developments related to sustainability and ESG issues - along with information in the following areas:

- Getting to net zero, see pages 45-46.
- Climate-related financial disclosures, see pages 50-62.
- Improving people's lives, see page 63.
- Caring for our planet, see page 64.
- Our approach – values and code of conduct, safety, people, ethics and compliance, see page 65.

We report on our progress embedding sustainability and delivering our frame in our latest sustainability report at ***bp.com/sustainability***.

## Getting bp to net zero

Our ambition to be a net zero★ company by 2050 or sooner, and to help the world get to net zero, remains unchanged. Since 2020 we have made the following updates:

- We now aim for a 50% reduction in our operational Scopes 1 and 2 emissions in 2030 (formerly 30-35%).
- For aim 3 we are aiming to reduce to net zero the average carbon intensity of sold energy products★ by 2050 or sooner (previously an aim for a reduction of 50%). For 2030 we are aiming for a 15-20% reduction in the lifecycle carbon intensity of these products. (previously >15%). We also expanded aim 3 to include physically traded energy products★.
- Our aim 5 is now aligned with our transition growth engines (see page 46). This means we expect to invest more than 40%, or $6-8 billion, of our capital expenditure in transition growth engines in 2025, and aim for this to reach around 50% in 2030.
- For aim 2 we are now targeting a 10-15% reduction by 2025 (previously 20%) in the emissions associated with the carbon in our upstream oil and gas production★ and are aiming for a 20-30% reduction by 2030 (previously 35-40%).

### Net zero performance

Progress against our five aims to help bp get to net zero in 2022.

| Aim | Measure / coverage | 2022 performance | 2025 target | 2030 aim | 2050, or sooner, aim |
|---|---|---|---|---|---|
| 1 Net zero operations★ | Scope 1 and 2 | 41%[a] | 20%[a] | 50%[a] | Net zero★ |
| 2 Net zero production★ | Scope 3★ | 15%[a] | 10-15%[ab] | 20-30%[ab] | Net zero★ |
| 3 Net zero sales★ | Average lifecycle carbon intensity | 2%[ch] | 5%[c] | 15-20%[c] | Net zero★ |
| 4 Reducing methane | Methane intensity★ | 0.05%[d] | 0.20%[e] | 50% reduction[e] | |
| 5 More $ into transition | Transition growth investment★ | $4.9bn[f] | $6-8bn[g] | $7-9bn[g] | |

a Reduction in absolute emissions against the 2019 baseline.
b Updated February 2023. We are now targeting 10-15% reduction by 2025 compared to a 2019 baseline (previously a 20% reduction) and aiming for 20-30% reduction by 2030 (previously a 35-40% reduction).
c Reduction in the average carbon intensity of sold energy products★ against the 2019 baseline
d The 2022 methane intensity is calculated using existing methodology and, while it reflects progress in reducing methane emissions, will not directly correlate with progress towards delivering the 2025 target under aim 4.
e The 0.20% methane intensity target is based on our new measurement approach, which we aim to have in place across the relevant operations by the end of 2023. The 50% reduction we are aiming for is against a new baseline, which we plan to set based on that new measurement approach.
f In 2022 capital expenditure against aim 5 activities (transition growth investment★) increased from $2.4 billion on an equivalent basis, in 2021 ($2.2 billion based on previous aim 5 low carbon investment metric). Most of this spend related to investments in biogas, EV charging, offshore wind, power and convenience.
g 2025 target has been updated from $3-4 billion (in low carbon activity investment★) to $6-8 billion in transition growth investment and 2030 aim has increased from ~$5 billion to $7-9 billion, respectively.
h Calculated in accordance with the expanded sales boundary (now the average carbon intensity of our sold energy products including physically traded energy products★), methodology improvements for power, updated carbon intensity factors and physical/chemical properties, and so differs from those presented in the bp Annual Report and Form 20-F 2019-2021, sustainability report and ESG datasheet. For more detail on how this metric is calculated see the basis of reporting.

★ See glossary on page 389

**1** **Aim 1** is to be net zero across our entire operations on an absolute basis by 2050 or sooner.

We are targeting a 20% reduction in our aim 1 operational emissions by 2025 and will aim for a 50% reduction by 2030 against our 2019 baseline.

Our combined Scope 1 and Scope 2 emissions, covered by aim 1, were 31.9Mt$CO_2$e in 2022 – a decrease of 41% from our 2019 baseline of 54.4Mt$CO_2$e. The total decrease of almost 22.5Mt$CO_2$e includes 16Mt$CO_2$e in divestments and 4.1Mt$CO_2$e in sustainable emission reductions (SERs)★. Compared with 2021 (35.6Mt$CO_2$e), Scope 1 and 2 emissions decreased by 10% in 2022.

Scope 1 (direct) emissions, covered by aim 1, were 30.4Mt$CO_2$e – a decrease of 8% from 33.2Mt$CO_2$e in 2021. Of these Scope 1 emissions, 29.7Mt$CO_2$e were $CO_2$ and 0.7Mt$CO_2$e methane. Emissions decreased due to divestments, delivery of SERs and other temporary operational changes.

Scope 2 (indirect) emissions decreased by 0.9Mt$CO_2$e, to 1.5Mt$CO_2$e, a 38% reduction compared with 2021. This decrease resulted from lower carbon power agreements, including those at our Gelsenkirchen, Cherry Point and Rotterdam sites.

We report our Scope 1 and 2 emissions on an equity share basis in our ESG datasheet, *bp.com/ESGdata*.

**2** **Aim 2** is to be net zero on an absolute basis across the carbon in our upstream★ oil and gas production★ by 2050 or sooner.

This is our Scope 3★ aim and is based on bp's net share of production[a] (around 361Mt$CO_2$ in 2019). It is associated with the $CO_2$ emissions from the assumed combustion of upstream production of crude oil, natural gas and natural gas liquids (NGLs).

The estimated Scope 3 emissions from the carbon in our upstream oil and gas production★ were 307Mt$CO_2$[a] in 2022, a slight increase from 304Mt$CO_2$ in 2021, mainly associated with an increase in underlying production★ due to the ramp-up of major projects★ and higher asset performance.

**Average carbon intensity of sold energy products (g$CO_2$e/MJ)[bc]**

| | **2022** | 2021 | 2020 | 2019 |
|---|---|---|---|---|
| Average carbon intensity of sold energy products | **77** | 78 | 77 | 79 |
| Refined energy products | **92** | 92 | 92 | 95 |
| Gas products | **67** | 67 | 67 | 68 |
| Bioproducts | **43** | 43 | 44 | 47 |
| Power products | **52** | 56 | 59 | 57 |

Since 2019, these estimated Scope 3 emissions covered by aim 2 have reduced by 15% which is at the upper end of our revised 2025 target of a 10-15% reduction against our 2019 baseline.

However, between now and 2025, we expect to see growth in underlying production due to major project start-ups, deferred divestments and growth in bpx production. Our aim to reduce our oil and gas production from 2019 levels by around 25% by 2030 underpins our 2030 aim of a 20-30% reduction in Scope 3 emissions covered by aim 2 against a 2019 baseline.

**3** **Aim 3** is to reduce to net zero the average carbon intensity of sold energy products★ by 2050 or sooner.

This aim applies to the average carbon intensity of sold energy products. It is estimated on a lifecycle (full value chain) basis from the use, production, and distribution of sold energy products per unit of energy (MJ) delivered.

In February 2022, we expanded aim 3 to include physically traded energy products as well as marketed sales. In future, it may also cover certain other products, for example, those associated with land carbon projects.

We are reporting on this basis for the first time this year and have recalculated our 2019-2021 data accordingly.

In 2022, the average carbon intensity of the energy products we sell was 77g$CO_2$e/MJ. This represents a 2% decrease from our 2019 baseline, primarily driven by a reduction in lifecycle emissions associated with the energy products we sell.

**4** **Aim 4** is to install methane measurement at all our existing major oil and gas processing sites by 2023, publish the data, and then drive a 50% reduction in methane intensity of our operations.

And we will work to influence our joint ventures★ to set their own methane intensity★ targets of 0.2%.

Our methane intensity in 2022 was 0.05%, an improvement from 0.07% in 2021. Methane emissions from upstream operations, used to calculate our intensity, continued on the declining trend they have followed since 2016, when we reported 111kt, decreasing by 35% to around 28kt, from 43kt in 2021. Variations in production and divestments accounted for approximately 85% of the absolute reductions reported for 2022, and methane reductions from SERs, accounted for 14%. Marketed gas volumes increased by 4.8% from 3,057bcf in 2021 to 3,205bcf in 2022. We remain on track to deliver against the World Bank's Zero Routine Flaring Initiative by 2030, and in our bpx energy operations by 2025.

And we remain on course to deliver our methane measurement aim by the end of 2023.

**5** **Aim 5** is to increase the proportion of investment we make into our non-oil and gas businesses.

Over time, as investment goes up in low and zero carbon, we see it going down in oil and gas.

In 2022 transition growth investment★ was $4.9 billion compared to $2.4 billion in 2021, this was around 30% of total capital expenditure★ for the year, up from around 3% in 2019. As we pursue our net zero ambition, we are targeting increasing our transition growth investment to $6-8 billion in 2025 and we are aiming for $7-9 billion in 2030, see page 29. Some capital investment goes into large transactions, like our acquisition of Archaea Energy and EDF Energy Services in 2022.

a Excluding bp's share of production in Rosneft. On 27 February 2022, following the war in Ukraine, the bp board announced that bp intends to exit its 19.75% shareholding in Rosneft Oil Company (Rosneft).
b Please see the bp basis of reporting for more information on the list of energy products covered at *bp.com/basisofreporting*.
c The aggregate lifecycle emissions and energy values used in the calculation of the average carbon intensity of sold energy products★ is provided in our ESG datasheet on *bp.com*.
d In 2022 capital expenditure against aim 5 activities (transition growth investment★) increased from $2.4 billion on an equivalent basis, in 2021 ($2.2 billion based on previous aim 5 low carbon investment metric). Most of this spend related to investments in biogas, power and offshore wind, and convenience and EV charging.
e Values have been restated to align with transition growth investment metric.

It is often not possible to predict the timing of such investments, which means the progress we make on aim 5 may fluctuate.

The level – and proportion – of the overall investment going into our transition growth engines, or into the low carbon activity subset may vary as we pursue our target and aim.

Our disciplined approach to capital investment means that individual investments will be made when we consider there to be a clear and compelling business case.

### Aim 5 transition growth investment (annual $ billion)

| | 2022 | 2021 | 2020 | 2019 |
|---|---|---|---|---|
| More $ into the transition | **4.9**[d] | 2.4[d] | 1.0[d] | 0.6[d] |

## Helping the world get to net zero

We have 5 aims to help the world get to net zero. For more detailed information on our performance in 2022, see the *bp sustainability report 2022*.

6 **Aim 6** is to more actively advocate for policies that support net zero, including carbon pricing. G

Advocacy takes place at regional, country, state and international levels. It focused on several themes during 2022, including methane emissions reductions, the need for increased climate policy and regulation, and zero and low carbon transportation.

The Climate Action 100+ Net Zero Company Benchmark assessed our Climate Policy Engagement as 'Aligned' – on the basis that we take up Paris Agreement-aligned climate lobbying positions.

We publish examples of our activity in support of aim 6 online at *bp.com/advocacyactivities*.

7 **Aim 7** is to incentivize our global workforce to deliver on our aims and mobilize them to become advocates for net zero. E

This will include continuing to allocate a percentage of remuneration linked to emissions reductions for leadership and around 32,000[a] employees. Our annual bonus for all eligible employees, including the bp leadership team, has been linked to a sustainability measure since 2019. The bonus scorecard against which our employees are measured incentivizes our people based on three themes: safety and sustainability (30%), operational performance (20%) and financial performance (50%).

In 2022 we expanded the sustainability measures in our long-term incentive plan scorecard for group leaders. This included explicitly linking performance to progress on our net zero operations aim. We also included two social measures – on employee engagement and on improved ethnic minority representation in our senior-level leader population. Collectively, these changes mean that more than 30% of our long-term incentive plan is linked to sustainability measures.

See the Directors' remuneration report on page **112** and Share ownership on page **68**

8 **Aim 8** is to set new expectations for our relationships with trade associations around the globe.

We periodically assess the alignment of key associations with our position on climate. In 2022 we reviewed 51 of our most significant trade association memberships. In comparison, we reviewed 30 memberships in our inaugural 2020 report. In 2022 we found that 41 associations aligned with our climate positions, and 10 were partially aligned – this means we disagreed on some positions or they did not take a public stance.

We plan to provide an update on partially aligned associations in 2023.

See [redacted]

9 **Aim 9** is to be recognized as an industry leader for the transparency of our reporting. On 12 February 2020, we declared our support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). We intend to work constructively with the TCFD and others – such as the International Sustainability Standards Board (ISSB) – to develop good practices and standards for transparency.

We support work to align global reporting standards and want to play our part in the development of quality, reliable, comparable standards that enable companies to prepare and disclose material, decision-useful information to stakeholders. In 2022 we shared our views on consultations from the SEC, ISSB and UK Transition Plan Taskforce. Our responses are available at *bp.com/advocacyactivities*.

For the second year running, we have reported in line with the FCA Listing Rule LR 9.8.6(8). It requires us to report on a 'comply or explain' basis against the TCFD Recommendations and Recommended Disclosures. We consider our 2022 climate-related financial disclosures to be consistent with all of the TCFD Recommendations and Recommended Disclosures, and therefore compliant with the Listing Rule.

See TCFD disclosures on page **50**

10 **Aim 10** is to provide integrated clean energy and mobility solutions. P

Our regions, corporates and solutions team is working to help countries, cities and corporations around the world decarbonize.

We do this through our one-stop-shop offer and integrated approach. In 2022 this included:

- Working to advance components of the East Coast Cluster – a vision for decarbonizing local heavy industries at scale, with $CO_2$ from their emissions taken offshore for permanent storage through Northern Endurance Partnership's carbon capture and storage facilities.
- Signing a memorandum of understanding with Thyssenkrupp Steel that focuses on developing a long-term supply of low carbon hydrogen and renewable power in steel production.

See [redacted]

a This figure reflects the number of employees eligible for a cash bonus in 2022. The number of eligible employees in 2021 was 30,000.

# **Sustainability** continued

## Streamlined energy and carbon reporting (SECR) information

Further information on our greenhouse gas (GHG) emissions, energy consumption and energy efficiency is set out here and on the following page and includes disclosures in respect of the SECR requirements.

Further breakdown of our GHG and energy data is available in our ESG datasheet at *bp.com/ESG*.

| Operational control[ab] | Unit | **2022** | 2021 | 2020 |
|---|---|---|---|---|
| **Scope 1 (direct) emissions** | $MtCO_2e$ | **30.4** | 33.2 | 41.7 |
| UK and offshore | $MtCO_2e$ | **1.0** | 1.0 | 1.7 |
| Global (excluding UK and offshore) | $MtCO_2e$ | **29.4** | 32.1 | 40.0 |
| **Scope 2 (indirect) emissions – location-based**[c] | $MtCO_2e$ | **2.1** | 2.4 | 3.2 |
| UK and offshore | $MtCO_2e$ | **0.02** | 0.03 | 0.05 |
| Global (excluding UK and offshore) | $MtCO_2e$ | **2.1** | 2.37 | 3.13 |
| **Scope 2 (indirect) emissions – market-based**[c] | $MtCO_2e$ | **1.5** | 2.4 | 3.8 |
| UK and offshore | $MtCO_2e$ | **0.02** | 0.03 | 0.04 |
| Global (excluding UK and offshore) | $MtCO_2e$ | **1.4** | 2.38 | 3.77 |
| **Energy consumption**[d] | GWh | **121,697** | 128,805 | 180,004 |
| UK and offshore | GWh | **4,376** | 4,386 | 7,005 |
| Global (excluding UK and offshore) | GWh | **117,321** | 124,419 | 172,999 |
| **Ratio of Scope 1 (direct) and Scope 2 (indirect) emissions to gross production**[e] | $teCO_2e/te$ | **0.15** | 0.17 | 0.20 |
| UK and offshore | $teCO_2e/te$ | **0.12** | 0.13 | 0.17 |
| Global (excluding UK and offshore) | $teCO_2e/te$ | **0.15** | 0.17 | 0.20 |

a Operational control data comprises 100% of emissions from activities operated by bp, going beyond the IPIECA guidelines by including emissions from certain other activities such as contracted drilling activities.
b Due to rounding some totals may not agree exactly to the sum of their component parts.
c Value rounded to one decimal place.
d Energy content of flared or vented gas is excluded from energy consumption reported as although it reflects loss of energy resources, it does not reflect energy use required for production or manufacturing of products.
e Gross production comprises upstream★ production, refining throughput and petrochemicals produced.

## Streamlined energy and carbon reporting (SECR) information continued

### Energy efficiency measures

Since 2016 we have delivered 8.0Mt$CO_2$e of sustainable emissions reductions (SERs) across our operated sites.

This is our key metric for tracking annual reductions in GHG emissions from energy efficiency savings and direct GHG emissions.

A total of 152 SERs were delivered in 2022 leading to reductions of 1.5Mt$CO_2$e. This compares with 120 SERs and a reduction of 1.6Mt$CO_2$e in 2021, which included reduced fuel consumption in the North Sea, waste heat recovery in the Azerbaijan Georgia Türkiye (AGT) region, the automation of gas turbine generators (power export optimization) in Oman, projects across bpx energy sites in the US Permian basin including electrification and removal of existing compressors to reduce fuel use.

Energy efficiency projects delivered in 2022 include:

- bpx energy – projects across its sites, which focused on improving energy efficiency including the removal of redundant compressors and installation of smart control systems which optimize engine fuel use.
- Tangguh LNG – a steam heat recovery project delivering reduced fuel gas consumption through rerouting excess steam to drive turbines.
- Refining – projects delivered across refining including cogeneration (combined heat and power) at Whiting refinery and waste heat recovery at Castellón where steam from hydrotreaters is routed to new heat exchangers to recover energy.
- bp shipping – advanced hull coatings have been applied on a selected class of vessels. This reduced the speed of biofouling, improving the efficiency of ships and enabling a reduction in fuel consumption. Application of advanced hull coating will be applied to further class vessel types in the coming years.
- North Sea – existing sea water lift pumps were replaced with smaller pumps leading to energy savings of 125KWh. Glen Lyon reduced fuel consumption through delivering spinning reserve reductions.

As part of managing energy efficiency, we take a portfolio-wide approach to assessing and prioritizing spinning reserve reduction opportunities.

Spinning reserve involves running additional power generation machines to provide an excess of energy supply. This can help to protect production from plant vulnerabilities, including power generation reliability.

Reducing spinning reserve can increase exposure to power fluctuations for production. We take a risk-based approach when considering reducing the number of running machines. This allows bp to realize emissions and maintenance cost reductions from fewer running machines, while managing the associated production risk.

In 2022 we worked on improving operational performance through updating unit key energy indicators and developing real-time digital carbon and energy dashboards. We also developed maintenance, operational and project opportunities to improve emissions and energy performance at several sites. New carbon and energy steering committees were also set up at some sites.

bp is involved in several external groups working on energy efficiency including the Oil & Gas Climate Initiative (OGCI), International Association of Oil & Gas Producers (IOGP) and Energy Star. We run an annual training course for new chemical engineers which includes energy efficiency and offers GHG emissions and energy efficiency training for more experienced engineers and practitioners.

### Reporting methodology

Our approach to reporting GHG emissions broadly follows the IPIECA, API, IOGP and Petroleum Industry Guidelines for Reporting GHG Emissions. We calculate GHG emissions based on the fuel consumption and fuel properties for major sources, such as flares. We report $CO_2$ and methane. We do not include nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride as they are not material to our operations and it is not currently practical to collect this data at scale.

Energy consumption is monitored and reported centrally from all operated sites by fuel type. This includes all energy, both imported and self-produced, used to run our operations aligned with our GHG reporting boundary, but excludes energy content of flared or vented gas. Although flaring and venting reflects loss of energy resources, it does not reflect energy use required for production or manufacturing of products.

### Ratio of Scope 1 and Scope 2 emissions to gross production

bp reports a ratio of Scope 1 and Scope 2 emissions to gross production, see SECR table on page 48. This covers all our Scope 1 and Scope 2 emissions on an operational control boundary and uses gross operated sales from our operated oil and gas facilities, refinery throughput and petrochemicals produced. The denominator uses output from production businesses, refineries and petrochemical facilities, which account for 95% of total operated emissions. The intensity ratio has improved due to our aim 1 reductions, as described on page 46.

The ratio provided in the SECR table uses production and throughput from our operated upstream, refining and chemicals businesses as a measure of output which can be consistently reported against. We report data on a consolidated basis in the Annual Report and Form 20-F and this differs to the production and throughput used for the ratio in the SECR table which aligns with the operated emissions reporting boundary.

★ See glossary on page 389

## Climate-related financial disclosures

We support the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), which was established by the Financial Stability Board to improve the reporting of climate-related risks and opportunities.

Our aim 9 is to be a recognized industry leader in the transparency of reporting and we want to work constructively, where possible, with the TCFD, and others, to develop good practices and standards for transparency. In 2022 we continued to engage with the World Business Council for Sustainable Development (WBCSD) in relation to their 'Climate Scenario Analysis Reference Approach for Companies in the Energy System'. Read about how we have used the WBCSD Scenario Catalogue[a] to inform our own scenario analysis on page 60.

### TCFD statement

We report in line with the FCA Listing Rule LR 9.8.6(8)[b], which requires us to report on a 'comply or explain' basis against the TCFD Recommendations and Recommended Disclosures in respect of the financial year ended 31 December 2022[c].

We consider our climate-related financial disclosures to be consistent with all of the TCFD Recommendations and Recommended Disclosures and that they are therefore compliant with Listing Rule 9.8.6(8). We have set out our disclosures against each TCFD Recommended Disclosure and in doing so have covered both the Recommended Disclosure and the related Recommendation[c]. We have made disclosures that take into consideration references made to the materiality of information in the Recommendations related to Strategy and Metrics & Targets. In determining materiality for these purposes we considered whether particular information may have the potential to influence the economic decisions of our shareholders. We have also, where appropriate, considered the TCFD guidance and other supporting materials referred to in the Listing Rules[d]. In the Strategy (b) section below, we describe elements of our plans for the transition to a lower carbon economy as we execute our strategy.

As explained on page 26, we consider our strategy to be consistent with the goals of the Paris Agreement. The strategy has been developed taking into consideration, among other things, the *bp Energy Outlook 2023* scenarios (described on page 8), which themselves take account of climate commitments and pledges made by countries in which we operate alongside a range of other factors.

In preparing our disclosures we have made several judgements, and while we are satisfied that they are consistent with the Recommendations and Recommended Disclosures, we will continue to evaluate our options for future TCFD disclosures. We will monitor TCFD guidance as it evolves and consider opportunities to enhance our disclosures.

### Governance

**TCFD Recommendation:**

Disclose the organization's governance around climate-related issues and opportunities.

**Recommended Disclosure:**

a. Describe the board's oversight of climate-related risks and opportunities.

b. Describe management's role in assessing and managing climate-related risks and opportunities.

The role of the board is to promote the long-term sustainable success of the company, generating value for our shareholders while having regard to the interests of our other stakeholders and the impact of our operations on the communities where we operate and the environment.

In performing this role, the board sets and monitors bp's strategy. It is responsible for monitoring bp's management and operations and obtaining assurance about the delivery of its strategy.

Any changes to the company's purpose, strategy and values are reserved for the board for approval in accordance with the board-approved corporate governance framework.

The board's responsibilities extend to oversight of bp's internal control and risk management framework, including bp's climate-related risks and opportunities. These responsibilities are set out in the terms of reference of the board, available online at *bp.com/governance*.

The board considers that the strategy allows us to be flexible to adapt to the evolution of the external environment, including market changes to remain consistent with the Paris goals, see page 30.

The board and its committees have oversight of climate-related issues[e], which include climate-related risks and opportunities. Committee activities in respect of climate-related risks and opportunities are set out within the respective committee reports, which can be found on the pages detailed in the table below.

Climate-related risks and opportunities were discussed at all six board meetings covering strategy in 2022. The board committees consider climate-related issues where it is appropriate to do so in fulfilling their responsibilities. Oral reports from each of the committee chairs are given at board meetings to keep the board apprised of the relevant matters discussed including, where applicable, climate-related risks and opportunities.

The board also reviewed documents containing climate-related disclosures.

a Our 2022 analysis used data from the WBCSD Climate Scenario Catalogue version 1.0, published on 23-03-2022 and downloaded on 11-01-2023.
b *https://www.handbook.fca.org.uk/instrument/2020/FCA_2020_75.pdf.*
c In considering the consistency of our disclosures with the TCFD Recommendations and Recommended Disclosures we have had regard to, among other things, the documents referred to in LR 9.8.6B and 6C, as applicable to the financial year 2022.
c In preparing the disclosures we have referred to the TCFD implementation guidance 'Annex: Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures (October 2021)', available from *fsb-tcfd.org/publication*.
d LR 9.8.6B and LR 9.8.6C.
e We interpret the term 'climate-related issues' to relate primarily to those climate-related risks and opportunities for bp which are relevant to the delivery of long-term shareholder value in the context of the low carbon transition.

The board continues to develop its knowledge and expertise on climate-related and sustainability matters. For example, in 2022, the board took part in the following:

| | |
|---|---|
| **TCFD deep dive** | Held to assist the board in its oversight of climate change and sustainability matters, which include climate-related risks and opportunities and external climate disclosures. |
| **Hydrogen deep dive** | The teach-in included a deep dive into hydrogen technology. Held to assist the board in remaining abreast of key energy transition risks and opportunities. |
| **Energy and economic update** | The briefing was given by the chief economist on developments shaping the key political and societal trends currently affecting the energy transition, ahead of publication of the *bp Energy Outlook 2022* in March 2022. Given to assist the board in remaining abreast of key developments fundamental to implementation of its strategy and net zero ambition and aims. |

The board believes its members possess the necessary expertise related to climate change and sustainability to support the group's strategy. In particular, six of our non-executive directors have specific climate change and sustainability expertise. This determination is based on an assessment of the non-executive directors' background and experience, with focus on their background in the energy sector, experience in executive roles and depth of experience in sustainability and climate change, including climate-related risks and opportunities.

For more information see the director skills matrix on page 100. For director biographies – which include skills and experience related to climate matters – see pages 80-83.

Our company secretary's office manages the process by which board and committee agendas are set and works closely with teams in bp to develop materials that assist the board to discharge its responsibilities, including in respect of climate-related issues.

## Board and committees' consideration of climate-related issues

For examples from the year ended 31 December 2022, see the pages set out below within the highlighted TCFD disclosure boxes (indicated with a T).

**The board**
See board activities on page **87**

**Safety and sustainability committee**
See page **110**

**Audit committee**
See page **102**

**Remuneration committee**
See page **112**

**People and governance committee**
See page **98**

## Climate governance: management of climate-related matters

As at 1 January 2023

**bp board level**

Board | Safety and sustainability committee | Audit committee | Remuneration committee | People and governance committee

**EVP level**

**CEO**

**bp leadership team**

**Group sustainability committee**
Chair: EVP SS&V
Oversight of sustainability matters.

**Resource commitment meeting**
Chair: CEO
Attended by CFO, EVP SS&V, EVP I&E. Observed by EVP legal and SVP internal audit.

**Issues and advocacy meeting**
Chair: EVP SS&V, EVP RC&S
Policy and advocacy issues, including those related to climate matters.

**Group operational risk committee**
Chair: CEO
Oversight of the group's safety and operational risk management performance, safety agenda and priorities.

**Group financial risk committee**
Chair: CFO
Oversight of finance, treasury, trading and cyber risks.

**SVP level**

**Sustainability forum**
Chair: SVP sustainability
Focused on sustainability plans and progress. Brings together previously separate committees, including carbon steering group, policy and advocacy, and human rights.

**Production & operations carbon table**
Chair: SVP HSE & carbon, P&O
Focuses on the delivery of lower carbon plans in P&O – particularly in relation to net zero aims 1 and 4.

**Cross bp forums and meetings**

Meetings and forums to allow cross-group discussions, integration and implementation.

★ See glossary on page 389

# Climate-related financial disclosures continued

### The role of management

The board, subject to certain conditions and limitations, delegates day-to-day management of the business of the company to the CEO. The CEO is responsible for proposing bp's strategy to the board for approval and leading the bp leadership team in delivering bp's strategy and annual plan.

Under this delegation, the CEO is responsible for overseeing the implementation of a comprehensive system of internal controls that are designed to, among other things (a) identify and manage risks that are material to bp, (b) protect bp's assets, and (c) monitor the application of bp's resources in a manner that meets external regulatory standards. Risks, for these purposes, include the climate-related risks and opportunities for bp associated with the issue of climate change and the transition to a lower carbon economy. This is set out in the CEO role profile at *bp.com/board*.

The assessment and management of climate-related risks and opportunities is embedded across bp at various levels and delegated authority flows down from the board through the CEO. See page 69 for more information on risk governance and oversight.

### 2022 activity

Where considered appropriate, climate-related risks and opportunities were discussed at bp leadership team meetings in 2022 as part of regular business performance updates produced for these meetings.

The bp leadership team provides oversight of risk, including climate-related risk, through the various committees described on page 69. The leadership team is informed about and monitors emerging risks via the 'emerging risk' paper, produced by the SVP, treasury which focuses primarily on short to medium term emerging risk. The members of the leadership team are also updated on the longer-term risks and opportunities associated with the energy transition via the 'tracking the energy transition, paper produced by our chief economist. These papers are shared with the board.

### SVP level and beyond

The bp leadership team is supported by bp's senior-level leadership and their respective teams, with dedicated business and functional expertise focused on climate-related risks and opportunities or on matters which may be affected by such risks and opportunities, including health, safety, environment and carbon; risk; strategy and sustainability (which includes our carbon ambition, policy and economics teams). Alignment between group, business and functional leaders is fostered through other meetings, for example, the C&P Sustainability Management Forum or the TCFD working group which leads the preparation of bp's TCFD disclosures.

**Management consideration of climate-related risks and opportunities is organized as follows:**

| | |
|---|---|
| **Resource commitment meeting** | Forum for approval of investments related to existing and new lines of business above $250 million (organic) and $25 million (inorganic), or which exceed the relevant EVP financial authority, and any project considered strategically important such as a new market entry, see page 29. |
| **Group sustainability committee** | Provides oversight, challenge and support in the implementation of bp's sustainability frame and the management of potentially significant non-operational sustainability (including climate-related) risks and opportunities. It met four times in 2022. During 2022 the committee considered progress embedding sustainability, performance against targets and bp's position on certain strategic sustainability issues that present risks or opportunities to delivery. This committee is chaired by the EVP strategy, sustainability & ventures (SS&V) and comprises members of the bp leadership team. The outputs from the committee are shared with the board and its committees, including the safety and sustainability committee, as appropriate. |
| **Group operational risk committee** | Provides oversight of safety and operational risk management performance for the group, where appropriate. Climate-related factors may affect certain sources of safety and operational risk, such as severe weather events. |
| **Group financial risk committee** | Monitors the effectiveness of bp's financial reporting, systems of internal control and financial risk management, namely material group financial risks. In 2022, in relation to climate-related risks and opportunities, it considered the proposed TCFD strategy disclosures and planned approach to assurance and verification of non-financial reporting (including climate-related reporting) ahead of discussion with the audit committee. |

## Risk Management

**TCFD Recommendation:**

Disclose how the organization identifies, assesses and manages climate-related risks.

**Recommended Disclosure:**

a. Describe the organization's processes for identifying and assessing climate-related risks.

bp's risk management system and policy, described on page 69, are designed to address all types of risks including our principal risks and uncertainties described on page 73.

As part of this system, our businesses, integrators and enablers are responsible for identifying, assessing, managing, and monitoring risks associated with their business or functional area. The process for identifying risks is outlined on page 70 and guidance to support consistency has been made available to our businesses, integrators and enablers to provide them with a climate-related framework and taxonomy, which they are able to use as they see fit in their identification and assessment of risk.

Where risks – including climate-related risks – are identified, businesses, integrators and enablers are required to assess them, in line with our risk management policy. This includes an impact and likelihood assessment which supports the consideration of relative significance and prioritization of risk management activities.

The impact criteria outlined on page 70 include health and safety, environmental, financial and non-financial (such as regulatory impact) criteria and are used for assessing risks, including climate-related risks. This provides a consistent basis for assessment across bp.

For the purposes of our TCFD disclosures, we have made use of the TCFD's distinction between 'physical' and 'transition' climate-related risks.

**Recommended Disclosure:**

b. Describe the organization's processes for managing climate-related risks

c. Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall Risk Management.

### Risk Management process

Risks which may be identified include potential effects on operations at asset level, performance at business level and developments at regional level from extreme weather or the transition to a lower carbon economy.

As part of our annual process the bp leadership team and board review the group's principal risks and uncertainties. Climate change and the transition to a lower carbon economy has been identified as a principal risk, see page 74. It covers various aspects of how risks associated with the energy transition could manifest. Similarly, physical risks such as extreme weather, which may be affected or intensified by climate change, are covered in our principal risks related to safety and operations.

### Physical risk

Physical risks are typically identified at the asset or project level and are managed depending on the level of risk assessed.

In the North Sea and Gulf of Mexico, regions more prone to severe weather conditions, our offshore facilities monitor meteorological and oceanographic conditions through the collection of measurements. This data is collated and periodically compared against the 'Basis of Design' for the facility. If significant differences are observed, then this may trigger an update to the 'Basis of Design', prompting action to reassess risks such as structural integrity and station-keeping and if necessary, implement additional risk mitigations, for example updating procedures for shutting down and removing personnel from facilities ahead of severe weather events. Updates may also be made as a result of other new knowledge, analysis methods and data, including climate projections where appropriate.

Our major projects★ are required to assess the potential impact of severe weather and projected climate-related physical impacts. Where relevant, potential changes in environmental conditions, such as sea level rise and ambient temperatures, over the expected lifetime of a project are to be considered as part of the design process.

In 2022 we undertook a top-down climate modelling exercise to help further understand potential changes in key parameters, including extreme precipitation, temperatures and sea level rise, at our major operating sites. Further analysis of the results of this exercise will be carried out to determine whether and how they might inform physical risk identification, assessment and management at those sites.

For other assets, such as our retail sites★, that are typically not exposed to a comparable level of severe weather risk, climate-related risks such as flooding or wind damage may be managed where appropriate through the emergency response plans and business continuity plans which are mandated through company-wide policies.

Additionally, at a group level we recognize risk associated with the potential for increased water scarcity due to climate change and other factors and the impact this could have on our operations and in the catchments where we operate. In order to understand the water-related challenges that we face, we review our water impacts, risks and opportunities at our major operating sites. These reviews consider the quantity and quality of water used as well as any regulatory requirements. Over time, we anticipate site-level activities in support of our aim 17 contributing to our management of water-related risks and opportunities. Under aim 17, we aim to replenish more fresh water than we consume in our operations by being more efficient in operational fresh water use and effluent management. And, by collaborating with others to replenish fresh water in stressed and scarce catchment areas where we operate.

### Transition risk

The board appraises bp's strategy and monitors bp's management and operations to obtain assurance over the delivery of its strategy. This approach enables the effective management of climate-related transition risks and opportunities facing bp associated with the energy transition. For the purposes of our TCFD disclosures, we have grouped transition risks identified by our businesses, integrators and enablers, into the three broad material climate-related transition risks to bp, see page 55. However, we continue to assess and manage the component parts of those broad transition risks, including:

### Policy and legal risks

Our policy and partnerships team monitors and develops policy positions in line with bp's sustainability aims. This team works with our regional organization as well as corporate entities to discuss regional and global policy trends and support external positioning and interactions relating to policy and advocacy topics. Our group sustainability committee provides oversight of sustainability matters and our issues and advocacy meeting covers emerging advocacy issues.

Our legal team manages bp's litigation, including climate-related litigation and advises on the management of associated risks. This includes the use of internal lawyers and, where appropriate, external counsel.

### Market risks

In developing our business strategies, we consider market risks, controls and mitigations including future demand in the different geographies in which we might operate, the competitive landscape and the potential value proposition. We manage these risks through our investment decisions, our hedging and optimization activity, and through key business processes including the group investment assurance and approval process.

### Reputational risks

Our investor relations and communications & external affairs (C&EA) teams work to mitigate reputation-related risks, which include the risk of shareholder action. Our investor relations team co-ordinates engagement with key investors on both a bilateral basis and through investor initiatives to support understanding of bp's strategy and gain insights to inform feedback they provide to the group.

Our C&EA team manages corporate reputation through identification and monitoring of key issues and both proactive and reactive engagement with relevant stakeholder groups to communicate bp's positions. Under our aim 6, which is to actively advocate for policies that promote net zero, the team also leads advocacy campaigns for policies that support net zero, see page 47.

### Technology risks

Our technology insights team work to both mitigate risks and identify opportunities associated with evolving and emerging technologies that play a role in the changing global energy system. The team generates technology assessments and disruptive technology reports for review by bp senior executives and the recommendations are overseen by the board through the Innovation Advisory Council. In appropriate cases this helps to underpin and appraise the business case for new investments, new partnerships, new customer offers or new business models where these are being driven by technology innovation.

★ See glossary on page 389

## Strategy

**TCFD Recommendation:**

Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's business, strategy and financial planning where such information is material.

**Recommended Disclosure:**

a. Describe the climate-related risk and opportunities that the organization has identified over the short, medium, and long term.

In setting and monitoring delivery of bp's strategy, the board and leadership team consider climate-related risks and opportunities across the:

- **Short term** (to 2025): aligning with our near-term business and financial planning timeframe.
- **Medium term** (to 2030): aligning with our group business outlook timeframe, and enabling us to think beyond our short-term targets and adjust course if appropriate.
- **Long term** (to 2050): using scenarios to help explore the wide range of uncertainties surrounding the energy transition over the next 30 years. For more detail on our approach, see page 9.

TCFD categorizes climate-related transition risk and opportunity as follows: policy and legal, market, reputation and technology. It also refers to climate-related acute and chronic physical risks and opportunities. Risks in each of these categories have been identified using a risk management process that our businesses, integrators and enablers are required to follow. For more about how the relative significance of identified risks is evaluated, see Risk Management on page 52.

### Climate-related transition risks and opportunities

At a group level, we have identified three broad, material climate-related transition risks, underpinned by underlying risks that are assessed and managed through the risk process outlined overleaf on page 55. These transition risks may cut across our short, medium and long-term time horizons; however, we indicate below wherever there is a particular time horizon in which the risk has been considered.

The transition risks are also global in nature, so we do not discuss specific geographies here, but the underlying risks refer to specific geographies where appropriate[a].

We also see significant potential for upside – or opportunity – associated with some of these risks. These are discussed under each risk on page 55 and in respect of Recommended Disclosure (b) we also describe the potential impacts of both the risks and opportunities to bp.

### Climate-related physical risks

The physical risks we have identified primarily relate to severe weather and often represent potential for increased drivers for safety and operational risks to our operations, particularly process safety, personal safety, and environmental risks, see Risk factors page 73. In addition, we have identified the potential for changes in the availability of freshwater, including as a result of climate change, as a risk to some of our operations.

We also recognize that we could also face other forms of physical climate-related risk over the longer term, for example associated with changes in sea level rise, extreme temperatures and flooding, which could impact our operations. As these risks are primarily operational, and location-specific, they are not grouped in the same way as transition risks.

#### Offshore facilities

In the case of our offshore facilities, climate change could create greater uncertainty around frequency and/or intensity of severe weather events, such as extreme waves, loop currents, and storms, particularly in the medium to long term. These factors could affect the future risk profile of an asset over its lifetime, and could also impact production or costs.

#### Water resources

Water resources are increasingly under pressure from various factors, including climate change, and this poses a potential risk to some of our operations that depend on the availability of freshwater. Based on analysis using the World Resources Institute (WRI) Aqueduct Global Water Risk Atlas, five of our 17 major operating sites in 2022 were located in regions with medium to extremely high water stress. We have identified the potential for this risk to increase in the medium term. For more information on water consumption, see page 64.

In common with other businesses around the world, in the longer term we could face adverse market or value chain conditions associated with large-scale cumulative impacts of physical climate change if global mitigation and adaptation efforts are insufficient or unsuccessful. We support the goals of the Paris Agreement and believe that the best mitigation against these types of physical risk is to seek to contribute along with others to the success of global climate mitigation efforts. Our strategy seeks to position us to make such a positive contribution.

We do not currently foresee any material opportunities arising from changes in the physical environment as a result of climate change. However, the actions we are taking to make our operations more resilient, for example through improving efficiency of our freshwater use, may also bring about benefits such as reduced costs.

**Recommended Disclosure:**

b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

#### bp's plans for the energy transition

We describe below how we believe our strategy and net zero ambition are both good for business and support society's drive towards the Paris goals.

In this section we talk about some of our plans for the transition and where we do so we have identified these with TP.[b]

Throughout the strategic report we set out bp's strategy and plans for the energy transition. This includes our progress against our strategic focus areas and transition growth engines, see pages 10, 14-19.

Our progress against our net zero aims and the actions we are taking to help the world get to net zero are described on pages 45-47.

TP Our strategy is to transition to be an integrated energy company, focused on delivering solutions for customers. This strategy, together with our net zero ambition and aims (see page 45), has been informed by various inputs, including the climate-related risks and opportunities associated with the energy transition described above; the same is true of our financial and business processes. We describe how we use scenarios to inform our strategy on page 9.

a Underlying risks are specific, for example, local or business-specific risks identified by specific bp entities through the risk processes described above under Risk Management.
b This is not intended to be an exhaustive list of our plans for the transition, but rather illustrative of some of the core elements of our plans.

**Climate-related transition risks and opportunities**

| | |
|---|---|
| **#1 The value of our hydrocarbon business could be impacted by climate change and the energy transition.** | Changes in policy, legislation, consumer preferences or markets as a result of growing concerns about climate change and the energy transition could reduce demand for fossil fuels or lower their price relative to our financial planning assumptions, particularly in the medium to long term, negatively impacting returns from or the value of our hydrocarbon businesses. Changes in regulations, including carbon pricing and fossil fuel policies, could also impact compliance and operating costs in our oil and natural gas production and refining businesses.<br><br>Alternatively, demand and/or prices for oil and natural gas and refined products during the next decade could remain higher than our financial planning assumptions under certain transition pathways, including those aligned with 1.5°C. This could strengthen returns from our hydrocarbon businesses (including securing higher proceeds from assets we choose to divest) which may enable us to deliver enhanced shareholder value, further strengthen our balance sheet and grow investment in the transition, in line with our financial frame. |
| **#2 Our ability to grow or deliver expected returns from our transition growth engines could be impacted by the energy transition.** | Several factors could restrict the growth of our transition engines or returns from them. These factors include lack of, or insufficient development and application of, policies, regulations and frameworks that support low carbon businesses; insufficient consumer demand for our low carbon offering; strong competition in the market; or the insufficiently rapid development of supporting technologies and infrastructure or constraints on supply chains for low carbon energies. This could particularly impact bp in the short to medium term as we seek to grow our low carbon businesses but could also represent a longer-term risk.<br><br>Alternatively, demand, policy support or enabling technology and supply chain growth for renewables could support a more rapid portfolio shift with expansion of our low carbon businesses and higher returns from them.<br><br>Some low carbon businesses, including renewable power, bioenergy and emerging technologies such as hydrogen and carbon capture and storage (CCS), rely on policy support to promote growth. Our aim 6 is to advocate more actively for policies that support net zero, including carbon pricing (see page 47).<br><br>Changes in customer preferences, pace of technology and infrastructure development and costs could impact the markets for low carbon products and services. For example, the pace of adoption of electric vehicles (EV) could impact utilization rates, and consequently returns, from our EV charging networks.<br><br>We recognize that the pace of our transition relative to our core low carbon target sectors and regions is important. If we move more slowly than those markets, we may miss investment opportunities and customers may prefer different suppliers with potential negative consequences to demand for our products and to our reputation. If we move faster than these markets, we risk investing in technologies or low carbon products that are unsuccessful because there is insufficient demand for them. However, our investment may also help to stimulate demand and provide us with a leading position in growth markets. |
| **#3 Our ability to implement our strategy could be impacted by changing stakeholder attitudes towards the energy sector, climate change and the energy transition.** | Negative perceptions of the energy sector, or bp, could have a number of consequences, for example: adverse litigation; reputational impacts, including our ability to attract and retain talent; and shareholder action. These consequences could affect us in the short, medium or long term.<br><br>Alternatively, increased support from our stakeholders could enable access to additional capital and new investors, strengthening our ability to deliver our strategy and enabling faster growth of our low carbon businesses. The *bp Energy Outlook 2023* (see page 8) suggests that the increased attention on energy security is likely to accelerate the energy transition. Together with the strategic progress we are already making, this gives us growing confidence in the opportunities of the energy transition.<br><br>Perceived inconsistencies between the pace of bp's transition and societal expectations could have reputational and commercial impacts that might impair our ability to deliver our strategy. However, we also see potential to positively differentiate bp, by delivering against our strategy, ambition and aims. |

Our ambition is to be a net zero company by 2050 or sooner, and to help the world get to net zero.

TP **Resilient hydrocarbons:** recognizing the uncertainty that the energy transition presents to our hydrocarbons business, our focus for that area of our business remains on high-grading our portfolio while maximizing returns and cash flow and working to reduce operational emissions.

This focus is underpinned by a deep and high-quality resource base that allows us to choose the best investments and the optionality to allocate capital through the transition; we also plan to divest around 200,000 barrels of oil equivalent per day of lower margin assets by 2030. This is less than previously assumed given the strong progress we have made improving operational reliability and commerciality across our portfolio over the past few years, which we expect to help enhance the resilience of those assets through the transition.

As a result, our 2030 production aim is now around 2mmboe/d after divestments.

To enable resilience to lower oil and gas prices which could result from the transition, as well as to deliver value, we intend to maintain the disciplined application of our balanced investment criteria, which include the consideration of hurdle rates of 15-20% from a balanced portfolio across oil and gas. We also intend to drive capital productivity through strong execution capability and sustain cost efficiency and reliability improvements. See more about our investment process on page 28.

In 2022 we announced our agreement to sell our upstream businesses in Algeria to Eni and completed the formation of the Azule Energy joint venture★ with Eni in Angola. We also took steps to make our business in Canada more focused, resilient and competitive through the sale of our 50% interest in the Sunrise oil sands project together with the acquisition of a 35% position in the offshore Bay du Nord project.

We are aiming for the Scope 1 and 2 emissions from our operations – the majority of which are associated with the operating assets in our hydrocarbons portfolio – to be 50% lower in 2030 than in 2019, and the Scope 3 emissions from our upstream oil and gas production to be 20-30% lower in 2030 than in 2019 – see page 45.

We see cash flow from our oil and gas businesses as helping to fund our investment into transition growth engines, while delivering shareholder value and helping maintain a strong balance sheet.

The climate-related transition risks we have identified may also impact demand for certain refined products in the future, potentially leading to lower refinery margins and requiring less efficient refineries to be retired. Consequently, we are continuing to drive greater competitiveness and value from our refineries, targeting around 96% Solomon refining availability★ by 2025 and to maintain Solomon first quartile net cash margins.

Our refineries are also a foundation for both our bioenergy and hydrogen transition growth engines. In biofuels, we plan to grow production to around 100,000 barrels per day by 2030 (of which ~20,000 barrels would be from co-processing at our refineries, focused on SAF). In hydrogen, our existing refining demand is intended to be an anchor to build scale. As a result, we expect throughput to be sustained around current levels while the average carbon intensity of our refined products declines.

Taking account of some of the climate-related transition opportunities we have identified, we also aim to increase biogas supply volumes by around six times compared to 2022 levels, to about 70mboe/d by 2030, leveraging our position as the largest US biogas supplier to the road transportation sector and expanding our presence in Europe and internationally. Our acquisition of Archaea Energy, completed in December 2022, advances our access to feedstock and scales our upstream participation in the biogas value chain.

TP **Convenience & mobility:** recognizing the growing opportunities in low carbon mobility that the energy transition offers, we are growing our EV charging network with the aim of having >100,000 charge points installed by 2030 and expanding our *Castrol* business into the EV sector. We see these and other businesses being supported by our focus to install on-the-go fast[a] charging and an end-to-end integrated fleet offer. As the aviation industry also transitions, we are aiming to be a sector leader in SAF.

We recognize the risk of a decline in demand for conventional vehicle fuels and products due to the energy transition and we are working to increase the efficiency and resiliency of our existing fuels and lubricants businesses through operating cost reductions and margin optimization. We are also using digital platforms to become more customer-centric, integrate our EV charging solutions, and expand our customer and loyalty engagement platforms.

Our convenience business, which serves a broad range of customer needs (not only fuels-led) further serves to mitigate the risk of decreasing fuel demand at our retail sites★, while providing the opportunity for us to bring our capabilities and reach in convenience together with EV charging – we see this enabling us over time to provide customer-focused, lower carbon transport solutions.

Integration of the customer-facing aspects of our strategy with our production of biofuels, hydrogen, liquefied natural gas (LNG) and electricity also helps to provide security of supply and to safeguard margins in a potentially supply-constrained faster transition or during periods of high market volatility.

The speed of the energy transition may impact the pace at which the EV, SAF, biofuels, hydrogen and LNG sectors develop, impacting the number of customer touchpoints★ and revenue from these opportunities. If these sectors develop quicker or slower, or demand for products is different to that anticipated, it could result in under-utilization of assets in the short term, therefore impacting returns on capital we have allocated into these sectors.

TP **Low carbon energy:** we recognize the opportunity to scale up our low carbon energy businesses over the next decade underpinned by growing demand and regulatory support.

In hydrogen, our ambition remains to become a global leader. We aim to leverage bp's existing refinery demand and growing biofuels ambitions to build regional supply positions, providing low carbon energy solutions to our customers. As the hydrogen sector develops, we aim to create a portfolio of global export hubs for hydrogen and hydrogen derivatives, aiming to scale our production to 0.5-0.7 million tonnes each year of primarily green hydrogen★ by 2030 while selectively pursuing blue hydrogen★ opportunities where there is regulatory support and CCS access.

In renewable power, we are focusing our investments in opportunities where we can create integration value and enhanced returns, participating in service of green hydrogen, green and e-fuels, EV charging and power trading (including low carbon flexible generation). We are building a global position in offshore wind, enabled by our capability in large-scale, complex offshore projects, and continue to progress a solar development and sell model with Lightsource bp. Within this, we aim to deliver, and largely operate, around 10GW net installed capacity in offshore wind, solar and onshore wind by 2030.

As the energy transition drives increasing electrification of the global energy system, our power trading business, which trades renewable and non-renewable electricity, allows us to optimize across the power value chain, from generation, including renewables and flexible generation, across grid markets, to customers. This becomes a differentiating factor in unlocking the full potential value of renewables for bp and helps position us for further electrification of the energy system as well as for further decarbonization of electricity. It may also increasingly help optimize across other value chains like green hydrogen and advanced mobility, that may be dependent on power as an anchor commodity.

We retain the ability to flex capital between our transition growth engines to optimize returns, recognizing the potential for the transition to occur faster or slower than anticipated and on different pathways. To help maintain resilience to the possibility of a slower transition, we also continue to consider whether the necessary regulatory support is in place and seek to secure a customer-backed route to market for a reasonable share of energy produced by our renewable power and hydrogen projects prior to final investment.

### Impact on technology

We are investing in technology that can help to generate value for bp and also help to accelerate the transition through focused scale-up and innovation. Over time, we expect our research and development spend to be increasingly focused on technologies with the potential to reduce carbon emissions and enable our new low carbon businesses. See page 43 for examples of technology investments in 2022.

a 'Fast' charging comprises rapid charging ≥50kW and ultra-fast charging ≥150kW.

We recognize the potential for disruptive technologies to impact our strategy, our bp ventures portfolio includes investments in emerging technologies and business models that may help enable the transition to a low carbon economy.

### Physical risk

The potential impacts of the types of physical risks we have identified could include reduced production, throughput, or sales – for example as a result of damage to facilities or supply chain disruption – or in a most extreme case loss of life or an asset. Due to uncertainties associated with the impact of climate change on severe weather events in the future, it is difficult to quantify the potential impacts associated with any increase in these risks as a result of climate change.

Having considered both geographic factors and the ability of climate models to adequately represent future trends in physical climate parameters, we seek to take the uncertainties concerning climate-related physical risk into account in our approach to design and operating criteria for existing assets and new major projects★. Where appropriate, we have updated our metocean design criteria to include consideration of both forward-looking and historic models including climate and synthetic models, in an attempt to mitigate both models and extrapolation uncertainty. The particular models chosen will depend in part on geographic location. See Risk Management, page 52, for how we manage these uncertainties.

As a step in seeking to improve the resilience of our operations to the physical changes that might result from climate change that we have described above, we have undertaken screening of present-day and future potential physical risk exposure for selected key assets and identified those sites with potential for heightened exposure to physical risks in order to prioritize these for further site-based assessment.

As part of this prioritized approach, in 2022 we completed a detailed site-based study at our Whiting refinery in the US, which found that the weather hazards contributing the most to risks at site include intense summer rainfall events, extremes of air temperature and coastal surge. Taking account of the results of the study, the Whiting integrity management team are assessing new risk barriers to support mitigation of potential risks.

Recognizing the potential impact of climate change on water resources, as part of our aim 17 to become water positive by 2035, we are taking steps to be more efficient in operational freshwater use and effluent management (see page 64).

### Impacts on our financial planning

**Capital allocation:** We plan to invest sufficient capital to execute our strategy, enabling us to mitigate the risks and capture the opportunities we have identified. As part of our annual planning processes, we assess the distribution of capital across our business areas, including consideration of market evolution. In February 2023 we announced up to $2 billion each year more investment, on average, to 2030 than the plans underpinning our February 2022 strategy update previously anticipated. In aggregate this includes up to $8 billion more this decade in transition growth engine investment★ and up to $8 billion more this decade into oil and gas. We now expect capital investment including inorganics to be in a range of $14-18 billion through 2030[a], with the proportion of that investment directed annually towards our five transition growth engines growing to around 50% in 2030. To help maintain resilience to the pace of transition and access opportunities, we will continue to flex capital as policies, technologies and markets evolve.

**Access to capital:** While there is potential for concerns about the energy transition to impact banks' or debt investors' appetite to finance hydrocarbon activity, we do not anticipate any material change to funding in the short to medium term, and our financial frame includes working to reduce net debt★ as well as targeting further progress within the 'A' range of a strong investment grade credit rating. In 2022 we reduced our net debt by over $9 billion. Since the end of 2019 we have repurchased around $15 billion of short-dated existing bonds and issued over $11 billion of new bonds with a duration of 20 years or longer, more than doubling the duration of our debt book to over 10 years. Additionally, we have continued to have good access to the commercial paper markets. We intend to allocate 40% of surplus cash flow★ in 2023 to further strengthen the balance sheet, targeting further progress within the 'A' range. We provide more detail on financial risk factors, including liquidity risk in Financial statements – Note 29.

**Investment criteria:** investments are evaluated against a balanced set of investment criteria; the economic criteria utilize a set of price assumptions that reflect our view of market evolution (for our key investment appraisal price assumptions see page 28). In addition, the investment economics for all investment cases where annual greenhouse gas (GHG) emissions from operations are anticipated to exceed specific thresholds include a carbon price for those emissions, that rises to $100/ $teCO_2e$ (2021 $ real) in 2030.

In 2022 we further embedded sustainability into our investment governance process by developing our sustainability assessment template for investments, for use in all investment cases reviewed by the resource commitment meeting. This provides information about an investment case's impact on our net zero aims 1-3, its expected GHG intensity, and significant impacts on or contribution to certain aims concerning people and planet. This helps to maintain the consistency of our investments with our strategy and sustainability aims, see page 30 for further information.

### Impacts on financial performance and position

Assessing the impact of climate change and the energy transition requires the use of a number of judgements and estimates. We have set out the significant accounting policies, judgements and estimates used in assessing the impact of climate change in Financial statements – Note 1.

This includes information on pricing, useful economic lives, timing of implementation of policies or decommissioning provisions, and assumptions related to how each might change over time and how such assumptions may impact our currently reported assets and liabilities.

Our price assumptions, including those set out on page 28, reflect a range of future possible scenarios and take account of the potential impact of climate-related risks and opportunities as well as current economic and geopolitical factors. Consequently, impairment losses and impairment reversals consider inputs that arise from climate change and the energy transition. It is not possible to quantify separately the impact of these different inputs on our impairments. However in conducting our impairment sensitivity tests, that in part reflect transition downside risk, we consider prices consistent with the 1.5°C scenario family within the WBCSD data sets used for TCFD resilience testing below.

Financial statements – Note 1 provides information on impairment assumptions and sensitivities. Note 4 provides information on gains and losses on disposal or closure of business and operations, and impairments and impairment reversals, and Note 8 provides information on impairment losses relating to exploration for and evaluation of oil and natural gas resources. See Financial statements – Note 1, Note 4 and Note 8 for more information.

a For 2023 we plan for capital investment of $16-18 billion.

> **Recommended Disclosure:**
>
> c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.

Our strategy is designed to be resilient to a range of climate-related scenarios including those consistent with well-below 2°C and 1.5°C outcomes, see page 26.

To help test our view of this, we have assessed the resilience of our strategy to different climate-related scenarios, including 1.5°C consistent scenarios. We did this in three steps:

1. First, we evaluated all business areas in our portfolio by i) quantitatively assessing their financial materiality, in the context of bp's total financial frame, to understand the potential scale of financial/strategic impact that could be put at risk if exposed to transition uncertainty, including 1.5°C; and ii) considered whether there is a key variable – such as price, margin or demand – which would represent a principal transition driver of such risk.
2. Second, we quantitatively assessed the impact, to each business area, of potential transition exposure scenarios in 2030 – the point in our planning horizon at which there is widest uncertainty.
   - For each of those business areas with both sufficient scale and for which a specific transition risk driver was identified – which collectively represent over 80% of our 2030 adjusted EBITDA★ outlook – we performed a scenario analysis focused on that transition risk driver, across a range of transition pathways[a], including 1.5°C, as set out below and in our methodology summary on page 60.
   - For each of the remaining business areas we performed a simplified quantitative scenario analysis, by testing the financial impact of 'a scenario in which each business area's expected 2030 adjusted EBITDA is assumed to be reduced to zero – an outcome at least as detrimental to that business area's adjusted EBITDA as could reasonably be expected to result from business-as-usual (BAU), well-below 2°C and 1.5°C transition pathways.'

   In this way, all business areas were quantitatively tested at, or beyond, a range of transition scenarios.
3. Finally, on the basis of the results of steps 1 and 2, we identified those business areas for which the possible consequences of the downside scenario(s) were sufficiently material to potentially jeopardize group strategic resilience – the only business areas for which this was found to be the case were oil and gas production with respect to their exposure to oil price. For these business areas we assessed the potential implications for bp's strategic resilience (as defined below) over the full period from 2024 to 2030.

To undertake steps 2 and 3, we identified financial criteria which can be modelled as proxies for strategic resilience – choosing to do this through three lenses: our ability to continue to (i) deliver a resilient dividend to shareholders, (ii) maintain a strong investment grade credit rating, and (iii) make disciplined investment allocations within our capital frame.

This is not intended to represent a 'definition' of resilience beyond the purposes of this exercise, and a core assumption of this analysis is necessarily that, aside from any implications of the scenarios being tested, including potential controllable mitigations such as capital or cost management that we might naturally expect to take in response, bp will deliver the assumed underlying strategic and financial priorities out to 2030.

Our approach, described in more detail in box 'Our approach to testing resilience to transition risk' on page 60, is directly applicable to transition risks #1 and #2 – as well as their associated opportunities – as these lend themselves to a financially quantified scenario-based analysis. The approach does not directly address transition risk #3 – however, we believe that some of the potential drivers for transition risk #3, namely policy and societal trends, may be implicit in these scenarios, and we believe that the successful execution of our strategy will, over time, help to mitigate this risk to bp as well as positioning us to take advantage of the potential associated opportunities. This scenario analysis exercise also does not directly address climate-related physical risk, our strategic resilience to which is further discussed below.

### Key insights from our scenario analysis and resilience test

While the results of any such analysis must be treated with caution – each is necessarily dependent on numerous assumptions and methodological choices, and each has its own limitations – overall, this analysis and resilience test reinforced our confidence in the resilience of our strategy to a wide range of transition scenarios, including those consistent with limiting temperature rise to 1.5°C, and in particular, as our greatest transition exposure, to oil price scenarios, tested to 2030. In undertaking this analysis we observed:

- There is considerable uncertainty across, and often within, each WBCSD Scenario Catalogue family in the pace and nature of the transition to 2030 – and therefore considerable range of financial impact across some of the variables selected for the analysis, reflecting the complexity and interdependencies of the energy transition (see table on page 61). Generally, we observed that the faster the pace of transition, the greater the uncertainty in the exact shape of the resulting energy system in 2030.
- Oil price is likely to remain the main source of climate-related transition uncertainty for our strategy through to 2030, reflecting both the wide range of potential pathways and the contribution to our expected total adjusted EBITDA over this period, that oil-price-linked businesses represent. In the 1.5°C family, the potential downside suggested by the lowest oil prices is around 28% of group adjusted EBITDA in 2030. However, in a number of the 1.5°C, well-below 2°C and BAU scenarios, based on the WBCSD Scenario Catalogue ranges, oil price could offer a financial upside relative to our reference 2030 group business outlook.
- Even with the most extreme low oil price environment in any of the scenarios, sustained over the period from 2024-30, in our analysis we are able to deliver across the three lenses we use to consider strategic resilience, described above.

a Although such scenarios do not and cannot represent all possible futures, we value them as a simplified and schematic way to consider the potential implications of, and uncertainty inherent within, a range of possible energy transition pathways to a future bp portfolio mix.
b Note that for the purposes of our scenario analysis and resilience test, we have assessed the impact of oil price across both our oil production businesses and those natural gas businesses for which commercial outcomes are linked to oil price.
c Our multi-year (2023-30) oil price resilience test considered sustained low oil prices consistent with the most extreme WBCSD Scenario Catalogue 2025 and 2030 scenarios – for 2025 the IEA (World Energy Model Net Zero Energy 2050) price at $36/bbl, and for 2030 the UN PRI (Inevitable Policy Response Required Policy Scenario) at $30/bbl (both 2019 $ real, and then inflated in line with bp's other planning assumptions).

- The maximum potential scale of downside impact on our 2030 expected group adjusted EBITDA (across the 1.5°C, well-below 2°C and BAU scenarios) from our other natural gas businesses was <8%, from our conventional refining and fuels businesses each <4% and from our low carbon activities★ each being <3%.
- Our diversified portfolio helps mitigate the implications for our strategic resilience of the exposure of any of one of the individual business areas to the identified risk. It is reasonable to consider each potential outcome in isolation since the outcomes for different business areas vary across scenarios (see table on page 61).
- In a BAU scenario, we believe our transitioning strategy mitigates the risk of what we and others have referred to as a 'delayed and disorderly' transition, which might follow in the medium to long term. Should the growth of any one of our in-scope transition growth engine areas be challenged by the downside range in the relevant variable, our analysis suggests that the impact of this on group adjusted EBITDA in 2030 would not be sufficient to impact the resilience of our strategy, as described above, in that timeframe.

It is important to note that insights from this analysis are necessarily limited by the scenarios, methodologies and business assumptions used. The analysis should not be taken as a prediction of the future.

### Maintaining strategic resilience to the transition

Taking into consideration potential constraints associated with factors such as long-term capital investment, contractual commitments and organizational capabilities at any given time, bp's ability to maintain strategic resilience rests, in part, on the governance used to keep the strategy under review in light of new information and changing circumstances. To enable us to understand and respond to the changing pace of the energy transition, we monitor and assess key indicators and metrics, such as policy development, renewables installed capacity, electric vehicle sales and low carbon technology costs. Our strategy and capital allocation, the associated risks, opportunities and their implications for our resilience are all reviewed by the bp leadership team and the board and updated as they consider appropriate.

### Resilience to physical risk

As described on page 57, we have identified a number of physical risks which may affect our business and assets, the frequency or severity of which could be affected by climate change. Exposure to physical climate-related risk is highly dependent on geographical location and on factors such as asset design, and we seek to manage these risks accordingly. We consider that our approach to managing these risks, described in Risk Management Recommended Disclosure b) on page 53, supports our strategic resilience to them. For the purposes of this Recommended Disclosure, we have considered the potential for physical risks to bp-operated assets to increase as a result of climate change (namely, increases in the potential frequency or intensity of extreme weather events) to such an extent as to have the potential to impact the resilience of our strategy.

During 2022, we undertook an analysis of potential changes in certain physical conditions, such as air temperature, precipitation, sea level rise and wave heights, for our onshore and offshore major operating sites, based on Shared Socioeconomic Pathway (SSP) emission scenarios 1-2.6, 2-4.5 and 5-8.5. Even in the highest emissions pathway (SSP5-8.5) the results of our analysis suggest that, on the basis of the 50th percentile values and compared to the baseline used (1991-2020), changes in the physical parameters considered are generally unlikely to be significant over the medium term. There is, however, uncertainty across different scenarios and wider variances were observed when looking at the 5th and 95th percentile values. Where the data do suggest greater potential for climate-related changes in physical conditions, we intend to consider whether further work is necessary to understand the potential for those changes to adversely impact our operations. For example, modelled changes in extreme precipitation by 2030 (50th percentile values) are less than 10% across all onshore major operating sites apart from Oman – where we have already undertaken hydrological studies and flood risk assessments that have supported the development of our operations there.

Our transition risk scenario analysis identified impacts on the earnings of our oil-priced businesses as having the most potential to impact the resilience of our strategy in 2030. Therefore, and viewing resilience through the same lenses that we describe above, we have considered the extent to which our oil and gas production business would need to be impacted by evolving physical risk over the same timeframe for the scale of financial impact to be sufficient to jeopardize the resilience of our strategy out to 2030. We concluded that a significant proportion of our combined oil and gas portfolio would need to be either permanently shut in or temporarily shut down to jeopardize our strategic resilience in this way.

Historically, severe weather risks to our operated assets have not occurred at a scale which could reduce earnings so significantly as to jeopardize the resilience of our strategy. As reflected in the latest science from the IPCC, it is in the nature of climate-induced severe weather events that their occurrence, intensity and severity are unpredictable and uncertain. Our own analysis on major operating sites, described above, is consistent with this IPCC view.

Despite this uncertainty, we have found no definitive basis in either the IPCC report or the limited number of detailed studies we have undertaken (see page 57), to conclude that climate-change-induced increases in the frequency or severity of severe weather events would be likely to result, at any point in time out to 2030, in disruption and shutdowns across our oil and gas portfolio on a scale that would reduce earnings so significantly as to jeopardize the resilience of our strategy.

For the purposes of this Recommended Disclosure, the resilience of our strategy was considered separately for the relevant transition and physical risks; accordingly, we did not seek to take account of any interdependencies or cumulative effects between the two types of climate-related risk, and the associated potential financial impact.

a The Shared Socioeconomic Pathways (SSPs) have been developed by the climate change research community to describe plausible major global developments that together would lead in the future to different challenges for mitigation and adaptation to climate change. The SSPs are based on five narratives describing alternative socioeconomic developments, including sustainable development, regional rivalry, inequality, fossil-fuelled development and middle-of-the-road development.

★ See glossary on page 389

## Our approach to testing resilience to transition risk

Most of our analysis focused on our medium-term time horizon (2030) – far enough ahead to provide a divergent range of scenarios, while not so far ahead that it is unrealistic to attempt to generate credible financial metrics for bp, or an individual business area within bp. For variables considered most material (see below), we also assessed resilience over the period 2024-30.

Our analysis sought to quantify the potential impact of a range of scenarios, including those consistent with 1.5°C, on bp's currently held (at the time the analysis was completed) internal reference group business outlook to 2030. This outlook is used for internal corporate planning and holds a current deterministic view of our portfolio, activity set, cost and capital frame. The outlook used in our analysis aligned to the strategic direction shared in the 'bp update on strategic progress' announced on 7 February 2023, and the financials lie within the range of financial outcomes set out in that announcement.[a]

The steps we took as part of our scenario analysis approach are outlined here at a high level.

1. **Whole company assessment:** We defined, through quantitative analysis, which business areas could have both the financial scale and clear transition exposures to potentially impact bp's strategic resilience.
   a. We assessed the business areas in our portfolio by i) quantitatively evaluating each business area's 'potential significance' – i.e. its expected contribution to bp group adjusted EBITDA★ in 2030 and therefore the quantum of financial impact that might be put at risk by transition uncertainty (including pathways consistent with 1.5°C); and ii) by identifying, for each, whether there were primary potential value driver(s) that different transition pathways might impact ('transition risk driver(s)'). This was performed to allocate the most appropriate analysis technique to that business (see 1b and 1c).
   b. Ten business areas (see table on page 61), representing over 80% of our expected 2030 adjusted EBITDA, were identified as both providing a potentially significant financial contribution and facing primary transition risk drivers, and accordingly were subjected to the driver-based scenario analysis set out in steps 2a-2c below.
   c. The remaining business areas were taken forward to a simplified scenario analysis, per step 2d below.
2. **Scenario analysis:** We tested the financial impact of transition on all of bp's business areas in 2030 through either specific 'driver-based' scenario modeling (that includes 1.5°C and current policies), or by 'simplified' conservative scenario analysis, that modeled cases likely to be beyond these ranges.
   a. For the driver-based scenario analysis, we selected the primary transition risk driver(s) for each business area – the variable(s) from the WBSCD Scenario Catalogue representing what we consider to be the primary driver(s) of that business area's exposure to the energy transition. For each transition risk driver, we extracted the full range of 2030 outcomes within each scenario 'family'. Given the global nature of the transition risks and opportunities we have identified, we used the 'world' values in the Catalogue except for gas price (see table on page 61).
   b. By calibrating the WBCSD Scenario Catalogue 2030 scenarios to relevant business metrics underpinning our strategic planning (for example, oil price or EV demand/utilization), we modelled the impact of each variable, across the full range of scenarios and each scenario family, on the 2030 expected earnings (adjusted EBITDA) for the associated business area(s). For example, we applied an earnings rule of thumb deemed appropriate to the period in question to the deviation of oil prices in WBCSD versus our reference case price. This analysis was unmitigated (see 'Other key considerations').
   c. This enabled us to assess the potential for each scenario to materially impact group adjusted EBITDA in 2030 (and by implication associated cash flows), against the reference group business outlook. By modelling the specific business area within the reference group business outlook (described in step 1b above), its exposure to the most extreme range of the respective scenario could be assessed to identify which (if any) variables(s) and scenario(s) could have the potential to impact strategic resilience (as defined below) most materially, and as such, which business areas should be carried forward into a multi-year resilience assessment.
   d. For the simplified scenario analysis, we took a simpler conservative approach, by evaluating whether a scenario in which each business area's expected 2030 adjusted EBITDA is assumed to be reduced to zero – an outcome at least as detrimental to that business area's adjusted EBITDA as could reasonably be expected to result from ranges associated with the trajectory of each of the 1.5°C, 2°C or BAU scenario families – could have the potential to impact strategic resilience (as defined below) materially.
3. **Multi-year resilience test:** This step tested bp's resilience to the exposure of any sufficiently material business areas to downside scenarios that may have the potential to jeopardize the ability to generate surplus cash flow★ and a strong cash cover ratio and gearing level – financial metrics that were treated for the purposes of the analysis as representing financial evidence of delivery of bp's strategic priorities.

   From step 2, only the exposure to oil price was assessed as sufficiently material in this sense, and hence carried forward for multi-year resilience analysis. Our multi-year (2024-30) oil price resilience test considered sustained low oil prices consistent with the most extreme WBCSD Scenario Catalogue 2025 and 2030 scenarios – for 2025 the IEA (World Energy Model Net Zero Energy 2050) price at $36/bbl, and for 2030 the UN PRI (Inevitable Policy Response Required Policy Scenario) at $30/bbl (both 2019 $ real).

### Other key considerations

- For the purposes of steps 2 and 3, we considered the resilience of our strategy to climate-related transition risk through the three lenses described on page 55. We defined the following as proxy indicators for these lenses:
  – Group surplus cash flow, to confirm whether after funding, among other things, our disclosed capital frame (7 February 2023 investor update) and the dividend/share assumed in our reference group business outlook, sufficient surplus cash flow remains to maintain or reduce net debt and/or make share buybacks.
  – Healthy cash cover ratio and gearing★ as indicators of the ability to maintain a strong investment grade credit rating.

a As was the case for the analysis presented in the *bp Annual Report and Form 20-F 2021*, the financials used do not include any reference to the shareholding in Rosneft that bp announced its intention to exit from on 27 February 2022.

- For steps 2 and 3, we made the simplifying assumption that, aside from the driver being modelled, our strategy, operating model, cost basis, volumes, margins, sales proceeds and taxes would remain unchanged out to 2030. We have also not deviated from bp's reference view of potential future shareholder distributions and uses of surplus cash as a basis for analysis.
- Therefore, for steps 2 and 3, while there are mitigations that we might naturally be expected to take in response to external trends, including cost reductions, portfolio adjustments or capital reallocation or reduction within the frames set out in our strategy, we have not applied these mitigations to the multi-year analysis. In reality, we keep our strategy under review and would seek to make use of opportunities to maintain our strategic flexibility in the face of the many uncertainties of the energy transition.
- The design of a strategic resilience analysis involves numerous methodological choices and assumptions – any one of which could reasonably have been different, leading to different outcomes. We have found value in conducting this analysis; however, we are mindful of the limitations to any such exercise and the highly qualified nature of any conclusions which may be drawn from it. The disclosures provided here should be read in conjunction with the rest of our strategic report, where we discuss how we have developed, and continue to evolve, our approach to strategy.
- As outlined above, we utilized our latest internal reference group business outlook as the basis against which resilience has been tested, as this is our latest deterministic view against which to model the transition sensitivities to 2030 and aligns to the strategic update provided to investors in February 2023. Alongside disclosed elements such as the capital frame to 2030, this includes shaping assumptions such as future distribution and net debt management. Through conducting this analysis, we do not intend to imply or commit to a specific forward trajectory of usage of cash, beyond those disclosed in the full year and 4Q results update on 7 February 2023. While we cannot disclose, for confidentiality reasons, the detail of the deterministic case, the test assesses whether the resilience indicators in our reference group business outlook are impacted by the transition uncertainties tested. Further, by the nature of the timeframes considered, a variety of uncertainties exist around this deterministic case (including transition risk itself) as indicated by the range of adjusted EBITDA disclosed in the full year and 4Q results update on 7 February 2023. It is not practical, and we have not attempted, to extend the analysis conducted here to any other potential outcomes within the disclosed range of group adjusted EBITDA.
- Where rules of thumb have been applied, to convert variance in hydrocarbon price to variance in adjusted EBITDA, these are deemed appropriate to the period in question – i.e. they reflect the respective 2030 (step 2) and 2024-30 (step 3) production portfolios and price leverage for this period. Due to the evolution of bp's portfolio, these rules of thumb may diverge from any short-term rule of thumb that we publish.

## WBCSD Scenario Catalogue family ranges for 2030 key transition variables

| | | TCFD/WBCSD variable | BAU | | Below 2°C | | 1.5°C | |
|---|---|---|---|---|---|---|---|---|
| **Business area** | | | **Min** | **Max** | **Min** | **Max** | **Min** | **Max** |
| **Resilient hydrocarbons** | **Oil and natural gas production** | Oil price[a] ($2019/bbl) | 62.82 | 81.77 | 45.00 | 78.45 | 30.00 | 71.22 |
| | | Natural gas price[b] ($2019/mmbtu) | 2.59 | 3.60 | 2.63 | 3.48 | 1.90 | 4.17 |
| | **Refining – refined oil demand** | Primary energy demand for oil (% vs 2020) | 17.2% | 17.2% | 11.6% | 11.6% | -20.8% | -1.0% |
| | **– bio-jet demand** | Final demand for liquid biofuels in aviation (EJ/yr) | 0.38 | 0.40 | 0.38 | 0.51 | 0.26 | 2.05 |
| | **Biogas** | Biogas demand in road transport (EJ/yr) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.18 |
| **Convenience and mobility** | **EV charging** | Final energy demand for electricity in road transport (EJ/yr) | 1.69 | 3.80 | 1.64 | 3.87 | 1.85 | 6.69 |
| | **Aviation fuel sales** | Liquid fuel consumption in aviation (EJ/yr) | 15.36 | 18.00 | 15.55 | 17.18 | 9.05 | 15.40 |
| | **Conventional fuels retail** | Final energy demand for liquid oil in road transport (EJ/yr) | 57.86 | 85.00 | 58.32 | 85.44 | 45.43 | 76.76 |
| | **Conventional B2B & supply** | | | | | | | |
| | **Conventional road lubricants** | | | | | | | |
| **Low carbon energy** | **Renewables** | Renewable capacity additions (GW vs 2020) | 1,682 | 3,935 | 1,682 | 6,237 | 4,968 | 8,474 |
| | **Hydrogen production** | Hydrogen consumption (EJ/yr) | 0.02 | 1.43 | 0.02 | 3.09 | 0.04 | 18.00 |

For the other business areas not shown above, we applied the generic scenario analysis methodology described in 2d above, thereby ensuring coverage of all of bp's business areas.

a Oil price sensitivities have been applied to the oil and gas production portfolio that is linked to oil marker prices – as such it not only reflects oil production exposure, but also a proportion of bp's natural gas production that is contracted off oil marker prices.

b Gas prices shown reflect Henry Hub price ranges. Where available in the TCFD/WBCSD data sets Asian and UK gas price sensitivities have also been selected and compared to the Henry Hub sensitivity percentages with the maximum deviation selected and applied to the respective Asian and NBP rules of thumb for these parts of the gas portfolio, in order to provide the most conservative uncertainty range.

★ See glossary on page 389

# Climate-related financial disclosures continued

## Metrics and targets

**TCFD Recommendation:**

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

We present the principal group-wide metrics and targets used to assess and manage climate-related risks and opportunities in line with our strategy and risk management process below, with metrics and targets mapped to the most relevant of TCFD's cross-industry, climate-related metric categories (such as 'transition risks'). The metrics and targets themselves are disclosed at the most appropriate locations in this strategic report.

### TCFD recommended disclosures – metrics and associated targets/goals

| a) Disclose the metrics used by the organization to assess material climate-related risks and opportunities in line with its strategy and risk management process. | c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets. |
|---|---|
| **Transition risks** | |
| • Note 5 to financial statements: Segmental analysis. Segment revenue (in table), pages 209-213.<br>• Estimated net proved reserves and production (net of royalties), page 35.<br>• Note 4 to financial statements: Disposals and impairments, page 206.<br>• Note 8 to financial statements: Impairment losses (in table), page 214.<br>• Oil and natural gas prices used for value-in-use impairment testing and recoverability of asset carrying values, pages 192 and 296. | • Our strategic 2025 targets and 2030 aims – resilient hydrocarbons, pages 14 and 15. |
| **Physical risks** | |
| • Number of major operating sites in regions with medium to extremely high water stress, page 54.<br>• Freshwater withdrawals and consumption at major operating sites in regions with high or extremely high water stress, page 64. | • Aim 17 (water positive): progress update, page 64. |
| **Climate-related opportunities** | |
| • Our strategic metrics, page 11 (in table, relevant metrics with T).<br>• Note 4 to financial statements: Segmental analysis. Segment revenue (in table), page 209.<br>• Adjusted EBITDA★ from transition growth engines, page 10.<br>• Renewables – installed capacity, developed to FID and pipeline, page 36. | • Our strategic 2025 targets and 2030 aims – convenience and mobility, and low carbon energy, pages 16 and 17. |
| **Capital deployment** | |
| • Disciplined investment allocation: 2022-2025 guidance, capital allocation and internal rate of return (IRR), page 24.<br>• Price assumptions, key investment appraisal assumptions, page 28 (in table, indicated with T).<br>• Amount invested in transition growth engines (aim 5), page 46.<br>• Additional information – capital expenditure by segment, page 352.<br>• Note 7 to financial statements: expenditure on research and development (in table), page 213.<br>• Note 8 to financial statements: exploration and evaluation costs (in table), page 214. | • Aim 5 (more $ into the transition): progress update, page 46. |
| **Internal carbon prices** | |
| • Internal carbon price, page 28. | |
| **Remuneration** | |
| • Directors' remuneration report metrics: Sustainable emissions reductions, pages 120, 128 and 132. | • Aim 7 (incentivizing employees): progress update, page 47. |
| **b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3[a] greenhouse gas (GHG) emissions, and the related risks** | |
| **GHG emissions** | |
| • Key performance indicators (relevant KPIs shown with T), page 20.<br>• Scope 1 and 2, in SECR table page 48.<br>• Ratio of Scope 1 and 2 emissions: gross production, in SECR table page 48.<br>• Scope 3 (category 11, to which our aim 2 relates) performance, page 46.<br>• TCFD: risks as described in Strategy A, page 54.<br>• Risk factors, page 73.<br>A further breakdown of our GHG and energy data by business group is available in our ESG datasheet at *bp.com/ESG*. | • Aim 1 (net zero operations): progress update, page 46.<br>• Aim 2 (net zero production): progress update, page 46.<br>• Aim 3 (net zero sales): progress update, page 46.<br>• Aim 4 (reducing methane): progress update, page 46. |

a In determining the Scope 3 emissions that are 'appropriate' to be disclosed for the purposes of this Recommended Disclosure, we have considered this term in the context of the recommendation to disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities. The relevant target that we use in respect of Scope 3 emissions is our aim 2, which is broadly aligned to category 11 of Scope 3.

## Improving people's lives

Our aims provide focus and structure for the actions we take to improve people's lives whether they work for bp or for our suppliers, or live in communities close to our operations.

These aims build on our environmental impact and risk management requirements and guidance in our operating management system★.

### Progress summary

In 2022, we took further steps to embed social sustainability more systematically and consistently – from independent assessments of our conformance with the bp human rights policy, to confirming that in 2022 we paid all our employees a fair wage.

For detailed information on our aims 11-15 and performance in 2022 go to [redacted]

**11**

*More clean energy*

**What we've achieved**

**Developed 1.4GW of renewable energy generating capacity to FID**

This brings the cumulative total of developed renewables to FID★ to 5.8GW from 2.6GW in 2019.

**12**

*Just transition*

**What we've achieved**

**Forged partnerships and collaborations to help communities benefit from the energy transition**

We are partnering with others to help local communities build skills in low carbon such as in offshore wind, solar and hydrogen.

**13**

*Sustainable livelihoods*

**What we've achieved**

**Confirmed that in 2022 all bp employees worldwide were paid a fair wage[a]**

Analysis in 2022 based on Fair Wage Network benchmark data and factors such as local market conditions confirmed that in 2022 all our employees were paid a fair wage. We plan to implement processes to make sure this continues.

**14**

*Greater equity*

**What we've achieved**

**Launched a social mobility framework for action and business resource group**

We are taking action to support people from disadvantaged backgrounds, with more than 1,000 employees showing their support by joining our business resource group.

**15**

*Enhance wellbeing*

**What we've achieved**

**Provided access to health and wellbeing programmes for all employees**

We have introduced new programmes to help employees and their families improve their health and wellbeing.

### Human rights

We believe everyone deserves to be treated with fairness, respect and dignity. At bp we strive to conduct our business in a responsible way, respecting the human rights of our workers and everyone we come into contact with.

Our human rights policy and our code of conduct help us do that. We respect internationally recognized human rights as set out in the International Bill of Human Rights and the International Labour Organization's Declaration on Fundamental Principles and Rights at Work, including the core Conventions.

These include the rights of our workforce and those living in communities potentially affected by our activities.

We incorporate the UN Guiding Principles on Business and Human Rights, which set out how companies should prevent, address and remedy human rights abuses, into our business processes.

When working to remediate any impacts on the rights of local communities we are open to co-operating in good faith to agree remedial actions through state-led mechanisms such as the Organisation for Economic Co-operation and Development National Contact Points.

We recognize the importance of accessible and effective operational-level grievance mechanisms in addressing our impacts.

E P

[redacted]

a A wage that meets employees' basic needs.

★ See glossary on page 389

## Caring for our planet

Our sustainability frame includes a focus on making a positive difference to the environment in which we operate.

These aims are focused on how we think bp can make the biggest difference in the places where we work. They build on strong social impact and risk management requirements and guidance in our operating management system★.

### Progress summary

We made progress across all our aims in 2022 and are starting to see impacts on the ground – from the identification of tangible water efficiency opportunities at our refinery in Castellón, Spain, to our support for direct biodiversity restoration in Trinidad & Tobago.

For detailed information on our aims 16-20 and performance in 2022, see *bp.com/sustainability*.

16

### Enhancing biodiversity

**What we've achieved**

**Launched three new biodiversity restoration projects**

Working with local partners we are supporting projects in Türkiye, Georgia and Trinidad & Tobago.

17

### Water positive

**What we've achieved**

**First water efficiency assessment completed**

Introduced site-based water efficiency assessments to identify operational efficiencies, starting with our refinery in Castellón, Spain.

18

### Championing nature-based solutions

**What we've achieved**

**Developed a carbon credit integrity centre of excellence**

We have established a centre of excellence in our trading and shipping business to conduct due diligence on bp-originated projects, and scaled up our work to originate high-integrity nature-based carbon credits.

19

### Unlock circularity

**What we've achieved**

**Launched our new circularity framework and waste metrics**

Our new framework and waste metrics will guide bp businesses to identify, implement and measure opportunities for circularity.

20

### Sustainable purchasing

**What we've achieved**

**Targeted high-impact procurement categories to reduce emissions and improve circularity**

We have focused on logistics, utilities and EV chargers to test our approach to sustainable procurement.

### Biodiversity

Our biodiversity position, published in 2020, builds on the robust practices we already had in place to manage biodiversity across bp projects up to that date.

We have integrated our net positive impact (NPI) methodology on biodiversity into several new bp projects, including a pipeline replacement project under way in Trinidad & Tobago. We are also trialling new digital technologies to monitor biodiversity and we contributed to a number of cross-industry groups during 2022, including IPIECA's Biodiversity & Ecosystem Services Working Group.

*bp.com/biodiversity*

### Water consumption

We saw a 9.8% fall in freshwater withdrawals and a 7.5% fall in freshwater consumption, compared with our 2020 baseline[a]. This was largely due to a decrease at some of our refineries brought about by higher maintenance activity and withdrawal restrictions at Gelsenkirchen because of dry summer weather.

At major operating sites, 0.1 % of our total freshwater[a] withdrawals and 0.6 % of freshwater consumption were from regions with high or extremely high water stress in 2022 (no change from 2021).

### Air emissions

We monitor our air emissions and where possible, put measures in place to reduce the potential impact of our operational activities on local communities and the environment. In 2022, our total air emissions decreased by 9% compared with 2021.

bpx energy contributed to this decrease through reducing its non-methane hydrocarbon emissions by 4% through various interventions including electrification, compressor optimization and flaring reduction projects.

*bp.com/ESGdata*

a The baseline freshwater consumption is defined as 55.9 million $m^3$.

# Our approach to sustainability

Our sustainability frame is built on strong foundations: our beliefs, our continued focus on safety, our commitment to ethics and compliance, our people and the economic value we create.

## Safety

Safety defines our beliefs, which guide how we work, and what we call 'Who we are'.

Everyone at bp is expected to be a safety leader. We always want to do better on safety so we have refreshed our code, which helps us do the right thing, and made our operating management system (OMS) simpler, clearer and even more rigorous, to help prevent incidents. Updates to our OMS emphasize an even closer focus on human performance, our safety leadership principles and the IOGP Life Saving Rules.

The aim we set in 2021, to eliminate fatalities, life-changing injuries and tier 1 process safety events, provided the basis for our strategic focus in 2022 along with our work to embed a consistent safety culture.

We deeply regret that in 2022, four people lost their lives while at work for bp.

In February 2022 a contractor driving for Aral in Germany lost his life in a vehicle collision on a highway.

In April 2022 a specialist tank contractor lost his life in an explosion while repairing a tank at an Aral retail site in northern Germany.

In September 2022 two bp employees lost their lives in a fire at our Toledo refinery in the US.

We have offered our condolences to everyone affected and have supported their families and colleagues. We will take action to learn from these incidents and drive improvements in safety.

### Keeping people safe

We monitor and report on key workforce personal safety metrics in line with industry standards. We include both employees and contractors in our data.

In addition to the fatalities reported for 2022, we recorded an increase of 14% in our recordable injury frequency (RIF) and an increase of 34% in our days away from work case frequency (DAFWCF), compared with 2021. We attribute this to an increase in the number of hand or ankle injuries suffered by retail employees in our customers and products business and consequently we have put in place a safety intervention plan to help avoid these injuries in future.

In our production and operations business, RIF and DAFWCF decreased compared with 2021. We attribute this to our sustained effort to improve safety, including our work on safety leadership, safety culture and human performance.

We expect to see further performance improvements as we roll out and embed the Life Saving Rules across bp.

See our RIF key performance indicator on page 20

| | 2022 | 2021 | 2020 |
|---|---|---|---|
| Day away from work case frequency | **0.068** | 0.051 | 0.044 |
| Severe vehicle accident rate | **0.037** | 0.034 | 0.009 |

### Our operating management system

The way our businesses around the world are expected to understand and manage their environmental and social impacts is set out in our OMS. This includes requirements on engaging with stakeholders who may be affected by our activities. OMS is a group-wide framework designed to help us manage risks in our operating activities and drive performance improvements.

It brings together bp requirements on health, safety, security, the environment, social responsibility and operational reliability, as well as related issues, such as maintenance, contractor relations and organizational learning, into a common management system. Our OMS also helps us improve the quality of our activities by setting a common framework that our operations must work to.

We review and amend these requirements from time to time to reflect our priorities. Any variations in the application of our OMS, in order to meet local regulations or circumstances, are subject to a governance process. Recently acquired operations need to transition to our OMS.

In planning our projects, we identify potential impacts from our activities and use the results to identify actions and mitigation measures and look to implement these in project design, construction and operations. Our OMS requires each of bp's operating businesses and functions to create and maintain its own OMS handbook, describing how it will carry out its local operating activities. Through self-verification, local business processes are reviewed and areas for improvement are prioritized, allowing focus on delivering safe, reliable and compliant operations.

We use a 'three lines of defence' model to improve the effective management of all types of risk, including safety. The nature and extent of first, second and third lines of defence activities are based on the type and level of risk.

### Driving safety

Driving safely is one of the greatest personal safety risks we face at bp. In 2022, we recorded one driving-related contractor fatality and one vehicle accident that resulted in life-changing injuries to the driver. In total, 10 severe vehicle accidents occurred, the same as in 2021. The number of kilometres driven fell by almost 0.2% compare with 2021.

We took action to improve safety for those driving on behalf of bp in several ways – for example, issuing a group-wide alert that emphasized how important it is to be aware of vulnerable road users. A second alert was issued to help improve contractors' oversight processes for land transportation. We require all newly purchased or leased light vehicles used on behalf of bp to have a 5-star New Car Assessment Program safety rating (where available).

### Preventing incidents

We carefully plan our operations, with the aim of identifying potential hazards and having rigorous operating and maintenance practices applied by capable people to manage risks at every stage. We design our new facilities in line with process safety, good design and engineering principles. We track our safety performance using industry-aligned metrics such as those found in the American Petroleum Institute recommended practice 754 and the International Association of Oil & Gas Producers recommended practice 456.

Our combined tier 1 and tier 2 process safety events★ (PSEs) have generally decreased over the last 10 years, apart from in 2019. This downward trend continued in 2022, with 12 fewer (19%) reported than in 2021, due to a 28% reduction in tier 2 PSEs.

★ See glossary on page 389

We investigate incidents including near misses, and we also use leading indicators, such as inspections and equipment tests, to monitor the strength of controls to prevent incidents.

| | 2022 | 2021 | 2020 |
|---|---|---|---|
| Tier 1 and tier 2 process safety events★ | **50** | 62 | 70 |
| Oil spills – number | **108** | 121 | 121 |
| Oil spills – contained | **57** | 73 | 70 |

### Emergency preparedness

The scale and spread of bp's operations means we must be prepared to respond to a range of possible disruptions and emergency events. We maintain disaster recovery, crisis and business continuity management plans and work to build day-to-day response capabilities to support local management of incidents.

### Security

We monitor for hostile actions that could harm our people or disrupt our operations. These actions might be connected to political or social unrest, terrorism, armed conflict or criminal activity. We take these potential threats seriously and assess them continuously. Our 24-hour response information centre in the UK uses state-of-the-art technology to monitor evolving high-risk situations in real time. It helps us to assess the safety of our people and provide them with practical advice if there is an emergency.

### Cyber security

The severity, sophistication and scale of cyber attacks continues to evolve. The increasing digitalization and reliance on IT systems and cloud platforms makes managing cyber risk an even greater priority for many industries, including our own. Direct or collateral impact can come from a variety of cyber threat actors, including nation states, criminals, terrorists, hacktivists and insiders. As in previous years, we have experienced threats to the security of our digital systems and our barriers have worked well to mitigate and contain them to minimize any impact on our business.

We have a range of measures to manage this risk, including the use of cyber-security policies and procedures, security protection tools, threat monitoring and event detection capabilities, and incident response plans. We conduct exercises to test our response to, and recovery from, cyber attacks.

To encourage vigilance among our employees, our cyber security training and awareness programme covers topics such as phishing and the correct classification and handling of our information. We collaborate closely with governments, law enforcement and industry peers to understand and respond to threats.

### Working with contractors

Through documents that help bridge between our policies and those of our contractors, we define the way our safety management system co-exists with those of our contractors to manage risk on a site. For our contractors facing the most risks, we conduct quality, technical, health, safety and security audits before awarding contracts. Once they start work, we continue to monitor their safety performance. Our OMS includes requirements and practices for working with contractors. Our standard model contracts include health, safety and security requirements. We expect and encourage our contractors and their employees to act in a way that is consistent with our code of conduct and take appropriate action if those expectations, or their contractual obligations, are not met.

### Our partners in joint arrangements

In joint arrangements where we are the operator, our OMS, code of conduct and other policies apply. We aim to report on aspects of our business where we are the operator – as we directly manage the performance of these operations. We monitor performance and how risk is managed in our joint arrangements, whether we are the operator or not. Where we are not the operator, our OMS is available as a reference point for bp businesses when engaging with operators and co-venturers. We have a group framework to assess and manage bp's exposure related to safety, operational and bribery and corruption risk from our participation in these types of arrangements.

Where appropriate, we may seek to influence how risk is managed in arrangements where we are not the operator.

The people and governance committee reviews workforce policies and practices and their alignment with bp's strategy, purpose, values and culture and conducts workforce engagement measures.

For more on the people and governance committee, see page **98**

## Our beliefs and code of conduct

In 2022 we launched 'Who we are' – our new beliefs and supporting behaviours. They define what we stand for, building on our best qualities and the things most important to us. It comprises three key beliefs – 'Live our purpose', 'Play to win' and 'Care for others'. 'Who we are' is integrated into our updated code of conduct (our code), and is already guiding our approach to recruitment, development, performance management and reward.

Our code sets standards and expectations for how we do the right thing and also empowers us to speak up without fear of retaliation. It puts safety first, and together with our safety leadership principles and OMS, helps us make safe and ethical decisions, act responsibly and comply with applicable laws.

We relaunched the code in January 2023, including updated content to incorporate our sustainability frame and 'Who we are'. The code also contains a new tool to help employees navigate difficult decisions.

Employees, contractors or other third parties who have a question about our code of conduct or see something that they feel is unethical or unsafe can discuss this with their managers, supporting teams, works councils (where relevant) or through OpenTalk, a confidential and anonymous helpline operated by an independent company.

We received more than 1,350 concerns or enquiries through these channels in 2022 (2021 1,400). We take steps to identify and correct areas of non-conformance and take disciplinary action where appropriate. In 2022, around 50 separations resulted from nonconformance with our code or unethical behaviour. This total excludes exits of contractors, vendors and staff employed at our retail stations

## Our people

### Workforce by gender

| As at 31 December 2022 | Male 2022 | Male 2021 | Female 2022 | Female 2021 | Female % 2022 | Female % 2021 |
|---|---|---|---|---|---|---|
| Board directors | **6** | 6 | **5** | 4 | **45** | 40 |
| Leadership team | **5** | 7 | **6** | 4 | **55** | 36 |
| Group leaders | **187** | 192 | **91** | 89 | **33** | 32 |
| Subsidiary directors | **488** | 674 | **212** | 303 | **30** | 31 |
| All employees | **41,000** | 39,900 | **26,500** | 25,900 | **39** | 39 |

### Number of employees as at 31 December 2022[a]

| | 2022 | 2021 | 2020 |
|---|---|---|---|
| Gas & low carbon energy | **4,200** | 4,000 | – |
| Oil production & operations | **8,600** | 8,800 | – |
| Customers & products | **44,700** | 43,600 | – |
| Other businesses & corporate | **10,100** | 9,500 | – |
| Total | **67,600** | 65,900 | 63,600 |

### Developing our people

Our people are crucial to delivering our purpose and strategy. We aim to recruit talented people from diverse backgrounds, and invest in training, development and competitive rewards for all our people. We focus our attraction, recruitment, development and retention activities to provide the support and skills they need to thrive and help bp succeed. In 2022 we continued our work to build skills forecasts and implement capability plans for our transition growth engines including hydrogen, offshore wind, digital and our EV charging network, bp pulse. Following the launch of 'Who we are', we integrated our beliefs into our core talent practices and leadership development, to inform how we assess, select, develop and reward our people.

In 2022 bp employees collectively completed more than 1.1 million hours of formal learning (2021 750,000 hours). This learning takes place within a development frame, applicable to all employees, which covers safety, technical depth, future skills (such as digital and agility) and leadership. Our training portfolio also includes a rigorous mandatory curriculum focused on compliance with applicable laws and regulations and conformance with our internal standards.

And we launched a new global learning platform, grow@bp, which gives our employees access to a wealth of learning content through a single point of access. This includes learning pathways that support our 20 aims, like 'sustainability at bp' which has now become one of our most utilized pathways.

### Diversity, equity and inclusion

Our aim 14 is greater diversity, equity and inclusion for our workforce and our customers, and to increase supplier diversity spend to $1 billion. For more information see page 63.

In 2022 we expanded our long-term incentive plan scorecard for group leaders to include DE&I measures. We have equipped our leaders with better DE&I data which they can use to help identify areas for improvement, and better understand areas of progress. Our data is refreshed monthly, and available 24/7.

We also report information and disclose against targets on the representation of women and ethnic minorities on our board and executive management on a voluntary basis, see page 83.

### Gender equality

Overall, the proportion of women employed across bp remained at 39% of our global workforce in 2022. At the end of 2022 we had five female directors (2021 4) on our board. Our people and governance committee remains mindful of diversity when considering potential candidates.

We have committed to an ambition of gender parity for the top levels of leadership (top 120 roles) by 2025 and an ambition of parity for all executive-level employees (group leaders) by 2030. And we have committed to an ambition of 40% female representation (senior-level leaders) for the next layer of senior leadership by 2030.

Our early engagement programmes, including Discovery Weeks and our new Future Talent Scholarship, support our future intern and graduate pipelines.

Our understanding of gender identity is evolving and our ambitions will reflect this over time.

Read our gender pay gap report at [redacted]

### Ethnic diversity

In 2022 we rolled out our LIFT programme to support the progression of Black and African American colleagues into senior leadership roles. Participants partner with each other and with senior leaders to enhance understanding of the experiences of working at bp and to build networks.

And we rolled out our mandatory Race for Equity racial equity and inclusion training programme to all UK and US employees. The programme focuses on leadership and accountability and explores how we show up, speak up in tough situations and cultivate a culture of care.

In 2022, 33% of our group leaders came from countries other than the UK and the US (2021 31%).

Read our DE&I report at [redacted]

For more on the composition of our board, see page 80

### Inclusion

To promote an inclusive culture, we provide leadership training and support employee-run advocacy groups in areas such as gender, ethnicity, sexual orientation and disability. As well as bringing employees together, these groups support our recruitment programmes and provide feedback on the potential impact of policy changes. Each group is sponsored by a senior executive.

We aim to provide equal opportunity in recruitment, career development, promotion, training and reward for all employees – regardless of ethnicity, national origin, religion, gender, age, sexual orientation, marital status, disability or any other characteristic protected by applicable laws.

We have launched 'Hiring Inclusively', a set of globally consistent recruiting principles to help enable an inclusive, equitable approach to hiring. It allows recruiters to review internal and external market data for skills availability by gender and by other historically under-represented groups in some geographies.

a We do not report number of employees data against our financial reporting segments for 2020 as the numbers are not comparable following our reorganization in 2020.

### Supporting disabled employees

We have taken a number of steps to help improve the experience of the workplace for employees with disabilities, including:

- Offering inclusive recruitment training, disability awareness training and neurodiversity training, as well as specific internships and apprenticeships.
- Access to assistive technology support (such as voice recognition software and screen readers) for all employees.

Where existing employees become disabled, our policy is to engage and use reasonable accommodations or adjustments to enable continued employment.

We have also formed partnerships to help source talent, assist with research and training and support students with disabilities build the skills they need to access the workplace, including the National Organization on Disability in the US, and the Business Disability Forum in the UK. bp is also part of the Valuable 500 – a global business collective made up of 500 CEOs and their companies, to drive lasting change for people around the world living with a disability.

### Employee engagement ⓔ

Our managers hold team and one-to-one meetings with their team members, complemented by formal processes through works councils in parts of Europe.

We regularly communicate with employees on factors that affect bp's performance, and seek to maintain constructive relationships with labour unions formally representing our employees.

We monitor employee sentiment through our 'Pulse' annual survey, which is sent to all eligible employees, and through our 'Pulse Live' survey, which is sent to a representative sample of employees weekly. Our overall engagement metric, employee engagement, increased to 70% (2021 64%), while pride in working for bp increased to a record 78% (2021 73%).

We focused on three action areas to drive employee engagement in 2022– strategy and purpose, inclusive culture and career development.

How the board engaged with members of the workforce, see page **94**.

Our employee engagement key performance indicator, see page **23**.

### Mental health and wellbeing

Our aim 15 is to enhance the health and wellbeing of our employees, contractors and local communities.

We offer employees access to a range of mental health support services, including our well-established 24/7 Employee Assistance Programme.

In 2022, we continued our efforts to create a workplace in which people can talk openly about mental health and get help if they need it. We updated our mental health training programmes and provided specific training for line managers so they can discuss mental health with their teams. bp is a founding partner of The Global Business Collaboration for Better Workplace Mental Health and in 2022 we formed a new partnership with MindForward Alliance, to promote global standards for workplace mental health.

We use a wellbeing index, which is included in our Pulse employee surveys, to assess health and wellbeing across bp. In 2022 our wellbeing index was slightly higher than in 2021 at 68% (2021 67%), reflecting improved perceptions of leadership support and workload manageability.

We continued promoting our new wellbeing platform, Thrive@bp, to support our workforce and their friends and families. We also launched the Thrive Together global physical activity challenge along with a new approach to our health and wellbeing campaigns globally. We focused on six relevant health topics: cancer awareness, women's health, men's health, LGBT+ health, heart health and mental health.

### Share ownership

We encourage employee share ownership and have a number of employee share plans in place. For example, we operate a ShareMatch plan, matching bp shares purchased by our employees. We also make annual share awards as part of our total reward package all for senior and mid-level employees globally, and a portion of our more junior professional grade employees.

See Directors' remuneration report on page 112 and our sustainable GHG emission reductions key performance indicator on page 23.

## Ethics and compliance

### Anti-bribery and corruption

We operate in parts of the world where bribery and corruption present a high risk. We have a responsibility to our employees, our shareholders and the countries and communities in which we do business to be ethical and lawful in all our work.

Our code of conduct explicitly prohibits engaging in bribery or corruption in any form. Our group-wide anti-bribery and corruption policy and procedures include measures and guidance to assess risks, understand relevant laws and report concerns. They apply to all bp-operated businesses.

We provide training to employees appropriate to the nature or location of their role. In 2022 more than 7,500 employees completed anti-bribery and corruption training (2021 12,700). We assess any exposure to bribery and corruption risk when working with suppliers and business partners. Where appropriate, we put in place a risk mitigation plan or we reject them if we conclude that risks are too high.

We also conduct anti-bribery compliance audits on selected suppliers to assess their conformance with our anti-bribery and corruption contractual requirements. We take corrective action with suppliers and business partners that fail to meet our expectations, which may include terminating contracts. In 2022 the number of audit reports we issued increased to 37 (2021 4), due to the completion of a backlog of audits from 2021.

### Political donations and activity

We prohibit the use of bp funds or resources to support any political candidate or party. We recognize the rights of our employees to participate in the political process and these rights are governed by the applicable laws in the countries where we operate. Our stance on political activity is set out in the code.

In the US we provide administrative support for the bp employee political action committee (PAC) which is a non-partisan, employee-led committee that encourages voluntary employee participation in the political process. All bp employee PAC contributions are weighed against the PAC's criteria for candidate support, reviewed for compliance with federal and state law, and publicly reported in accordance with US election laws.

### Tax transparency

Our code of conduct informs the responsible approach we take to managing taxes. We have adopted the B Team responsible tax principles and we engage in open and constructive dialogue with governments and tax authorities. We comply with the tax legislation of the countries in which we operate and we do not tolerate the facilitation of tax evasion by people who act for or on behalf of bp.

We are committed to transparency around our tax principles and the taxes we pay. We paid $12.5 billion in corporate income and production taxes to governments in 2022 (2021 $5.4 billion).

# How we manage risk and risk factors

## How we manage risk

bp manages, monitors and reports on the principal risks and uncertainties we have identified that can impact our ability to deliver our strategy. These risks are described in Risk factors on page 73.

bp's system of internal control is a holistic set of internal controls that includes policies, processes, management systems, organizational structures, culture and standards of conduct employed to manage bp's business and associated risks.

### bp's risk management system

bp's risk management system and policy is designed to be a consistent and clear framework for managing and reporting risks from the group's business activities and operations to management and to the board. The system seeks to avoid incidents and enhance business outcomes by allowing us to:

- Understand the risk environment, identify the specific risks and assess the potential exposure for bp.
- Determine how best to deal with these risks to manage overall potential exposure.
- Manage the identified risks in appropriate ways.
- Monitor and seek assurance of the effectiveness of the management of these risks and intervene for improvement where necessary.
- Report up the management chain and to the board on a periodic basis on how principal risks are being managed, monitored and assured, with any identified enhancements that are being made.

#### Day-to-day risk management

Management and employees at our facilities, assets, and within our businesses, integrators and enablers (see page 14) seek to identify and manage risk, promoting safe, compliant and reliable operations. bp requirements, which take into account applicable laws and regulations, underpin the practical plans developed to help reduce risk and deliver safe, compliant and reliable operations as well as greater efficiency and sustainable financial results.

#### Business and strategic risk management

Our businesses, integrators and enablers integrate risk management into key business processes such as strategy, planning, performance management, resource and capital allocation and project appraisal. We do this by using a standard framework for collating risk data, assessing risk management activities, making further improvements and in connection with planning new activities.

#### Oversight and governance

Throughout the year, management, the leadership team, the board and relevant committees provide oversight of how principal risks to bp are identified, assessed and managed. They support appropriate governance of risk management including having relevant policies in place to help manage risks.

Such oversight may include internal audit reports, group risk reports and reviews of the outcomes of business processes including strategy, planning and resource and capital allocation. bp's group risk team analyses the group's risk profile and maintains the group's risk management system. bp's internal audit team provides independent assurance to the chief executive and board as to whether the group's system of internal control is adequately designed and operating effectively to respond appropriately to the risks that are significant to bp.

### Our risk management activities


### Risk oversight and governance

Key risk oversight and governance committees include the following:

#### Board and committees

- bp board.
- Audit committee.
- Safety and sustainability committee.
- Remuneration committee.
- People and governance committee.

#### Leadership team and committees

- Leadership team meeting – for oversight and for strategic and commercial risks.
- Group operations risk committee – for health, safety, security, environment and operations integrity risks.
- Group financial risk committee – for finance, treasury, trading and cyber risks.
- Group disclosure committee – for financial reporting risks.
- People and culture committee – for employee risks.
- Group ethics and compliance committee – for legal and regulatory compliance and ethics risks.
- Group sustainability committee – for non-operational sustainability risks.
- Resource commitment meeting – for investment decision risks.
- bp quarterly internal audit meeting – for assurance on the oversight of bp's principal risks.

Board activities see page **87**, bp governance framework see page **86**, committee reports see pages **98-112** and Risk management and internal control see page **149**.

★ See glossary on page 389

# How we manage risk and risk factors continued

### Risk management processes

We aim for a consistent basis of measuring risk to:

- Establish a common understanding of risks on a like-for-like basis, taking into account potential impact and likelihood.
- Report risks and their management to the appropriate levels of the organization.
- Inform prioritization of specific risk management activities and resource allocation.

bp's risk management policy sets out requirements for businesses, integrators and enablers to follow. These requirements support the consideration of the following risk types:

- Strategic and commercial
- Safety and operational
- Compliance and control

**Risk identification** – businesses, integrators and enablers identify risks across the three risk types.

Risks are identified on an ongoing basis – this can be done using a range of approaches including workshops, subject matter expertise, hazard identification processes and engineering requirements.

**Risk assessment** – identified risks are assessed for potential impact across a number of criteria including:

- Health and safety
- Environmental
- Financial
- Non-financial (includes reputation and regulatory impact levels)

Likelihood is also assessed using a standardized set of criteria. This aims to provide a consistent basis for the evaluation of potential impact and likelihood, facilitating a comparison across risks.

**Risk management and monitoring** – risk management activities can be prioritized where improvements are needed based on a number of factors, including the risk assessment, strength of existing risk management measures, strategy and plans and legal and regulatory requirements. Risk management measures, including mitigations, are identified for each risk and monitored to the extent considered appropriate. To support leadership oversight of decisions relating to the risk assessment and management measures, risks are notified to, and the business's risk management measures are subject to endorsement at, the appropriate organizational level (EVP, SVP, VP) depending on the assessed potential impact and likelihood.

As part of bp's annual planning process, the leadership team and the board review the group's principal risks and uncertainties. These may be updated during the year in response to changes in internal and external circumstances.

There can be no certainty that our risk management activities will mitigate or prevent these, or other risks, from occurring. Further details of the principal risks and uncertainties we face are set out in Risk factors on page 73.

## Our risk profile

The nature of our business operations is long term, resulting in many of our risks being enduring in nature. Nonetheless, risks can develop and evolve over time and their potential impact or likelihood may vary in response to internal and external events. These may include emerging risks which are considered through existing processes, including an emerging risk paper considered at board meetings, bp's risk management system, the *bp Energy Outlook*, bp's Technology Insights Radar and ongoing emerging technology scanning and group strategic reviews.

We describe above how risks are managed. The following section provides examples of the particular risk management activities for each of bp's principal risks.

### Strategic and commercial risks

#### Prices and markets

Our financial performance is impacted by fluctuating prices of oil, gas and refined products, technological change, exchange rate fluctuations, and the general macroeconomic outlook.

Our strategy is designed to accommodate a range of scenarios and be resilient to the volatility in the energy markets. This is supported through a diversified portfolio, a strong balance sheet and operating within a resilient and disciplined financial frame. We test out investment and project development costs against a range of pricing and exchange assumptions.

#### Accessing and progressing hydrocarbon resources and low carbon opportunities

Inability to access and progress hydrocarbon resources and low carbon opportunities could adversely affect delivery of our strategy.

For hydrocarbon resources our subsurface team is accountable for the delivery of high-value, carbon-efficient resources to deliver predictable and reliable investments today as well as the long-term renewal of our hydrocarbon resources. Additionally, the subsurface team partners with innovation & engineering to prioritize technology development needs for the future. Our gas & low carbon energy business is accountable for the delivery of our low carbon opportunities through both organic and inorganic growth. This includes the development of our offshore wind, solar, onshore wind, hydrogen and carbon capture, use and storage businesses.

#### Major project delivery

Failure to invest in the best opportunities or deliver major projects successfully could adversely affect our financial performance.

We seek to manage this risk through our projects organization which exists to frame, build and execute projects across bp. The organization contains capability which includes the centre of expertise for appraisal and optimization, expertise to manage the design and build of projects and programmes, and collaboration with our businesses and enablers to ensure project objectives are met. The projects team delivers using its major projects common process which is systematically reviewed and continuously improved.

#### Geopolitical

The diverse locations of our business activities and operations around the world expose us to a wide range of political developments and consequent changes to the economic and operating environment. Geopolitical risk is inherent to many regions in which we operate, and heightened political or social tensions or changes in key relationships could adversely affect the group.

We seek to manage this risk at multiple levels, through:

- Identifying macro-level geopolitical trends in the geopolitical advisory council.
- Providing a clear focal point for political risk management in our regions, corporates & solutions business.
- Monitoring how geopolitical trends create risk at the country level through changes to our baseline threat assessments.

More broadly, we manage the risk on a day-to-day basis through development and maintenance of relationships with governments and stakeholders, and by being trusted partners in each country and region. In addition, we closely monitor events and implement risk mitigation plans where deemed appropriate.

### Financial liquidity

External market conditions can impact our financial performance. Supply and demand and the prices achieved for our products can be affected by a wide range of factors including political developments, interest rates, consumer preferences for low carbon energy, global economic conditions, access to capital markets and the influence of OPEC+.

We seek to manage this risk through bp's diversified portfolio, our financial framework, liquidity stress testing, maintaining a significant cash buffer, regular reviews of market conditions and our planning and investment processes.

Energy markets, page 6, Liquidity and capital resources on page 356 and Liquidity, financial capacity and financial, including credit, exposure, page 73

### Joint arrangements and contractors

Varying levels of control over the standards, operations and compliance of our partners, contractors and sub-contractors could result in legal liability and reputational damage.

bp's exposure in non-operated joint ventures (NOJV) is primarily managed by the NOJV-facing business team in the business or entity where ownership of bp's interest in the NOJV sits. Support, verification and assurance is provided by the joint venture centre of expertise, safety & operational risk assurance and ethics & compliance functional assurance and group internal audit to drive a focused, deliberate and systematic approach to the set up and management of bp's interests in NOJVs.

Our relationships with contractors are managed through the bp procurement processes with appropriate requirements incorporated into contractual arrangements.

### Cyber security

Both targeted and indiscriminate threats to the security of our digital infrastructure and those of third parties continue to evolve rapidly and are increasingly prevalent across industries worldwide.

We seek to manage this risk through a range of measures, which include cyber security standards, security protection tools, ongoing detection and monitoring of threats and testing of cyber response and recovery procedures. We collaborate with governments, law enforcement agencies and industry peers to understand and respond to new and emerging cyber threats.

We build awareness with our employees, share information on incidents with leadership for continuous learning and conduct regular exercises including with the leadership team to test response and recovery procedures.

### Climate change and the transition to a lower carbon economy

Developments in policy, law, regulation, technology and markets, including societal and investor sentiment, related to the issue of climate change and the transition to a lower carbon economy could increase costs, reduce revenues, constrain our operations and affect our business plans and financial performance.

Risks associated with climate change and the transition to a lower carbon economy impact many elements of our strategy and, as such, these risks are managed through key business processes including setting the bp strategy and annual plan, capital allocation and investment decisions. The outputs of these key business processes are reviewed in line with the cadence of these activities. See page 53 for further detail on how transition risks are managed.

### Competition

Inability to remain efficient, maintain a high-quality portfolio of assets and innovate could negatively impact delivery of our strategy in a highly competitive market.

We seek to manage this risk through our strategy, sustainability and ventures team by providing external insights on the economic, energy, market and competitive environment. Our strategy, sustainability and portfolio management teams use these insights to help define a resilient strategy for bp, including decisions related to portfolio, business development and resource allocation. The ventures team provides commercial innovation capacity that allows us to build new businesses.

### Talent and capability

Inability to attract, develop and retain people with necessary skills and capabilities could negatively impact delivery of our strategy.

Our people and culture team oversees all hiring activity for bp globally, both professional hiring and early careers. They help to ensure that the right talent and people capability is in place, using local market analysis, people analytics and insights to underpin our strategic workforce planning. Talent leadership focuses on translating bp's diversity, equity and inclusion ambitions and global framework for action into a robust and diverse talent pipeline, see page 67 for more information.

### Crisis management and business continuity

Failure to address an incident effectively could potentially disrupt our business or exacerbate the legal, financial or operational impacts of the crisis event.

Incidents that could potentially disrupt our business are addressed using emergency response and business continuity plans which are mandated through company-wide policies. We use internationally recognized incident command structures and for significant events business support teams and executive support teams are established to provide oversight and management. In addition, we provide a trained cadre of crisis professionals and niche expertise for deployment across the company through our mutual response team.

### Insurance

Our insurance strategy could expose the group to material uninsured losses.

Our insurance team is accountable for aligning our insurance approach with bp's strategy and they engage with the businesses, integrators and enablers to determine the appropriate level of insurance. We retain in-house expertise and partner with insurance industry leaders. Our captive insurance companies are regulated within the jurisdictions in which they operate.

## Safety and operational risks

### Process safety, personal safety and environmental risks

The nature of the group's operating activities exposes us to a wide range of significant health, safety and environmental risks such as incidents associated with releases of hydrocarbons when drilling wells, operating facilities and transporting hydrocarbons.

Our operating management system helps us manage these risks and drive performance improvements. It sets out the standards and requirements which govern key risk management activities such as inspection, maintenance, testing, business continuity and crisis response planning and competency development. In addition, we conduct our drilling activity through a wells organization in order to promote a consistent approach for designing, constructing and managing wells.

# How we manage risk and risk factors continued

### Drilling and production

Challenging operational environments and other uncertainties could impact drilling and production activities.

Our production and operations business group brings together all our hydrocarbon operations and our distinctive capabilities in one place to safely deliver competitive returns. The enablers, in particular wells and production, are accountable for safety, risk, quality and operational delivery. They execute capital and operational activity and manage associated expenditure.

### Security

Hostile acts such as terrorism, activism, insider acts or piracy could harm our people and disrupt our operations. We monitor for emerging threats and vulnerabilities to manage our physical and information security.

Our intelligence, security and crisis management teams provide strategic and operational risk management to our businesses through a network of regional security managers who provide front line risk management as well as conduct assurance activities through a team independent of the business.

We continue to monitor threats globally and maintain disaster recovery, crisis and business continuity management plans.

### Product quality

Supplying customers with off-specification products could damage our reputation, lead to regulatory action and legal liability, and impact our financial performance.

bp's product quality policy is aligned with our operating management system and sets requirements for our business to meet specifications and applicable legal and regulatory requirements.

## Compliance and control risks

### Ethical misconduct and legal or regulatory non-compliance

Ethical misconduct or breaches of applicable laws or regulations could damage our reputation, result in litigation, regulatory action and penalties, adversely affect results and shareholder value, and potentially affect our licence to operate.

Our code of conduct, the foundation of who we are, is applicable to all employees and central to managing this risk. Additionally, we have various group requirements and training covering areas such as anti-bribery and corruption, anti-money laundering, competition/anti-trust law and international trade regulations. We offer an independent confidential helpline, OpenTalk, for employees, contractors and other third parties with the option to raise concerns anonymously.

### Regulation

Changes in the law and regulation could increase costs, constrain our operations and affect our strategy, business plans and financial performance.

Our businesses, integrators and enablers all seek to identify, assess and manage legal and regulatory risks relevant to bp's operations, strategy, business plans and financial performance. To support this work, we seek to develop co-operative relationships with governmental authorities in line with our code of conduct, to allow appropriate focus on areas of potential risk or uncertainty while also protecting bp's interests within the law. The bp group ethics and compliance committee provides risk oversight and governance for legal compliance and ethics risks.

### Trading non-compliance

In the normal course of business, we are subject to risks around our trading activities which could arise from shortcomings or failures in our systems, risk management methodology, internal control processes or employee conduct.

We have specific operating standards and control processes to manage these risks, including guidelines specific to trading, and seek to monitor compliance through our dedicated compliance teams. We also seek to maintain a positive and collaborative relationship with regulators and the industry at large.

### Reporting

Failure to accurately report our data could lead to regulatory action, legal liability and reputational damage.

Our accounting reporting and control team provide assurance of the control environment and are accountable for building control and compliance into finance processes and digital systems.

# Risk factors

The risks discussed below, separately or in combination, could have a material adverse effect on the implementation of our strategy, our business, financial performance, results of operations, cash flows, liquidity, prospects, shareholder value and returns and reputation.

## Strategic and commercial risks

**Prices and markets:** our financial performance is impacted by fluctuating prices of oil, gas and refined products, technological change, exchange rate fluctuations, and the general macroeconomic outlook.

Oil, gas and product prices are subject to international supply and demand and margins can be volatile.

Political developments, increased supply from new oil and gas or alternative low carbon energy sources, technological change, global economic conditions, public health situations (including the continued impact of the COVID-19 pandemic or any future epidemic or pandemic), the introduction of new carbon costs and the influence of OPEC+ can impact supply and demand and prices for our products.

Decreases in oil, gas or product prices could have an adverse effect on revenue, margins, profitability and cash flows. If these reductions are significant or for a prolonged period, we may have to write down assets and reassess the viability of certain projects, which may impact future cash flows, profit, capital expenditure, the ability to work within our financial frame and maintain our long-term investment programme. Conversely, an increase in oil, gas and product prices may not improve margin performance as there could be increased fiscal take, cost inflation and more onerous terms for access to resources. The profitability of our refining activities can be volatile, with periodic over-supply or supply tightness in regional markets and fluctuations in demand.

Exchange rate fluctuations can create currency exposures and impact underlying costs and revenues. Crude oil prices are generally set in US dollars, while products vary in currency. Many of our major project development costs are denominated in local currencies, which may be subject to fluctuations against the US dollar.

**Accessing and progressing hydrocarbon resources and low carbon opportunities:** inability to access and progress hydrocarbon resources and low carbon opportunities could adversely affect delivery of our strategy.

Delivery of our strategy depends partly on our ability to progress hydrocarbon resources from our existing portfolio and access new resources in our existing core regions. Our ability to progress upstream resources and develop technologies at a level in line with our strategic outlook for hydrocarbon production could impact our future production and financial performance. Furthermore, our ability to access low carbon opportunities and the commercial terms associated with those opportunities could impact our financial performance and the pace of our transition to an integrated energy company in line with our strategy.

**Major project delivery:** failure to invest in the best opportunities or deliver major projects successfully could adversely affect our financial performance.

We face challenges in developing major projects, particularly in geographically and technically challenging areas. Poor investment choice, efficiency or delivery, or operational challenges at any major project that underpins production or production growth, could adversely affect our financial performance.

**Geopolitical:** exposure to a range of political developments and consequent changes to the operating and regulatory environment could cause business disruption.

We operate and may seek new opportunities in countries, regions and cities where political, economic and social transition may take place.

Political instability, changes to the regulatory environment or taxation, international trade disputes and barriers to free trade, international sanctions, expropriation or nationalization of property, civil strife, strikes, insurrections, acts of terrorism, acts of war and public health situations (including the continued impact of the COVID-19 pandemic or any future epidemic or pandemic) may disrupt or curtail our operations, business activities or investments.

These may in turn cause production to decline, limit our ability to pursue new opportunities, affect the recoverability of our assets and our related earnings and cash flow or cause us to incur additional costs, particularly due to the long-term nature of many of our projects and significant capital expenditure required.

Events in, or relating to, Russia and the conflict in Ukraine, including trade restrictions, international sanctions or any other actions taken by governmental authorities or other relevant persons have had and could continue to have an impact on global energy supply and demand, market volatility and the prices of oil, gas and products. In February 2022, we announced that we would exit our shareholding in Rosneft and our other businesses with Rosneft in Russia. Trade restrictions, international sanctions, Russian counter restrictions and sanctions and other actions taken by governmental authorities or other relevant persons are expected to continue to impact our ability to exit those interests.

**Liquidity, financial capacity and financial, including credit, exposure:** failure to work within our financial framework could impact our ability to operate and result in financial loss.

Failure to accurately forecast or work within our financial framework could impact our ability to operate and result in financial loss. Trade and other receivables, including overdue receivables, may not be recovered, divestments may not be successfully completed and a substantial and unexpected cash call or funding request could disrupt our financial framework or overwhelm our ability to meet our obligations.

An event such as a significant operational incident, legal proceedings or a geopolitical event in an area where we have significant activities, could reduce our financial liquidity and our credit ratings. Credit rating downgrades could potentially increase financing costs and limit access to financing or engagement in our trading activities on acceptable terms, which could put pressure on the group's liquidity.

They could also potentially require the company to review the funding arrangements with the bp pension trustees. In the event of extended constraints on our ability to obtain financing, we could be required to reduce capital expenditure or increase asset disposals in order to provide additional liquidity.

Liquidity and capital resources, page **356** and Financial statements – **Note 29**

★ See glossary on page 389

# How we manage risk and risk factors continued

**Joint arrangements and contractors:** varying levels of control over the standards, operations and compliance of our partners, contractors and sub-contractors could result in legal liability and reputational damage.

We conduct many of our activities through joint arrangements, associates or with contractors and sub-contractors where we may have limited influence and control over the performance of such operations.

Our partners and contractors are responsible for the adequacy of their resources and capabilities. If these are found to be lacking, there may be financial, operational or safety exposures for bp. Should an incident occur in an operation that bp participates in, our partners and contractors may be unable or unwilling to fully compensate us against costs we may incur on their behalf or on behalf of the arrangement. Where we do not have operational control of a venture or direct oversight of contractor activity, we may still be pursued by regulators or claimants in the event of an incident.

**Digital infrastructure, cyber security and data protection:** breach or failure of our or third parties' digital infrastructure or cyber security, including loss or misuse of sensitive information could damage our operations, increase costs and damage our reputation.

The energy industry is subject to fast-evolving risks, including ransomware, from cyber threat actors, including nation states, criminals, terrorists, hacktivists and insiders. Current geopolitical factors have increased these risks. There is also growing regulation around data protection and data privacy. A breach or failure of our or third parties' digital infrastructure – including control systems – due to breaches of our cyber defences, or those of third parties, negligence, intentional misconduct or other reasons, could seriously disrupt our operations. This could result in the loss or misuse of data or sensitive information, including employees' and customers' personal data, injury to people, disruption to our business, harm to the environment or our assets, legal or regulatory breaches, legal liability and significant costs including fines, cost of remediation or reputational consequences. Furthermore, the rapid detection of attempts to gain unauthorized access to our digital infrastructure, often through the use of sophisticated and co-ordinated means, is a challenge and any delay or failure to detect could compound these potential harms.

**Climate change and the transition to a lower carbon economy:** developments in policy, law, regulation, technology and markets, including societal and investor sentiment, related to the issue of climate change and the transition to a lower carbon economy could increase costs, reduce revenues, constrain our operations and affect our business plans and financial performance.

Laws, regulations, policies, obligations, government actions, social attitudes and customer preferences relating to climate change and the transition to a lower carbon economy, including the pace of change to any of these factors, and also the pace of the transition itself, could have adverse impacts on our business including on our access to and realization of competitive opportunities in any of our strategic focus areas, a decline in demand for, or constraints on our ability to sell certain products, constraints on production and supply, adverse litigation and regulatory or litigation outcomes, increased costs from compliance and increased provisions for environmental and legal liabilities.

Investor preferences and sentiment are influenced by environmental, social and corporate governance (ESG) considerations including climate change and the transition to a lower carbon economy. Changes in those preferences and sentiment could affect our access to capital markets and our attractiveness to potential investors, potentially resulting in reduced access to financing, increased financing costs and impacts upon our business plans and financial performance.

Technological improvements or innovations that support the transition to a lower carbon economy, and customer preferences or regulatory incentives that alter fuel or power choices, could impact demand for oil and gas.

Depending on the nature and speed of any such changes and our response, these changes could increase costs, reduce our profitability, reduce demand for certain products, limit our access to new opportunities, require us to write down certain assets or curtail or cease certain operations, and affect investor sentiment, our access to capital markets, our competitiveness and financial performance.

Policy, legal regulatory, technological and market developments related to climate change could also affect future price assumptions used in the assessment of recoverability of asset carrying values including goodwill, the judgement as to whether there is continued intent to develop exploration and appraisal intangible assets, the timing of decommissioning of assets and the useful economic lives of assets used for the calculation of depreciation and amortization.

Climate-related financial disclosures, page **50** and Financial statements – **Note 1**

**Competition:** inability to remain efficient, maintain a high-quality portfolio of assets and innovate could negatively impact delivery of our strategy in a highly competitive market.

Our strategic progress and performance could be impeded if we are unable to control our development and operating costs and margins, if we fail to scale our businesses at pace, or to sustain, develop and operate a high-quality portfolio of assets efficiently. Furthermore, as we transition from an international oil company to an integrated energy company, we face an expanded and rapidly evolving range of competitors in the sectors in which we operate. We could be adversely affected if competitors offer superior terms for access rights or licences, or if our innovation in areas such as new low carbon technologies, digital, customer offer, exploration, production, refining, manufacturing or renewable energy lags behind those of our competitors. Our performance could also be negatively impacted if we fail to protect our intellectual property.

**Talent and capability:** inability to attract, develop and retain people with necessary skills and capabilities could negatively impact delivery of our strategy.

The sectors in which we operate face increasing challenges to attract and retain diverse, skilled and capable talent. An inability to successfully recruit, develop and retain core skills and capabilities and to reskill existing talent could negatively impact delivery of our strategy.

**Crisis management and business continuity:** failure to address an incident effectively could potentially disrupt our business.

Our reputation and business activities could be negatively impacted if we do not respond, or are perceived not to respond, in an appropriate manner to any major crisis.

**Insurance:** our insurance strategy could expose the group to material uninsured losses.

bp generally purchases insurance only in situations where this is legally and contractually required. Some risks are insured with third parties and reinsured by group insurance companies. Uninsured losses could have a material adverse effect on our financial position, particularly if they arise at a time when we are facing material costs as a result of a significant operational event which could put pressure on our liquidity and cash flows.

## Safety and operational risks

**Process safety, personal safety, and environmental risks:** exposure to a wide range of health, safety, security and environmental risks could cause harm to people, the environment and our assets and result in regulatory action, legal liability, business interruption, increased costs, damage to our reputation and potentially denial of our licence to operate.

Technical integrity failure, natural disasters, extreme weather or a change in its frequency or severity, human error and other adverse events or conditions, including breach of digital security, could lead to loss of containment of hydrocarbons or other hazardous materials. This could also lead to constrained availability of resources used in our operating activities, as well as fires, explosions or other personal and process safety incidents, including when drilling wells, operating facilities and those associated with transportation by road, sea or pipeline. There can be no certainty that our operating management system or other policies and procedures will adequately identify all process safety, personal safety and environmental risks or that all our operating activities, including acquired businesses, will be conducted in conformance with these systems.

See Safety page 65

Such events or conditions, including a marine incident, or inability to provide safe environments for our workforce and the public while at our facilities, premises or during transportation, could lead to injuries, loss of life or environmental damage. As a result we could face regulatory action and legal liability, including penalties and remediation obligations, increased costs and potentially denial of our licence to operate. Our activities are sometimes conducted in hazardous, remote or environmentally sensitive locations, where the consequences of such events or conditions could be greater than in other locations.

**Drilling and production:** challenging operational environments and other uncertainties could impact drilling and production activities.

Our activities require high levels of investment and are sometimes conducted in challenging environments such as those prone to natural disasters and extreme weather, which heightens the risks of technical integrity failure. The physical characteristics of an oil or natural gas field, and cost of drilling, completing or operating wells is often uncertain. We may be required to curtail, delay or cancel drilling operations or stop production because of a variety of factors, including unexpected drilling conditions, pressure or irregularities in geological formations, equipment failures or accidents, adverse weather conditions and compliance with governmental requirements.

**Security:** hostile acts against our employees and activities could cause harm to people and disrupt our operations.

Acts of terrorism, piracy, sabotage, activism and similar activities directed against our operations and facilities, pipelines, transportation or digital infrastructure could cause harm to people and severely disrupt operations. Our activities could also be severely affected by conflict, civil strife or political unrest.

**Product quality:** supplying customers with off-specification products could damage our reputation, lead to regulatory action and legal liability, and impact our financial performance.

Failure to meet product quality specifications could cause harm to people and the environment, damage our reputation, result in regulatory action and legal liability, and impact financial performance.

## Compliance and control risks

**Ethical misconduct and non-compliance:** ethical misconduct or breaches of applicable laws by our businesses or our employees could be damaging to our reputation, and could result in litigation, regulatory action and penalties.

Incidents of ethical misconduct or non-compliance with applicable laws and regulations, including anti-bribery and corruption, competition and antitrust, and anti-fraud laws, trade restrictions or other sanctions, could damage our reputation, and result in litigation, regulatory action, penalties and potentially affect our licence to operate. In relation to trade restrictions or other sanctions, current geopolitical factors have increased these risks.

**Regulation:** changes in the law and regulation could increase costs, constrain our operations and affect our strategy, business plans and financial performance.

Our businesses and operations are subject to the laws and regulations applicable in each country, state or other regional or local area in which they occur. These laws and regulations result in an often complex, uncertain and changing legal and regulatory environment for our global businesses and operations. Changes in laws or regulations, including how they are interpreted and enforced, can and do impact all aspects of our business.

Royalties and taxes, particularly those applied to our hydrocarbon activities, tend to be high compared with those imposed on similar commercial activities. In certain jurisdictions there is also a degree of uncertainty relating to tax law interpretation and changes.

Governments may change their fiscal and regulatory frameworks in response to public pressure on finances, resulting in increased amounts payable to them or their agencies.

Changes in law or regulation could increase the compliance and litigation risk and costs, reduce our profitability, reduce demand for or constrain our ability to sell certain products, limit our access to new opportunities, require us to divest or write down certain assets or curtail or cease certain operations, or affect the adequacy of our provisions for pensions, tax, decommissioning, environmental and legal liabilities. Changes in laws or regulations could result in the nationalization, expropriation, cancellation, non-renewal or renegotiation of our interests, assets and related rights. Potential changes to pension or financial market regulation could also impact funding requirements of the group. Following the Gulf of Mexico oil spill, we may be subjected to a higher level of fines or penalties imposed in relation to any alleged breaches of laws or regulations, which could result in increased costs.

Regulation of the group's business, page 369

**Trading and treasury trading activities:** ineffective oversight of trading and treasury trading activities could lead to business disruption, financial loss, regulatory intervention or damage to our reputation and affect our permissions to trade.

We are subject to operational risk around our trading and treasury trading activities in financial and commodity markets, some of which are regulated. Failure to process, manage and monitor a large number of complex transactions across many markets and currencies while complying with all regulatory requirements could hinder profitable trading opportunities. There is a risk that a single trader or a group of traders could act outside of our delegations and controls, leading to regulatory intervention and resulting in financial loss, fines and potentially damaging our reputation, and could affect our permissions to trade.

Financial statements – Note 29

**Reporting:** failure to accurately report our data could lead to regulatory action, legal liability and reputational damage.

External reporting of financial and non-financial data, including reserves estimates, relies on the integrity of the control environment, our systems and people operating them. Failure to report data accurately and in compliance with applicable standards could result in regulatory action, legal liability and damage to our reputation.

# Compliance information

## bp non-financial information statement

Produced in compliance with Sections 414CA and 414CB of the Companies Act. Information incorporated by cross reference.

| Requirement | Relevant policies and standards | Information related to policies, any due diligence processes |
|---|---|---|
| a Environmental matters | • Net zero aims<br>• TCFD (governance and risk management)<br>• Sustainability frame<br>• Biodiversity position (online) | • Climate-related financial disclosures– pages 50-62.<br>• Caring for our planet aims – page 63.<br>• Our operating management system (OMS) – page 65.<br>• Decision making by the board – page 89. |
| b Employees | • Reinvent bp guidelines<br>• bp values and code of conduct (online) | • Our people – page 67.<br>• Safety – page 65.<br>• Our values and code of conduct – page 66.<br>• Employee engagement (Pulse survey) – page 68.<br>• How the board engaged with stakeholders (workforce) – pages 94-95. |
| c Social matters | • Sustainability frame | • Caring for our planet – page 64.<br>• Our operating management system – page 65.<br>• Improving people's lives – page 63.<br>• Decision making by the board – page 89. |
| d Respect for human rights | • Business and human rights policy (online)<br>• Modern slavery statement (online)<br>• Labour rights and modern slavery principles (online)<br>• Code of conduct (online) | • Human rights – page 63.<br>• Our values and code of conduct – page 66. |
| e Anti-corruption and anti-bribery | • Anti-bribery and corruption policy<br>• Code of conduct (online) | • Ethics and compliance – page 68.<br>• Our partners in joint arrangements – page 66. |
| Description of principal risks relating to matters (a-e above) | | • How we manage risk – pages 69-72.<br>• Risk factors – pages 73-75.<br>• TCFD (climate-related risk management) – page 50. |
| | **Relevant information** | |
| Business model description | • Business model – pages 12-13. | |
| Description of non-financial KPIs | • Measuring our progress – pages 11, 20-23. | |

## TCFD index table

Our expanded TCFD disclosures can be found on the following pages.

| TCFD Recommendation | TCFD Recommended Disclosure | Where reported |
|---|---|---|
| **Governance**<br>Disclose the organization's governance around climate-related issues and opportunities. | a Describe the board's oversight of climate-related risks and opportunities. | Pages 50-52. |
| | b Describe the management's role in assessing and managing climate-related risks and opportunities. | Pages 52-53. |
| **Strategy**<br>Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's business, strategy and financial planning where such information is material. | a Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term. | • Pursuing a strategy that is consistent with the Paris goals, page 26.<br>• Strategy – page 10.<br>• Risk factors, page 73. |
| | b Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning. | • Risk factors, page 73 – description of principal risks.<br>• Strategy – page 10. |
| | c Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario. | • Strategy, page 10.<br>• Pursuing a strategy that is consistent with the Paris goals, page 26. |
| **Risk management**<br>Disclose how the organization identifies, assesses and manages climate-related risks. | a Describe the organization's processes for identifying and assessing climate-related risks. | • Risk management – page 52.<br>• How we manage risk, page 69.<br>• Risk factors – page 73. |
| | b Describe the organization's processes for managing climate-related risks. | • Risk management, page 52.<br>• How we manage risk, page 69. |
| | c Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management. | • Risk management, page 52.<br>• How we manage risk, page 69.<br>• Risk factors – page 73. |
| **Metrics and targets**<br>Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material. | a Disclose the metrics used by the organization to assess climate- related risks and opportunities in line with its strategy and risk management process. | • Our strategic focus areas and metrics, page 11.<br>• Our group-wide principal metrics and relevant targets – page 62. |
| | b Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 GHG emissions, and the related risks. | • GHG emissions data – pages 45-48. |
| | c Describe the targets used by the organization to manage climate- related risks and opportunities and performance against targets. | • Our net zero targets and aims at a glance – page 45. |

## Section 172 statement

In accordance with the requirements of Section 172 of the Companies Act 2006 (the Act), the directors consider that, during the financial year ended 31 December 2022, they have acted in a way that they consider, in good faith, would most likely promote the success of the company for the benefit of its members as a whole, having regard to the likely consequences of any decision in the long term and the broader interests of other stakeholders, as required by the Act.

See page 89 for more information in support of this statement, including a description of the board's activities during 2022.

The strategic report was approved by the board and signed on its behalf by Ben J.S. Mathews, company secretary, on 10 March 2023.

# Corporate governance



★ See glossary on page 389

## Introduction from the chair

> My belief in effective, purpose-driven boards has been reinforced by the way in which bp met those challenges last year.

[redacted]

# Dear fellow shareholder,

The year 2022 was challenging for societies, governments, and businesses – including for bp. My belief in effective, purpose-driven boards has been reinforced by the way in which bp met those challenges last year.

In our decision to exit Russia, the board was alert to our responsibilities towards the company's owners and towards our wider stakeholders, including bp's employees.

The thoroughness of the board's review process – concluding within days of Russia's attack on Ukraine – was enabled by two factors.

First, by robust governance, which required that a decision of this significance be reserved to the full board.

Second, by the trust that exists both among the board's members, and between the board and the leadership team. Of course, the board's decision had a material impact on bp, but the response from shareholders and employees was overwhelmingly positive – for which we are grateful. We remain convinced that the decision was the right one.

### Strategic progress

Since Russia's attack on Ukraine, the importance of transforming the global energy system has been brought into sharp relief. The world wants and needs a system that is not only lower carbon, but secure and affordable too. The threefold nature of this demand is known as the energy trilemma, and in 2022 the board and leadership team spent a great deal of time focused on how bp's strategy – designed to address all three elements of the trilemma – might further evolve.

Our consideration contributed to the strategic progress update announced in February 2023. That update reflects the growing confidence the board has in a strategy that is working well, with more investment both in our resilient oil and gas business and in what we call our transition growth engines – bioenergy, EV charging, convenience, hydrogen, and renewables & power.

Prior to this update, in December 2022, we announced important progress on our bioenergy transition growth engine with the acquisition of Archaea Energy, a leading US producer of renewable natural gas.

During 2022 we saw good strategic progress with the development of low carbon plans and opportunities in Abu Dhabi, Australia, Egypt, Mauritania, Oman, Spain, the UK, and the US.

Earlier in 2022, at our May annual general meeting, the board invited shareholders to express their support for bp's journey to net zero, and we were pleased that the result delivered a clear mandate for continuing that journey – a mandate that I hope you agree we have put into action.

### Board engagements

During 2022 the board was able to travel more – visiting bp operations and meeting employees, investors, and communities in person. In April, we visited bp's offices in Aberdeen, and board members travelled offshore to bp's Glen Lyon production vessel. In September, we visited Houston, building the board's understanding of colleagues' work to keep energy flowing and also spending time reviewing the vital work of bp's security operations centre.

## Board representation

The board believes that better decision-making can be achieved when people with different backgrounds and perspectives come together with a common ambition. I am therefore pleased with the continued progress that bp has made on diversity, equity & inclusion (DE&I), including at the level of the board.

Our board currently meets the new UK listing targets regarding the representation of women and ethnic minorities; however, there is more to do. With this in mind, the board's updated DE&I policy reflects the concrete actions we are taking to make bp a more diverse and inclusive place to work, setting as an example the diversity of our board.

## Board capability

As I have already said, I am pleased with the productive working relationship that exists between the board and the leadership team. We have found that the high degree of trust between them allows for greater constructive challenge, rigour, and scrutiny. It has also made our decision-making processes swifter, allowing us to be more responsive to changing circumstances.

We seek continuously to improve the board's performance. After an external evaluation in 2021, we implemented changes in 2022 to further improve board processes and how we work, investing more time in understanding the opportunities presented through our five transition growth engines, such as the Archaea acquisition, while maintaining a strong focus on capital discipline and shareholder returns.

We have also taken steps to enhance capability by building a board that reflects the markets, customers, and communities bp serves and the strategic direction we have set for the company.

In 2022 it was a privilege to welcome Amanda Blanc to the board. She brings wide-ranging board experience and industry and regulatory expertise.

Most recently, we welcomed Satish Pai and Hina Nagarajan, who both joined the board on 1 March 2023. Satish has broad experience in operations and technology in energy as well as in industries that complement bp's activities. Hina has a proven record in transforming businesses in complex emerging markets, and she brings deep experience in customer-focused businesses – an area of increasing strategic importance for bp.

Our work to build the board and to optimize its composition continues.

## Closing thanks

It would be impossible to thank everyone who contributed to bp's progress in 2022, but I do want to thank four groups in particular.

First, bp's shareholders. I am grateful to you for placing your faith in bp during 2022, and for the engagement we have had with you. The board will work to retain and repay that faith.

Second, my fellow directors. They have created a boardroom that I believe to be open, trusting, and supportive – in which all perspectives can be shared and considered. I am convinced that our decisions benefit from this open atmosphere.

Third, Bernard and his team, for their leadership and for all they have achieved so far. They have proven to be determined in delivering bp's strategy, but also perceptive of the world's evolving energy needs – and able to adjust as necessary.

Above all, praise goes to the almost 68,000 bp employees who make bp the company it is. The strong results of the engagement survey among bp employees in 2022 indicate the pride they feel in bp. In return, I speak on behalf of the entire board in saying how immensely proud we are of them.

[redacted]

10 March 2023

> "We have found that the high degree of trust between the board and the executive team allows for greater constructive challenge, rigour, and scrutiny."

★ See glossary on page 389

# Board of directors

As at 10 March 2023

P

[redacted]

### Appointed

[redacted]

### Nationality

Norwegian

### Outside interests

[redacted]

### Career summary

[redacted]

### Skills and experience

[redacted]

[redacted]

### Appointed

[redacted]

### Nationality

Irish

### Outside interests

[redacted]

### Career summary

[redacted]

### Skills and experience

[redacted]

[redacted]

### Appointed

[redacted]

### Nationality

Canadian

### Outside interests

[redacted]

### Career summary

[redacted]

### Skills and experience

[redacted]

R A P

[redacted]

### Appointed

[redacted]

### Nationality

American

### Outside interests

[redacted]

### Career summary

[redacted]

[redacted]

Ⓡ Ⓟ

[redacted]

Nationality

[redacted]

Outside interests

[redacted]

Career summary

[redacted]

Skills and experience

[redacted]

Ⓐ Ⓡ

[redacted]

Nationality

[redacted]

Outside interests

[redacted]

roles in the company, including senior vice president of business development

[redacted]

Ⓢ Ⓡ

[redacted]

Nationality

[redacted]

Outside interests

[redacted]

Career summary

[redacted]

### Committee membership key

- ● Chair
- Ⓐ Audit committee
- Ⓢ Safety and sustainability committee
- Ⓡ Remuneration committee
- Ⓟ People and governance committee

★ See glossary on page 389

## Board of directors continued
As at 10 March 2023

A R

[redacted]

**Appointed**

[redacted]

**Nationality**

[redacted]

**Outside interests**

[redacted]

A

[redacted]

**Appointed**

[redacted]

**Nationality**

[redacted]

**Outside interests**

[redacted]

S

[redacted]

**Appointed**

[redacted]

**Nationality**

[redacted]

**Outside interests**

[redacted]

A

[redacted]

**Appointed**

[redacted]

**Nationality**

[redacted]

**Outside interests**

[redacted]

**Career summary**

[redacted]

[redacted]

**Appointed**

[redacted]

**Career summary**

[redacted]

Ⓢ Ⓟ

Ⓢ

[redacted]

**Appointed** | **Appointed**

[redacted]

**Nationality** | **Nationality**

[redacted]

**Outside interests** | **Outside interests**

[redacted]

## Attendance

| | Board |
|---|---|
| Non-executive directors | |
| [redacted] | ●●●●●●●●●● |
| | ●●●● |
| | ●●●●●●●●●● |
| | ●●●●●●●●●● |
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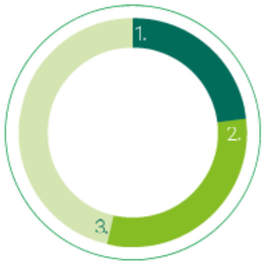
| | |
| | ●●●●●●●●●● |
| | ●●●●●●●●●○ |

Attended meetings/possible meetings
● Meetings attended
○ Meetings not attended
For more information see the committee reports on pages 98-112.

## Board gender diversity

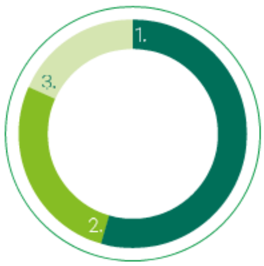

| | 2022 | 2021 |
|---|---|---|
| 1. Male | 7 | 6 |
| 2. Female | 6 | 4 |

## Board nationality




| | 2022 | 2021 |
|---|---|---|
| 1. UK | 3 | 2 |
| 2. US | 4 | 4 |
| 3. Non US/UK | 6 | 4 |

## Non-executive directors' tenure




| | 2022 | 2021 |
|---|---|---|
| 1. 1–3 years | 6 | 5 |
| 2. 4–6 years | 3 | 3 |
| 3. 7–9 years | 2 | 0 |

★ See glossary on page 389

## Leadership team

As at 10 March 2023

The leadership team represents the principal executive leadership of the bp group. Its members include bp's executive directors [redacted] appear on page 80) and the members of senior management listed here.

## Business groups

[redacted]

[redacted]

Leadership team tenure

[redacted]

## Integrators

[redacted]

[redacted]

Leadership team tenure

[redacted]

## Enablers

[redacted]

[redacted]

Leadership team tenure

[redacted]

[redacted]

**Leadership team tenure**

**Leadership team tenure**

[redacted]

[redacted]

**Leadership team tenure**

**Leadership team tenure**

**Leadership team tenure**

[redacted]

[redacted]

**Leadership team tenure**

[redacted]

★ See glossary on page 389

# Governance framework

Authority for decision making is formally delegated by the board and flows through the company to ensure an appropriate and consistent approach across all parts of the organization.

## Corporate governance framework

Terms of reference for the board and each of its four committees are available online at [redacted]

Accountability

Delegation

**Board of directors**

The role of the board is to promote the long-term sustainable success of bp, generating value for shareholders while having regard to its stakeholders. The board is responsible for setting bp's purpose, strategy and values and monitoring its implementation by the bp leadership team, as well as overseeing that the group maintains effective systems of risk management and internal control.

**People and governance committee**
See page 98

**Audit committee**
See page 102

**Safety and sustainability committee**
See page 110

**Remuneration committee**
See page 112

**bp leadership team**
**led by the chief executive**

Day-to-day management of the business is delegated to the CEO, except for those matters reserved for the board's approval.

- **Group disclosure committee**
- **Group sustainability committee**
- **Group ethics & compliance committee**
- **People & culture committee**
- **Group financial risk committee**
- **Group performance committee**
- **Group operations risk committee**
- Resource commitment meeting
- Quarterly audit meeting

- **Innovation advisory council**[a]
- **Geopolitical advisory council**[a]
- **Digital advisory council**[a]

### Division of responsibilities

There is a formal division of responsibilities between the board and the leadership team, promoting clear lines of accountability and oversight. Full role profiles are online at [redacted]

**Non-executive directors**

[redacted]
Leads the board and is responsible for its overall effectiveness.

[redacted]
Supports the chair in matters of governance and board performance, and serves as an intermediary for other directors.

**Independent non-executive directors**
Provide constructive challenge to the executive.

**Executive directors**

[redacted]
Delegated responsibility for day-to-day management of the business and implementation of bp's strategy.

[redacted]
Provides financial leadership and supports in the development and implementation of bp's strategy.

[redacted]
Advises the board on corporate governance matters and compliance with board procedures and corporate governance requirements.

a Collaborative for both executive and non-executive directors to benefit from insights and discussions, with updates provided to the board and leadership team.

# Board activities

The board and its committees met regularly in 2022, as well as on an ad hoc basis, as required by business needs.

The board welcomed the return of in-person meetings in 2022, recognizing that this format allows for better interaction with the bp leadership team and with the workforce more generally.

The relaxation of COVID-19 travel measures in 2022 allowed two sets of board and committee meetings to be held at locations of key strategic significance for bp. Meetings were held at our offices in Aberdeen and Houston, enabling the directors to meet and engage with management and other employees based in these locations – the first time that this type of visit had been possible since 2019.

To ensure the most constructive and efficient use of their time together, the agenda for board meetings is structured along four distinct pillars: strategy, performance, people and governance, with a focus on monitoring strategic progress and tracking performance and delivery.

## Primary tasks during 2022

**Strategic progress:** The board monitored and oversaw the activities and performance of bp's leadership team in delivering the strategic aims and targets. This involved taking into account important changes to the wider economic environment, in particular the issue that the world wants and needs a better and more balanced energy system – one that can deliver more secure, more affordable as well as low carbon energy solutions.

**People:** The board received briefings on executive succession and development – discussing the leadership team's succession plans and reviewing development needs – with the aim of identifying and working with future leaders.

The board was also consulted in the development of bp's new culture frame and specifically our new core beliefs, which we refer to as 'Who we are' (see page 66).

**Value generated for shareholders:** In the second quarter of 2022, the board approved an increase in the ordinary dividend of 10% per ordinary share. After a structured review of the strategy during the second half of 2022, and consideration of the capital allocation options available to it, a further 10% increase in the ordinary dividend was approved by the board in February 2023. These increases are underpinned by strong underlying performance and the confidence we have in delivering higher adjusted EBITDA★ as a result of our updated investment plans.

The review also informed the board's confidence in the disciplined capital frame, delivering continued share buybacks while also reducing its level of net debt.

**Climate:** The board considered a number of climate-related issues during the year including approving, and agreeing to put to shareholders the opportunity to vote on, the net zero ambition report at the 2022 AGM, a report which summarized bp's net zero ambition and the actions we plan to pursue it. For information on the board's other considerations of climate-related issues, please see the 'Task Force on Climate-related Financial Disclosures' (TCFD) box on the next page, and pages 50-62 for our full TCFD disclosure.

## Strategy

Reflecting on the evolving macro-economic situation, during 2022 the board engaged regularly with the bp leadership team to review bp's strategy. During the year, the board received business presentations, including a deep dive on our low carbon energy strategy and other transition growth engines.

After a thorough review process, and satisfying itself that it was consistent with bp's growth strategy, the board approved the acquisition of Archaea Energy in 2022.

Decision making by the board, see page 89

## Performance

The board reviewed safety, project and operational performance throughout the year, as well as taking a retrospective look at the full-year delivery against plan. The company's financial performance, liquidity, credit position and associated financial risks were closely and regularly monitored by the board. These activities were also supported by the committees, with committee chairs providing regular update reports at board meetings.

The board also discussed the financial frame, and the various options available for modifying it, for example via incremental changes that will enhance the overall investor proposition, while retaining as much consistency as possible. Inputs that assisted the board in discharging its duty to oversee performance included reports from the CEO and CFO, quarterly and full-year results, and the annual plan and associated capital allocation commitments.

### Emerging and principal risks

The board assessed bp's principal and emerging risks, in accordance with the UK Corporate Governance Code (Code). The board and committees also met regularly with senior members of management and sought updates on their review, evaluation and management of the principal and emerging risks allocated to them.

### Internal controls

The board assessed the effectiveness of the group's system of internal control and risk management as part of the process through which it reviews, and ultimately approves, the *bp Annual Report and Form 20-F*. No specific areas of concern were identified in this assessment and the board concluded that the group's system of internal control and risk management continued to be resilient, fit for purpose and that the system generally meets external expectations of components to be included in internal control frameworks. In arriving at these conclusions, the board took into account reports from group risk and internal audit, as well as deep dive presentations and business reviews undertaken by the board and its committees during the year.

How we manage risk, see page 69
bp's system of internal control, see page 149

★ See glossary on page 389

# **Board activities** continued

## People

The board discussed key people priorities in 2022. Advised by the people and governance committee, this included reviewing the board's composition, skills, experience and diversity, as well as that of the bp leadership team.

Amanda Blanc's appointment to the board as a non-executive director was announced in July 2022, with her appointment taking effect from 1 September 2022. Amanda was appointed as a member of the remuneration and people and governance committees with effect from 1 January 2023.

Satish Pai and Hina Nagarajan were appointed to the board with effect from 1 March 2023. Satish was also appointed to the safety and sustainability committee and Hina was appointed to the audit committee with effect from the same date.

To help inform board discussions and decisions, board members engaged directly with the workforce through various events, see page 94.

### Diversity

The board diversity, equity and inclusion (DE&I) policy (the policy) sets out the board's approach to DE&I including targets for board diversity that align with those set out in the UK Listing Rules. The policy was reviewed in 2022, and amendments were made to reflect regulatory changes and market practice. The updated policy was then approved and published in February 2023.

A copy of the policy is available at [redacted]

### Culture

The board has a number of mechanisms to monitor culture. Through the people and governance committee, regular updates are provided by the EVP, people and culture as well as feedback from employee pulse surveys, global engagement sessions led by the CEO and also from workforce engagement programme sessions, of which a summary is reported to the board itself.

Advised by the people and governance committee, plans have been developed for a range of culture related data points and reporting measures to be brought into one place for the board's review. This will provide the board with a baseline assessment in relation to key criteria against which the continuing evolution of culture can be monitored.

## Governance

The board continued to operate in accordance with the governance framework established in 2020, which is set out on page 86.

Under the leadership of the chair and the people and governance committee, an internally-facilitated evaluation of the board was conducted in 2022. For more information on this, and the progress made in relation to recommendations arising from the 2021 external evaluation, see page 97.

## The board's consideration of climate-related issues

Some examples from the year ended 31 December 2022

### Reviewing and guiding the strategy and approving the annual plan and budget

- Considered and approved changes to bp's aims.
- In reviewing and approving the annual plan and budget, the board considered, among other matters:
  - bp's emissions and methane reduction targets.
  - Delivery against net zero aims.
  - Strategic priorities and opportunities, including in relation to electrification, offshore wind and hydrogen.
  - Key financial risks and uncertainties, including those associated with transition growth businesses.
- The board received business presentations, including a deep dive on our low carbon energy strategy and other transition growth engines, which helped to inform its review of the budget and plan proposals. The board's review extended to planned capital commitments and their consistency with our strategy.
- Monitored management's execution of bp's strategy, with updates from the CEO and CFO at every board meeting covering, among other matters, performance against bp aims 1-5 and updates on the current macro environment and ESG considerations.
- Considered transition risks and opportunities as part of its review of the financial frame and total capital expenditure ahead of its decision to increase capital expenditure★ guidance in February 2023, see page 24.
- Received updates from the chief economist on the macroeconomic environment, energy markets and energy transition scenarios.
- Approved bp's 2022 net zero ambition report and agreed to put to shareholders the opportunity to vote on it at the 2022 AGM.

### Risk management

- The board reviews bp's principal and emerging risks twice per year, including those related to climate and the impact of geopolitics and macroeconomic developments on the pace of the energy transition. For further details about the board's risk oversight role, see page 50.

### Capital expenditure, acquisitions and divestments

- At every board meeting the CEO provides an update on business development. Updates cover projects across all of bp's businesses and include inorganic or divestment opportunities of more than $100 million or which would represent a new strategic business. This included the acquisition of EDF Energy Services for a total cash consideration of $0.5 billion, see page 31. The CFO provides verbal updates and, where appropriate, specific climate-related considerations are drawn out.
- The board reviews and reserves for its approval all transition and low carbon investment opportunities★ above $1 billion. In 2022 the board considered:
  - The capital commitment for Empire Wind offshore wind farms, see page 29.
  - The acquisition of Archaea Energy for a total cash consideration of $3.1 billion, supporting bp's biogas portfolio and our accelerated net zero aim 3, see page 29.

## Decision making by the board

# Key *decisions* made

The board operates within a corporate governance framework that provides clarity and consistency for decision making at bp and which allows for day-to-day operational management to be undertaken efficiently, with appropriate controls.

The corporate governance framework governs how the board works, including certain matters that are reserved for decision by the board as a whole and which therefore cannot be delegated.

Beyond these matters, the board delegates day-to-day management of the business of the company to the CEO. The responsibility for the execution of this delegation of authority, including regularly monitoring it, is retained by the board.

Given the size and scale of bp, in practice there are relatively few matters that come to the board for a decision.

Under the framework, these matters would include, for example, transactions involving a capital commitment of $3 billion or more in the case of investment into oil and gas opportunities, or $1 billion or more for other investments, as well as decisions on strategy and distributions to shareholders.

Details of three key decisions that were taken by the board in the past year in the context of the framework are set out on page 90.

### How the board had regard to Section 172 factors

Directors must act in the way that they consider, in good faith, would be most likely to promote the success of the company for the benefit of shareholders as a whole. The table below provides further information on how the directors had regard to the factors in section 172.

| Section 172 factor | Key examples |
| --- | --- |
| The likely consequence of any decisions in the long term. | Our strategy and business model, pages 10-14. |
| Interests of employees. | How the board has engaged with shareholders, the workforce and other stakeholders, page 91.<br>Sustainability: our people, page 67. |
| Fostering the company's business relationships with suppliers, customers and others. | How the board has engaged with shareholders, the workforce and other stakeholders, page 91.<br>Our strategy and business model, pages 10-14.<br>Sustainability: ethics and compliance, page 68.<br>Sustainability: our values and code of conduct, page 66. |
| Impact of operations on the community and the environment. | Sustainability: caring for our planet, page 64.<br>Sustainability: safety, page 65. |
| Maintaining a reputation for high standards of business conduct. | Role of the board, page 87.<br>Sustainability: ethics and compliance, page 68.<br>Sustainability: our values and code of conduct, page 66. |
| Acting fairly between members of the company. | How the board has engaged with shareholders, the workforce and other stakeholders, page 91. |

★ See glossary on page 389

# **Decision making by the board** continued

Details of three key decisions taken by the board including how the board had regard to stakeholder considerations and impacts in relation to Section 172 (1) (a) to (f).

### 1. Board decision

## Net zero ambition updates

**July 2022 – February 2023**

### Board discussion

After a number of extended board discussions with the bp leadership team that began in mid-2022, the board approved the strategic update announced on 7 February 2023. We have updated how we expect to achieve our short-medium term pathway to deliver our net zero production aim (aim 2) and are now targeting 10-15% reduction by 2025 and aiming for 20-30% reduction by 2030 (see page 45).

#### Stakeholder considerations and impacts

When discussing the update to this element of bp's net zero ambition throughout the second half of 2022, the board considered the global demand and need for energy that is secure and affordable as well as lower carbon – all three together known as the energy trilemma. The board remains committed to the energy transition, and recognizes that responding today to what governments and customers are asking of companies like bp is important to many stakeholder groups. The board also agreed that investment into bp's transition would grow at the same time as increasing our investment into oil and gas. As a result, on 7 February 2023, we also set out that our aim 5 – to increase the proportion of investment into non-oil and gas – is aligned with our transition growth engines (see page 29) – meaning we expect to invest more than 40%, or $6-8 billion of our annual capital expenditure★ in transition growth engines by 2025, and are aiming for around 50% by 2030 – or $7-9 billion. In coming to this conclusion following the extended review process it had undertaken, the board continues to believe our strategy – and ambition and aims – taken together, are consistent with the goals of the Paris Agreement, see page 26.

G C

### 2. Board decision

## Acquisition of Archaea Energy

**December 2022**

### Board discussion

We completed the purchase of Archaea Energy, a leading US provider of renewable natural gas, in December 2022. With bioenergy being one of five transition growth engines which bp intends to grow rapidly through this decade, the acquisition of Archaea marked a key milestone in the growth of this business area.

The board discussed the acquisition with the bp leadership team throughout the second half of 2022 as the opportunity matured, in order to review the business case and what it offered. The board recognized with Archaea, the opportunity to rapidly expand bp's presence in the US biogas industry while progressing bp's aim to reduce the average carbon intensity of sold energy products★.

#### Stakeholder considerations and impacts

The board saw the opportunity to deliver additional distinctive value through the integration of the Archaea business with bp's trading capabilities and broad customer base. The board recognized that the Archaea acquisition enhances bp's ability to support customers with reaching their decarbonization goals.

In considering the value of this acquisition to shareholders, the board noted that the business is expected to deliver rateable earnings growth. From around $140 million today, bp is targeting adjusted EBITDA★ from the business, when integrated with bp, of more than $500 million in 2025 and is aiming for around $1 billion by 2027, following completion of the development pipeline.

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For more information about Archaea Energy, see page 15

### 3. Board decision

## Exit from Russia

**February 2022**

### Board discussion

In February 2022, shortly following Russia's attack on Ukraine, the board met with members of the bp leadership team and undertook a thorough review of the consequences of these events on bp's business and operations in Russia. After careful consideration, and just days after Russia's first attack, the board decided that bp would exit its shareholding in Rosneft. This review process considered a wide variety of factors, including how any decision should be informed by the company's purpose and strategy, as well as the implications of the decision for shareholder distributions and our financial frame.

#### Stakeholder considerations and impacts

The board concluded that bp's continuing involvement with Rosneft would be inconsistent with bp's purpose and strategy, believing the decision was in the best long-term interests of all our shareholders.

Importantly, the board was clear that the decision meant that no changes to our strategy, financial frame or shareholder distributions guidance were required.

# Stakeholder engagement

The board engages with stakeholders to understand their priorities and concerns through a range of engagement activities.

bp investors are one of our key groups of stakeholders. The investor engagement cycle below details the ways that the board, and bp as a whole, engaged with investors throughout 2022.

## Investor engagement cycle

| | Activity | Matters raised |
|---|---|---|
| Q1 | • Fourth quarter and full-year 2021 results presentation.<br>• Investor roadshows with executive management following fourth quarter 2021 results.<br>• Investor engagement with executive management following decision to exit Russia.<br>• Publication of the *bp Annual Report and Form 20-F 2021.*<br>• Publication of the *Net Zero Ambition Report.*<br>• Publication of the *bp Sustainability Report 2021.*<br>• Regular meetings with Climate Action 100+ (CA100+) co-leads and other investor bodies. | • Performance during 2021.<br>• Strategy and bp's sustainability aims.<br>• bp's decision to exit Russia.<br>• Response on ESG and Say on Climate resolutions including the *bp Net Zero Ambition Report.*<br>• Remuneration outcomes for executive directors and bp's leadership team. |
| Q2 | • Investor roadshows with the chair and executive management following publication of the *bp Annual Report and Form 20-F 2021* and the *bp Sustainability Report 2021*.<br>• First quarter 2022 results presentation.<br>• Investor roadshows with executive management following first quarter 2022 results.<br>• Regular meetings with CA100+ co-leads.<br>• UK Shareholders' Association (UKSA) meeting.<br>• 2022 AGM, including company resolution enabling investors to support the *bp Net Zero Ambition Report*.<br>• Publication of the *bp Energy Outlook 2022*. | • Performance during first quarter 2022.<br>• Implications of Russia announcement in February.<br>• bp's sustainability frame and net zero ambition.<br>• A range of issues were raised at the AGM. Go to *bp.com/AGM* for transcripts of the CEO and chair's speeches, and the Q&A session. |
| Q3 | • Second quarter 2022 results presentation.<br>• Investor roadshows with executive management following second quarter 2022 results.<br>• Regular meetings with CA100+ co-leads.<br>• Calls with investors and investor bodies. | • Performance during second quarter and first half 2022.<br>• Shareholder distributions.<br>• Follow-up to themes raised by CA100+ at bp's AGM. |
| Q4 | • Third quarter 2022 results presentation.<br>• Investor roadshows with executive management following third-quarter 2022 results.<br>• Investor engagement with the chair and executive management.<br>• Investor and stakeholder event to gather insights to help inform the formation of the directors' remuneration policy which is to be voted on at the 2023 AGM.<br>• Regular meetings with CA100+ co-leads.<br>• Investor study conducted by a third party to provide independent feedback on progress. | • Performance during third quarter and nine months 2022.<br>• Investors gave feedback for consideration and inclusion in the remuneration policy. |

★ See glossary on page 389

# **Stakeholder engagement** continued

## Board engagement with stakeholders

Considering the interests of our stakeholders is fundamental to delivering our strategy. The following table identifies our most strategically significant stakeholders and summarizes the engagement that the board undertook during 2022, as well as engagement activities undertaken by management on the board's behalf. It includes details on some of the actions taken as a result of this engagement in line with Provision 5 of the UK Corporate Governance Code. For more information on our stakeholders see our business model, page 12. For engagement with the bp workforce see pages 94-95.

| | Investors and shareholders I | Customers C |
|---|---|---|
| **Why we engage** | • Institutional and retail investors are key stakeholders through their provision of finance and stewardship. Regular and constructive dialogue with institutional and retail investors is important to communicate bp's strategy and to build and maintain confidence in management. | • Customer demand is crucial to bp's business, and we are constantly working to meet their ever-changing needs. They are the driving force for innovating new business models and service platforms. |
| **How we engaged in 2022** | • Ongoing communications including quarterly results calls, in-person and virtual meetings and investor roadshows.<br>• The board engaged with investors at the 2022 AGM, and received feedback from a meeting with the UK Shareholders' Association (UKSA).<br>• Investor studies presented to the board<br>• Communication of financial results and regulatory announcements through a regulatory information service and the *bp Annual Report and Form 20-F 2021*.<br>• An investor event focused on remuneration and related matters was hosted by the remuneration committee in November 2022.<br>• The other committee chairs were available to investors as needed throughout the year.<br>• See the stakeholder engagement cycle on page 91 for further information. | • Emma Delaney, EVP, customers & products, presented a deep dive to the board on the EV charging business on 27 September 2022, and on the biofuels business on 1 December 2022.<br>• The board visited retail sites★ throughout the year; for example, the CEO travelled to Melbourne to officially open bp pulse Australia in November 2022.<br>• Some of our customers are also shareholders. They were able to ask questions relating to their experiences at the 2022 AGM. |
| **Outcomes and highlights in 2022** | • The UKSA engagement provided those investors in attendance with the opportunity to put questions to the company secretary and senior leaders from our investor relations and ESG teams. This helped the board understand issues that were important to the private shareholders present, in advance of the 2022 AGM.<br>• Investors voted to support our net zero ambition report with 88.53% of votes cast in favour of the resolution at the 2022 AGM.<br>• The remuneration-focused investor event allowed investors to share their views on a variety of matters, including ESG and performance measures and how they relate to the remuneration policy. For more information see the directors' remuneration report on page 112.<br>• For information on the value delivered for investors, see page 24. | • We continued to deliver for our customers through a range of products and services, see page 41.<br>• We added 250 new strategic convenience sites★ in 2022.<br>• The number of bp EV charge points grew to around 22,000 in 2022.<br>• bp developed a new strategic convenience partnership with Uber to enhance our convenience and mobility offer to customers. |
| **Key topics of engagement** | • Financial performance, credit rating and dividends.<br>• Strategy and associated aims and targets.<br>• Sustainable growth and ESG performance.<br>• Executive remuneration. | • Energy security and affordability.<br>• Quality products and experiences.<br>• Offering new energy solutions. |

| | Partners and suppliers P | Governments and regulators G | Society S |
|---|---|---|---|
| | • Strong relationships with partners and suppliers are vitally important to meet our customers' needs today and, as bp accelerates its transition, to provide integrated energy and mobility solutions that help reduce carbon emissions while creating new business opportunities. | • Engagement with governments, law enforcement and regulators is important to maintaining legal compliance and understanding how to respond to new and emerging threats, changes in regulations and changes to industry standards. | • We want to act in a way that benefits the societies in which we operate, which includes more than 60 countries. We aim to maintain a strong reputation globally and rely on wider society as potential customers, partners and employees. |
| | • The board received regular updates from the CEO, CFO and other members of the leadership team on engagements with partners and suppliers.<br>• Ethics and compliance leadership reported to the board, outlining matters raised regarding partners and suppliers.<br>• The board reviewed the Modern Slavery Act Statement released in June 2022. The safety and sustainability committee (S&SC) reviewed bp's modern slavery risk management, including supplier due diligence and human rights questionnaires. See the S&SC report on page 110 and the *bp sustainability report 2022* for more information. | • The board received updates relating to changes in regulations, including a TCFD learning session in February 2022.<br>• Board members attended numerous global events throughout 2022 where they met with world leaders.<br>• The board approved reporting, including the *bp Annual Report and Form 20-F 2021*, in compliance with relevant regulations. | • The board received updates from management about the impact of bp's operations on the communities in which we operate, for example, the potential impact of gas flaring on communities around the Rumaila oil field in Iraq.<br>• Management engaged with a wide range of NGOs and other stakeholders. Their feedback was incorporated in reports to the board from the CEO.<br>• bp published the *bp Energy Outlook* as a contribution to the wider debate about the factors shaping the energy transition. Spencer Dale, SVP, economic & energy insights, provided a summary of its findings and the implications of Russia's invasion of Ukraine to the board in March 2022. |
| | • $174 billion spend sourcing goods and services from 39,000 suppliers in 2022.<br>• Developed new strategic partnerships including with Uber (see page 16), Eni and Aberdeen City Council.<br>• bp is developing hydrogen plans and partnerships in Abu Dhabi, Australia, Egypt, Mauritania, Oman, UK and US. For example, in May 2022, ADNOC joined bp's blue hydrogen★ project H2Teesside, and Masdar of Abu Dhabi joined bp's HyGreen Teesside green hydrogen project. | • The board approved up to $8 billion more of investment into oil and gas, and up to $8 billion more into our transition growth engines by 2030 in response to governments' concerns about energy security and affordability. See our full-year and 4Q results update on 7 February 2023, and decision making by the board on page 90 for further information.<br>• We paid $12.5 billion of tax globally in 2022, see page 68 for more information.<br>• In May 2022, we announced our intention to invest up to £18 billion in the UK's energy system by the end of 2030, demonstrating our firm commitment to the UK.<br>• In October and December 2022, bp signed memoranda of understanding with the Mauritanian and Egyptian governments respectively to explore the potential for the production of green hydrogen in both countries. | • We supported more than 67,000 jobs in 2022.<br>• We spent $93 million supporting additional initiatives to benefit the communities where we operate.<br>• This included a commitment of over £1 million with EnBW to the X-Academy in Scotland which will support the reskilling of experienced workers and the creation of entry-level energy transition roles.<br>• For more information about our aims to get bp to net zero and care for our planet see page 45. |
| | • Payment terms.<br>• Shared vision and values.<br>• Trust and transparency. | • Supporting initiatives and infrastructure.<br>• Energy security and affordability.<br>• Investment in the energy transition and driving down emissions. | • Creation and protection of jobs and livelihoods.<br>• Caring for the planet and environment.<br>• Behaving responsibly in the societies in which we operate. |

★ See glossary on page 389

# Engaging with bp's *Workforce*

## Our approach to workforce engagement

The board recognizes the value to be derived from engaging with bp's workforce. That is why the board has adopted a structured workforce engagement programme (WFEP) which it believes is effective in complying with Provision 5 of the UK Corporate Governance Code (Code).

This is complemented by a suite of board-led activities, involving both in-person engagements and virtual interactions, which aim to maximize insights across multiple locations and perspectives.

Following the completion of the Reinvent bp programme, a particular focus of the board's engagement in 2022 was on workforce culture to complement the launch of bp's new beliefs, which we refer to as 'Who we are'.

For further detail on how the board satisfied Provision 2 of the Code, see pages 87-88.

## How the board engages

**Town hall events**
including with North Sea colleagues at our Aberdeen office in Scotland.

**CEO 'Keeping connected' webcasts**
highlighting safety, bp's beliefs and financial performance.

**AGM**
see more on page 91 and on *bp.com/AGM*.

**Focused engagements**
including meeting with high-potential individuals in our Houston office.

**'Pulse' employee survey**
reports including KPIs on employee engagement.
See page 68.

**Reports on Speak Up**
bp's anonymous whistleblowing service, meeting Provision 6 of the Code.

**Individual and collective site visits**
including a visit to our offshore Glen Lyon facility.

**Workforce engagement programme (WFEP)**
bp's mechanism for complying with Provision 5 of the Code.

### Key features of our WFEP

**Meaningful dialogue**
- Small group sessions to allow every voice present to be heard: up to 12 participants, and 1-2 board members at each session.
- Roundtable format without line managers.
- Engagement purpose agreed for each session but no set agenda to allow free-flow discussion.

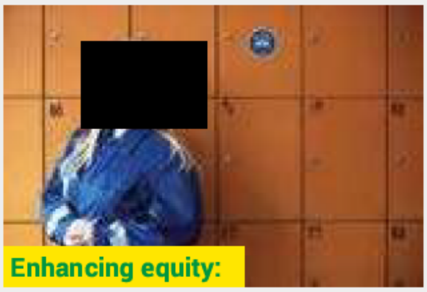
**Equity of representation**
- Participants represent a broad cross-section of the workforce by: seniority, tenure, business area, geographic location.

**Full board participation**
- Every board member attends sessions rather than having engagement channelled through one director.
- Feedback from sessions is shared with the full board so all directors benefit from all insights gained.

**10**
**Jurisdictions (incl. UK, US, India, Oman, China)**

**13**
**Key themes**

**>50**
**Colleagues participated**




### WFEP: Gelsenkirchen visit

"Our front-line colleagues have a unique insight into our key priority of safety."

[redacted]

In planning a WFEP session at our Gelsenkirchen refinery in Germany, we identified an opportunity to help non-native English-speaking colleagues engage confidently with board members. To encourage colleagues to speak openly about their experiences in their own language, German-speaking [redacted] held the in-person WFEP session entirely in German, with representatives from our Lingen operations joining virtually.

Topics discussed included the Reinvent bp programme, centralization of activity, and safety awareness, particularly among non-bp employees on site.

## Review of the workforce engagement programme (WFEP)

The people and governance committee (P&GC) reviews the mechanism for workforce engagement on an annual basis. The structure of the WFEP remained broadly unchanged from last year, with a few key adaptations. These changes included: a greater focus on understanding company culture, more in-person sessions and engagement in a language other than English.

The P&GC considers the current approach is effective given the diversity of bp's workforce. Considering enhancements for next year, there will be closer alignment between the WFEP and the board's forward agenda with an emphasis on bp's growth engines.

## Insights gained from 2022 engagement activities

| | Insights shared by the workforce | Action taken by the board |
|---|---|---|
| **Reinvent bp programme** | • Commenting on our Reinvent bp programme, employees were proud that bp is an industry 'first mover' in the energy transition, with the employee 'Pulse' survey receiving the highest ever response rate and a record figure for pride in working for bp.<br>• Employees highlighted a particular interest in the role gas will play in bp's strategy. | • The board regularly reviews bp's strategy, covering deep dives across each of bp's businesses, including our transition growth engines.<br>• Consideration was given to communication of bp's strategy, and some additional insight on the role of gas was included in employee email updates and webcasts. |
| **Safety** | • Front-line leaders at refineries felt processes underpinned a strong safety culture with a sense of genuine care.<br>• The importance of tacit knowledge and safety continuity in times of change (strategically and otherwise) was expressed. | • Extensive discussion took place relating to safety following the tragic events at Toledo (see page 65).<br>• In relation to M&A activity in particular, the board considered the identification of key personnel whose knowledge and experience would contribute to the maintenance of safety standards. |
| **Culture** | • A strong sense of employees wanting each other to succeed was conveyed, with safety and care most evident.<br>• Employees felt progress had been made on diversity and inclusion, but there was still work to do particularly with regard to psychological safety. | • Directors reviewed management's plans on engagement and culture, in particular the new culture frame, in accordance with Provision 2 of the Code, having specific regard to health, wellbeing, diversity, equity and inclusion and the development of agile working practices.<br>• The board was supportive of management's goal to produce a shorter, simpler 'Pulse' survey, aiming to be more relevant and inclusive for more colleagues. |
| **Career development** | • Employees shared their experiences on attracting new talent to a transitioning company.<br>• Interest was voiced on shifting careers into low carbon areas of bp.<br>• Opportunities to enhance certain development tools were raised, e.g. in relation to Early Careers programmes. | • The board challenged management's approach to leadership development, talent management and capability among other people-related issues.<br>• The launch of 'grow@bp' was reviewed (see page 67); a personalized learning and development platform with a focus on 'future skills'. |
| **Remuneration** | • Positive feedback was shared on levels of equity ownership among colleagues and an opportunity was highlighted for greater communication on the value of shares.<br>• The commitment to the Living Wage was well received among retail employees, standardizing pay across regions. | • Directors reviewed management's priorities with regard to remuneration and considered updates on benefits offered to employees. This included free financial coaching, covering employee equity schemes and any other relevant personal finance matters.<br>• The board considered company communications on financial performance, which highlighted the impact on employee remuneration. |

How the board engaged with stakeholders in 2022, see pages 91-93

Workforce engagement on remuneration, see pages 117-118

Careers at bp, including development, rewards, inclusion and employee stories, [redacted]

Gender and ethnicity pay gap reporting, [redacted]

★ See glossary on page 389

# Induction of new directors, ongoing learning and development

All directors benefit from a structured and wide-ranging induction programme and receive tailored learning opportunities throughout their tenure.

Our induction programme is tailored to suit the needs, skills and experience of each new member of our board. The programme prepares new board members for their role with bp, recognizing the importance of supporting directors in meeting their statutory duties, increasing their understanding of bp's strategy, and bringing them closer to the decision makers and leaders responsible for the day-to-day management of the business.

Beyond the initial period of induction, the development needs of individual board members are reviewed regularly. Ongoing training aims to ensure that directors continue to be best placed to objectively assess and inform the evolution of bp's strategy and purpose. This approach also supports the role that non-executive directors have in scrutinizing and holding the leadership team to account.

The review of development needs is also informed by feedback received from the chair's individual meetings with directors and the outputs from the board's annual evaluation (see page 97). Together, these steps help to identify areas where a particular focus or a deeper dive into a business may support the board's understanding.

## Induction of [redacted]

On 1 September 2022, the board appointed [redacted] In advance of her appointment, a personalised induction programme was developed, taking account of [redacted] existing knowledge and expertise as a director of a UK FTSE 100 company.

As part of her induction [redacted] held a series of 1:1 introductory meetings with members of both the board and leadership team, together with selected senior management. Within those meetings a wide range of topics were covered including ESG, investor relations, financial, legal and regulatory updates together with business group overviews and discussions on bp's strategy.

## 2022 learning opportunities

For all directors, after completing a structured induction programme, specific training and knowledge sessions are provided, either as part of the routine programme of meetings and site visits or in response to a specific request.

In addition to meeting in London, during 2022 the board travelled to Aberdeen and Houston. As well as holding routine board and committee meetings, the directors took the opportunity to make site visits and engage with stakeholders in these key strategic locations.

In Aberdeen, the directors met with bp employees, contractors and other stakeholders representing our North Sea businesses. This included those associated with new growth opportunities linked to the ScotWind offshore wind project and the partnership to create the city hydrogen hub. Some members of the board visited Glen Lyon, one of our floating production, storage and offloading (FPSO) vessels located west of the Shetland Islands, and spent time with the key operational staff on board (see page 111). While in Houston, directors met the trading and shipping leadership team and visited the security operations centre which monitors and combats cyber threats.

Outside of the scheduled board programme, knowledge sessions were held on the subject matters of hydrogen, liquefied natural gas and the mandatory regulations arising as a result of the Task Force on Climate-related Financial Disclosures. In addition, the directors visited the refineries in Whiting, US, and in Gelsenkirchen, Germany. At both locations, the board members met with local teams to discuss operational and safety matters associated with their sites.

"My detailed induction to bp enabled me to hit the ground running at my first board meeting. Being able to meet with members of the bp leadership team across all three business groups, as well as bp's integrators and enablers was particularly valuable, helping me to understand their priorities and challenges first-hand. I look forward to developing my knowledge further in 2023 and beyond, particularly through undertaking site visits and meeting with teams in person."

[redacted]

## Board evaluation

# Evaluating performance

A rigorous evaluation of the performance of the board, its committees, the chair and individual directors is undertaken on an annual basis.

The board regularly monitors the performance of management in the delivery and execution of the agreed strategy. The performance of the board itself is also subject to review, reflecting the Code provision for such an evaluation to be undertaken annually.

This provides the opportunity to assess the quality of decision making and discussion by the board and each of its committees, and to reflect on the performance of each individual director.

### Triennial cycle

Evaluations are run on a three-year cycle with an internal review for the first two years. For the third year, the evaluation is externally facilitated by an independent firm. The most recent external review was undertaken in 2021 by the firm Independent Board Evaluation. Progress on the recommendations of the 2021 evaluation is set out below.

### 2022 review

At the end of 2022, the board initiated an internal evaluation of the board, its committees and individual directors. This was led by the chair and company secretary who each had one-to-one conversations with the non-executive directors. With reference to the actions identified and delivered from the 2021 evaluation, these conversations were framed around the four pillars of the board's focus: strategy, performance, people and governance.

Feedback was then consolidated and presented within a report that was discussed with the board in early 2023.

In parallel, an evaluation of the chair's performance was undertaken by the senior independent director. The performance of the executive directors was assessed by the chair with input from the senior independent director.

### 2022 outcome

The evaluation highlighted positive reflections by the board with a view that time spent across the four pillars of the board's focus was appropriately balanced. Opportunities identified to improve the board's effectiveness and efficiency further included a review of pre-read templates to greater support prioritization of focus areas and a refresh of calendar planning to maintain the existing good balance of board members' time commitment.

### 2021 external evaluation: progress to date

Key areas of focus identified through the 2021 external evaluation process and progress made against them during 2022:

| Focus area | Response/action taken |
|---|---|
| Opportunity for greater alignment between the board's areas of focus and the priorities of the bp leadership team (LT). | Syndication of planning for the board's forward agenda with the priorities of the bp LT has increased. |
| Opportunity to provide the board with an alternative analysis challenge to help the board consider all angles of a proposal. | Management provides the board improved visibility of pathways being considered in order to allow for greater constructive challenge as plans mature, including for options not pursued. |
| Focus on improving talent management and succession planning through increased engagement opportunities for board members. | Greater use of informal engagement opportunities created for board members to meet with high potential talent pool during the year. In particular, leveraging site visits e.g. during 2022, in Aberdeen and Houston to meet with local teams with a focus on high potential individuals. |
| Review of guidelines on cover sheets and executive summaries for board and committee papers. | After review, a new standard format for board and committee agendas and papers was introduced in 2022. Guidelines on the distribution of board papers ahead of meetings were also reviewed. |

★ See glossary on page 389

## People and governance committee

"Our focus in 2022 has been on succession, overseeing the design and roll-out of a structured framework for talent management and development, while also identifying and nominating for appointment three new non-executive directors to join the board."

[redacted]

### Chair's introduction

## Dear fellow shareholders,

As chair of the people and governance committee, I am pleased to report on the committee's work in 2022. The committee dedicated a significant amount of its time to executive succession planning, agreeing a framework to review and develop our highest potential talent and to nurture bp's future leadership.

As part of the board's ongoing renewal, it also set and agreed the search criteria for new non-executive members of the board, culminating in the identification and selection of three new non-executive directors during the year.

Turning to 2023, the committee has supplemented its membership through the addition of Amanda Blanc. The committee will continue to focus its attention on succession, in particular, the development of a strong leadership cadre to address the opportunities presented by the energy transition.

## Diversity
>40%

**board members identify as female**

### Purpose of the committee

The people and governance committee seeks to ensure that the composition and structure of the board remains effective by monitoring the balance of skills, knowledge, experience and diversity that it needs to have represented amongst its directors in support of the strategy. It involves the nomination, induction, evaluation and orderly succession of candidates for directors, the leadership team and the company secretary.

The committee also oversees corporate governance matters, reviewing developments in law, regulation and practice and their practical impact for bp.

### Meetings and attendance

The committee met six times in 2022, with all members attending each meeting.

● Meeting attended ○ Did not attend

[redacted]
●●●●●●

[redacted]
●●●●●●

[redacted]
●●●●●

### Key areas of focus in 2022

**Executive succession** – the committee reviewed the company's talent model, its development initiatives and succession management approach, in addition to discussing the short and long-term pipeline of potential executive leaders.

**Board succession** – a priority for the committee was to review the tenure and mandate of its non-executive directors, as well as the experience, knowledge and skills that they bring in support of an effective dynamic, enhancing the strategic discussion in the boardroom.

**Workforce** – the committee reviewed the results of bp's annual 'Pulse' survey and engaged throughout the year on the roll-out of the company's new beliefs, which we refer to as 'Who we are'.

**Board effectiveness** – the committee oversaw the implementation of the recommendations arising from the 2021 externally facilitated board effectiveness review. It also oversaw the process for the 2022 internally managed effectiveness review.

## Key responsibilities

- **Talent pipeline:** Oversee the development of a diverse pipeline for executive succession (across immediate, medium and long-term time horizons), taking into account the challenges and opportunities facing bp, its strategic priorities and the skills and expertise needed in the future.
- **Evaluation:** Embedding the recommendations made following internal and external board effectiveness reviews.
- **Interests:** Review the outside directorships/commitments/conflicts of the non-executive directors.
- **Policies:** Review workforce policies and practices, including those that may have an impact on talent and capability, diversity and inclusion, engagement and ensuring consistency with bp's purpose, strategy and values.
- **Workforce:** Monitor workforce engagement levels through a range of formal and informal channels in order to bring the 'employee voice' into the boardroom.
- **Governance framework:** Review and develop the board's corporate governance framework and monitor its compliance with corporate governance standards and practices while ensuring that it remains appropriate to the size, complexity and strategy of bp.
- **Inclusion and diversity:** Review the board's diversity, equity and inclusion policy and the effectiveness of its implementation.

## Activities during the year

### Succession planning

#### Executive succession planning

The committee oversaw the design and roll-out of a new framework to provide for more structured development of bp's executive talent – focusing on the identification and development needs of internal talent that can compete for roles across the bp leadership team over the short, medium and longer term. Our investment in bp's future leaders using this framework includes the creation of individual development plans and structured career pathways. This allows for broader experience and insight to be obtained by this talent pool, accelerating their readiness and increasing their internal visibility. The model that has been rolled out encompasses engagement with the board as a whole and individually, as well as opportunities to build relationships in informal environments around board meetings and visits across the businesses.

#### Board succession planning

Amanda Blanc joined the board on 1 September 2022. The appointments of Satish Pai and Hina Nagarajan were also announced in 2022 and took effect from 1 March 2023.

The table on page 101 describes the different stages of our recruitment process for these three new non-executive directors identified and nominated to join the board. It sets out the search criteria defined by the committee for each role at the start of the process and the skills and experience the board believes that they each bring to bp.

During 2022 the committee engaged with Egon Zehnder, MWM Consulting and Spencer Stuart in support of its ongoing search for new board candidates. Egon Zehnder provides advice and support on bp's executive development programme and Spencer Stuart support on executive recruitment. MWM Consulting has no other connection with the company. There are no connections between these search agents and individuals directors.

### Workforce engagement

The committee reviewed both the results from the company's annual 'Pulse' survey and the plan regarding the roll-out of the company's new beliefs, which we refer to as 'Who we are'. Our Pulse survey captures our employees' thoughts on what it is like to work at bp and gives the opportunity to feedback on key issues and the committee was encouraged that the results showed the highest ever pride in the company – as well as the strongest response rate since it began. Another focus for the committee in 2022 was to review the plans to raise awareness and understanding of 'Who we are' and the underlying values, beliefs and principles foundational to bp within the frame. In 2023, the committee will continue to monitor the culture within bp and how the practices and behaviours within our new beliefs are being reinforced. For more information, see workforce engagement on page 94.

### Induction and training

All newly appointed directors receive a formal induction (see page 96). These induction programmes usually commence before appointment and are typically completed within the first three months of a director's appointment. Feedback is sought from the director each time a programme is completed to ensure it is continually updated and improved.

In addition to the induction process, further training and development is provided through online training, material provided through our secure board portal, targeted knowledge sessions and educational sessions with local management during site visits by the board or its committees.

## Diversity of the board

The board believes that to deliver on our purpose and strategy, we must foster diversity of thought and an environment where everyone can bring their best and true selves to work. It is therefore pleasing that the board already meets the UK listing rule diversity benchmark target (as at 31 December 2022 and at the date of publication of this report) for at least 40% of the board comprises women, at least one of the senior board positions is a woman and at least one director is from a minority ethnic background, continuing the progress made in 2021.

## The P&GC's consideration of climate-related issues

### Some examples from the year ended 31 December 2022

#### Performance objectives

- Reviewed people capability plans, analyzing the skills and experience required for bp to deliver its strategy, including the skills identified by management that bp needs to improve the capability of its people and, as required, to acquire new knowledge across key business areas and disciplines, including across the transition growth engines.

#### Monitoring, implementation and performance

- Reviewed the expansion of bp's executive succession planning framework which aims to identify the skills and experience bp needs to deliver our strategy and net zero ambition.

# People and governance committee continued

After a review by the committee, the board has approved changes to its diversity, equity & inclusion (DE&I) policy which complements bp's wider diversity policies and which embraces the group's values, code of conduct and sustainability frame. The full DE&I policy is available online at [redacted]

While the board aspires to achieve gender parity, progress against diversity targets is sensitive to the size and tenure of the board. In respect of other forms of diversity, three members of the board self-identify as being from a minority ethnic background (2021: one director). Diversity of the board remained a consideration as part of the identification and selection of new directors in 2022, with an additional female director, Amanda Blanc, appointed in 2022.

## Diversity of senior leaders

The composition of senior management (as defined in the Corporate Governance Code 2018) and their direct reports comprise 51% women (2021 49%) and 25% Black, Asian and minority ethnic individuals (2021 26%). The committee supports the work undertaken by management to support career progression of under-represented groups in a sector that has historically been male-dominated with limited diversity in other forms. This includes the ambition to have females in 50% of the top 120 leader roles by 2025, our US minority ambition to have 20% of our group and senior leader roles held by minorities by 2025 and our UK ethnicity ambition to have 15% of our senior leader roles to be held by minorities.

## Diversity of the workforce

Diversity, equity and inclusion remain a key part of the group's people strategy. The board as a whole is supportive of the group's employee-led business resource groups (BRGs) which provide forums for employees to obtain support and networking opportunities around specific themes such as ethnicity and sexual orientation.

## Skills matrix

| | Background and experience | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Energy markets | Operational excellence and risk management | Global business leadership and governance | Technology, digital and innovation | Climate change and sustainability | People leadership and organizational transformation | Society, politics and geopolitics | Finance, risk and trading |
| **Non-executive directors** | | | | | | | | |
| [redacted] | | ● | ● | | ● | ● | ● | ● |
| | | | ● | | | | | ● |
| | ● | ● | ● | | ● | ● | ● | |
| | ● | ● | ● | | ● | | | |
| | | ● | ● | | | ● | | ● |
| | | ● | ● | ● | ● | ● | | |
| | ● | ● | ● | ● | ● | ● | | |
| | ● | ● | | ● | | ● | | ● |
| | | ● | ● | ● | | ● | | ● |
| | | | | | | ● | ● | |
| | ● | ● | ● | | ● | ● | ● | |

## Non-executive director recruitment process

**Stage 1** – Identify criteria

The committee determined the criteria for each appointment, considering the tenure, experience, skills and diversity of the existing board members, and what it believes that bp needs in support of the strategic direction set by the board.

Search 1

**Criteria to inform role specification**

Experienced global business leader, well networked and connected to key institutions, customers and other stakeholders.

Search 2

**Criteria to inform role specification**

CEO-level candidate with proven operational excellence, safety and manufacturing experience, ideally from a multinational company in a similar sector to bp.

Search 3

**Criteria to inform role specification**

FMCG and emerging markets candidate with proven B2C experience, deep knowledge and understanding of key new markets for bp and consumer markets more broadly.

**Stage 2** – Initial engagement

Candidate lists meeting the criteria were compiled by the search consultants and reviewed by the committee. Individuals were identified for initial engagement and to gauge their interest in a board role.

**Stage 3** – Shortlist meetings

Following confirmation of interest, a shortlist of candidates was agreed who were then invited to meet with the chair. Based on feedback from these meetings, preferred candidates met with the other committee members, as well as the CEO.

**Stage 4** – Candidate selection

Feedback from these individual candidate meetings with the members of the committee and the CEO was aggregated and discussed. Appointment recommendations were then made to the board subject to due diligence, satisfying independence criteria, and capacity to take on the role.

**Search 1 recommendation**

[redacted]

**Search 2 recommendation**

[redacted]

**Search 3 recommendation**

[redacted]

**Stage 5** – Induction

The final stage is to provide the new directors with a comprehensive induction. See page 96 for an overview.

★ See glossary on page 389

# Audit committee

> The committee has sought to understand the stressors and resilience of the business to volatile energy prices, with four updates received during the year.

[redacted]

## Chair's introduction

# Dear fellow shareholders,

I am pleased to introduce the committee's report for 2022 – which reflects a challenging year from a macro perspective.

The volatility in energy market prices has continued to be a key area of focus, building on stress testing undertaken at the end of 2021. The committee has sought to understand the stressors and resilience of the business to volatile energy prices, with four updates received during the year. In addition, the committee has carefully reviewed the impact of energy prices on the LNG portfolio★ and the associated accounting treatment.

Earlier in the year, the committee reviewed the accounting treatment of Rosneft, following the board's decision that bp would exit its shareholding as announced on 27 February 2022. An assessment of the going concern status and longer-term viability following this decision was also made and the committee concluded there was minimal impact of this decision.

Following a successful roll-out of the non-financial reporting assurance framework for the *bp Annual Report and Form 20-F 2021*, the committee received a briefing on updates to the framework and discussed with management ways to enhance the framework over time to achieve a similar level of assurance to financial reporting for material metrics.

The five-yearly external effectiveness review of the internal audit function was completed during the year. The outcome of the review was overwhelmingly positive with further enhancements identified in the use of technology and digital tools.

The committee will monitor the implementation of the UK government's audit and corporate governance reform consultation and the FRC consultation on minimum standard for audit committees during 2023. The committee will continue to review the development of ESG reporting frameworks that may impact our reporting.

## Role of the committee

The committee monitors the effectiveness of the group's financial reporting (including climate-related financial disclosures), systems of internal control and risk management and the integrity of the group's external and internal audit processes.

## Meetings and attendance

There were 10 committee meetings in 2022. All members attended each meeting with the exception of Pam Daley who was unable to attend one meeting due to a prior commitment. Regular attendees include the chief financial officer, SVP, accounting reporting control, SVP, internal audit, EVP, legal and the external auditor.

● Meeting attended ○ Did not attend

[redacted]
●●●●●●●●●●

[redacted]
●●●●●●●●●○

[redacted]
●●●●●●●●●●

[redacted]
●●●●●●●●●●

## Key areas of focus in 2022

**Liquidity risk and credit risk** – the committee reviewed management's response to increased volatility of energy prices at key points during the year. The wider macroeconomic environment has also led to increased credit exposures.

**Rosneft accounting treatment** – following bp's decision to exit its shareholding in Rosneft, the committee reviewed and challenged management's accounting judgements in respect of Rosneft.

**LNG market and accounting treatment** – the committee reviewed the overall LNG market, bp's response and the fair value of these contracts.

**Non-financial reporting** – reviewed the assurance framework in place for non-financial reporting, in particular related to climate disclosures.

**Internal audit external effectiveness review** – oversaw the selection of the external reviewer and discussed the outcome of the assessment with management.

**Macroeconomic environment** – the committee monitored the impact of increased energy market volatility on inflation and interest rates and related supply chain impacts. This included, in addition to credit risk referred to above, decommissioning liabilities and the impact of sanctions related to the Russia-Ukraine war.

[redacted]

See page 82 for his biography. The board is satisfied that he is the audit committee member with recent and relevant financial experience as provided for by the UK Corporate Governance Code and that he is competent in accounting and auditing in accordance with the FCA's Disclosure and Transparency Rules. It considers that the committee as a whole has an appropriate and experienced blend of commercial, financial and audit expertise to assess the issues it is required to address, as well as competence in the oil and gas sector. The board has also determined that, as bp is a foreign private issuer, the audit committee meets the independence criteria provisions of Rule 10A-3 of the US Securities Exchange Act of 1934 and that [redacted] can be regarded as an audit committee financial expert as defined in Item 16A of Form 20-F.

## Key responsibilities

- Monitor and critically assess bp's financial statements and financial information, including the integrity of the financial reporting and related processes, context in which statements are made, compliance with relevant legal and regulatory requirements and financial reporting standards, including the Task Force on Climate-related Financial Disclosures (TCFD).
- Assess the going concern assumption and the longer-term viability statement as to bp's ability to continue to operate and meet its liabilities.
- Review and challenge the application and appropriateness of significant accounting policies and financial reporting judgements.
- Evaluate the risk to quality and effectiveness of the financial reporting process and, where requested by the board, advise whether the annual report and accounts are fair, balanced and understandable.
- Review the affordability of distributions to shareholders.
- Oversee the appointment, remuneration, independence and performance of the external auditor and the integrity of the audit process as a whole, including the engagement of the external auditor to supply non-audit services to bp.
- Review the effectiveness of the internal audit function, bp's internal financial controls and its systems of internal control and risk management.
- Monitor the principal risks allocated to the committee by the board and review the mitigations proposed by management in respect of risks associated with bp internal financial controls and reporting responsibilities and such emerging risks that may fall within scope.
- Review the systems in place to enable those who work for bp to raise concerns about improprieties in financial reporting or other issues, and for those matters to be investigated.

## How risks were reviewed

The risk factors allocated to the committee for monitoring in 2022 are set out below. In addition to the specific areas identified below, the committee received quarterly reports from internal audit on their work associated with each of the risk factors.

For a definition of the risk factors, see pages **73-75**

**Prices and markets:** The committee reviewed cash flow forecasts and business performance. Each quarter the committee assessed the affordability of distributions and the financial frame. It also reviewed the longer-term outlook for energy prices in line with bp's price assumptions for investment – see the committee's consideration of climate-related issues on page 107 for further information.

**Accessing and progressing hydrocarbon resources and low carbon opportunities:** The committee reviewed the methodology behind oil & gas reserves disclosures, holding a deep dive with the business on its outlook to 2030 and key areas for development. It reviewed the financial risks around the business case for a follow-on investment in bp's Empire Wind development and recommended the follow-on investment to the board.

**Liquidity, financial capacity and financial, including credit, exposure:** the committee received four updates during the year on liquidity and credit risk. It also reviewed off-balance sheet commitments and reviewed the longer-term viability statement at year end, together with the going concern basis of accounting at the full and half-year ends.

**Joint arrangements and contractors:** A jointly held review was undertaken with the safety & sustainability committee to assess the management of this risk.

**Digital infrastructure, cyber security and data protection:** The committee received updates on the control environment related to financial controls each quarter. It reviewed and challenged progress on the remediation of significant deficiencies with input from internal audit and the external auditor.

**Insurance:** a review was undertaken and management's plan to mitigate this risk was challenged by the committee.

**Ethical misconduct and non-compliance:** the committee received updates on the system in place to identify and prevent fraud risk and progress on the roll-out of additional controls. It also received updates on management's disclosure committee meetings in connection with the quarterly results and any areas of compliance or fraud risk related to the results.

**Regulation:** the committee received an update on compliance with regulation together with additional briefings during the year on the implementation of evolving sanctions regimes in response to Russia's invasion of Ukraine.

**Trading and treasury trading activities:** the committee undertook two reviews of the trading & shipping business, including a floor walk of the trading floor in Houston.

**Reporting:** The committee reviewed and challenged the quarterly results, including key accounting judgements and the system of internal control over financial reporting. The committee reviewed the annual report (see page 104) and reviewed the assurance process of the same, together with receiving updates from the external auditor. A review was undertaken of the non-financial reporting assurance framework and the key non-financial metrics. The outcome of this review was the development of a project plan to enhance the assurance framework in response to an anticipated increase in regulatory requirements over time.

In action

### Visiting audit and ARC teams

The audit committee visited bp's Sunbury campus in the UK and met with the internal audit and accounting, reporting and control (ARC) leadership teams. The committee discussed the internal audit 2023 planning process and how emerging and enduring risks are considered in the allocation of audits. The ARC leadership team provided an overview of the team's work to modernize the control environment through automation and analytical tools and support for new business areas (including acquisitions). The committee also met with the technical accounting and external reporting teams.

★ See glossary on page 389

The committee's agendas are focused around the following core areas. Key considerations during the year for each core area are set out below.

| Topic | Items discussed |
|---|---|
| **Financial results, external audit and Annual Report** | Reviewed the quarterly, half-year and annual financial statements and supporting materials, focusing on the:<br>• Integrity of the group's financial reporting process.<br>• Clarity of disclosure.<br>• Compliance with relevant legal and financial reporting standards.<br>• Application of accounting policies and judgements.<br>• The consistency of the disclosures with climate risks and opportunities.<br>• Whether, in considering the above factors, the *bp Annual Report and Form 20-F* was fair, balanced and understandable.<br>Key accounting judgements were reviewed and discussed with management and the external auditor. The committee challenged management on the recoverability of asset carrying values and climate risks and opportunities. The committee also considered and addressed key accounting estimates and judgements relating to exploration and appraisal intangibles and pensions and other post-retirement benefits, see Financial statements – Note 1 for further information.<br>The committee was satisfied that the financial statements appropriately addressed the key accounting judgements and estimates in respect of both the amounts reported and disclosures made, and in particular that they reflect the impact of the group's transition strategy, see key accounting judgements on pages 108-109.<br>Recommended to the board that the *bp Annual Report and Form 20-F* was fair, balanced and understandable.<br>Discussed financial reporting and internal controls processes, reviewed any control gaps identified and mitigating actions. Deep dive on significant deficiencies and control environment, with a focus on IT and journal controls. The committee focused on mitigating measures and challenged management on the timeline for the development of more enduring IT and journal controls. It received a report from management on the verification process undertaken in respect of the annual report, including non-financial disclosures, such as TCFD.<br>Reviewed and tested the external audit plan, in particular the materiality level versus prior years and key audit risks relating to energy price outlook and audit coverage. Approved the external audit plan and received an update prior to year end on key audit risks.<br>Determined that the quality and effectiveness of the external audit was of the required standard, noting the improved quality score versus the prior year and continued constructive challenge of management. Areas for further improvement to the external audit process were identified, see external auditor on pages 106-107. |
| **Corporate reporting** | Reviewed correspondence from the FRC and SEC related to financial reporting, see pages 105-106 for further information.<br>Considered the going concern basis of accounting together with the longer-term viability statement and the input and assumptions. Reviewed the impact of the board's decision to exit the shareholding in Rosneft and the alignment of assumptions used between the longer-term viability statement and TCFD assumptions. Determined and recommended to the board that it was appropriate to adopt the going concern basis of accounting and the longer-term viability of the company in accordance with Provision 31 of the UK Corporate Governance Code.<br>Challenged management on the underlying assumptions used in the TCFD assessment and comply or explain basis of reporting against the TCFD Recommendations and Recommended Disclosures. |
| **Internal audit** | Reviewed the internal audit plan and alignment to risk factor coverage. Received updates on audits undertaken and adjustments made to the plan. Undertook a deep dive on the internal audit planning process for 2023.<br>The committee also received a report from internal audit on its annual review of the system of internal control and risk management, together with an assessment from management on the system of internal control. Further information can be found in the risk management and internal control update on the opposite page.<br>Challenged management on the systems of internal control and risk management and concluded that these were effective.<br>Reviewed and approved the internal audit charter.<br>Oversaw the external effectiveness review of the internal audit function and the outcome of the same (see page opposite).<br>Reviewed the independence and objectivity of the SVP, internal audit and succession plans for this role, see page opposite. |
| **Business and function reviews** | **Trading & shipping** – two business reviews during 2022, with a focus on the management of principal risks allocated by the board to the committee. A floor walk was undertaken at the Houston office covering business areas related to gas, LNG and US power trading.<br>**Production & operations** (P&O) – review of the strategy, principal risks and recent internal audit findings and management actions. A floor walk was undertaken with the P&O finance team. For details of the committee's consideration of climate-related issues, see page 107.<br>**Internal audit and accounting, reporting** and **control** – see page 103. |
| **Risk** | The committee monitored the principal risks allocated to it by the board for 2022 through a mixture of business reviews, updates from management, internal audit and the external auditor, as well as deep dives on specific principal risks, see page 103 for further information. |

## Internal control

### How internal control and risk management was assessed

**Internal audit**: Internal audit provides key assurance to the committee on the group's governance, risk management and system of internal control.

**Key matters reviewed by the committee**

Regular updates from internal audit on the key findings during the year, progress against the internal audit plan and adjustments made to the plan during the course of the year. The committee challenged management's response and progress made on the closure of findings. Areas of interest for the committee included findings related to trading and treasury trading activities and crisis management and business continuity.

The committee also reviewed and approved the internal audit charter, which sets out the expectations for the function in accordance with the Chartered Institute of Internal Auditors' (IIA) guidelines.

### Internal audit effectiveness

An external effectiveness review was undertaken during the year following the last external review in 2017 and the committee's own review in 2021. The process is set out below. The outcome of the review was overwhelmingly positive with further enhancements identified in the use of technology and digital tools.

In addition to the external effectiveness review, the committee approved the annual plan and reviewed reports from internal audit. It also met privately with the SVP, internal audit, and received feedback from other key stakeholders on the effectiveness of the function. The committee concluded that internal audit had unrestricted scope, together with access to information and sufficient resources to fulfil its mandate.

The committee reviewed the independence and objectivity of the SVP internal audit, who has served for longer than seven years, in line with IIA best practice guidelines. The committee concluded that the SVP internal audit remained independent and objective. In reaching this conclusion, the committee considered feedback from key stakeholders, access to information and the resources available and the response of management to the challenge received, together with the outcome of the external effectiveness review. The committee discussed the succession plans for this role and the anticipated timeframe.

### Non-financial reporting assurance framework

The committee reviewed the control and assurance framework for non-financial reporting (NFR) published by bp under a broad range of regulatory and voluntary disclosure frameworks and standards, including TCFD, following the introduction of the NFR framework in 2021. Following updates from management on regulatory developments over the course of the last year, the committee challenged management on the underlying assurance processes and whether bp had the most appropriate suite of metrics for disclosures against bp's strategy and aims and ambitions.

### Training and briefings

The committee considered market updates and developments throughout the year. This included technical accounting updates from the SVP, accounting reporting control on developments in financial reporting and accounting policy.

The committee also received briefings on specific topics, including risk governance and the audit and corporate governance consultation outcome published by the UK government during 2022.

## Regulatory correspondence

### FRC request for information

The company received a request from the Financial Reporting Council (FRC) for information relating to segmental reporting of the gas & low carbon energy segment in the *bp Annual Report and Form 20-F 2021*. The committee reviewed the correspondence and proposed response, the outcome of which was the inclusion in this *bp Annual Report and Form 20-F 2022* of enhanced disclosures relating to the management of the gas & low carbon businesses and how reportable segments have been determined (see our financial reporting segments and business groups on pages 12 and 13, and Financial statements – Note 5).

An FRC review provides no assurance that the *bp Annual Report and Form 20-F 2021* was correct in all material respects. The FRC's role was not to verify the information provided, but to consider compliance with reporting requirements. Its letters are written on the basis that the FRC (which includes the FRC's officers, employees and agents) accepts no liability for reliance on them by bp or any third party, including but not limited to investors and shareholders.

## Internal audit external effectiveness review process

**Selection of external reviewer**

- Tender process conducted by procurement team.
- Recommendation to audit committee chair.
- PwC selected to undertake review.
- Scope and objectives of review finalized based on guidelines from institute of internal auditors.

**Review fieldwork undertaken**

- Assessment against IIA standards.
- Stakeholder interviews and surveys, incorporating NEDs, management and internal audit staff.
- Review audit files.
- Benchmarking against other internal audit functions.

**Reporting**

- Discussing outcome of review with chairs of the audit committee and safety and sustainability committee.
- Presentation of findings and recommendations to a joint session of the audit and safety and sustainability committees.
- Discussion of findings and recommendations by both committees with a focus on items where the function could be further enhanced.

**Outcome**

- Internal audit function performing well.
- Committees appreciated the adaptability of the function, particularly during the COVID-19 pandemic.
- Recommendations, such as the enhancement of data analytics to be taken forward by the function.
- A well-planned onboarding process for the successor to the current SVP, internal audit should be put in place.

★ See glossary on page 389

# **Audit committee** continued

### FRC thematic review

The *bp Annual Report and Form 20-F 2021* was included in the FRC's sample for its thematic review of TCFD disclosures and climate in financial statements. The committee noted the findings from the thematic review, where some of bp's disclosures were considered to be examples of better practice and how further improvements could be incorporated into the *bp Annual Report and Form 20-F 2022*.

### SEC review

The Securities and Exchange Commission reviewed the *bp Annual Report and Form 20-F 2021* and raised a number of comments including ones relating to the disclosures in the report relating to Russia's invasion of Ukraine and oil and gas reserve disclosures, to which bp responded. As a result, bp agreed to include additional line items in the oil and gas reserve disclosure in this *bp Annual Report and Form 20-F 2022*.

## External audit

### How the committee assessed audit risk

The external auditor set out its audit plan for 2022, identifying significant audit risks. These included:

- Impairment (including reversals) of oil and gas property, plant and equipment values.
- Accounting for structured commodity transactions.
- Valuation of level 3 instruments in trading and shipping and revenue recognition.
- Decommissioning provisions.

The committee discussed with the auditor the scope of the audit and the overall coverage against profit, revenue and property, plant and equipment metrics, alongside the potential impact of volatility of energy prices on the materiality level. The committee received updates during the year on the audit process, including how the auditor had challenged the group's assumptions on the significant audit risks.

A summary of the audit approach is set out in the independent auditor's report on page 153.

### How the committee assessed audit fees

The audit committee reviews the fee structure, resourcing and terms of engagement for the external auditor annually. In addition, it reviews the non-audit services that the auditor provides to the group on a quarterly basis.

Fees paid to the external auditor for the year were $52 million (2021 $58 million), of which less than 1% was for non-audit and other assurance services (see Financial statements – Note 36). The audit committee is satisfied that this level of fee is appropriate in respect of the audit services provided and that an effective audit can be conducted for this fee. Non-audit or non-audit related services consisted of other assurance services.

### How the committee assessed audit quality and effectiveness

As part of its overall assessment of audit quality and effectiveness, the committee requested reports from the external auditor and management (see below) on the audit process, quality procedures and the handling of key judgements. The committee also held private meetings with the external auditor during the year and committee members met separately with the external auditor at least quarterly. The committee chair also met with SVP, internal audit on a regular basis. The committee considered its interactions with the external auditor and the regular reporting received in relation to the quarterly results.

The committee assessed the auditor's approach to providing audit services, taking account of the external auditor insights report and management survey. The committee concluded that the audit team was providing the required quality in relation to the provision of the services.

The audit team had shown the necessary commitment and ability to provide the services together with a demonstrable depth of knowledge, robustness, independence and objectivity as well as an appreciation of complex issues. The team had posed constructive challenge to management and the committee noted the quality of reporting provided to it.

In challenging management, the committee was impressed by the external auditor's engagement with management on LNG cargo contract performance and decommissioning discount rates. The committee received a presentation on the external auditor's use of technology in their audit process and opportunities for further enhancements to the audit.

### Reports received by the committee as part of its assessment of audit quality

**External auditor insights report:** the committee receives a summary of areas of opportunity for improvements to processes related to financial reporting or internal control identified as part of the audit process, management's response to the recommendations identified and progress made against any prior year items together with areas of focus for the forthcoming year.

**Management survey:** the survey sought views from key internal stakeholders and comprised questions across the following:

(i) The external auditor's performance, for which the main measurement criteria were:

- Planning and scope.
- Robustness of the audit process.
- Independence and objectivity.

Quality of delivery

- Quality of people and service.
- Value added advice.

(ii) bp's commitment to the audit.

The overall score from the survey increased compared to the prior year, with strong improvement in engagement, independence and team capability. Reductions in scores for use of technology and constructive recommendations were discussed by the committee with the external auditor.

### How the auditor's reappointment and independence were assessed

The committee considers the reappointment of the external auditor each year before making a recommendation to the board. The committee assesses the independence of the external auditor on an ongoing basis, taking account of the information and assurances provided by the external auditor and the level of non-audit fees. The external auditor is required to rotate the lead audit partner every five years and other senior audit staff every five to seven years. No partners or senior staff associated with the bp audit may transfer to the group.

External audit services were last tendered in 2016 and the external auditor has been in role for four years (since 2018). It is anticipated that a re-tender will be completed by 2026 or sooner, in line with relevant guidelines, for the 2028 audit. The committee believes that the anticipated timeline for the re-tender of audit services is in the best interests of shareholders. It provides an appropriate balance of factors such as the auditor knowledge of controls and risks, maintaining audit quality, independence and objectivity, and providing value for money.

The company is in compliance with the requirements of the Statutory Audit Services for Large Companies Market Investigation (Mandatory Use of Competitive Tender Processes and Audit Committee Responsibilities) Order 2014.

### How the committee had oversight of non-audit services

The audit committee is responsible for bp's policy on non-audit services and the approval of non-audit services. Audit objectivity and independence are safeguarded through the prohibition of non-audit tax services being provided by the external auditor and the limitation of audit-related work which falls within defined categories. bp's policy on non-audit services states that the auditor may not perform non-audit services that are prohibited by the SEC, Public Company Accounting Oversight Board (PCAOB), International Auditing and Assurance Standards Board (IAASB) or the UK Financial Reporting Council (FRC).

The audit committee approves the terms of all audit services as well as permitted audit-related and non-audit services in advance. The external auditor is considered for permitted non-audit services only when its expertise and experience of bp is important. Approvals for individual engagements of pre-approved permitted services below certain thresholds are delegated to the SVP, accounting reporting control or the chief financial officer. Any proposed service not included in the permitted services categories must be approved in advance either by the audit committee chair or the audit committee before engagement commences.

The audit committee, chief financial officer and SVP, accounting reporting control monitor overall compliance with bp's policy on audit-related and non-audit services, including whether the necessary pre-approvals have been obtained. The categories of permitted and pre-approved services are outlined in principal accountant's fees and services on page 376.

## Other matters

The committee reviewed the affordability of the distribution policy elements of the financial frame (covering dividend and share buybacks) as part of its review of the quarterly results. The committee considered bp's cash flow forecasts as it transitions to an international energy company and the risks associated with oil and gas price changes over the medium term. The committee reviewed its terms of reference and no material updates were identified. An assessment of going concern was made as part of the half and full-year results process. The committee also reviewed the longer-term viability statement. The going concern and longer-term viability statements can be found on page 150.

## The audit committee's consideration of climate-related issues

### Examples from the year ended 31 December 2022

The committee's primary role in monitoring the effectiveness of bp's financial reporting, systems of internal control and risk management means that it is well placed to consider a range of risks and opportunities associated with climate change and the transition to a lower carbon economy, together with the oversight of the assurance process for certain climate-related items. There are several ways in which the committee has considered climate risk and opportunities during the year, which are set out below.

| | |
|---|---|
| **Empire Wind follow-on investment decision** | Reviewed the cost base, capability and expertise of the team and joint venture partner, recruitment and risks and opportunities related to opex and capex. |
| **TCFD** | Reviewed the TCFD compliance assessment. Considered the alignment of the TCFD assumptions with the WBCSD Scenario Catalogue and other reporting assumptions (going concern/longer-term viability).<br>The committee reviewed management's scenario analysis and the inputs used to test the resilience of our strategy to different climate scenarios. |
| **Oil & gas reserves** | Deep dive on our oil & gas reserves portfolio and the conclusion of management's estimation process for the purposes of the disclosure within the *bp Annual Report and Form 20-F*. |
| **Production & operations business review** | Deep dive on financial risks and risks to strategy in achieving 2025 targets and 2030 aims. |
| **Low carbon impairment discount rate** | Assessed the underlying assumptions and overall level proposed by management versus wider benchmarking and the view of the external auditor, Deloitte. |
| **Carbon Tracker report** | Received an update from management on the implementation of suggested enhancements to disclosures contained in the Carbon Tracker climate accounting and audit alignment assessment. |
| **Energy price assumptions** | Considered management and the external auditor's view of the reasonableness of assumptions compared to a broad spectrum of other published price forecasts. The committee reviewed and challenged the underlying assumptions provided by management, the changes from the prior year and their consistency with the goals of the Paris agreement. |
| **Impairments** | Reviewed the consistency of impairment assumptions, including discount rates and prices, in light of the 2030 aims. Reviewed impairment tests of key assets. |
| **Decommissioning** | Reviewed and challenged management on the underlying assumptions, particularly around inflation and discount rates, and the timeframe of the transition to a low carbon economy. |
| **Non-financial reporting framework** | Reviewed the controls in place for non-financial reporting disclosures and agreed the level of assurance required over key non-financial, including climate-related, metrics, see page 105 for further information. |

For more information on the resilience of our strategy, see pages 54 to 61

★ See glossary on page 389

## Examples of how accounting judgements and estimates were considered and addressed

| Key judgements and estimates in financial report | Audit committee activity | Conclusions/outcomes |
|---|---|---|
| **Impact of climate change and the energy transition** | | |
| Climate change and the transition to a lower carbon economy may have significant impacts on the currently reported amounts of the group's assets and liabilities and on similar assets and liabilities that may be recognized in the future. | • Reviewed management's best estimate of oil and natural gas price assumptions for value-in-use impairment testing and investment appraisal.<br>• Reviewed management's assessment of recoverability of exploration intangibles.<br>• Reviewed management's assessment on decommissioning provisions.<br>• See how the committee considered climate risks and opportunities on page 107. | • Management's revised best estimate of oil and natural gas prices are in line with a range of transition paths consistent with the goals of the Paris climate change agreement.<br>• How bp applies carbon pricing in its impairment testing is disclosed in Note 1.<br>• Sensitivity analyses estimating the effect of changes in net revenue due to prices, production or carbon prices are disclosed in Note 1.<br>• Reasonable changes in the expected timing of decommissioning do not have a significant impact on the associated provisions. |
| **Provisions** | | |
| bp's most significant provisions relate to decommissioning, environmental remediation and litigation.<br><br>The group holds provisions for the future decommissioning of oil and natural gas production facilities and pipelines at the end of their economic lives. Most of these decommissioning events are many years in the future and the exact requirements that will have to be met when a removal event occurs are uncertain. Assumptions are made by bp in relation to settlement dates, technology, legal requirements and discount rates. The timing and amounts of future cash flows are subject to significant uncertainty and estimation is required in determining the amounts of provisions to be recognized. There is also a risk that decommissioning obligations from previously divested assets revert to bp. | • Received briefings on decommissioning (including the process for managing the risk of decommissioning reversion), environmental, asbestos and litigation provisions. These included the requirements, governance and controls for the development and approval of cost estimates and provisions in the financial statements.<br>• Reviewed and challenged the group's discount rates and inflation rates used for calculating provisions. | • Decommissioning provisions of $12.3 billion were recognized on the balance sheet at 31 December 2022.<br>• The discount rate used by bp to determine the balance sheet obligation at the end of 2022 was a nominal rate of 3.5% – based on long-dated US government bonds – an increase of 1.5% from 2021. |
| **Recoverability of asset carrying values** | | |
| Determination as to whether and how much an asset, cash-generating unit (CGU) or group of CGUs containing goodwill is impaired involves management judgement and estimates on uncertain matters such as future commodity prices, discount rates, production profiles, reserves and the impact of inflation on operating expenses.<br><br>Reserves estimates based on management's assumptions for future commodity prices have a direct impact on the assessment of the recoverability of asset carrying values reported in the financial statements.<br><br>Judgement is required to determine whether it is appropriate to continue to carry intangible assets related to exploration costs on the balance sheet. | • Reviewed policy and guidelines for compliance with oil and gas reserves disclosure regulation, including the group's reserves governance framework and controls.<br>• Reviewed and challenged the group's oil and gas price assumptions.<br>• Reviewed and challenged the group's discount rates for impairment testing purposes including for low carbon energy assets.<br>• Impairment charges, reversals and 'watch-list' items were reviewed as part of the quarterly due diligence process.<br>• Received the output of management's annual intangible asset certification process used to ensure accounting criteria to continue to carry the exploration intangible balance are met. | • The group's price assumption for Brent oil and for Henry Hub gas were increased as set out on page 28 and Note 1.<br>• Sensitivity analyses estimating the effect of changes in net revenue and discount rate assumptions have been disclosed in Note 1.<br>• Net impairment /charges of $3.8 billion (excluding Rosneft related impairments) as disclosed in Note 4.<br>• Exploration intangibles totalled $4.2 billion at 31 December 2022. |

| Key judgements and estimates in financial report | Audit committee activity | Conclusions/outcomes |
|---|---|---|
| **Pensions** | | |
| Accounting for pensions and other post-retirement benefits involves making estimates when measuring the group's pension plan surpluses and deficits. These estimates require assumptions to be made about uncertain events, including discount rates, inflation and life expectancy. | • Reviewed and challenged the group's assumptions used to determine the projected benefit obligation at the year end, including the discount rate, rate of inflation, salary growth and mortality levels. | • At 31 December 2022, surpluses of $9.3 billion and deficits of $5.2 billion were recognized on the balance sheet in relation to pensions and other post-retirement benefits.<br>• The method for determining the group's assumptions remained largely unchanged from 2021. The values of these assumptions and a sensitivity analysis of the impact of possible changes on the benefit expense and obligation are provided in Note 24. |
| **Investments in Rosneft, Aker BP and Azule Energy** | | |
| Judgement is required in assessing the level of control or influence over another entity in which the group holds an interest. bp uses the equity method of accounting for its investment in Aker BP and bp's share of Aker BP's oil and natural gas reserves are included in the group's estimated net proved reserves of equity-accounted entities.<br>The equity-accounting treatment of bp's 15.9% interest in Aker BP in 2022 was dependent on the judgement that bp had significant influence over Aker BP.<br>bp's interest in Rosneft, following loss of significant influence, is measured at a fair value of nil.<br>The initial valuation of the Azule Energy joint venture involved judgement over future commodity prices, discount rates, production profiles and reserves. | • Reviewed the judgement on whether the group retained significant influence over Aker BP following completion of the Lundin Energy transaction.<br>• Reviewed the accounting implications of bp's announcement to exit its shareholding in Rosneft and other businesses with Rosneft in Russia, including the valuation of these investments.<br>• Reviewed the accounting impacts of and the judgments made for, the formation of the Azule Energy joint venture. | • bp retained significant influence over Aker BP throughout 2022 as defined by IFRS.<br>• As a result of bp's two nominated directors stepping down from the Rosneft board on 27 February 2022, bp determined that it no longer had significant influence over Rosneft from that date.<br>• bp considers that it is not currently possible to estimate any carrying value of the interest in Rosneft other than nil and that the accounting criteria for recognizing any dividend income have not been met.<br>• bp recognized a pre-tax charge in 2022 relating to its investments in Rosneft and other businesses with Rosneft in Russia of $25.5 billion. See Note 1 for further information.<br>• bp recognized an initial net investment in Azule Energy of $4.9 billion and a net gain on disposal of $2.0 billion. |
| **Derivatives** | | |
| For its level 3 derivative financial instruments, bp estimates their fair values using internal models due to the absence of quoted market pricing or other observable, market-corroborated data. Judgement may be required to determine whether contracts to buy or sell commodities meet the definition of a derivative, in particular LNG contracts. | • Received regular reports on derivative accounting judgements and impacts of commodity price volatility on derivative valuations, in particular in relation to the LNG portfolio.<br>• Received a briefing on the group's trading risks and reviewed the system of risk management and controls in place.<br>• Reviewed the control process and risks relating to the trading business. | • bp considers that contracts to buy or sell LNG do not meet the definition of a derivative under IFRS.<br>• bp has assets and liabilities of $8.8 and $7.0 billion, respectively, recognized on the balance sheet for level 3 derivative financial instruments at 31 December 2022 mainly relating to the activities of the trading and shipping function.<br>• bp's use of internal models to value certain of these contracts has been disclosed in Note 1. |

# Safety and sustainability committee

> "The committee was pleased to work with the bp leadership team to monitor the continued progress on safe, secure, reliable and sustainable operations across the business."

[redacted]

## Chair's introduction

## Dear fellow shareholders,

On behalf of the committee, I am pleased to present our report for the year ended 31 December 2022.

During the year, the committee monitored the work of the leadership team to drive improvement in overall safety and environmental performance, with a specific focus on reducing tier 1 and 2 process safety events★.

Despite overall strong safety performance, tragically, four people lost their lives while at work for bp. In February 2022, a contractor driving for Aral in Germany, lost his life in a vehicle collision. In April 2022, a specialist tank contractor lost his life in an explosion while repairing a tank at an Aral retail site in Germany. In September 2022, two bp employees lost their lives in a fire at our Toledo refinery in the US. We take action to share and embed lessons learned across the organization to mitigate against the risk of future accidents and drive improvements in safety.

The committee and audit committee worked jointly, allowing them to better understand and review bp's non-operated joint venture★ risk exposure and how the associated risks are being managed.

Throughout the year, the committee was also proactive in engaging with the business through its visits to the Gelsenkirchen refinery in Germany, the Glen Lyon floating production, storage and offloading vessel in the North Sea, and the security operations centre in Houston (see pages 94 and 111). The committee looks forward to additional site visits in 2023 to see first-hand how the company is putting safety and performance into practice.

[redacted]

### Key areas of focus in 2022

**Safety** – continued to oversee safety and environmental performance, with a specific focus on reducing tier 1 and 2 process safety incidents, advising the remuneration committee on safety outcomes for 2022 and the setting of safety and sustainability measures for the group's reward plans.

**Site visits** – engaged with local management through site visits to the Glen Lyon floating production, storage and offloading vessel in the North Sea, the Gelsenkirchen refinery in Germany, and the security operations centre in Houston.

**Oversight of principal risks** – reviewed the company's strategies to mitigate the principal risks associated with cyber security and safety and operational risks.

## Role of the committee

The committee oversees the leadership team's identification, management and mitigation of significant non-financial risk. This extends to personal and process safety risks, security and cyber security risks, operational, environmental and social risks, ethics and compliance risks and modern slavery risk management.

The committee also monitors the effectiveness of the implementation of bp's sustainability frame, including the progress being made by management in the delivery of our net zero ambition and associated aims and targets. To support this oversight role, the committee receives assurance that processes to identify and mitigate such non-financial risks are appropriate in their design and effective in their implementation.

## Meetings and attendance

There were six committee meetings in 2022. All members attended each meeting. At the conclusion of each meeting the committee holds private sessions for its members, without management in attendance, to discuss any issues arising and meeting quality. The CEO receives ad hoc invitations to private sessions and the SVP, internal audit is invited at least once per year.

● Meeting attended ○ Did not attend

[redacted] ●●●●●●

[redacted] ●●●●●●

[redacted] ●●●●●●

## Key responsibilities

- Monitor and/or test: bp's performance in respect of safety and sustainability matters; and the effectiveness of bp's system of internal control for safety and sustainability matters, including applicable management systems, policies, practices, processes, leadership and culture, informed by regular review of performance and assurance reports.
- Monitor the management and mitigation of principal risks allocated to the committee by the board and such emerging risks as the committee may determine fall within its scope from time to time.
- Review learnings from key incident investigations.
- Review bp's modern slavery risk management, the bp sustainability report and such other materials intended for disclosure or publication as may be allocated to it by the board from time to time.
- Review and test management's responses to relevant quarterly reports of group internal audit and the findings of selected safety investigations.
- Conduct such other oversight activities as may be allocated to it by the board from time to time.

The committee is entitled to investigate all matters falling within its scope. For full committee terms of reference go to *bp.com*.

## Activities during the year

The review of operational risk and performance forms a large part of the committee's agenda, and it received regular reports from the business covering key risks within operations, security and cyber.

The committee attended a cyber security knowledge session, where they were briefed on the extent of bp's cyber threat and improvements being made to tooling and capability to maintain the health of cyber security barriers. This session was supplemented by the committee's visit to the security operations centre in Houston, see the case study (right) for more information.

### Oversight of principal risks

The committee reviewed reports from the leadership team on their review, management and mitigation of the principal risks assigned to the committee, including related to marine, wells, product quality, pipeline, explosion or release at bp facilities, major security incident, cyber security and ethics and compliance.

During the year, the committee held focused reviews on compliance, process safety and maintenance improvements, cyber security drills and modern slavery, and worked jointly with the audit committee to review bp's non-operated joint venture risk exposure.

The committee also received a report on how the company is reducing risk of marine incident, be it via the examples of transportation of bulk hydrocarbons, stability of floating production assets, or integrity of marine vessels. Safety at bp is underpinned by the group's operating management system★ and the committee reviewed the section of the framework supporting the management of marine risk.

The committee also discussed an in-depth report on bp's product quality risk, and the actions taken to manage and mitigate it.

Ethics and compliance remained a focus in 2022, and the committee reviewed the strategic objectives designed to mitigate the risk of major compliance incidents. The committee also reviewed the new ethics and compliance code of conduct and associated risk-based training and made a recommendation to the board to adopt it as of 1 January 2023, see page 66.

### Sustainability

The committee considered reports on bp's delivery against aim 3, related to carbon intensity reduction, and aim 17, related to water positivity. See page 45 for information on all aims. In relation to aim 17, the committee discussed the benefits, challenges and roadmap for implementation in light of the global issue of water stress and scarcity.

Under aim 13, bp's approach to develop a fair wage in countries where bp has employees was reviewed. The committee also reviewed how bp was managing labour rights and modern slavery risk across all of bp's operations.

In partnership with the remuneration committee, input was provided on the measures and targets relating to safety performance for executive and leadership team incentive plans to ensure they arrived upon outcomes that were well reasoned and well supported.

### Glen Lyon visit

In April 2022, committee members visited Glen Lyon floating production, storage and offloading facility, located 130km west of Shetland. The visit provided an opportunity to speak with the 130-person crew and observe first-hand the asset's design and complex subsea structure. Discussions provided insight into the operational and safety challenges our people experience, particularly after being unexpectedly stranded due to weather overnight.

In action

### Securities operations centre (SOC) visit

In September of 2022, members of the committee, along with most of the bp board, visited the SOC to get a first-hand view of how the SOC identifies and stops cyber threats across bp's global digital footprint, 24x7. Board members took away a clearer understanding of how digital security works across the company to reduce any potential impact of attacks by monitoring billions of daily events correlated with cyber and business intelligence to keep bp safe.

### S&SC's consideration of climate-related issues

**Examples from the year ended 31 December 2022**

Monitoring, implementation and performance

- Received updates regarding progress on each of bp's sustainability aims, including important trends and insights in relation to each of the aims.
- Conducted a review of aims 3 and 17.
- Considered sustainability assurance findings.
- Received updates on the progress on our sustainability frame (which includes our net zero ambition and aims) via reports from the EVP, strategy, sustainability & ventures.
- Consulted with the remuneration committee on emissions measures to be incorporated into annual performance scorecards. See the directors' remuneration report on page 112.

★ See glossary on page 389

# Directors' remuneration report

"2022 was a year of strong strategic progress, operational and financial performance for bp, against a challenging backdrop."

[redacted]

## Role of the remuneration committee

The role of the committee is to determine and recommend to the board the remuneration policy and to set chair, executive director and leadership team remuneration. The committee reviews workforce remuneration and monitors related policies, satisfying itself that incentives and rewards are aligned with bp's culture. In determining the policy, the committee takes into account various factors, including wider workforce remuneration, and structures the policy to align reward to performance, thus promoting the long-term success of the company.

## Key responsibilities

- Recommend to the board the remuneration principles and policies for the executive directors and leadership team while considering remuneration and related policies for the employees below the board.
- Set and approve the terms of engagement, remuneration, benefits and termination of employment for the executive directors, leadership team, chief internal auditor and the company secretary in accordance with the policy.
- Prepare the annual remuneration report to shareholders to outline policy implementation.
- Approve the principles of any equity plan that requires shareholder approval.
- Ensure termination terms and payments to executive directors and the leadership team are appropriate.
- Receive and consider regular updates on workforce views and engagement initiatives related to remuneration, insights and data from pay ratios and potential pay gaps as appropriate.
- Maintain appropriate dialogue with shareholders on remuneration matters.

## Membership

**Paula Rosput Reynolds**
Member since September 2017 and chair since May 2018

**Amanda Blanc**
Member (since January 2023)

**Pamela Daley**
Member

**Melody Meyer**
Member

**Tushar Morzaria**
Member

## Meetings and attendance

The chair and the CEO attend meetings of the committee except for matters relating to their own remuneration. The CEO is consulted on the remuneration of the CFO, the leadership team and more broadly on remuneration across the wider workforce. Both the CEO and CFO are consulted on matters relating to the group's performance.

bp's EVP, people & culture, SVP, reward, external advisors and other executives may attend where necessary. The committee consults other board committees on the group's performance and on issues relating to the exercise of judgement or discretion as necessary.

The committee met eight times during the year. All directors attended each meeting that they were eligible to attend.

## Remuneration committee consideration of climate-related issues

### Examples from the year ended 31 December 2022

Monitoring, implementation and performance

Discussed and agreed the climate measures in annual performance scorecards. For example after consulting with the safety and sustainability committee, the remuneration committee set the weighting for sustainable emissions reductions★ measures for annual bonus awards, as well as the long-term incentive plan ESG measures designed to align with bp's strategy.

## Key areas of focus in 2022

**Remuneration policy** – undertook a thorough and robust engagement process with investors and other stakeholders to gather insights and feedback relevant to the policy-setting process.

**Workforce engagement** – engaged with the wider workforce on reward and wellbeing, for example met with front-line representatives from the bp retail business, and reviewed management's responses to cost-of-living pressures for bp employees globally.

**Remuneration outcomes** – monitored in-flight progress of equity and bonus awards, and evaluated salary and benefits against peer group comparators, considering adjustments where appropriate.

**Reporting** – reviewed the directors' remuneration report and the UK gender and ethnicity pay gap report.

## Contents



## Summary of 2022 pay outcomes for executive directors

| | CEO: Bernard Looney | CFO: Murray Auchincloss |
|---|---|---|
| **Base salary** | £1,371,876 | £782,000 |
| **2022 annual bonus** | £2,365,542 (75.5% of max) | £1,404,000 (78% of max) |
| **Downward discretion applied to 2022 annual bonus, see page 120** | 3.2% or -£78,329 | 0% |
| **2020-22 performance share plan** *Additional three-year post-vesting holding period applied* | £6,007,512 (54% of max) | £2,890,536 (54% of max) |
| **Downward discretion applied to 2020-22 performance share plan, see page 122** | 10% or -£667,497 | 10% or -£321,172 |
| **Single figure outcome for 2022** | £10,025,782 | £5,282,049 |
| **Total downward discretion applied** | -£745,826 | -£321,172 |

## Chair's introduction

# Dear fellow shareholder,

2022 was a year of strong strategic progress, operational and underlying financial performance for bp, against a challenging backdrop. Inflation was increasingly embedded in the global economy, and was exacerbated by geopolitical events, notably the war in Ukraine and the prolonged impact of COVID-19 lockdowns in China. We have considered remuneration in this context for our executive directors and wider workforce.

In line with government regulation, the directors' remuneration report (DRR) is required to report on executive reward. However, the reader will note throughout how we have included discussion about bp's aim to be an employer of choice for bp's 60,000+ people around the world. Clearly this aim is about pay, but it's also about benefits, working environment, purpose, and programmes to assure the wellbeing of bp employees. Indeed, the welfare of bp people is critical to the company's success for shareholders. The committee spent considerable time in 2022 understanding engagement levels of the entire bp workforce.

The committee has conferred with a great number of shareholders and proxy advisory firms, seeking their input prior to reaching our decisions. The one piece of feedback we received from virtually every party was to lay out in detail how the committee came to its decisions. Thus, you will see contained within the DRR a deeper level of granularity than in prior years.

In both the treatment of the period 2020-2022 and the proposals for the refreshed policy, the committee has sought to find the balance between rewarding performance and doing so with moderation of outcomes.

## Meeting bp's challenges

bp's employees have risen to the challenge again and again over the past three years. In 2020, shareholders endured an underlying replacement cost loss of $5.7 billion as the pandemic devastated worldwide demand for energy. But bp employees kept operations running safely despite the complexity of pandemic protocols; at the same time, they also undertook actions to reset the company's ambition towards net zero. In 2021, our people delivered a seamless return to full operations and an underlying replacement cost profit★ of $12.8 billion. In 2022 the war in Ukraine led to the board's decision to exit bp's businesses in Russia; we took an unprecedented write-down of $24 billion. Nevertheless, robust operational results across the globe allowed the company to achieve an underlying replacement cost profit of $27.7 billion in the year just ended.

bp aims to provide the world with secure, reliable, and increasingly cleaner energy. During 2022, bp maintained high production at levels necessary to meet the challenges of a bifurcated energy market and responded to the supply emergency in Europe by bringing additional supplies of LNG to European shores. In the UK we pledged to bolster resource development in the North Sea, supporting the UK's supply security. At the same time, bp is enabling retail customers' choice to switch to EVs through our fast-charging network, and advancing our plans for offshore wind, hydrogen and carbon capture.

As we responded to the changing energy landscape, the committee stress-tested whether we are rewarding our employees appropriately for the responsibilities that they have undertaken and the superior performance they have delivered. Board members engaged with front-line employees who work in the North Sea as well as those who are employed in bp's retail forecourts across the UK. It is important to note that all UK employees, including forecourt employees, are paid at, or above, the real living wage. We listened to their concerns – they didn't hold back – and relayed such concerns to management to ensure that pay and benefits programmes, development, and work systems continue to evolve and remain fit for purpose.

## Alignment with stakeholders

In reaching our recommendations for the 2022 remuneration of our executive directors, we also undertook an extended dialogue with shareholders and other stakeholders.

In pursuing this dialogue, we have tried to make clear that we are a committee that keeps its commitments to all of bp's employees, including executives, and that any discretion we use or judgement we apply is thoughtfully undertaken and proportionate to the issues we seek to address (see page 116).

Over the past six years, the committee has carefully sought to moderate outcomes for our executives, even as the roles they play have become more challenging. We hope you will agree that our judgements reflect a sensible approach to rewarding difficult jobs well-done in this several-year period. A summary of executive director pay outcomes is shown on page 113 and the details are provided in the following pages.

★ See glossary on page 389

## Bernard and Murray's leadership

Bernard has been the CEO since 2020. He led the reset of bp's purpose and strategy, and the creation – and work towards – bp's net zero ambition and aims. He has led the reinvention of bp, through a pandemic and global energy supply crisis. Throughout, he has shown commendable resilience which contributed to bp's strong underlying 2022 results, while growing investment, growing value and growing distributions to shareholders.

Murray has been the CFO since 2020. He has been instrumental in designing and rolling out our disciplined financial frame. Under his prudent leadership, bp has gained greater investor and credit agency confidence, while reducing our net debt to $21.4 billion, the lowest for almost a decade, and returning funds to shareholders through a revised distribution policy. He has shown similar resilience and has matured convincingly into the role of CFO.

## Overview of 2022 performance and remuneration outcomes

The 2022 annual bonus plan applies to more than half of bp's workforce, including its two executive directors. The plan seeks to reward performance against six key measures in three categories of bp's bonus scorecard: safety and sustainability, operational and financial.

### Safety and sustainability

bp exceeded our annual sustainability targets for emissions reductions, delivering 1.5mte reductions in 2022, and 7.1mte cumulative reductions since 2017. Process safety events – combined tier 1 and 2★ – were at a record low, which continues a downward trajectory over the past few years and reflects our continuous focus on safety improvement.

However, tragically, during 2022 four people died while working for bp. The committee takes the view – shared by bp's leadership – that at bp safety comes first and thus avoiding workplace safety incidents must be the top priority. We provide more information about the impact of safety on remuneration on page 121.

As such, we have applied additional downward discretion on the outcome for Bernard and relevant members of management which results in a score of 1.51 out of 2.00.

### Operational

Operationally, the reliability and availability of our plants and refineries were just below target. This was driven by lower-than-expected refinery availability offset by record high upstream plant reliability★. Margin share from convenience and electrification was impacted this year by the market environment (see page 6). The committee decided to exercise its discretion under this measure to reflect underlying performance by making two adjustments: 1) to adjust for the actual foreign exchange rate environment, which resulted in a minimal uplift to all participants, including the executive directors; and 2) recognizing actual underlying business unit decisions to maintain margin (see page 121), which provides a more material uplift. We believe this latter adjustment was appropriate for the wider workforce. The uplift was not included in the calculation of executive director bonuses.

### Financial

Financial performance, as measured by adjusted free cash flow★ and cumulative cash cost reductions in the annual bonus scorecard, has been very strong. Adjusted free cash flow performance of $25.8 billion was above our stretch target even after targets had been adjusted upwards to reflect the actual price environment, ensuring that the executives do not benefit from higher prices.

Similarly, cumulative cash cost reductions, by the end of 2022 compared to the 2019 baseline, of $3.2 billion were above the scorecard target, delivering our cost reduction target a year ahead of plan.

Taking performance against these measures into account, the outcome for the bonus plan was a score of 1.56 out of 2.0 for the CFO, or 78% of maximum, and 1.51 out of 2.0 for the CEO, or 75.5% of maximum.

## Long-term performance

Under the remuneration policy that shareholders approved in 2020, a material portion of Bernard and Murray's remuneration is tied to longer-term performance under a performance share plan designed to drive strong alignment to the execution of bp's strategy.

The 2020-22 performance share awards were measured against a three-part scorecard:

- Relative total shareholder return (rTSR) against seven industry peers.
- Return on average capital employed (ROACE)★.
- Strategic progress.

While absolute TSR growth was a great improvement over the prior year, bp delivered disappointing rTSR performance over the 2020-22 period, placing sixth out of eight industry peers. This resulted in nil vesting for this element of the scorecard. This outcome should be read in the context of a newly-launched strategy. At the point of making the 2020-22 grants to the executive directors just months after the strategy launch, it was evident that investor confidence in that strategy, as demonstrated in our rTSR performance, would take time to build and be dependent on progressive execution and delivery over many years. While a disappointing rTSR performance, this expectation has proved to be correct. Conversely, ROACE performance of 13.4% over the period was above our stretch target, reflective of strong progress over the three years culminating in a 30.5% return in 2022, which was a very strong result regardless of the price environment. The committee's view of strategic progress, as measured against three distinct aspects of our strategy – resilient hydrocarbons, convenience and mobility and low carbon energy – was very strong and resulted in maximum vesting. This element of the scorecard is a mixture of quantitative assessment and qualitative judgement, which we expand on in more detail on page 123 of the report.

Taking performance against these measures into account, the formulaic outcome under the performance share plan was 60% of maximum. However, as we said we would do when making these awards in 2020, the committee also paid great attention to review the basis on which these awards were granted, at a time when the share price was materially lower than historical norms. Ultimately, the committee decided that despite this strong improvement over three years, an adjustment should be made to the vesting outcome of the 2020-22 awards.

After much discussion and consultation, we arrived at an adjustment which, when coupled with a disappointing formulaic vesting outcome, leads to what we consider to be an appropriately modest level of vesting. We took the decision to exercise our discretion and to revise downwards the level of vesting to 54% of maximum.

We provide additional detail on this adjustment and the rationale behind it on page 124.

## Decisions in the context of the wider workforce

Decisions regarding the executive directors' base salary increases and incentive outcomes were made paying careful attention to the level of awards for the wider bp workforce.

In practice, in 2022 the committee used its discretion to reduce outcomes for the CEO under the annual bonus and the CEO and CFO under the performance share plan, while mostly maintaining formulaic outcomes for the wider workforce.

Employees in the wider workforce participating in the annual cash bonus plan received a score of 1.62 compared with 1.51 and 1.56 for Bernard and Murray respectively. Other senior leaders who participated in the 2020-22 performance share plan received the full formulaic outcome of 60%.

Our approach to the annual pay review for the wider workforce was also modified this year, responding to the unprecedented pressure on our employees due to the rising cost of living. Firstly, bp made a cash payment to most of bp's retail forecourt employees globally, equivalent to 8%, or one month's salary locally. The payment is being made in equal parts across the winter period. Secondly, all salaried employees (excluding retail forecourt employees) below the senior leadership team worldwide received a one-off payment in December, differentiated by geography and ranging from 4% to 8% of salary – a move which was welcomed by our people. Finally, all salaried employees will be eligible for a base pay adjustment effective 1 April 2023. We have set salary budgets this year that are reflective of the market environment in each country. In many cases these are higher than last year, reflecting the impact inflation is having on wages. For more information on remuneration and support for the wider workforce, see page 117.

In this context, the committee determined that Bernard would receive a base salary increase of 4% in 2023, lower than the wider UK workforce average, despite the outsized impact he has had on bp and his exemplary leadership during a very tough period. Murray will receive an increase of 5.5% in 2023 in line with the wider UK workforce average. In the view of the committee, Murray's contribution and impact as a CFO internally and externally, has grown rapidly since his appointment and we will continue to review his base salary in line with market expectations, his performance and his responsibilities in the role, but mindful of the wider workforce pay.

## Refreshing our executive remuneration policy for 2023

The committee believes that the current policy, approved by 96.6% of shareholders in 2020, has operated as intended and can generally be retained and serve as the basis for the 2023 policy. As part of the policy review, the committee completed an extensive programme of shareholder engagement to ensure their views were reflected in the new policy.

I would like to thank shareholders for their highly valued time, energy and feedback during this period. I outline a summary of the key changes here, and the full policy is on page 132.

## Performance measures for incentive plans

We are proposing to fine-tune the performance measures that apply for the upcoming year and three-year performance periods to better align with bp's strategy; these changes do not represent a deviation from the current policy, as the existing policy already allows the committee to choose specific measures and relative weightings.

For the purposes of the annual bonus we propose to introduce a profit measure (adjusted EBITDA★) under the financials category, in place of cumulative cash cost reductions to reflect our strategic progress on costs and forward-looking focus on earnings.

For our performance share plan (2023-25), we propose the introduction of one new emissions measure, to incentivize progress towards our aim 1 net zero operations. We will retain rTSR, ROACE, adjusted EBIDA per share CAGR★ and strategic progress. Having complementary emissions reduction measures in both the short and long-term plans ensures that annual delivery supports longer-term plans, as set out in our net zero ambitions under aim 1. For a summary of proposed measures and targets under both plans, see page 130.

### Annual bonus deferral

Under our 2020 policy, the annual bonus has been paid 50% in cash, with 50% deferred into restricted share units that are subject to a three-year restricted period. This deferral has been an important way of increasing the executives' personal shareholdings and satisfying the already high bar we have set through our minimum shareholding requirement (MSR).

In our deliberations for 2023 we have recognized that the shareholdings of our executive directors can build quickly and, given that neither the committee nor the executives themselves expect them to sell shares while in office, the result is a high portfolio concentration exposure. Since our control mechanism for ensuring alignment with shareholders' interests is the MSR itself, we have concluded that once the MSR is met, the deferral rate should reduce. Thus, the 2023 policy has been updated to require a deferral rate of 33% once an executive has met bp's high minimum shareholding requirement threshold (5x salary for the CEO and 4.5x salary for the CFO). As on 17 February 2023 both the CEO and CFO have met the MSR requirement therefore, subject to shareholder approval, the 2023 policy will apply to 2022 bonus outcomes.

Operationally robust and effective malus and clawback provisions remain in place and the committee is comfortable that sufficient shareholdings will be built under the new policy to apply these provisions to their fullest extent if necessary. For more detail see the policy report on page 131.

### Retirement benefits

In 2021, as part of a holistic review and modernization of the UK reward package for the wider workforce, the UK defined benefits pension plan was closed and all remaining participants were entitled to a single contributory plan. This aligns to legacy defined benefit plan participants that received a cash allowance, which is being stepped down in value from 35% (in July 2021) to 20% (in April 2023). Except for the executive directors, all other participants had their cash allowance increased from 15% to 20%. Thus, the majority of the UK workforce (~62%) now receives a 20% cash allowance.

The 2020 policy sets the executive director benefit to be in line with the wider workforce, and therefore the current level for the executives is 15% of salary, which was in line with the wider UK workforce level at their appointment. We are proposing to amend our 2023 policy and adjust the cash allowance to 20% of salary, to match the arrangements now in place for the majority of the wider UK workforce.

Recognizing the impact the increased pension allowance could have in absolute terms, and considering the overall remuneration package, the committee has decided to retain Bernard's pension allowance at 15% for 2023. The committee will bring the allowance into line with that of the wider workforce in 2024.

As you read this DRR, we hope you will appreciate the expanded focus on our underlying rationale, and how our stewardship is directed at both the executive directors and the wider workforce. We need all bp employees to feel fairly rewarded and we continue to do our utmost to show our appreciation to them within the context of the policies shareholders have previously approved.

On behalf of the committee, I hope you will agree that our judgements are a sensible approach to rewarding difficult jobs well-done in this several year period.

**Paula Rosput Reynolds**
Chair of the remuneration committee
10 March 2023

In this directors' remuneration report, underlying replacement cost profit, net debt, margin share from convenience and electrification, adjusted free cash flow, cumulative cash cost reductions, ROACE, adjusted EBITDA, adjusted EBIDA per share CAGR and organic capital expenditure are non-GAAP measures.

These measures are defined in the glossary on page **389**.

★ See glossary on page 389

# Remuneration at a glance

### Key financial and strategic highlights in 2022

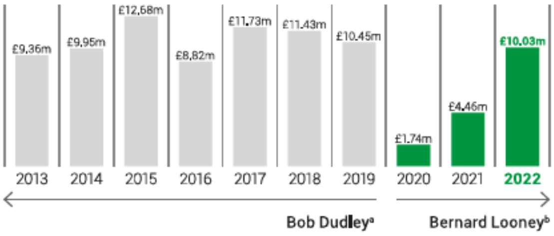
**30.5%**
**ROACE**
Up 129% from 2021

**$25.8bn**
**Adjusted free cash flow★**
Up 57% from 2021

**$21.4bn**
**Net debt**
Lowest since 3Q 2013

- Record bp-operated upstream plant reliability at 96%.
- 65% increase in the number of EV charge points installed.
- 30mboe/d increase in biogas supply.

### CEO – 10-year trend of remuneration




a Previous CEO single figure converted from USD to GBP at the relevant year average exchange rate.
b 2022 is the first full year of remuneration outcomes as an executive director.


**Target:** £8.78m
**Maximum:** £15.91m

**16%**
**Total fixed remuneration**

**84%**
**Total variable remuneration**

**Key**
1. Salary and benefits
2. Retirement benefits
3. Annual bonus
4. Performance shares

### CFO – 10-year trend of remuneration


a 2022 is the first full year of remuneration outcomes as an executive director.


**Target:** £4.56m
**Maximum:** £8.14m

**19%**
**Total fixed remuneration**

**81%**
**Total variable remuneration**

**Key**
1. Salary and benefits
2. Retirement benefits
3. Annual bonus
4. Performance shares

## Annual bonus

See page 120

**75.5% of maximum**
**has been awarded to the CEO**

**78.0% of maximum**
**has been awarded to the CFO**

## Performance shares

See page 122

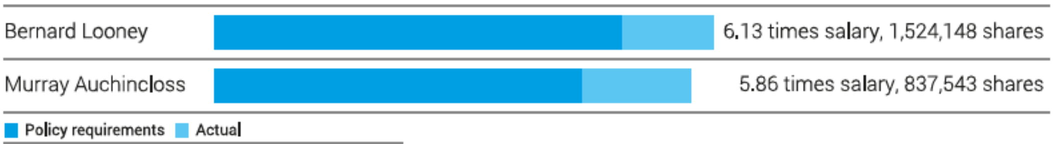
**54% of maximum**
**awarded to CEO and CFO**

## Application of discretion

These outcomes are post-application of committee discretion and represent final outcomes for the executive directors. For more detail on the discretion applied, see pages 124-125 respectively.

## Share ownership

Share ownership is a key means by which the interests of executive directors are aligned with those of shareholders.



# Engaging with our wider workforce

A strong committee, in our view, spends the majority of its time ensuring that we have fair pay, that we recognize our employees personally and financially, and that the people and culture programmes we have in place create alignment with our strategy and demonstrate our commitment to wellbeing.

We believe the real story of bp lies with our people, the culture frame we are building, our net zero ambition, our determination to be successful and yet to remain a company where we care for and about one another.

The extraordinary economic environment we are operating in has further accentuated focus on how we recognize, reward and care for employees. We are pleased to see the solutions implemented by bp have driven high employee engagement and are making a real impact, especially on more junior employees and those on the front line at a time when care is paramount. We outline here key highlights of this focus in action.

## Supporting the wider workforce in 2022 – key highlights

### Fair pay

- First major energy, mobility and convenience employer to be accredited as a Living Wage Employer in the UK.
- bp's global fair wage commitments are being met in each country in which it operates aligned to 2025 fair wage commitments to be published in the sustainability report this year.
- Focus on front-line retail employees during a period of economic hardship:
  - Hourly wage increases in the UK and US aligned to the Living Wage. UK rates increased earlier than recommended by the Living Wage Foundation.
  - One-off payments made to the global retail population (c.20,000 employees) equivalent to one month's salary – paid over the winter period starting in November 2022.
- All employees, excluding the most senior managers, received a one-off payment in December 2022 as part of the 2022-23 pay review, followed by the normal annual review of base pay to be conducted in early 2023.
- Second year of voluntary ethnicity pay gap reporting in the UK alongside enhanced gender pay gap reporting (to be published separately in March 2023)

### Recognition

- 1.3 million recognition moments since the launch of 'energize!', bp's internal peer-to-peer recognition programme.
- Introduction of cash spot bonus awards for outstanding team and individual contributions.
- Service awards, with more than 9,000 service anniversaries in 2022.
- Share awards to employees under the 2021 reinvent bp share plan – reaching more than 63,000 colleagues in over 60 countries, making all employees owners in bp.
- Share ownership is a key part of remuneration and bp's share programmes are widely recognized by industry bodies. bp won the 2021 ProShare award for Best International Share Plan and Best Overall Performance in Fostering Employee Share Ownership. The company received the 2022 ProShare award for Most Effective Use of Technology, which celebrated bp's systems, benefiting both the employee experience and administration of plans.
- bp's annual cash bonus plan evolved in 2022 to include a higher focus on individual performance – recognizing the value and impact of individual contributions.

### Wellbeing

- Employee engagement scores increased year on year, underpinned by improvements in all four pillars of wellbeing: mental, physical, financial and social.
- Thrive@bp – bp's global wellbeing platform – extended to new countries and businesses. More than 500,000 'healthy habits' have been adopted via the platform.
- Employee assistance programme enhanced with technology, providing access to instant mental health support via a live chat function.
- Financial wellbeing support rolled out across the UK and US, with financial coaching made available to all employees.
- Wellbeing allowance – a fund which allows individuals to select how they wish to spend their money within pre-defined wellbeing categories – introduced in several countries as part of modernizing the reward package.

### Workforce engagement

During 2022 the remuneration committee continued its direct engagement sessions with the wider workforce, building on its work in 2021. See page 94 for the board's workforce engagement agenda.

Specifically on remuneration, a session was held with a diverse group of UK front-line retail employees. The majority came from retail backgrounds and without exception commented that bp is one of the best employers they have experienced. They also shared concerns about how some of our technology could be improved to support productivity, the challenges of accommodating new services such as fast charging in the forecourts, and how we could be more flexible in the design of shifts. We noted their pride in bp, bp's commitment to paying a real living wage and the opportunities to advance. The company-wide reinvent bp share plan was a particular highlight. The committee was struck that in this engagement – as in many others – our employees are quick to speak up, honest and constructive.

# **Directors' remuneration report** continued

## Wider workforce in 2022

| Element | Policy features for the wider workforce | Comparison with executive director remuneration |
|---|---|---|
| **Salary** | Salary is the basis for a competitive total reward package for all employees, and we conduct an annual salary review for all non-unionized employees.<br><br>In setting pay budgets each year, we assess how employee pay is currently positioned relative to market rates, wage inflation forecasts, and business context related to such things as growth plans, workforce turnover and affordability.<br><br>For 2023 for the majority of salaried employees, the pay review comprises both a cash lump sum (paid in December 2022) and base salary increase (effective 1 April 2023) – this was in response to exceptional economic conditions being experienced by colleagues across the world. The average pay increase in the UK, effective 1 April 2023, has been set at 5.5%. | The salaries of our executive directors form the basis of their total remuneration, and we review these salaries annually along the same timelines as the wider workforce.<br><br>We intend to keep increases within the salary review budgets set for our wider workforce, except in specific circumstances.<br><br>In 2023, the proposed increase for our CEO is 4%, below that of the wider UK workforce, and for our CFO is 5.5%, which is equal to the average increase received by employees in the UK. These are effective after the 2023 annual general meeting (AGM).<br><br>Senior leaders, including the executive directors, were not eligible for the December 2022 cash lump sum payment that the wider workforce benefited from. |
| **Pensions and benefits** | We operate different pension plans by location and for those parts of our business where market practice is markedly different, e.g. our retail business.<br><br>For our population of non-retail employees in the UK, covering 62% of the UK workforce, we provide a flexible cash benefits allowance of 20% of salary.<br><br>In the UK, our hourly retail employees, the majority of whom are part-time, are eligible to participate in the National Employment Savings Trust (NEST) where we make contributions and all proceeds are portable with the employee. | Following a review of reward for the UK workforce in 2021, the flexible benefits allowance was increased to 20% of salary (in parallel with the removal of future accruals for members of the UK defined benefit pension plan). Following our principle to align the executive directors' benefits with those provided to the wider workforce, our 2023 policy therefore includes the same benefits allowance of 20% of salary. For 2023, the committee has determined to retain the CEO's pension allowance at 15% of salary. The committee will bring the CEO's allowance into line with that of the wider UK workforce in 2024. For the CFO, this allowance will be adjusted to 20% of salary in 2023 subject to shareholder approval of this policy.<br><br>Other than the provisions of security and tax preparation related benefits, our executive director benefit packages are broadly aligned with those of other employees in the UK. |
| **Annual bonus** | More than half of our global workforce participate in an annual cash bonus plan that multiplies a grade-based target bonus amount by a bp performance factor in the range 0 to 2.<br><br>In 2022 the bonus plan was enhanced to include a stronger link to individual performance. Select participants may be nominated to receive an uplift to their bonus outcome, reflecting their contribution and impact.<br><br>We operate different bonus plans for those distinct parts of our business where market practice is markedly different, such as our trading business. | The annual bonus for executive directors is directly linked to the same bp performance measures and bp performance factor as those for the wider workforce.<br><br>The executive directors are not entitled to a bonus uplift linked to individual performance. |
| **Performance shares** | We operate share plans with three-year vesting for all our senior leaders. Opportunity varies across two broad tiers: group leaders (approximately 300) and senior-level leaders (approximately 4,000). Vesting is subject to bp performance outcomes for the group leader population only – aligned to the executive directors.<br><br>All employees are eligible to receive share awards on an ad hoc basis in exceptional circumstances. bp also operates an award-winning global sharematch programme which is available to over 16,000 employees in 50 countries. | Performance shares for our executive directors have been assessed using the same bp performance scorecard as is used for the group leader performance shares.<br><br>Executive directors share awards are subject to an additional three-year holding period post vesting. Executive directors are also expected to build a minimum level of shareholding equal to 5x salary for the CEO and 4.5x salary for the CFO. This holding cannot be sold until two years post-retirement. |
| **Recognition** | Energize!, our global recognition platform is open to all employees for peer-to-peer recognition. Recognition may be in the form of a 'thank you' or points that can be spent on a catalogue of products. We also operate a spot bonus programme where individuals or teams can be nominated to receive a one-off cash award to recognize their achievements.<br><br>Senior leaders and our two executive directors fully participate in the programmes (typically by giving recognition). They may receive non-financial recognition only through energize!. | |
| **Wellbeing** | All employees have access to mental health support via our employee assistance programme. In addition, Thrive@bp – our global wellbeing platform – is open to all employees and provides access to mental, physical and financial wellbeing support.<br><br>In a number of countries, employees have access to a personal wellbeing fund – a sum of money that can be spent on wellbeing initiatives. In 2022 this was equal to £1,500 per employee in the UK. | |

## Executive directors’ pay for 2022

### Single figure table – executive directors (audited)

| | [redacted] | [redacted] | [redacted] | [redacted] |
|---|---|---|---|---|
| **Salary** | [redacted] | [redacted] | [redacted] | [redacted] |
| **Benefits** | [redacted] | [redacted] | [redacted] | [redacted] |
| **Cash in lieu of retirement benefits** | [redacted] | [redacted] | [redacted] | [redacted] |
| **Annual bonus**[a] | [redacted] | [redacted] | [redacted] | [redacted] |
| **Performance shares**[b] | [redacted] | [redacted] | [redacted] | [redacted] |
| **Total remuneration** | [redacted] | [redacted] | [redacted] | [redacted] |
| Total fixed remuneration | [redacted] | [redacted] | [redacted] | [redacted] |
| Total variable remuneration | [redacted] | [redacted] | [redacted] | [redacted] |

a Annual bonus is subject to deferral into shares for three years at a rate of 33%, subject to the 2023 policy being approved by shareholders. In the event the policy is not approved, deferral would remain at 50%.

b Share price has been based on the average share price over the fourth quarter of 2022 of £4.73 and includes notional dividends arising prior to 10 March 2023.

### Overview of single figure outcomes

#### Salary and benefits

[redacted] from the 2022 annual general meeting. [redacted] salary [redacted] annual general meeting. Both the executive directors receive car-related benefits, coverage of tax return preparation, security assistance, health and life insurance and medical benefits. Changes in the healthcare benefits provided to the executive directors, as approved by the committee, and in the case o[redacted]professional advice provided to him in the course of his duties, are the primary drivers for the increase in the value of taxable benefits compared with 2021.

#### Cash in lieu of retirement benefits

From their appointments as executive directors in 2020, [redacted] ceased to receive any retirement benefits for their service and were aligned to the 15% cash allowance in lieu of benefit rate which applied to the majority of the wider UK workforce at that time. This is the rate that applied during 2022.

## 2022 annual bonus scorecard and outcome

For 2022, the committee established a bonus scorecard of six measures across three categories: safety and sustainability, operational performance and financial performance. These measures align with our strategy and investor proposition (see pages 125 and 126) and were set out under the terms of our 2020 policy.

Safety and sustainability 0.51 + Operational performance 0.12 + Financial performance 0.92 = Formulaic score 1.55 out of 2.0

| Measures | | Weighting | Threshold (0) | Target (1) | Maximum (2) | Outcome |
|---|---|---|---|---|---|---|
| **Safety and sustainability** (30% weight) | Process safety tier 1 and tier 2 events★ | 15% | >68 events<br>0 | 61 events<br>0.15 | 49 events<br>0.3 | 50 events<br>0.29 |
| | Sustainable emissions reductions★ (million tonnes) | 15% | <6.67<br>0 | 6.87<br>0.15 | 7.27<br>0.3 | 7.065 million tonnes<br>0.22 |
| **Operational performance** (20% weight) | bp-operated reliability and availability | 10% | 94.1%<br>0 | 95.2%<br>0.1 | 96.3%<br>0.2 | 95.1%<br>0.09 |
| | Margin share from convenience and electrification | 10% | 27.4%<br>0 | 30.6%<br>0.1 | 33.0%<br>0.2 | 28.5%<br>0.03 |
| **Financial performance** (50% weight) | Adjusted free cash flow★ | 25% | $23.7bn<br>0 | $24.7bn<br>0.25 | $25.7bn<br>0.5 | $25.8bn<br>0.50 |
| | Cumulative cash cost reductions 2022 vs 2019 | 25% | $2.7bn<br>0 | $3.0bn<br>0.25 | $3.3bn<br>0.5 | $3.2bn<br>0.42 |
| **Formulaic score** | | | | | | 1.55 out of 2.0 |

Formulaic scorecard outcome **1.55 out of 2.0**

Committee discretion for FX rate environment **+1 point**

**1.56 out of 2.0** for CEO, CFO

Committee judgement for fatalities for CEO **-5 points**

**1.51 out of 2.0** for CEO

**1.56 out of 2.0** for CFO

**1.56 out of 2.0** for wider workforce

Committee discretion for fuel sales margin volatility **+6 points**

**1.62 out of 2.0** for wider workforce

**Safety performance**, as measured by tier 1 and 2 process safety events, was strong with the mechanical outcome near maximum. The committee's review of safety performance is detailed on page 121 and in the safety and sustainability committee (S&SC) report on page 110.

**Sustainable emissions reductions** (SER) of 7.065mte cumulative (2022 vs. 2017) was more than target for the third year running and reflective of strong progress against our aim 1 milestones. At the start of the year bp identified opportunities for emission reductions, based on planned activity totalling only 635kt in 2022. However, an SER target of 1.3Mt was set, based on previous year delivery (1.2Mt) presenting a significant stretch for bp. We have continued to embed a net zero mindset and ownership of emissions performance across the operating entities. This approach allowed our sites to review existing activity sets and identify projects with SER potential that were not in existing plans, e.g. Tangguh steam heat recovery project (86kt). Other key contributions across bp's portfolio, included the Gelsenkirchen refinery and chemicals and Rotterdam and Cherry Point refineries switching to low carbon power (662kt) and bpx energy projects including electrification, vapour recovery in Eagle Ford and centralized processing at Grand Slam (351kt).

**Reliability and availability** is a measure of bp-operated upstream plant reliability and bp-operated refining availability. bp-operated upstream plant reliability strengthened year-on-year to 96.0% (94% in 2021), a historical record. bp-operated refining availability was below the target outcome at 94.5%. It was impacted by an increase in maintenance activity.

**Margin share from convenience and electrification** was below target with performance heavily influenced by adverse foreign exchange impacts and the volatility of bp's fuel sales margin, driven by the macro-economic environment.

Financial performance, as measured by **adjusted free cash flow** and **cumulative cash cost reductions**, was very strong. bp generated adjusted free cash flow of $25.8 billion, which resulted in the maximum outcome. Our targets are environment-adjusted at year end and the revised target was £24.7 billion. This result also excludes any cash flow from our stake in Rosneft. Cumulative cash cost reductions of $3.2 billion reflected continued discipline in cost management within our financial frame against a target of $3.0 billion.

The formulaic score for the 2022 annual bonus was 1.55 out of 2.00 (77.5% of maximum).

We took input from the audit committee and S&SC to ensure our conclusions were robust and reflected underlying and sustained performance. This included a detailed review of safety performance and how we are trending over time. We also noted the upwards adjustments made to the adjusted free cash flow targets to remove the impact of the external price environment, focusing on underlying performance (avoiding unintended gains or losses).

As part of the committee's holistic review of performance, it was identified that the formulaic outcome for the margin share from convenience and electrification measure was not reflective of underlying performance. Performance was negatively impacted by foreign exchange rate volatility (strengthening of the US dollar) which was not in the executives' control. The committee has therefore adjusted the target to reflect the actual (not plan) foreign exchange rate environment. This resulted in the formulaic score increasing by one point, from 1.55 to 1.56 for all participants. Performance under this measure was also impacted by the volatility of margins from fuel sales in 2022 compared with historical norms over the past five years. The committee determined that, for the wider workforce only, a further discretionary adjustment should be made to reflect the historic norms as intended by the committee at the point targets were set. The result of this adjustment is an increase in the formulaic score by six points, to 1.62 out of 2.00 (81% of maximum) for the wider workforce. The adjustment will not apply to the CEO and CFO.

The formulaic score for safety in the bonus scorecard is an outcome of process safety tier 1 and tier 2 events. In determining the overall bonus score the committee can apply judgement based on other factors such as fatalities and safety culture.

So, while underlying safety performance was strong, as measured by process safety tier 1 and tier 2 events, we tragically lost four colleagues during the year. The committee, alongside the S&SC, considered these events (see 'A focus on safety' below) and resolved to apply a downward adjustment to the annual bonus for the CEO and cascade this through the relevant members of the bp leadership team. The resulting score for the CEO has therefore been reduced from 1.56 to 1.51 (75.5% of maximum).

## A focus on safety

We are deeply saddened by the loss of four colleagues in 2022. These losses are devastating for the families and our thoughts are with them. They have a profound impact on our organization and the communities in which we operate. For more detail on these incidents, our response and our safety performance, see page 65.

The remuneration committee seeks input from the S&SC on safety performance each year, both relative to the annual bonus scorecard, and underlying performance beyond the formal measures we link to remuneration.

Alongside the S&SC, we have considered these tragic events and our underlying safety performance to agree the extent to which a discretionary adjustment should be applied to incentive outcomes. To be clear, there is no value that we would associate with a loss of human life and therefore we do not operate a formulaic policy in such situations.

The committee takes the view – shared by bp's leadership – that at bp safety comes first and thus avoiding workplace safety incidents must be the top priority. As such, the committee has applied downward discretion on the outcome for the CEO and relevant members of management for the associated business units. The resulting score for the CEO has therefore been reduced from 1.56 to 1.51.

The committee also reviews underlying safety performance as part of its holistic review of incentive outcomes. Safety performance in 2022 was strong, relative to the metrics we set at the start of the year – tier 1 and 2 process safety events. We recorded 50 events this year, a record low (2021 62). However, within this metric tier 1 events – the most serious – increased from 16 in 2021 to 17 in 2022. Two of the four fatalities impacted the number of tier 1 events. The committee determined that a further reduction for the same incidents was not appropriate beyond that already described above.

To improve the focus on process safety tier 1 events, the committee, with input from the S&SC, has decided to modify how we measure safety for the 2023 annual bonus scorecard so that both tier 1 and tier 2 events are measured independently, rather than as a combined metric. The greater focus on tier 1 delivery aligns with our goal to eliminate tier 1 events.

## 2020-22 performance share plan scorecard and outcome

2020-22 performance share awards were the first granted to the CEO and CFO under the executive director incentive plan (EDIP). The EDIP runs on a three-year cycle, and therefore this is the first EDIP vesting since their appointment as executive directors.

The scorecard for the 2020-22 cycle – the first under the 2020 policy – consists of relative total shareholder return (rTSR) (40% weighting), return on average capital employed (ROACE)★ (30% weighting) and strategic progress (30% weighting).

### 2020-22 performance share plan scorecard (audited)

These measures were set under the terms of our 2020 policy.

Relative total shareholder return 0.0% + Return on average capital employed 30.0% + Strategic progress 30.0% = Formulaic vesting 60.0%

| Measures | | Weighting at maximum | Threshold performance | Maximum performance | Outcome |
|---|---|---|---|---|---|
| **Financial** (70% weighting) | Relative total shareholder return | 40.0% | Fourth | First | Sixth<br>0.0% |
| | Return on average capital employed (2020-22 average) | 30.0% | 10.0% | 13.0% | 13.4%<br>30.0% |
| | | | | **Outcome** | **30%** |
| **Strategic progress** (30% weighting) | Deliver value through resilient hydrocarbon business | 10.0% | Qualitative and quantitative assessment by the committee, see page 123. | | 10.0% |
| | Accelerate growth in convenience and mobility | 10.0% | | | 10.0% |
| | Demonstrate track record, scale and value in low carbon energy | 10.0% | | | 10.0% |
| | | | | **Outcome** | **30.0%** |
| **Formulaic vesting** | | | | | **60.0%** |

Formulaic vesting 60.0% (applied to wider workforce)

**Committee judgement:** discretionary adjustment to account for low share price at grant (see page 124 – 'windfall gains')

Final vesting after committee judgement for the CEO and CFO 54.0%

## Financial

Performance for rTSR was disappointing (sixth place out of eight peers), yielding nil vesting. Performance for ROACE, at 13.4% over the period, was strong and resulted in maximum vesting of this measure. The ROACE outcome aligns to our 2025 strategic objectives and reflects a recovery and subsequent sustained year-on-year growth in returns across the three-year performance period (2020 -3.8%, 2021 13.3%, 2022 30.5%).

## Strategic progress

Strategic progress is determined using a balance of quantitative assessment and qualitative judgement against bp's three strategic pillars; to deliver value through a resilient hydrocarbon business; to demonstrate track record, scale and value in low carbon energy, and; to accelerate growth in convenience and mobility. Following our review of achievements and progress towards bp's 2025 targets, the committee determined that bp's strategic progress over the 2020-22 period was fully on track. We therefore determined that maximum vesting under this measure of the 2020-22 scorecard is justified. The paragraphs below describe the qualitative and quantitative factors that led us to our determination.

### Deliver value through a resilient hydrocarbon business

| Measure | 2020 | 2021 | 2022 | 2025 targets |
|---|---|---|---|---|
| Upstream unit production costs ($/boe) | 6.39 | 6.82 | 6.07 | ~6 |
| bp-operated upstream plant reliability (%) | 94.0 | 94.0 | 96.0 | 96 |
| bp-operated refining availability★ (%) | 96.0 | 94.8 | 94.5 | ~96 |

Upstream production costs per barrel have now fallen from $6.8/boe (2019) to $6.1/boe over this cycle, placing bp well-ahead of the $6/boe target by 2025. Also, upstream plant reliability reached 96% in 2022 – a record outcome that already meets the 2025 target. While ahead on these two indicators, refining availability is lower in the period, with the 2022 result of 94.5% reflecting an increase in maintenance activity. Business improvement plans remain in place to meet the target of around 96% by 2025.

bp continues to high-grade its portfolio, converting and consolidating the existing asset base. Great progress was made in 2022 with the Azule Energy JV in Angola, Iraq IJV, Sunrise divestment, Algeria and Toledo divestments announced. There are opportunities for refinery conversion or consolidation with five major projects announced, including the conversion of Kwinana to an Energy Hub. bp signed 30-year production-sharing contracts with the Indonesian government, paving the way for exploration activities in the Agung I and II offshore gas blocks and the Gulf of Mexico Herschel expansion project started up ahead of schedule and with no safety incidents. Overall, we find bp's hydrocarbon business has delivered significant value over the cycle, particularly in 2022, and is well-positioned to meet the targets set for 2025.

### Demonstrate track record, scale and value in low carbon energy

| Measure | 2020 | 2021 | 2022 | 2025 targets |
|---|---|---|---|---|
| Developed renewables to final investment decision (GW)★ | 3.3 | 4.4 | 5.8 | 20 |
| Biofuels production (kb/d) | 30 | 26 | 27 | 50 |
| LNG portfolio (Mtpa) | 20 | 18 | 19 | 25 |

bp has made strong progress over the first three years in the strategic pillar of low carbon energy focusing on hydrogen and renewables & power transition growth engines. In renewables and power bp has more than doubled since the end of 2019 renewables to FID and delivered a pipeline of renewable projects of 37GW bp net by the end of 2022. bp's share in LSbp has grown from 8GW in 2020 to 14GW in 2022 with LSbp expanding its presence to 19 countries. bp has established presence in UK and US offshore wind with 5GW pipeline, added 10GW renewable projects pipeline in support of hydrogen export hubs and acquired 7GW US solar projects pipeline. In hydrogen bp is in action building regional hubs in the UK, US and Europe and global export hubs in advantaged geographies like MENA and Asia Pacific. bp pipeline of hydrogen projects in concept development reached 1.8Mtpa bp net by end 2022.

Bioenergy, one of five strategic transition growth engines that bp intends to grow rapidly through this decade, is progressing well, especially with the recent acquisition of Archaea Energy, which is a leading US provider of renewable natural gas (RNG), building out our existing biogas business and helping us expand into the fast-growing US biogas market. Two new bioenergy measures were introduced in 2021; biofuels production and biogas supply. Against 2025 targets bp is on track with strong progress in 2022.

In LNG, bp began lifting cargoes from Mozambique under a long-term agreement to purchase 100% of output from the Coral Sul facility which has capacity to produce 3.4 million tonnes of LNG per year. bp's LNG portfolio★ is strong, with significant commitments in place for future projects, lending confidence that the company is on track to deliver 25Mtpa by 2025.

### Accelerate growth in convenience and mobility

| Measure | 2020 | 2021 | 2022 | 2025 targets |
|---|---|---|---|---|
| Electric vehicle charge points | 10,100 | 13,100 | ~22,000 | >40,000 |
| Strategic convenience sites★ | 1,900 | 2,150 | 2,400 | ~3,000 |
| Margin share from convenience and electrification (%) | 27.6 | 29.1 | 28.5 | ~35 |

In convenience and mobility bp continues to make strong strategic progress. A new global convenience partnership was signed with Uber and bp are aiming to make around 3,000 retail locations available on Uber Eats by 2025. A new supply contract and brand partnership was signed with Julius Stiglechner GmbH, in Austria, establishing the bp brand in nearly 160 stores. In Air bp a strategic collaboration agreement was signed with DHL Express to supply sustainable aviation fuel (SAF) until 2026, and a SAF supply contract with Rolls-Royce in the UK and Germany.

In March 2022, bp announced plans to invest up to £1 billion over the next 10 years to support the roll-out of fast, convenient charging infrastructure across the UK and to nearly triple our number of UK public charge points. Further progress has been evidenced by a new exclusive agreement in the UK with M&S to install fast charge points in around 70 of their stores; expansion of the strategic partnership with REWE in Germany to include the installation of fast[a] charge points at up to 180 of their sites; and building momentum in fleet business with plans to establish a bp pulse Gigahub network – a series of large, EV fast charging hubs designed to serve ride-hail and taxi fleets, near US airports and high-demand locations and we're collaborating with Hertz in the US, with plans to install and manage a national network of EV charging solutions, powered by bp pulse. Amply Power, acquired in 2021 (now rebranded as bp pulse), is working towards installing charging infrastructure at 25 Hertz rental locations in several states across the US.

The 2022 result on margin share from convenience and electrification has been impacted by fuels sales margin volatility and foreign exchange impacts, even though underlying progress in convenience and electrification has been strong. Looking forward, bp will simplify this measure to track growth in convenience and electrification gross margin.

a 'Fast' charging comprises rapid charging ≥50kW and ultra-fast charging ≥150kW.

★ See glossary on page 389

## Other vesting considerations

Along with the results from the scorecard measures, the committee considers an 'underpin' to the formulaic outcome in order to determine the final vesting percentage. The underpin broadens our performance assessment, allowing us to consider vesting outcomes with overall alignment to absolute shareholder returns, environmental and safety factors and progress in low carbon and climate change matters. Where relevant, we take input from the safety and sustainability committee and the audit committee to deepen and enhance our perspective.

Beyond the discretion applied to account for the low grant price in 2020, the committee concluded that there was no reason to apply a further discretionary adjustment and therefore the plan should vest at 54% of maximum. This yields the outcomes shown in the table below.

### 2020-22 performance share plan outcome (audited)

| | Shares awarded | Unvested shares following application of performance factor | Value of unvested shares following application of performance factor | Impact of share price change[a] |
|---|---|---|---|---|
| Bernard Looney | 2,076,677 | 1,270,087 | £6,007,512 | £2,032,139 |
| Murray Auchincloss | 999,201 | 611,107 | £2,890,536 | £977,771 |

a These values reflect the impact of the increase in share price since grant related to the number of shares which are no longer subject to performance conditions, including dividend equivalents. The value of unvested shares not subject to performance conditions reflects the share price changes all shareholders have experienced over the three-year period. For this 2020-22 award cycle, the original grant was calculated based on ordinary share price of £3.13, while the average share price in 4Q 2022 was £4.73. Consequently, the share price gain has increased the initial face value of these awards by approximately 51%.

## Application of committee discretion on 2020-22 performance share outcomes

### Context of decisions made in 2020

The 2020-22 performance share award was granted at a share price of £3.13 in August 2020. This grant price represented a material reduction (-41%) from the prior year's grant price of £5.33. Consequently, [redacted] received a grant of [redacted] in August 2020 (grant price of £3.13) compared with a grant of [redacted] he would have received in 2019 at a grant price of £5.33 – both awards equated to the same relative value at grant (5x salary), as defined by the 2020 policy. The committee's decision at the point of grant was to defer consideration of this impact until the point of vesting.

The context of this decision is important – firstly, in February 2020, Bernard announced a significant change in strategic direction of the company followed by a major restructuring including a material reduction in our workforce. Secondly, as these changes were being absorbed, the world was confronted with the onset of the COVID-19 pandemic and the resulting impact on stock markets. Finally, in line with our 2020 policy, we were to price and award our 2020 grant based on the 90-day average share price prior to the date of the AGM in May – a policy change driven by shareholder guidance that our earlier methodology of adopting the average Q4 share price of the year prior and awarding shares in March, required a change. In May 2020, given continuing volatility of stock markets the committee determined to delay the grant by a further three months to August to allow for the share price to stabilize. In August 2020 the committee noted that while prices were at historic lows, there was no line of sight to return to the pre-2020 pricing levels. As evidence of the volatile conditions, the share price dipped even further to its lowest level of the period to £1.92 in October 2020.

For the two executive directors, the 2020 EDIP grant was the first grant they would receive as newly appointed executive directors. At this point they were facing the unprecedented challenge of running the company with a new purpose and strategy while managing great economic uncertainty driven by a pandemic with no end in sight. We conferred with shareholders at the time and the majority were sympathetic to our dilemma and reluctance to reduce the grant size. However, in the circumstance, we agreed that we would determine a fair and appropriate outcome three years hence and potentially use discretion as to how many shares would ultimately vest.

### Assessment of the 'gain' by executives

The 2020 grant used a price of £3.13 as the basis for determining the number of shares awarded. This could be compared with a range of prices to determine the theoretical 'gain' between the award price and the share price at vesting. bp's share price over the previous five years ranged from £3.10 to £5.98 resulting in quite different conclusions on the amount of any 'gain'. In the event, the committee determined to select the 2019-21 EDIP grant price of £5.33, this being the highest price over the period since the 2019 award was made from which to assess the extent of any 'gain'.

Applying this price, the 'gain' received by the CEO between the two awards was calculated as [redacted] awarded in 2020 at a price of £3.13 vs. [redacted] that would have been awarded under the 2019 grant price of £5.33). This formed the basis of the committee's determination for a discretionary downwards adjustment.

### The committee's perspective

In considering a fair and appropriate adjustment the committee debated a number of factors including: our overarching policy and principles, the history of bp's share price movement before and after 2020, our relative share price performance vs our peers and other reward outcomes of 2020, as outlined below.

#### Consistent application of policy and principles

Our consistent approach over many years has been to accept volatility as a natural aspect of share awards – we have neither adjusted up, or down, vesting outcomes based on share price volatility.

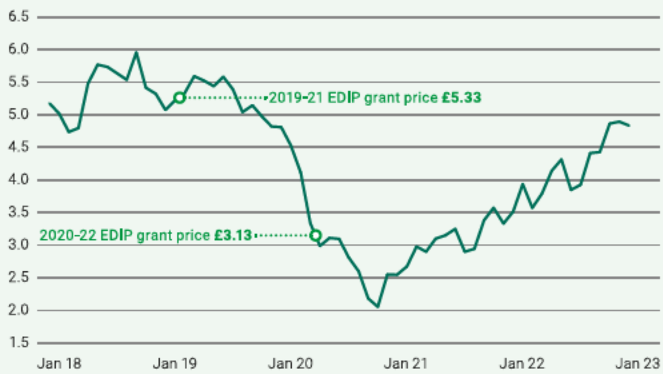
### Share price history

The fall, and subsequent recovery of the share price was not immediate and was driven by many converging factors; demand recovery, excellent pandemic and post-pandemic leadership, and a greater belief of the market in bp's strategy.

In particular, the share price remained at or below £3.13 (the price used to determine the grant) until September 2021 and was within 10% of the grant price until the end of December 2021, demonstrating that the price used to determine the grant was not a short term low point.

Additionally, the average share price over the three financial years 2020-22 was £3.48.

**Share price** ORD £[a]




a Grant prices are calculated as a share price average over a defined period. Positioning on the chart is illustrative.

### Relative performance

The committee is mindful that bp experienced a slower recovery than many of our peers. This is measured in the performance share plan scorecard using relative total shareholder return (rTSR). Under the 2020-22 cycle this returned a nil vesting outcome. The committee is comfortable therefore that the poor relative performance has been tested and reflected appropriately in the outcome.

### Other reward outcomes for CEO and workforce in 2020

- No bonus was paid for 2020 –worth ~£1.5 million at target.
- Performance shares granted in 2018 and vesting in 2020 experienced a 'windfall loss' of -46%.
- All employees received shares/options in 2021 under the bp reinvent plan – the CEO and CFO were excluded.

Finally, we are strongly of the view that executives should be aligned to the shareholder experience and that fluctuations in the share price are a function of share plan mechanics. The release of the 2020 award, and therefore the true value delivered to executives, will not occur until six years post-grant (a three-year performance period plus a three-year holding period) i.e. Q1 2026 at the earliest. This is further extended by the committee's expectation that executives will not sell shares until two years post-retirement (the point at which our minimum shareholding requirement policy ends).

### The committee's decision

Ultimately, application of discretion in this type of scenario is complex. The committee has sought feedback during our engagement with shareholders and representatives of the primary proxy voting agencies. Our conclusion is that an adjustment to the vesting outcome is appropriate but must be fair, taking into account all of the above factors.

The formulaic performance-based vesting for the 2020-22 award is 60%. The 40% lost on account of performance is due to the rTSR measure. Given all of the considerations listed above, we propose a 25% reduction of the 'gain' of [redacted] in 2020. This translates to [redacted] shares, which is 10% of the initial grant of 2,000,000 shares.

Applying this 10% adjustment to the vesting outcome of 60% for the 2020-22 award results in a final vesting of 54% of maximum or a reduction of [redacted] for the CEO.

We view this adjustment as discretionary in the extreme. While we believe the above factors are relevant, we do not intend that this reduction calculation should become embedded in policy. We will continue to use our discretion as we address the unique circumstances that surround share price variations that have been pervasive since March 2020.

The committee has also determined that no deduction will be applied to shares granted to the wider workforce.

## Alignment with our strategy and investor proposition

bp's strategy has been, and remains, the primary driver of our remuneration policy. Each year the committee aims to set a remuneration structure for the executive directors that supports and incentivizes progress against our strategy. In a policy review year this becomes ever more important as it allows the committee a reflection point to assess whether the remuneration structures we have in place are fit-for-purpose, provide the flexibility needed for a transitioning company, and create the right alignment with the strategy and shareholder experience.

As discussed in detail throughout the strategic report (see page 4), we are leaning further into our strategy, investing in our transition and to accelerate the energy transition. bp is also investing more into today's oil and gas system. In light of this evolution, the committee believes the fundamental structure of remuneration for our senior leaders is appropriate – we are not proposing material changes to the 2020 policy because it provides the platform to meet our needs across three areas:

- Creates alignment of strategy, performance and shareholder experience with reward outcomes.
- Allows flexibility for the committee to apply judgement and discretion through the energy transition and in volatile economic conditions.
- Provides a robust framework with which to track and measure performance and strategic progress.

The implementation of our policy is where the committee's focus has been, to ensure alignment of strategy, performance and the shareholder experience. Aligning pay outcomes with results delivered for shareholders is among the most important tasks that the committee undertakes. Our commitment remains to oversee this alignment with care, and to explain the basis for the judgements we make.

### Alignment of strategy and remuneration

Each year the committee will agree the performance framework for senior leadership, as set out in the performance scorecards under the annual bonus and performance share plan (see page 130 for 2023 scorecards). This involves a combination of performance measures, a frame for judgement to be applied through formal underpins, and the flexibility to make discretionary adjustments where the need arises.

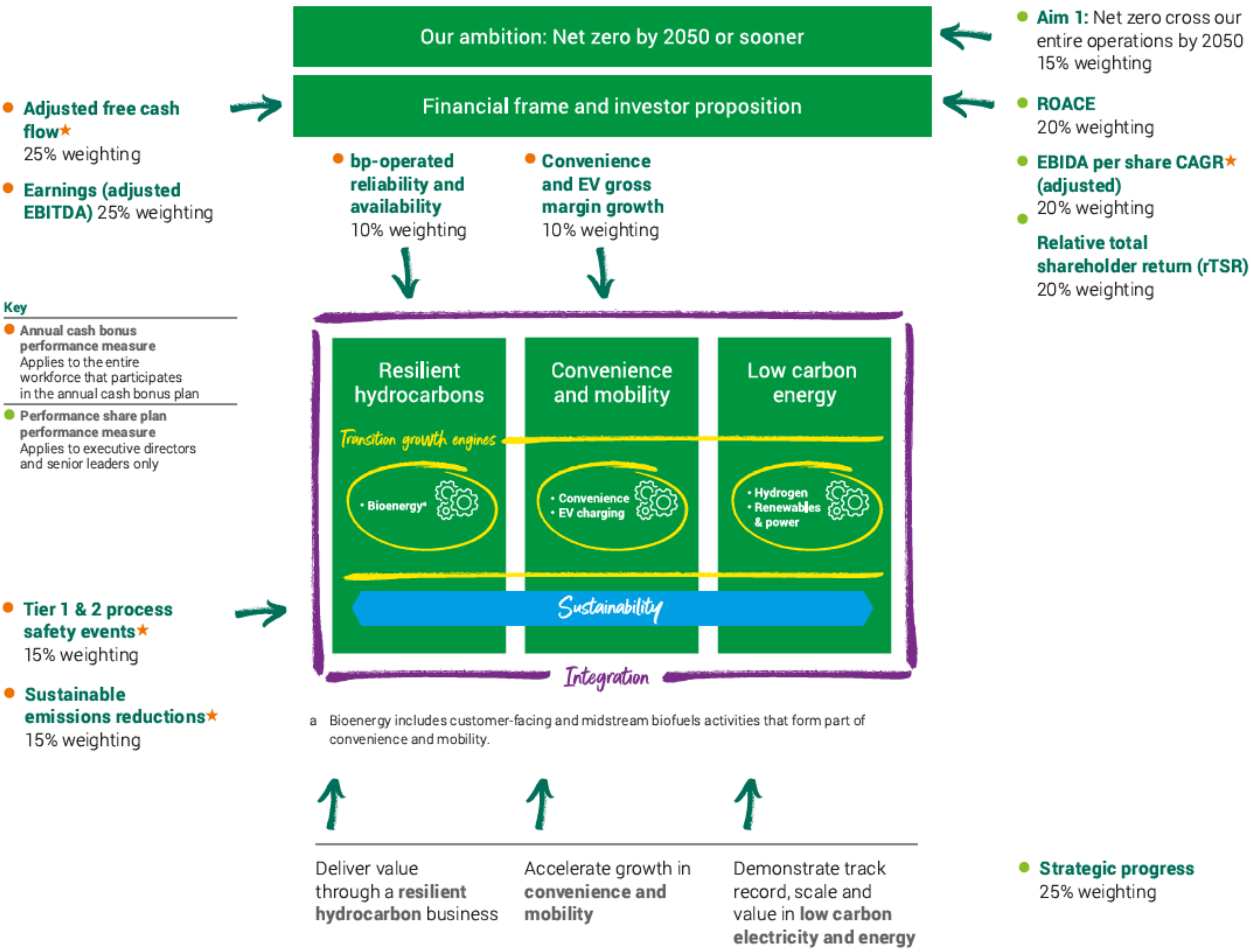
# **Directors' remuneration report** continued

The committee has adopted a combination of performance lenses to ensure alignment to our strategy:

- **Safety and sustainability** – to support our fundamental goal of no harm to our people and driving our net zero ambition. Safety and sustainability is a key thread that runs through all of our incentive arrangements either by formal measure or underpin.
- **Operational** – a focus on operational delivery and returns that underpins sustainable financial success, which is critically important as we progress through the transition to an integrated energy company.
- **Financial** – a headline performance indicator and a key measure of success by our shareholders. Commercial delivery within our financial frame will remain of primary importance.
- **Strategic** – perhaps the most important aspect for strategic alignment, we have built into our remuneration structure a performance lens which focuses on ongoing multi-year progress against the three pillars of our strategy, beyond the headline measures of financial and operational performance.

For our senior leaders, remuneration measures under each of the categories balance delivery against our financial frame, investor proposition, and with our core value of safety. Our measures and weightings across annual bonus and performance share plans have evolved over time to balance a clear direction across performance cycles with the evolving nature of the transition.

## Alignment of 2023 variable remuneration with strategy




a Bioenergy includes customer-facing and midstream biofuels activities that form part of convenience and mobility.

## History of chief executive officer remuneration

| Year | Chief executive officer | Total remuneration thousand[a] | Annual bonus % of maximum | Performance shares % of maximum |
|---|---|---|---|---|
| [redacted] | | | | |

a 2020 figures show remuneration for the periods of qualifying service as CEO during 2020.
b Share price has been based on the average share price over Q4 of the 2022 FY of £4.73.

## Chief executive officer to employee pay ratio

| Year | Method | [redacted] | | |
|---|---|---|---|---|
| 2019[a] | Option A | 543:1 | 188:1 | 82:1 |
| | | [redacted] | | |
| 2020[a] | Option A | 99:1 | 40:1 | 19:1 |
| | | [redacted] | | |
| 2021 | Option A | 208:1 | 87:1 | 35:1 |
| | | [redacted] | | |
| **2022[b]** | **Option A** | **421:1** | **172:1** | **69:1** |
| | | [redacted] | | |

a [redacted] pay has been converted from US dollars as per the ratios reported in the 2019 and 2020 annual reports.
b Share price for the CEO share plan vesting has been based on the average share price over the fourth quarter of 2022 of £4.73.

This is our fourth year reporting the CEO pay ratio following the requirements introduced in 2018. As per the past three years, we have selected Option A as our reporting basis, being the most accurate approach available, and we confirm that no broadly applicable components of pay have been omitted. Where necessary, full-time equivalent pay has been calculated by simple engrossment of part-year values. Employee values relate to pay and benefits for the year ended 31 December 2022.

Changes in pay ratio over time reflect the fact that CEO remuneration is more heavily weighted to variable pay, resulting in larger year-on-year swings than wider workforce pay. This is evidenced by the variability of the CEO pay ratio over the past four years. This volatility in the pay ratio reporting from year to year is expected, and illustrates one of the challenges in commenting on whether pay differentials are appropriate. In 2022 the 50th percentile pay ratio increased from 87:1 to 172:1. This was driven by higher variable pay outcomes for the CEO. Notably this was the first year in which the executive director incentive plan (EDIP) vested for the CEO, being three years since the first grant was made in 2020. It is the view of the committee that the remuneration frameworks we have in place for the executive directors and the wider workforce are fit-for-purpose and deliver pay outcomes appropriate to the circumstance of the year, with differentials that reflect the relative contributions made at different levels in our organization.

The committee is satisfied that the median pay ratio reported this year is consistent with bp's pay policies for employees and does not constitute a reason to modify our pay programmes.

★ See glossary on page 389

## Percentage change comparisons: Directors' remuneration versus employees

In the table below, values in column 'a' represent the percentage change in salary and fees; values in column 'b' represent the percentage change in taxable benefits; and values in column 'c' represent the percentage change in bonus outcomes for performance periods in respect of each financial year.

For the purposes of comparison, the employee percentages shown below represent the relative change between the median full-time equivalent pay for every employee employed at bp plc at any point during the relevant financial year, and the equivalent median value for the preceding financial year.

| | 2022 v 2021 | | | 2021 v 2020 | | | 2020 v 2019 | | |
|---|---|---|---|---|---|---|---|---|---|
| Percentage change for: | a | b | c | a | b | c | a | b | c |
| Employees | 2% | 1% | 45% | 7% | -9% | 100%[a] | 0% | 0% | -100% |
| [redacted] | 4% | 233% | -2% | 2% | -29% | 100% | – | – | – |
| [redacted] | 7% | 530% | 3% | 5% | 5% | 100% | – | – | – |
| [redacted] | – | – | n/a | – | – | n/a | – | – | n/a |
| [redacted] | 7% | 43% | n/a | 4% | 1385% | n/a | -15% | -92% | n/a |
| [redacted] | 0% | 97% | n/a | 0% | -24% | n/a | 0% | -74% | n/a |
| [redacted] | 13% | 139% | n/a | -4% | 283% | n/a | 9% | -77% | n/a |
| [redacted] | 25% | 0% | n/a | 5% | 0% | n/a | – | – | n/a |
| [redacted] | 16% | 145% | n/a | 6% | 228% | n/a | 2% | -92% | n/a |
| [redacted] | 30% | 96% | n/a | – | – | n/a | – | – | – |
| [redacted] | 17% | 1% | n/a | 0% | 1588% | n/a | 0% | -83% | n/a |
| [redacted] | 21% | 65% | n/a | – | – | n/a | – | – | – |

a The resumption of bonus for 2021 is, mathematically, an infinite increase relative to the nil bonus for 2020; we have shown the increase as 100% for illustration.

[redacted] were appointed to the board part-way through 2020 and therefore, other than for one-time items, their 2020 pay has been annualized for comparison. Taxable benefit changes for non-executive directors in 2021 compared to 2020 principally arise as a result of the cessation of and resumption of travel.

[redacted] were appointed to the board in 2021 and therefore no comparison to 2020 or 2019 is available.

[redacted] was appointed to the board in 2022 and therefore no comparison to 2021, 2020 or 2019 is available.

## Policy implementation for 2023

The table below shows how the proposed remuneration policy, to be approved by shareholders at the 2023 annual general meeting, will be implemented in 2023, alongside a summary of key features.

| Element | Policy feature | 2023 implementation |
|---|---|---|
| **Salary** | To provide fixed remuneration to reflect the scale and complexity of both the business and the role, and to be competitive with the external market.<br><br>When setting salaries, the committee considers practice in other oil and gas majors as well as European and US companies of a similar size, geographic spread and business dynamic to bp. Percentage increases for executive directors will not exceed that for the wider workforce, other than in specific circumstances identified by the committee (e.g. in response to a substantial change in responsibilities). | • [redacted] |
| **Pensions and benefits** | Executive directors normally participate in the company retirement plans that operate in their home country.<br><br>New appointees from within the bp group retain previously accrued benefits related to service prior to appointment as executive director. For their service as a director, retirement benefits will be up to 20% of base salary.<br><br>For future appointments, the committee will carefully review any retirement benefits to be granted to a new director, taking account of retirement policies across the wider group and any arrangements currently in place. | • [redacted] are deferred members of final salary pension plans related to their service prior to appointment as executive directors, but now receive a cash allowance in lieu of retirement benefits.<br>• The committee has determined to retain [redacted] pension allowance at 15% salary for 2023. He accrues no further value under his deferred pension.<br>• [redacted] cash allowance will be changed to 20% subject to shareholder approval of the 2023 remuneration policy and he accrues no further value under his US deferred pension.<br>• Benefits will remain unchanged for 2023 and include car-related provisions, security assistance, insurance and medical cover. |

| Element | Policy feature | 2023 implementation |
|---|---|---|
| **Annual bonus** | Bonus is measured against an annual scorecard. The committee holds discretion to choose the specific measures and the relative weightings adopted in the annual scorecard, to reflect the annual plan as agreed with the board.<br><br>Numeric scales are set for each measure, to score outcomes relative to targets. A scorecard outcome of 1.0 reflects the target outcome, and half of the maximum outcome.<br><br>Target bonus is 112.5% of salary, and maximum bonus is 225% of salary.<br><br>Half the bonus is paid in cash, and half is deferred into bp shares for three years up until 'minimum shareholding requirement' is met. At this point, 67% is paid in cash and 33% is paid in bp shares. Dividends (or equivalents, including the value of any reinvestment) may accrue in respect of any deferred shares.<br><br>Awards are subject to operationally robust and effective malus and clawback provisions as described below. | • For our 2023 bonus, our scorecard categories will remain unchanged from 2022 with safety and sustainability (30%), operations (20%), and financials (50%).<br>• We propose to make two changes to performance measures in 2023:<br>– Introduce a profit measure (adjusted EBITDA) under the financials category, in place of cumulative cash cost reductions to reflect our strategic progress on costs and forward-looking focus on earnings.<br>– Modify the process safety measure to track tier 1 and tier 2 process safety events★ separately in order to increase focus on the most serious tier 1 events.<br>• See measures for 2023 annual bonus on page 130 for more detail.<br>• The 2023 policy, if approved by shareholders, will apply to 2022 bonus outcomes. |
| **Performance shares** | Performance shares are granted with a three-year performance period, measured against a scorecard.<br><br>The committee holds discretion to choose the specific measures and the relative weightings adopted in the scorecard, to ensure they are focused on the near-term priorities for delivering the bp strategy in the interests of shareholders.<br><br>Annual grants are 500% of salary for the CEO, and 450% of salary for any other executive director. Awards will vest in proportion to the outcomes measured through the performance scorecard, subject to any adjustment by the committee. | • For our 2023-25 cycle, we propose the introduction of one new measure, to incentivize progress towards our aim 1 net zero ambition with a weight of 15%. Consequently, we have reduced the weighting of strategic progress from 40% to 25%. We will retain rTSR (20%), ROACE (20%), and adjusted EBIDA per share CAGR★ (20%). See measures for 2023-25 performance shares (EDIP) on page 130 for more detail.<br>• The 2023-25 awards will be granted based on the average closing share price of each trading day in the 90-day period ending on the date of bp's 2023 annual general meeting.<br>• Awards are subject to operationally robust and effective malus and clawback provisions as described below. |
| **Shareholding requirement** | CEO to build a shareholding of at least five times salary, and other executive directors four and a half times salary, within five years of appointment.<br><br>Executive directors are required to maintain that level for at least two years post employment. | • [redacted]shareholding has reached 6.13 times salary, above his minimum shareholding requirement.<br>• [redacted]shareholding has reached 5.86 times salary, above his minimum shareholding requirement. |
| **Malus and clawback** | Operationally robust and effective malus provisions may apply where there is: a material safety or environmental failure; an incorrect award outcome due to miscalculation or incorrect information; a restatement due to financial reporting failure or misstatement of audited results; material misconduct; or other exceptional circumstances that the committee considers similar in nature.<br><br>Operationally robust and effective clawback provisions may apply where there is: an incorrect outcome due to miscalculation or incorrect information; a restatement due to financial reporting failure or misstatement of audited results; or material misconduct. | |
| **Committee flexibility** | The committee has discretion to adjust performance measures and weightings, and to revise the peer group for the rTSR measure.<br><br>This discretion allows appropriate re-alignment, throughout the policy term, for changes in the annual plan and for the anticipated evolution of the low carbon business environment.<br><br>The committee also holds discretion in determining the outcomes for annual bonus and performance shares, allowing them to take broad views on alignment with shareholder experience, environmental, societal and other relevant considerations e.g. portfolio changes. | |

★ See glossary on page 389

## Measures for 2023 annual bonus

Below is a summary of the measures we have chosen for the 2023 annual bonus plan scorecard. We are introducing a new profit measure (EBITDA) under financials in place of cumulative cash cost reduction. This reflects strategic progress already achieved on costs and sets a forward looking focus on the group's earnings. The targets for the 2023 annual bonus are commercially sensitive and will be disclosed in the 2023 report.

### Safety and sustainability
30%

| Measures include | Weighting |
|---|---|
| Tier 1 and tier 2 process safety events★ (measured separately) | 15% |
| Sustainable emissions reductions★ (million tonnes) | 15% |

### Operational
20%

| Measures include | Weighting |
|---|---|
| bp-operated reliability and availability | 10% |
| Convenience & EV gross margin % growth (v. 2022) | 10% |

### Financial
50%

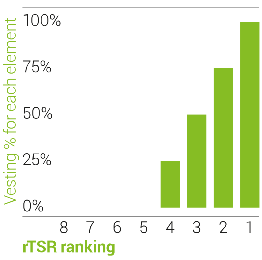
| Measures include | Weighting |
|---|---|
| Adjusted free cash flow★ ($bn) | 25% |
| Earnings (adjusted EBITDA) | 25% |

## Measures for 2023-25 performance shares (EDIP)

Below is a summary of the measures we have chosen for the 2023–25 performance share plan. We are introducing a new emissions target by way of a net zero measure. Weighted at 15%, it forms a significant and meaningful percentage of the EDIP. Targets are objective and quantified. It is also in alignment with our already disclosed long-term strategic ambitions around net zero – as set out in aim 1.

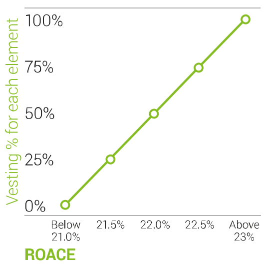
### Relative total shareholder return (rTSR) vs eight peers[a]
20%

Peer group of eight companies: Chevron, Eni, Equinor, ExxonMobil, Repsol, Shell, TotalEnergies (and bp)



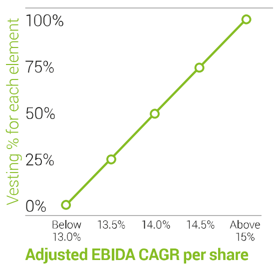

### Financials
20%

ROACE (average 2023-25)[b]



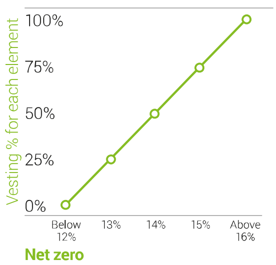

### Growth
20%

Adjusted EBIDA per share CAGR★[c]




### Environmental, social and governance
15%

Net zero across entire bp operations by 2050 (scope 1 + 2)




### Strategic progress
25%

Weighting of measures subject to remuneration committee judgement

- Deliver value through a resilient hydrocarbon business (8.3%).
- Demonstrate track record, scale and value in low carbon energy (8.3%).
- Accelerate growth in convenience and mobility (8.3%).

See page 20 for key performance indicators related to the strategic progress measures.

- Underpin will take into account safety outcomes prior to determining final vesting percentage.
- Remuneration committee discretion will reflect shareholder experience, environment, societal and other inputs.
- Robust malus and clawback may apply in certain circumstances.

a Nil vesting for fifth place or lower.
b Based on the average over 2023, 2024 and 2025. Score to be based on straight-line interpolation between threshold and maximum. Adjustments may be required in certain circumstances. The external environment to be a considered judgement in the final outcome.
c Targets will be adjusted for mergers, acquisitions and disposals outside of plan. The committee may consider share buyback activity before making a final judgement.

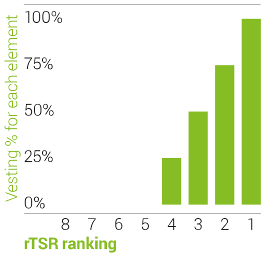
Last year, having reflected on the counsel received from shareholders, our disclosure for the long-term incentive targets were improved for our in-flight awards. In the interest of completeness, we have again included the disclosure for our in-flight awards, made under the 2020 policy.

## Measures for 2021-23 performance shares

### Relative total shareholder return (rTSR) vs eight peers

20%

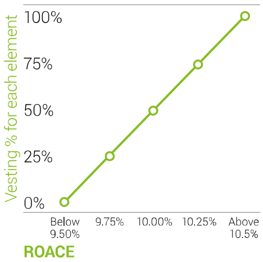
Peer group of eight companies: Chevron, Eni, Equinor, ExxonMobil, Repsol, Shell, TotalEnergies (and bp)




### Financials

20%

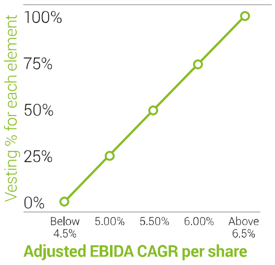
ROACE (average 2021-23)




### Growth

20%

Adjusted EBIDA per share CAGR




### Strategic progress

40%

Weighting of measures subject to remuneration committee judgement:

- Deliver value through a resilient hydrocarbon business (13.3%).
- Demonstrate track record, scale and value in low carbon energy (13.3%).
- Accelerate growth in convenience and mobility (13.3%).

See page 20 for key performance indicators related to the strategic progress measures.

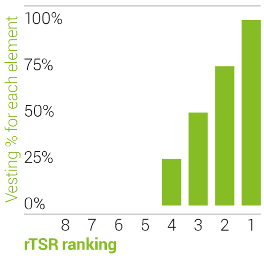
- Underpin will take into account safety outcomes prior to determining final vesting percentage.
- Remuneration committee discretion will reflect shareholder experience, environment, societal and other inputs (including bringing into account potential impacts arising from bp's announced intention to exit its shareholding in Rosneft).
- Robust malus and clawback may apply in certain circumstances.

## Measures for 2022-24 performance shares

### Relative total shareholder return (rTSR) vs eight peers

20%

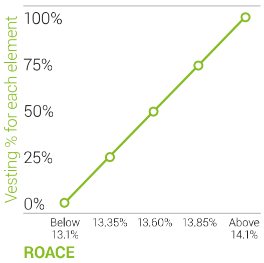
Peer group of eight companies: Chevron, Eni, Equinor, ExxonMobil, Repsol, Shell, TotalEnergies (and bp)




### Financials

20%

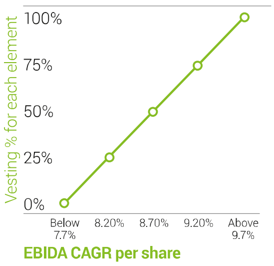
ROACE (average 2022-24)




### Growth

20%

Adjusted EBIDA per share CAGR




### Strategic progress

40%

Weighting of measures subject to remuneration committee judgement:

- Deliver value through a resilient hydrocarbon business (13.3%).
- Demonstrate track record, scale and value in low carbon energy (13.3%).
- Accelerate growth in convenience and mobility (13.3%).

See page 20 for key performance indicators related to the strategic progress measures.

- Underpin will take into account safety outcomes prior to determining final vesting percentage.
- Remuneration committee discretion will reflect shareholder experience, environment, societal and other inputs (including bringing into account potential impacts arising from bp's announced intention to exit its shareholding in Rosneft).
- Robust malus and clawback may apply in certain circumstances.

## Directors' remuneration report – the 2023 remuneration policy

Across pages 134 to 141 we set out our directors' remuneration policy for 2023 and subsequent years (the 2023 policy). We will present this 2023 policy to shareholders at the 2023 annual general meeting (AGM) and, subject to shareholder approval, it will come into effect for the 2023 financial year.

### Remuneration principles

In preparation for the review of our directors' remuneration policy, the committee gave deep consideration to the existing reward framework for the wider workforce, alongside executive remuneration. As our 2020 policy has served us well during the current economic environment, we have decided that the remuneration principles are still fit for purpose to apply equally to executives, and to employees at all levels of our workforce hierarchy.

| | |
|---|---|
| **Alignment** | Our remuneration programmes will align with bp's strategic priorities, long-term success and shareholders' experience.<br>In delivering our remuneration programmes across the globe we will reflect the policies and practices of the respective markets in which we operate. |
| **Competitiveness** | Total remuneration will be competitive for the role taking into account scale, sector, complexity of responsibility and geography.<br>When setting senior executive pay, we will consider both wider workforce remuneration and conditions, and external pay relativities. |
| **Pay for performance** | We promote a culture where all employees are accountable for delivering performance.<br>Depending on the level of the individual in the organization, we use variable pay to incentivize delivery against performance. Pay will be delivered with an emphasis on long-term equity in line with seniority.<br>Performance measures and targets will seek to balance collective bp success with clear line of sight for participants.<br>Remuneration outcomes aim to reflect sustained long-term underlying performance of bp. Factors beyond the control of management will be adjusted in determining final outcomes. |
| **Judgement** | We will use discretion and judgement to review formulaic performance outcomes to arrive at fair and balanced remuneration outcomes for both bp and employees. |
| **Sustainability** | Remuneration programmes will support the development of a long-term sustainable business informed by environmental, societal and other inputs.<br>Performance targets and measures will typically be chosen with due regard to incentives for prudent risk taking. Individual contribution and ways of working will be reflected in remuneration outcomes. |

### Shaping our 2023 remuneration policy

Throughout 2022, and in the first quarter of 2023, we engaged extensively with our shareholders. This began with a constructive listening session in November 2022 with our shareholders and representatives from the main proxy advisory firms. The exercise was important in shaping our 2023 remuneration policy. We identified the following themes from our engagement:

- Alignment of remuneration policy and outcomes to the shareholder experience remains important.
- There is increasing importance placed on the wider workforce context and how decisions and policy are aligned to this frame.
- ESG performance measures continue to play an important role in executive remuneration in both short- and long-term incentives.
- Continued application of discretion and restraint on executive remuneration outcomes and decisions will be important, as will the effective disclosure and rationale behind the decisions taken.

The engagement enabled us to identify a clear direction for our future policy. Input was also received from the company chairman and management while ensuring that conflicts of interest were suitably mitigated, the committee's appointed independent advisors also advised throughout the process. We have concluded that the current policy, adopted in 2020, can generally be retained as the basis for the 2023 policy. Stability in the policy has the advantage of being well understood and accepted by shareholders, our executives and wider workforce. We have proposed two modest changes for 2023 – a reduced deferral rate under the annual bonus from 50% to 33%, which will apply only once an executive director has met the 'minimum shareholding requirement' threshold and, raising the CEO and CFO's cash in lieu of retirement benefits to align with the majority of the UK workforce. We have engaged with shareholders extensively on these changes to ensure their views have been represented.

### Changes to the 2023 remuneration policy

#### Annual bonus deferral

Under our 2020 policy, any annual bonus earned is paid 50% in cash, with 50% deferred into restricted share units subject to a three-year restricted period. Typically, these deferred shares are held until employment ceases and beyond, pursuant to our post-employment shareholding policy; executives must seek permission from the remuneration committee to dispose of shares after the three-year restricted period. This deferral has been a clear source of increasing the executives' personal shareholdings and rapidly bringing them to conformance with the minimum shareholding requirement (MSR). Under the 2023 remuneration policy, we are proposing that the bonus deferral be rebalanced from 50% to one third (33%) of any bonus received subject to the achievement of MSR conformance.

In our deliberations we recognized that the structure of bp's equity plans lead to the executive director shareholdings building quickly and, given that the committee does not expect the executive directors to sell shares while in office, they have a particular portfolio concentration exposure. For context, our previous CEO had over 15 times the MSR at his point of separation from bp. Since our control mechanism for ensuring alignment with shareholder interests is the MSR itself, we have concluded that once the MSR is met, the deferral rate should reduce. Thus, the 2023 policy has been updated to require a deferral rate of 33% once the MSR threshold has been met. The deferral rate would remain at 50% until the MSR is met.

We have considered key aspects of this change that arose in our deliberations with shareholders including portfolio balance, shareholder experience, risk management and adherence to shareholder (and where appropriate, proxy agency) guidelines.

Malus and clawback provisions enable us to continue to manage and mitigate the risk associated with the incentive programmes. We note that all our share plans include provisions for malus and clawback, and we consider that bp's triggers are already stricter than the current market standard of misconduct and misstatement. We include 'material failure impacting safety or environmental sustainability' as well as 'such other exceptional circumstances that the committee consider to be similar in nature'. The headline remuneration policy on malus and clawback is supported with more detailed operational policies to ensure enforceability. Application of malus is also simplified by the synthetic nature of the share awards which are held as performance share units or restricted share units (RSUs).

The reduced bonus deferral rate means that at any given time the CEO will hold, at target payout, around 110% of salary in the form of vested shares, rather than 169% of base salary at target at the current deferral rate. However, in the event that the committee were to seek to apply a larger penalty, our operational policy also allows malus to be applied against unvested performance shares, which amount to up to 15x salary (three years of 5x salary awards). Thus we do not envisage a scenario in which the reduced deferral rate leaves us unable to operate malus to the appropriate extent.

We will maintain our current MSR policy, which requires the CEO to hold shares to a value of five times salary and other executive directors four and a half times salary. This policy also includes a three year post vesting holding period and post-employment shareholding requirement to maintain this minimum holding for two years following cessation of employment.

We have reviewed shareholder guidelines and have ensured that our new policy is aligned with the current guidelines.

The committee has concluded that our CEO's shareholding is 123% of his MSR (6.13x base salary) and our CFO's is 130% (5.86x base salary) of his MSR as at 17 February 2023. Subject to the 2023 policy being approved at the AGM, 2022 bonus would be subject to the 33% deferral rate at the point of payment after the AGM for both the CEO and CFO.

### Executive director shareholding compared to minimum shareholding requirements as at 17 February 2023


### Executive director cash in lieu of retirement benefits

In the 2021 directors' remuneration report we signalled an intention to review the cash pension allowance for the two executive directors within the context of the wider remuneration policy. In making this decision, the committee considered bp's global pension landscape and the history of bp's pension provision in the UK.

bp operates over 100 pensions schemes across 60 countries including defined benefit (DB), defined contribution (DC) and cash balance schemes. This leads to a complex landscape of plans representing its global wider workforce. Ensuring benefits are competitive while managing and transitioning legacy programmes can often result in multiple pension schemes within the same country and can lead to market competitive but differentiated distribution of reward between different employee groups. For example, bp also operates a retail business in the UK with c.6,800 bp-contracted employees. Pension arrangements for this group continue to follow competitive market practice.

In the UK prior to 2021, bp operated both a DB pension plan (closed to most new entrants since April 2010) and a DC pension plan. Under the DC plan, participants were provided a flexible cash allowance equal to 15% of salary which could be invested in pensions, other benefits or taken as cash. This created a significant variance in the value provided to employees between the DB and DC plans. In 2021, as part of a holistic review and modernization of the UK reward package, the UK DB plan was closed, and the primary pension scheme became a DC pension plan. To manage a smooth transition the legacy DB plan participants received a cash allowance which stepped down in value from 35% in 2021 to 20% in April 2023. To drive fairness, legacy DC plan participants had their flexible cash allowance increased from 15% to 20%. Thus effective 1 April 2023 the majority of the UK workforce (62% of employees) are now aligned and receive a 20% flexible cash allowance. It is a cash allowance and an employee may elect how this is allocated, they may invest some or all of this in the DC pension scheme, choose from a range of benefits or take it all in cash. The new pension offer brought greater fairness and equity through the alignment of employees in similar roles. The only two employees who did not participate in this arrangement and who did not receive an increase in their pension allowance were the executive directors, Bernard Looney and Murray Auchincloss.

Before Bernard's appointment as CEO in 2020, he was a member of the legacy DB plan with an annual pension value in excess of 25% of base salary. On appointment, he ceased to be a participant in the DB plan and was aligned to the wider workforce at that point with a then 15% cash allowance under the DC plan. Before Murray's appointment as CFO, he was a member of both DB and DC arrangements as a US employee. The value of these two pension benefits were in excess of 33% of base salary. On appointment, he ceased to be a participant in the two legacy US DB and DC schemes and was aligned with Bernard and the wider workforce in the UK with a 15% cash allowance under the UK DC plan.

Our 2020 policy stated that pension contribution rates for the executive directors were limited to no more than the median allowance offered to the wider workforce in the UK (as a percentage of salary). At the time of Bernard and Murray's appointments, as stated above, this was 15% of base salary. As explained, it is now the case that the majority of the UK workforce receive a 20% of base salary flexible cash allowance. The committee feels it is appropriate to increase the maximum cash allowance permitted under the policy to 20% of base salary for Bernard and Murray. In 2023 the committee has determined to retain Bernard's allowance at 15% of salary. The committee will bring the allowance into line with that of the wider workforce in 2024.

Our approach remains fully aligned to commitments under the UK Corporate Governance Code.

* See glossary on page 389

## Policy table – executive directors

### Salary and benefits

| | | |
|---|---|---|
| **Purpose** | To provide fixed remuneration to reflect the scale and complexity of both the business and the role, and to be competitive with the external market. | |
| **Operation and opportunity** | **Salary**<br>Salary levels will relate to the nature of the role, performance of the business and the individual, market positioning and pay conditions in the wider bp group. There is no maximum salary under the policy.<br><br>When setting salaries, the committee considers practice in other energy majors as well as European and US companies of a similar size, geographic spread and business dynamic to bp. The committee will also consider salary increases for the most senior management and the wider workforce. In particular, percentage increases for executive directors will not exceed increases for the broader employee population, other than in specific circumstances identified by the committee (e.g. in response to a substantial change in responsibilities).<br><br>Salaries are normally set in the home currency of the executive director and are reviewed annually. They may be reviewed at other times where appropriate, for example following a major role change. | **Benefits**<br>Executive directors are entitled to receive those benefits available to a majority of the wider workforce. These include participation in all-employee share plans, sickness pay, relocation assistance and parental leave. Benefits are not pensionable.<br><br>Executive directors may receive other benefits that are judged to be cost-effective and appropriate in terms of the individual's role, time and/or security. These include car-related benefits and/or cash in lieu, security, assistance with tax return preparation, insurance and medical benefits. The company may meet any tax charges arising on business-related benefits provided to directors, for example security.<br><br>The taxable value of benefits provided may fluctuate during the period of this policy, depending on the cost of provision and a director's personal circumstances.<br><br>In general, the committee expects to maintain benefits at the current level. |

### Retirement benefits

| | | |
|---|---|---|
| **Purpose** | To recognize competitive practice in the directors' home country while aligned with the majority of the workforce. | |
| **Operation and opportunity** | Executive directors normally participate in the company retirement plans that operate in their home country.<br><br>New appointees from within the bp group retain previously accrued benefits. For future appointments, the committee will carefully review any retirement benefits to be granted to a new director, taking account of retirement policies across the wider workforce and any arrangements currently in place. | For both new and future appointments, the committee will be sensitive to investor concerns over pensions for directors, and limit cash in lieu of benefits allowance rates to no more than the allowance offered to the majority workforce in the UK (the maximum allowance is 20% of salary).<br><br>Current executives have been employees of bp for a number of years but for their service as a director, retirement benefits will align to the cash in lieu of benefits allowance rate enjoyed by a majority of bp's workforce in the UK. |
| **Performance framework** | Retirement benefits are not directly linked to performance. | |

### Annual bonus

| | | |
|---|---|---|
| **Purpose** | To provide variable remuneration dependent on annual performance against three categories: safety and sustainability, financial, and operational. Bonus is subject to a mandatory deferral into bp shares which are held for three years to reinforce the long-term nature of the business and the importance of safety. | |
| **Operation and opportunity** | The bonus is based on performance against annual measures and targets set at the start of the year, evaluated over the financial year and assessed following the year end.<br><br>The target annual bonus is half of the maximum available, and typically relates to delivery of performance in line with targets in the annual plan.<br><br>Executive directors may earn a maximum annual bonus of 225% of salary. This maximum level would relate to performance at or above the highest end of the performance scale for every measure. The committee intends to set demanding requirements for maximum payment.<br><br>Achievement of threshold performance would normally result in a payout of 0% of the maximum opportunity.<br><br>Bonus calculation is based on salary as at 31 December in each performance year. | The final bonus outcome, following the formulaic assessment of performance relative to targets, is specifically reserved as a matter for the committee's judgement. Accordingly, the committee may exercise its discretion to adjust the formulaic outcome either upwards or downwards.<br><br>Half the bonus is paid in cash, and half is deferred into bp shares for three years up until 'minimum shareholding requirement' (MSR) is met, as determined by the committee under the shareholding guidelines. Once met, 67% is paid in cash and 33% is deferred into bp shares. Dividends (or equivalents, including the value of any reinvestment) may accrue in respect of any deferred shares.<br><br>Awards are subject to malus and clawback provisions as described on page 137. |

| Annual bonus | | |
|---|---|---|
| **Performance framework** | The committee determines a scorecard of specific measures, weightings and targets each year to reflect the priorities in the annual plan and thus deliver the group's strategy.<br>The committee holds discretion to choose the specific measures and weightings to be adopted within each of the three categories to better reflect the annual plan as agreed with the board. | The scorecard will typically include a balance of measures in three categories: safety and sustainability, financial and operational measures. Details of the measures and weighting will be reported in advance each year in the annual report on remuneration, while targets, where commercially sensitive, will be disclosed retrospectively. |

| Performance shares | | |
|---|---|---|
| **Purpose** | To link the largest part of remuneration opportunity with the long-term performance of the business. | |
| **Operation and opportunity** | The maximum annual award level for the chief executive officer will be 500% of salary and 450% of salary for the chief financial officer.<br>Annual awards of shares will vest based on performance relative to measures and targets that reflect the delivery of bp's strategy over a performance period of typically three years. The scorecard will typically measure performance against relative total shareholder return (rTSR), financials, environment, social and governance (ESG) and strategic progress measures.<br>For each measure, the threshold level at which vesting is first triggered is not expected to yield vesting above 25% of the maximum. | The final performance shares outcome, following the formulaic assessment of performance relative to targets, is specifically reserved as a matter for the committee's judgement. Accordingly, the committee may exercise its discretion to adjust the formulaic outcome either upwards or downwards.<br>The shares that vest are subject to a three year post vesting holding period.<br>Dividends (or equivalents, including the value of reinvestment) may accrue in respect of share awards to the extent that they vest. Awards are subject to robust malus and clawback provisions as described on page 137. |
| **Performance framework** | Performance shares vest relative to performance achieved against a combination of financial, ESG and strategic progress measures.<br>At the outset of each performance cycle the committee holds the discretion to review the measures that are to govern the award, along with weightings and targets, to ensure they remain focused on delivering the strategy and are in the interests of shareholders. | The committee will assess in year safety outcomes and long-term trends in safety outcomes over the performance cycle as an underpin in determining the final vesting percentage. |

| Shareholding requirements | | |
|---|---|---|
| **Purpose** | To provide alignment between the interests of executive directors and our other shareholders. | |
| **Operation and opportunity** | The chief executive officer is required to build and maintain a minimum shareholding of five times base salary within five years of appointment, and to maintain that minimum shareholding for at least two years post-retirement. | Other executive directors are required to build and maintain a minimum shareholding of four and a half times base salary within five years of appointment, and to maintain that minimum shareholding for at least two years post-retirement. |
| **Performance framework** | Not applicable. | |

## Notes to the policy table

### 1. New components and key changes from the 2020 policy

While the structure of the 2020 policy has been retained, the committee highlights the following modest changes:

- Introducing a reduced deferral rate for bp shares from 50% to 33% once an executive has met the MSR threshold. This will be applicable to the 2022 annual bonus, subject to approval at the AGM in April 2023.
- Lifting both the CEO and CFO's cash in lieu of retirement benefits from 15% to 20% of salary aligning them to a majority of the wider UK workforce.

### 2. How is variable pay linked to performance?

| | | |
|---|---|---|
| Annual bonus | Bonus aligned with company performance | <100% MSR[a]: 50% paid in cash; 50% in bp shares deferred for 3 years<br>>100% MSR[a]: 67% paid in cash: 33% in bp shares deferred for 3 years |
| Performance bonus | Share award for meeting three-year targets | 6 years; 3 year performance period + 3 year holding period |
| Share ownership | Long-term shareholding | Built up over 5 years and maintained for a further two years post-employment |

a MSR: group chief executive to build a shareholding of at least five times salary, and other executive directors four and a half times salary, within five years of appointment.

The three elements described above provide a balance between focus on short-term, medium-term and long-term performance, while encouraging behaviours which are in the long-term interests of shareholders. The operation of variable pay is supported by a focus on stewardship. There is a requirement that the chief executive officer will build up a holding of five times salary, and other executive directors a holding of four and a half times salary, over a period of five years following appointment and maintain that level during employment and for a further two years post employment.

### 3. How are performance measures linked to strategy?

Variable pay is linked to performance measures designed to deliver the bp strategy. At the start of each year, the remuneration committee reviews the measures, targets and weightings to ensure they remain consistent with the priorities in the annual plan and the group strategy. For the annual bonus and performance shares, the approach to performance measurement is intended to provide a balance of measures to assess performance reflecting the global scale of the business, the unique characteristics of the energy sector, and progress in transitioning to an integrated energy company.

### 4. Our use of flexibility, judgement and discretion

The committee reviews bp's performance against specific measures and targets, and in doing so may make both quantitative and qualitative assessments of performance in reaching its decisions. This involves the application of judgement and discretion, in which the committee also seeks relevant input from the board's audit, safety and sustainability committees. Accordingly, the committee may decide to adjust the formulaic outcome derived from the relevant scorecards, either upwards or downwards, to reflect broader considerations. The committee continues to consider that the powers of flexibility, judgement and discretion are critical to the successful execution of the policy.

In framing the policy, the committee has taken care to ensure that these important powers continue to be available:

- Sufficient flexibility to take account of future changes in the industry environment and in remuneration practice generally. This allows the committee to respond to changes in circumstances, for example in applying particular performance measures and/or weightings within the plans, or in broadening the comparator group for the relative returns measure, in order to evolve with the company's strategy, without the need for specific shareholder approval.
- Power to exercise judgement in making a qualitative assessment in certain circumstances. A number of measures are used for annual or long-term incentive awards, many of which are numerical in nature and require a quantitative assessment of performance. Others may require a qualitative assessment, such as the strategic progress measures in the performance share plan.
- Scope for the committee to exercise discretion, mainly where it is desirable to vary a formulaic outcome that would otherwise arise from the policy's implementation. The committee considers that the ability to exercise discretion, upwards or downwards, is important to ensure that a particular outcome is fair in light of the director's own performance, the company's overall performance and positioning under particular performance measures and outcomes for shareholders.

The committee may make minor amendments to the remuneration policy to aid its operation or implementation without seeking shareholder approvals (e.g. for regulatory, exchange control, tax or administrative purposes or to take account of a change in legislation).

The committee intends to provide appropriate disclosure on the use of flexibility, judgement and discretion so that shareholders can understand the basis for its decisions.

### 5. How will we safeguard against payments for failure?

| | | |
|---|---|---|
| **Performance based pay** | A significant portion of remuneration varies with performance – where performance targets are not achieved, lower or no payments will be made under the plans. | |
| **Discretion** | The committee may vary formulaic outcomes where these do not suitably reflect performance or other circumstances over the relevant performance period. | |
| **Malus and clawback** | The robust malus provisions enable the committee to reduce the size of award, cancel an unvested award, or impose further conditions on an award made under this policy.<br>The malus provisions may apply if, prior to the vesting or payment of an award, there is a negative event such as:<br>• Material failure impacting safety or environmental sustainability.<br>• Incorrect award outcomes due to miscalculation or based on incorrect information.<br>• Restatement due to financial reporting failure or misstatement of audited results.<br>• Material misconduct by the participant.<br>• Such other exceptional circumstances that the committee consider to be similar in nature. | The robust clawback provisions enable the committee to require participants to return some or all of an award after payment or vesting. They may be applied under the following circumstances:<br>• Incorrect outcomes due to miscalculation or based on incorrect information.<br>• Restatement due to financial reporting failure or misstatement of audited results.<br>• Material misconduct by the participant. |

# Directors' remuneration report continued

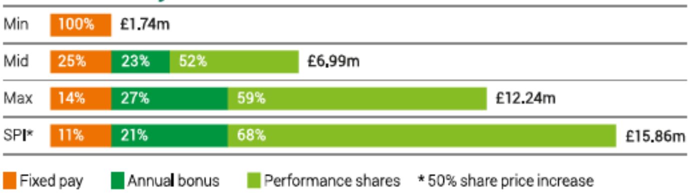
### 6. Differences from remuneration policy in the wider group

This executive director remuneration policy is structurally similar to remuneration for the majority of the wider workforce, but naturally differs in quantum, reflecting market norms for the differing size and complexity of roles, see page 118 for more detail on these differences.

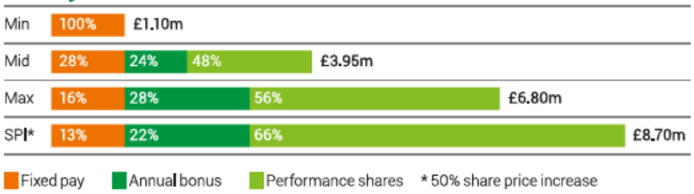
### Illustrations of application of remuneration policy

The total remuneration opportunity for executive directors is strongly performance-based and weighted to the long term. The charts below provide scenarios for the total remuneration of executive directors at different levels of performance and are calculated as prescribed by UK regulations.

**Bernard Looney**




**Murray Auchincloss**




Due to rounding, the sum of the parts does not equal 100%.

### Fixed components

For these illustrations salary, benefits and pension are the same in each scenario (annual values shown).

| | | | |
|---|---|---|---|
| **Salary** | CEO (Looney) | £1,448,220 | [redacted] salary, effective from the 2023 AGM |
| | CFO (Auchincloss) | £844,000 | [redacted] salary, effective from the 2023 AGM |
| **Benefits and pension benefits** | CEO (Looney) | £292,233 | Based on cash in lieu of retirement benefits at 15% of salary, with an estimated £75k total for other benefits. Cash in lieu of retirement benefits will increase to 20% from 2024. |
| | CFO (Auchincloss) | £256,800 | Based on cash in lieu of retirement benefits at 20% of salary, with an estimated £88k total for other benefits. |

### Variable components

Variable pay under the policy comprises annual bonus and performance shares.

| **Scenario** | **Minimum** | **Mid** | **Maximum** |
|---|---|---|---|
| | ↓ | ↓ | ↓ |
| **Annual bonus** (including cash and deferred elements) | **Threshold not met** Nil | **50% of maximum** 112.5% of salary | **100% of maximum** 225% of salary |
| **Performance shares** | **Threshold not met** CEO – Nil<br>CFO – Nil | **50% vesting** CEO – 250% of salary<br>CFO – 225% of salary | **100% vesting** CEO – 500% of salary<br>CFO – 450% of salary |

## Recruitment policy

The committee expects any new executive director to be engaged on terms that are consistent with the policy. However it recognizes that it cannot anticipate circumstances in which any new executive director may be recruited. The committee may determine that it is in the interests of the company and shareholders to secure the services of a particular individual which may require it to take account of the terms of that individual's existing employment and/or their personal circumstances.

Accordingly, the committee will ensure that:

- The salary level of any new director is appropriate to their role and the competitive environment at the time of appointment. Where appropriate it may appoint an individual on a lower salary (relative to any previous incumbent), then gradually increase salary levels as the individual gains experience in the role.
- Variable remuneration will be awarded within the parameters of the policy for current executive directors.
- The committee may tailor the vesting criteria for initial incentive awards depending on the specific circumstances.
- Where an existing employee is promoted to the board, the company may honour all existing contractual commitments including any outstanding share awards.
- The committee would expect any new director to participate in the company pension and benefit schemes that are open to other employees (where appropriate referencing the candidate's home country).
- Where an individual is relocating in order to take up the role, the company may provide certain one-off benefits such as reasonable relocation expenses, accommodation for a period following appointment, assistance with visa applications or other immigration issues and ongoing arrangements such as tax filing assistance, annual flights home and a housing/utilities allowance.
- Where an individual would be forfeiting remuneration or employment terms in order to join the company, the committee may award appropriate compensation. The committee would require reasonable evidence of the nature and value of any forfeited arrangements and would, to the extent practicable, ensure any compensation was of comparable commercial value and capped as appropriate, considering the terms of the previous arrangement being forfeited (for example the form and structure of award, timeframe, performance criteria and likelihood of vesting). Where appropriate, the committee prefers to deliver buy-outs in the form of restricted shares in the company.

In making any decision on the remuneration of a new director, the committee would balance shareholder expectations, current best practice and the circumstances of any new director. It would strive not to pay more than is necessary to recruit the right candidate and would give full details in the next remuneration report.

## Service contract

[redacted] and [redacted] service contracts are with BP p.l.c.

Each executive director is entitled to retirement benefits as outlined on page 134.

Each executive director is also entitled to the following contractual benefits:

- If appropriate for security reasons, a company car and driver is provided for business and private use, with the company bearing all normal employment, servicing, insurance and running costs. Alternatively, where not required for security reasons, a cash allowance may be paid instead.
- Medical and dental benefits, sick pay during periods of absence and assistance with the preparation of tax returns.
- Indemnification in accordance with applicable law.
- Participation in bonus or incentive arrangements at the committee's sole discretion.

Each executive director may terminate their employment by giving 12 months' written notice. In this event, for business reasons, the employer may not necessarily hold the executive director to their full notice period.

The employer may lawfully terminate the executive director's employment in the following ways:

- By giving the director 12 months' written notice.
- Without compensation, in circumstances where the employer is entitled to terminate for cause, as defined for the purposes of their service contract.

The company may lawfully terminate employment by making a lump sum payment in lieu of notice equal to 12 months' salary, or by monthly instalments rather than as a lump sum.

The lawful termination mechanisms described above are without prejudice to the employer's ability in appropriate circumstances to terminate in breach of the notice period referred to above, and thereby to be liable for damages to the executive director.

In the event of termination by the company, each executive director may have an entitlement to compensation in respect of their statutory rights under employment protection legislation in the UK and potentially elsewhere. Where appropriate the company may also meet a director's reasonable legal expenses in connection with either their appointment or termination of their appointment.

Copies of the executive directors' service contracts, along with the non-executive director appointment letters, are available for inspection at the registered office of BP p.l.c.

## Termination payments

In determining overall termination arrangements, the committee will distinguish between types of leaver and the circumstances of their leaving. The committee would also consider all relevant circumstances, including whether a contractual provision in the director's arrangements complied with best practice at the time of termination and the date the provision was agreed, as well as the performance of the director in certain respects.

Where appropriate, the committee may consider providing certain benefits relating to termination including the provision of outplacement support or reasonable costs associated with relocation back to an individual's home country. Should it become necessary to terminate an executive director's employment, and therefore to determine a termination payment, the committee's policy is as follows:

| | | |
|---|---|---|
| **Termination payments** | The director's primary entitlement would be a termination payment in respect of their service agreement, as set out above. However the committee will consider mitigation to reduce the termination payment where appropriate to do so, taking into account the circumstances for leaving and the terms of the agreement.<br><br>Mitigation would not be applicable where a contractual payment in lieu of notice is made. | If the departing director is eligible for an early retirement pension, the committee would consider, if relevant under the terms of the appropriate plan, the extent of any actuarial reduction that should be applied. UK directors who leave in circumstances approved by the committee may have a favourable actuarial reduction applied to their pensions (which to date has been 3%). Departing directors who leave in other circumstances may be subject to a greater reduction. |
| **Annual bonus** | The committee would consider whether the director should be entitled to an annual bonus in respect of the financial year in which the termination occurs. | Normally, any such bonus would be restricted to the director's actual period of service in that financial year. |
| **Share awards** | Share awards will be treated in accordance with the relevant plan rules. For awards granted under the executive directors' incentive plan (EDIP), the treatment can only be made in accordance with the framework approved by shareholders.<br><br>The committee would consider whether conditional share awards held by the director should lapse on leaving or should, at the committee's discretion, be preserved. If awards are preserved, the award would normally continue until the vesting date. Awards may be pro-rated based on service over the performance period. | In deciding whether to exercise discretion to preserve EDIP awards, the committee would also consider the proximity of the award to its maturity date.<br><br>To the extent that any such share award vests, the release of those shares to the former director will be made approximately one year after their date of termination (even if they would have been subject to a longer holding period had the executive remained in employment with bp). |

## Remuneration in the wider group

The committee considers employment conditions in the bp group when establishing and implementing policy for executive directors to ensure the alignment of and context for principles and approach. In particular, the committee reviews the policy and makes decisions for the most senior leaders (the bp leadership team that reports to the CEO). Decisions regarding remuneration for employees outside the most senior leaders are the responsibility of the chief executive officer. The committee does not consult directly with employees when formulating the policy. However, feedback from employee focus groups and employee surveys, that are regularly reported to the board, provide views on a wide range of employee matters including pay.

The wider employee group participates in performance-based incentives. Throughout the group, salary and benefit levels are set in accordance with the prevailing relevant market conditions and practice in the countries in which employees are based. Differences between executive director pay policy and that of other employees reflect the senior position of the individuals, prevailing market conditions and corporate governance practices in respect of executive director remuneration. The key difference in policy for executive directors is that a greater proportion of total remuneration is delivered as performance-based incentives.

## Policy table – non-executive directors

The following table sets out the framework that will be used to determine the fees for non-executive directors during the term of this policy.

| | |
|---|---|
| **Non-executive chair** | |
| Fees | |
| **Approach** | Remuneration is in the form of fees, payable monthly in cash. The level and structure of the chair's fee will primarily be compared against UK best practice. |
| **Operation and opportunity** | The quantum and structure of the non-executive chair's fee is reviewed annually by the remuneration committee, which makes a recommendation to the board. |
| Benefits and expenses | |
| **Approach** | The chair is provided with support and reasonable travelling expenses. |
| **Operation and opportunity** | The chair is provided with an office and full-time secretarial and administrative support in London and a contribution to an office and secretarial support in his home country as appropriate. A car and the use of a driver is provided in London, together with security assistance. All reasonable travelling and other expenses (including any relevant tax) incurred in carrying out his duties are reimbursed. |

| | |
|---|---|
| **Non-executive directors** | |
| Fees | |
| **Approach** | Remuneration is in the form of fees, payable monthly in cash. Remuneration practice is consistent with recognized best practice standards for non-executive directors and, as a UK-listed company, the level and structure of non-executive directors' remuneration will primarily be compared against UK best practice.<br><br>Additional fees may be payable to reflect additional board responsibilities, for example, committee chairship and membership and for the role of senior independent director. |
| **Operation and opportunity** | The level and structure of non-executive directors' remuneration is reviewed by the chair, the CEO and the company secretary, who make a recommendation to the board. Non-executive directors do not vote on their own remuneration.<br><br>Fee levels for non-executive directors are reviewed annually. |
| Benefits and expenses | |
| **Approach** | Non-executive directors are provided with administrative support and reasonable travelling expenses. Professional fees are reimbursed in the form of cash, payable following the provision of advice and assistance. |
| **Operation and opportunity** | Non-executive directors are reimbursed for all reasonable travelling and subsistence expenses (including any relevant tax) incurred in carrying out their duties. Professional fees incurred by non-executive directors based outside the UK in connection with advice and assistance on UK tax compliance matters are reimbursed. |
| Shareholding guidelines | |
| **Approach** | Chair and non-executive directors are encouraged to establish a holding in bp shares of the equivalent value of one year's base fee. |

| | |
|---|---|
| **Letters of appointment for chair and non-executive directors** | |
| **Approach** | The chair and non-executive directors each have letters of appointment. There is no term limit on a director's service, as bp proposes all directors for annual re-election by shareholders. There are no obligations arising from the non-executive directors' letters of appointment for remuneration or payments for loss of office, except for the chair whose appointment may be terminated in the following ways:<br><br>• By either party giving three months' written notice, or<br>• By the company for cause (as set out in the letter of appointment) and without compensation.<br><br>The company may lawfully terminate the appointment by making a lump sum payment in lieu of notice equal to three months' fees. Copies of the executive directors' service contracts and non-executive directors' letters of appointment are available for inspection at the registered office of the company. |

The maximum fees for non-executive directors are set in accordance with the Articles of Association.

# Directors’ remuneration report continued

## Stewardship and executive director interests

We believe that our executive directors should build and maintain a material interest in the company. Our policy therefore requires the CEO and CFO to build a personal shareholding of five times and four and a half times, respectively, their salary within five years of their appointment. They are expected to maintain this level of personal shareholdings for two years post employment.

### Directors’ shareholdings and aggregated interests (audited)

The table below details the personal shareholdings of each executive director. These figures include all beneficial and non-beneficial ownership of shares of bp (or calculated equivalents) that have been disclosed to the company. Both the executive directors have met the minimum shareholding requirement under the policy. The committee has reviewed and confirmed this position and will continue to monitor compliance with this policy.

| | Directors’ shareholdings at 17 Feb 2023 | Aggregated interests at 17 Feb 2023, all plans | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Unvested awards not subject to performance conditions | | Unvested awards subject to performance conditions | | | | |
| Director | Ordinary shares or equivalents | Shares[d] | Options | Shares | Options | Current shareholding for MSR[c] | Value of current shareholding[a], £ | Multiple of salary achieved |
| [redacted] | [redacted] | | | | | | | |

a Based on ordinary share price at 17 February 2023 of £5.60.
b Includes interests of a person closely associated with Murray Auchincloss.
c Includes ordinary shares or equivalents and unvested awards not subject to performance conditions on a net-of-tax basis, excluding dividends.
d Includes deferred and restricted shares, and performance shares prior to application of the performance factor.

The executive directors have additional interests in performance, restricted and deferred bonus shares. These interests are shown in aggregate in the table above, and by plan in the tables below. For performance shares, the figures reflect maximum possible vesting levels (excluding the addition of reinvested dividends) even though the actual number of shares that vest will depend on the extent to which performance conditions are satisfied.

### Performance shares (audited)

| | Share element interests | | | | | Interests to vest in 2023 | | |
|---|---|---|---|---|---|---|---|---|
| | | | Potential maximum performance shares[a] | | | | | |
| | Performance period | Date of award of performance shares | At 1 Jan 2022 | Awarded 2022 | At 31 Dec 2022 | Number of ordinary shares due to vest | Vesting date | Face value of award[c], £ |
| [redacted] | [redacted] | | | | | | | |
| [redacted] | | | | | | | | |

a For awards under the 2020-2022 plans performance conditions were measured 40% on TSR relative to Chevron, ExxonMobil, Shell, Total, ENI, Equinor and Repsol (‘comparator companies’) over three years, 30% ROACE averaged over the full performance period, and 30% on strategic progress assessed over the performance period.
For awards under the 2021-2023 plans performance conditions are measured 20% on TSR relative to the comparator companies over three years, 20% ROACE averaged over the performance period, 20% EBIDA CAGR per share measured versus year ending June 2020 and 40% on strategic progress assessed over the performance period.
For awards under the 2022-2024 plans performance conditions are measured 20% on TSR relative to the comparator companies over three years, 20% ROACE averaged over the performance period, 20% EBIDA CAGR per share measured versus year ending June 2020 and 40% on strategic progress assessed over the performance period.
Each performance period ends on 31 December of the third year.
b Represents unvested shares, which will vest during 2023 but are not subject to further performance conditions, achieved under rules of the plan and includes notional dividends accrued until 17 February 2023. Bernard’s and Murray’s awards are due to vest on 14 August 2023, three years after the date of award. The average share price during 4Q 2022 was £4.73 for each share. The amounts reported as 2022 income on the single figure table are therefore £6.008m for Bernard and £2.891m for Murray.
c Face values have been calculated using market prices of ordinary shares at closing on the dates of the award, as follows; £3.15 on 1 June 2021; and £4.35 on 26 May 2022.
d Minimum vesting under these awards (below threshold performance) is 0%. At threshold performance of each measure, vesting would be 5% of maximum for 2021-23 and 2022-24.

## Restricted shares (audited)

| | Restricted period | Date of award of restricted shares | Share element interests — Number of restricted shares: At 1 Jan 2022 | Awarded 2022 | At 31 Dec 2022 | Face value of award[b], £ |
|---|---|---|---|---|---|---|
| [redacted] | [redacted] | | | | | |

a Award made under the Restricted Share Plan II prior to appointment as a director.
b Face values have been calculated using market prices of ordinary shares at closing on the dates of award, as follows: £4.64 on 20 March 2018; £2.64 on 28 August 2020; £2.94 on 25 March 2021; £3.29 on 16 June 2021; £3.71 on 22 March 2022; and £3.79 on 17 June 2022.
c Interests of person closely associated with [redacted]
d Awards vested and were released on 15 February 2023.

## Deferred shares[a] (audited)

| | Bonus year | Performance period | Date of award of deferred shares | Deferred share element interests — Potential maximum deferred shares: Number of ordinary shares at 31 Dec 2022 | Face value of award[b], £ |
|---|---|---|---|---|---|
| [redacted] | [redacted] | | | | |

a Since 2010, vesting of the deferred shares under EDIP has been subject to a safety and environmental sustainability hurdle. If the committee assesses that there has been a material deterioration in safety and environmental performance, or there have been major incidents, either of which reveal underlying weaknesses in safety and environmental management, then it may conclude that shares should vest only in part, or not at all. In reaching its conclusion, the committee obtains advice from the S&SC. There is no identified minimum vesting threshold level. The 2022 bonus year deferred shares award is expected to be made following the conclusion of the 2023 annual general meeting.
b Face values have been calculated using the market price of ordinary shares on the date of award, as follows; £4.04 on 16 February 2022; and £3.71 on 22 March 2022.
c Interests of person closely associated with [redacted] Award made under the IST Deferred Annual Bonus Plan.

## Share interests in share option plans (audited)

In common with many of our UK employees [redacted] holds options under the bp group Save As You Earn (SAYE) scheme as shown below. These options are not subject to performance conditions.

| Director | Option type | At 1 Jan 2022 | Granted | Exercised | At 31 Dec 2022[a] | Option price | Market price at date of exercise | Date from which first exercisable | Expiry date |
|---|---|---|---|---|---|---|---|---|---|
| [redacted] | [redacted] | | | | | | | | |

a The closing market price of an ordinary share on 31 December 2022 was £4.75. During 2022 the highest market price was £5.04, and the lowest market price was £3.30.
b Interest of person closely associated with Murray Auchincloss.

[redacted] have no interests in bp preference shares, debentures or option plans (other than as listed above), and neither do they have interests in shares or loan stock of any subsidiary company.

## Directors and leadership team

No directors or other leadership team members own more than 1% of the shares in issue. At 17 February 2023, our directors and leadership team members collectively held interests of [redacted] or their calculated equivalents, [redacted] (with or without conditions) or their calculated equivalents, [redacted] or their calculated equivalents and [redacted] or their calculated equivalents, under bp group share option schemes.

## Chair and non-executive director outcomes and interests

### Fee structure

The table below shows the fee structure for the chair and NEDs. The chair is not eligible for committee chairship and membership fees.

At the time the board last approved changes to fee levels, it was decided to align the fee review cycle with the wider workforce salary review process. In practice and as provided for under the 2020 policy, fee levels are therefore reviewed annually alongside the wider workforce salaries and any changes that are agreed are put into effect from 1 April each year. Taking all factors into consideration, the board agreed to implement a 4% increase to the base fee for its NEDs and for the senior independent director, marginally lower than for the wider UK workforce (5.5%). Oversight and determination of the fees payable to the chair falls to the remuneration committee, which agreed to align the percentage increase of the chair's fee with the other non-executive board members.

Following board and remuneration committee approval, the remuneration arrangements for the chair and NEDs will be adjusted with effect from 1 April 2023 as per the below table.

| | **2023/24 fees £ thousand per annum[c]** | 2022 fees £ thousand per annum |
|---|---|---|
| [redacted] | [redacted] | [redacted] |

a The senior independent director is eligible for committee chairship and membership fees, but has waived her entitlement to the fee for membership of the people and governance committee. Fee includes board member fee.
b Committee chairs do not receive an additional membership fee for the committee they chair.
c From 2023, any changes to chair and NED fees will be made with effect from 1 April, in line with the wider workforce.

### 2022 remuneration (audited)

The table below shows the fees paid and applicable benefits for the year ended 31 December 2022. Benefits include travel and other expenses relating to the attendance at board and other meetings both inside and outside bp's headquarters in the UK. Under the terms of his engagement with the company, Helge Lund has the use of a fully maintained office for company business, a car and driver, and security advice in London. Benefits values have been grossed up using a tax rate of 45%, where relevant, as an estimation of tax due.

| | Fees | | Benefits | | Total[a] | |
|---|---|---|---|---|---|---|
| £ thousand | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 |
| [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] |

a Due to rounding, the totals may not agree exactly with the sum of the component parts.
b Amanda Blanc was appointed on 1 September 2022.
c Fee includes [redacted] for chairing the bp innovation advisory council.
d Fee includes [redacted] for chairing the bp geopolitical advisory council.
e Fee includes [redacted] for being a member of the bp geopolitical advisory council.
f Due to an administrative error [redacted] received an overpayment of [redacted] during 2022, which has been recovered in 2023. This overpayment has therefore not been included in this year's disclosure.

### Chair and non-executive directors' interests (audited)

The figures below include all the beneficial and non-beneficial interests of the chair and each non-executive director of the company in shares of bp (or calculated equivalents) that have been disclosed according to the disclosure guidance and transparency rules in the Financial Conduct Authority handbook ('the DTRs') as at the applicable dates. Our 2020 policy encourages non-executive directors to establish a holding in bp shares of the equivalent value of one year's base fee during their tenure, which remains unchanged for the 2023 policy.

| | Ordinary shares of equivalents at 1 Jan 2022 | Ordinary shares or equivalents at 31 Dec 2022 | Changes from 31 Dec 2022 to 17 Feb 2023 | Ordinary shares of equivalents at 17 Feb 2023 | Value of current shareholding[a] | % of guideline achieved |
|---|---|---|---|---|---|---|
| [redacted] | | | | | | |

a Based on ordinary share and ADS prices at 17 February 2023 of £5.60 and $40.02. Where a US$ value is provided these shares are held as ADSs.
b Amanda Blanc was appointed on 1 September 2022.

## Past directors

### Payments for loss of office (audited)

No payments were made during the financial year for loss of office.

### Payments to past directors (audited)

Since leaving employment, Bob Dudley and Brian Gilvary have received shares upon vesting of awards as detailed in the tables below. These relate to the deferred share element of prior year annual bonuses, as detailed below.

#### Deferred shares from prior year bonuses

| | Bonus year | Type | Performance period | Date of award of deferred shares | Shares originally granted | Vesting date | Value of shares vested (including dividends)[b] |
|---|---|---|---|---|---|---|---|
| [redacted] | | | | | | | |

a This award was received in the form of ADSs. The above numbers reflect calculated equivalents in ordinary shares. One ADS is equivalent to six ordinary shares.
b Based on ordinary share and ADS prices at 15 February 2023 of £5.60 and $40.88 respectively.

#### Post-employment benefits

[redacted] were provided with tax return preparation support amounting [redacted] respectively.

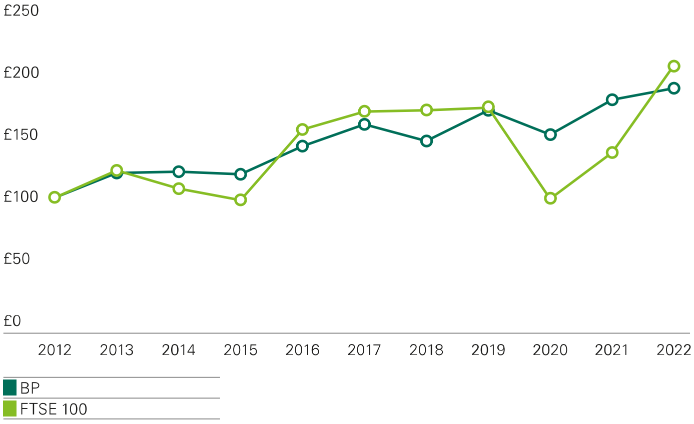
We made no other payments within the scope of the disclosure requirements to any past director of bp during 2022 (we have no de minimis threshold for such disclosures).

★ See glossary on page 389

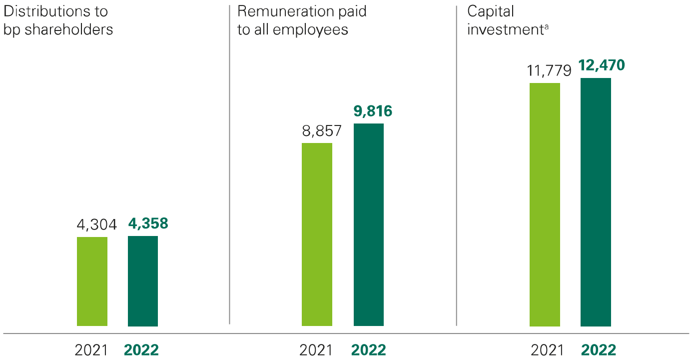
# Directors' remuneration report continued

## Other disclosures

### Historical TSR performance




### Relative importance of spend on pay ($ million)




a Organic capital expenditure.

The graph above shows the growth in value of hypothetical £100 investments in BP p.l.c. ordinary shares, and in the FTSE 100 index (of which bp is a constituent), over 10 years from 31 December 2012 to 31 December 2022.

### Independence and advice

The board considers all committee members to be independent with no personal financial interest, other than as shareholders, in the committee's decisions. Further detail on the activities of the committee in 2022 is set out in the remuneration committee report on page 112.

During 2022 Ben Mathews, who was employed by the company and reported to the chair of the board, acted as secretary to the remuneration committee.

The committee also received advice on various matters relating the remuneration of executive directors and senior management from Kerry Dryburgh, EVP people and culture and Ashok Pillai, SVP reward and wellbeing.

PricewaterhouseCoopers LLP (PwC) continued to provide independent advice to the committee in 2022. PwC advice included, for example, support with remuneration benchmarking and updates on market practice. PwC is a member of the Remuneration Consulting Group and, as such, operates under the code of conduct in relation to executive remuneration in the UK. The committee is satisfied that the advice received is objective and independent. The committee is comfortable that the PwC engagement partner and team who provides remuneration advice to the committee do not have connections with the company or its directors that may impair their independence.

Total fees or other charges (based on an hourly rate) for the provision of remuneration advice to the committee in 2022 (save in respect of legal advice) were £122,013 to PwC. Freshfields Bruckhaus Deringer LLP (Freshfields) provided legal advice on specific compliance matters to the Committee. PwC and Freshfields provide other advice in their respective areas to the group.

### Considerations related to the Corporate Governance Code

When setting the 2023 policy, the committee concluded that a scorecard-based approach to setting targets and measuring outcomes helps it to engage transparently with shareholders and the wider workforce on remuneration. Thus, bp continues to operate a simple, clear structure of market-aligned salary with annual and three-year performance-based incentives. Risks are managed through careful setting of performance measures and targets and the committee retains the exercise of its discretion in assessing outcomes. These are complemented with robust malus and clawback measures. Remuneration outcomes are predictable, as shown in the scenario charts of the 2023 policy, and proportional by virtue of the challenging performance levels required to achieve target pay outcomes. Through material weighting in measures related to safety, sustainability and strategy, as shown on page 126, remuneration aligns closely with bp's culture, as expressed through our purpose and ambition.

## Shareholder engagement

Throughout 2022, the committee engaged frequently on remuneration policy and approach with bp's largest shareholders, as well as their representative bodies. This dialogue will continue throughout 2023.

The table below shows the votes on the directors' remuneration report, and policy, for the last three years.

| Year | % vote 'for' | % vote 'against' | Votes withheld |
|---|---|---|---|
| **Directors' remuneration report** | | | |
| 2022 | 94.36% | 5.64% | 203,221,922 |
| 2021 | 95.20% | 4.80% | 220,577,221 |
| 2020 | 96.05% | 3.95% | 67,623,825 |
| **Directors' remuneration policy** | | | |
| 2020 | 96.58% | 3.42% | 65,652,222 |

## Service contracts and letters of appointment

The service contracts of executive directors do not have a fixed term. Service agreements for each executive director are available for inspection at the company's registered office. Each executive director's service contract contains a 12-month notice period. Consistent with the best interests of the group, the committee will seek to minimize termination payments.

| | Date of contract | Effective date |
|---|---|---|
| [redacted] | | |

The non-executive directors (NEDs) have letters of appointment, which are available to view at the company's registered office. All directors are subject to annual re-election by shareholders at the annual general meeting. Normally, NEDs will be encouraged to serve for up to nine years from their appointment in line with the provisions of the 2018 Code, subject to annual re-election.

## External appointments

The board supports executive directors taking up appointments outside the company to broaden their knowledge and experience. Each executive director is permitted to retain any fee from their external appointments. Such external appointments are subject to agreement by the chair and reported to the board. Any external appointment must not conflict with a director's duties and commitments to bp. Details of appointments as non-executive directors of publicly listed companies during 2022 are shown below.

| | Appointee company | Additional position held at appointee company | Total fees |
|---|---|---|---|
| [redacted] | | | |

a As of 27 February 2022, Bernard stepped down from his role as non-executive director of Rosneft.
b Held as a result of the company's shareholding in Aker BP ASA.

This directors' remuneration report was approved by the board and signed on its behalf by [redacted], company secretary on 10 March 2023.

# Other disclosures

## Appointment and time commitment

The chair, senior independent director and other NEDs each have letters of appointment with BP p.l.c. and do not serve, nor are they employed, in any executive capacity by bp.

NEDs are generally appointed for three-year fixed terms; however, in line with what is considered good governance practice in the UK Corporate Governance Code (the Code), bp proposes all directors for annual re-election by shareholders at the annual general meeting (AGM) where letters of appointment for each NED are available for inspection.

Details on the skills and experience of each director seeking re-election, as well as their individual contributions to the long-term success of the company, are set out in the notice of AGM. In accordance with the recommendations of the Code, NEDs would not be expected to serve beyond nine years unless there are exceptional circumstances.

Of the 10 board meetings held in 2022, six were board meetings covering a full agenda across strategy, performance, people and governance. Three board meetings were focused on the quarterly results, with one meeting combining both a full agenda and the quarterly results.

Bernard was unable to attend one board meeting due to unforeseen personal circumstances and Amanda joined the board on 1 September 2022. Pam was unable to attend one audit committee meeting due to a pre-existing external commitment.

## Appointments and succession plans

On behalf of the board, the people and governance committee reviews the formal appointment process and succession plan. Appointments and succession plans are both based on merit and assessed against objective criteria with the promotion of diversity, equity and inclusion as central considerations. This includes diversity of gender, social and ethnic backgrounds as well as cognitive and personal strengths.

In reviewing appointments and succession plans, due consideration is given to ensure smooth transition of board members with specific responsibilities (e.g. committee chair roles) by allowing sufficient time for a detailed handover. This is balanced by the need to have new board members join at regular intervals such that over time there is a controlled approach to board members reaching the end of their tenure.

Further details on succession and tenure are set out in the people and governance committee report on pages 98-101.

## Time commitments

The expectation regarding time commitment for board members to effectively discharge their duties is set out in the directors' letters of appointment. The time commitment varies with the demands of bp business and other events.

The NEDs' external time commitments – whether through executive, non-executive, advisory or other roles – are regularly reviewed by the company secretary to ensure that they are able to allocate appropriate time to bp.

The review process takes into account outside appointments and other external commitments, factoring in the complexity of the company in question and the industry, in particular regulated and potentially competing sectors.

NEDs are also required to consult with the company secretary and chair before accepting any other role that may impact their ability to commit appropriate time to bp. The process for the approval of any new external appointment for an existing director reviews the time commitment required for the new external appointment in order to ensure the director has sufficient capacity for their role with bp. As part of that same review process, a review of independence and potential conflicts of interest is undertaken.

The board has concluded that, notwithstanding the NEDs' other appointments, they are each able to dedicate sufficient time to fulfil their bp duties.

As recommended by the Code, neither of the executive directors hold more than one non-executive directorship in a FTSE 100 company or other significant appointments, as set out on page 80.

## Independence and conflicts of interest

All directors have a statutory duty to exercise independent judgement. Independence of non-executive directors (NEDs) is a crucial in bringing constructive challenge to the CEO and the leadership team at board meetings, while providing support and guidance to promote meaningful discussion and, ultimately, informed and effective decision-making. In addition, each director has a statutory duty to disclose actual or potential conflicts of interest. In accordance with the criteria set out in the Code, the chair was considered independent at the time he was appointed. NEDs are required to provide sufficient information to allow the board to evaluate their independence prior to and following their appointment.

Formal procedures are in place for new potential conflicts to be reported and recorded during the year. As a consequence of regular reviews in 2022, the board is satisfied that there were no matters giving rise to conflicts of interest which could not be authorized by the board. It has therefore concluded that all bp NEDs are independent.

# Directors' statements

## Statement of directors' responsibilities

The directors are responsible for preparing the annual report and the financial statements in accordance with applicable law and regulations. The directors are required by the UK Companies Act 2006 to prepare financial statements for each financial year that give a true and fair view of the financial position of the group and the parent company and the financial performance and cash flows of the group and parent company for that period. Under that law they are required to prepare the consolidated financial statements in accordance with International Financial Reporting Standards (IFRS) as adopted by the United Kingdom and applicable law and have elected to prepare the parent company financial statements in accordance with applicable United Kingdom law and United Kingdom accounting standards (United Kingdom generally accepted accounting practice), including FRS 101 'Reduced Disclosure Framework'. In preparing the consolidated financial statements the directors have also elected to comply with IFRS as issued by the International Accounting Standards Board (IASB) and IFRS as adopted by the European Union (EU).

In preparing those financial statements, the directors are required to:

- Select suitable accounting policies and then apply them consistently.
- Make judgements and estimates that are reasonable and prudent.
- Present information, including accounting policies, in a manner that provides relevant, reliable, comparable and understandable information.
- Provide additional disclosure when compliance with the specific requirements of IFRS is insufficient to enable users to understand the impact of particular transactions, other events and conditions on the group's financial position and financial performance.
- State that applicable accounting standards have been followed, subject to any material departures disclosed and explained in the parent company financial statements.
- Prepare the financial statements on the going concern basis unless it is inappropriate to presume that the company will continue in business.

The directors are responsible for keeping adequate accounting records that disclose with reasonable accuracy at any time the financial position of the group and company and enable them to ensure that the consolidated financial statements comply with the Companies Act 2006 and the parent company financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the group and company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Having made the requisite enquiries, so far as the directors are aware, there is no relevant audit information (as defined by Section 418(3) of the Companies Act 2006) of which the company's auditors are unaware, and the directors have taken all the steps they ought to have taken to make themselves aware of any relevant audit information and to establish that the company's auditors are aware of that information.

Each of the current directors, whose names and functions are listed on pages 80 to 83, confirms that to the best of their knowledge:

- The consolidated financial statements, prepared on the basis of IFRS as issued by the IASB, IFRS as adopted by the United Kingdom and EU and in accordance with the provisions of the Companies Act 2006 as applicable to companies reporting under international accounting standards, give a true and fair view of the assets, liabilities, financial position and profit or loss of the group.
- The parent company financial statements, prepared in accordance with United Kingdom generally accepted accounting practice, give a true and fair view of the assets, liabilities, financial position, performance and cash flows of the company.
- The management report, which is incorporated in the strategic report and directors' report, includes a fair review of the development and performance of the business and the position of the group, together with a description of the principal risks and uncertainties that they face.

[redacted]

10 March 2023

## UK Corporate Governance Code compliance

Throughout 2022, bp applied the principles and provisions of the 2018 UK Corporate Governance Code (Code). It has complied with all provisions of the Code. The Code can be found on the Financial Reporting Council website: *www.frc.org.uk*.

## Risk management and internal control

Under the UK Corporate Governance Code 2018 (Code), the board is responsible for the company's risk management and internal control systems. In discharging this responsibility the board, through its governance principles, requires the chief executive officer to operate the company with a comprehensive system of controls and internal audit to identify and manage the risks including emerging risks that are material to bp. In turn, the board, through its monitoring processes, satisfies itself that these material risks are identified and understood by management and that systems of risk management and internal control are in place to mitigate them. These systems are reviewed periodically by the board, have been in place for the year under review and up to the date of this report and are consistent with the requirements of Principle O of the Code.

The board has processes in place to:

- Assess the principal and emerging risks facing the company.
- Monitor the company's system of internal control (which includes the ongoing process for identifying, evaluating and managing the principal and emerging risks).
- Review the effectiveness of that system annually.

Non-operated joint ventures and associates★ have not been dealt with as part of this process.

A description of the principal and emerging risks facing the company, including those that could potentially threaten its business model, future performance, solvency or liquidity, is set out in Risk factors on page 73. During the year, the board undertook a robust assessment of the principal and emerging risks facing the company. The principal means by which these risks are managed or mitigated are set out on page 69.

# **Directors' statements** continued

In assessing the risks faced by the company and monitoring the system of internal control, the board and the audit and safety and sustainability committees requested, received and reviewed reports from executive management, including management of the business segments, corporate activities and any functions, at their regular meetings. A report by each of these committees, including its activities during the year, is set out on pages 98-112.

During the year, the committees, as relevant, also met with management, the SVP, internal audit and other monitoring and assurance functions (including group ethics and compliance, safety and operational risk, group control, group legal and group risk) and the external auditor. Responses by management to incidents that occurred were considered by the appropriate committee or the board.

At a meeting in March 2023, the audit committee considered reports from the group risk function on the system of internal control and the function's categorisation of significant failings or weaknesses. The audit committee also considered a report from internal audit on their assessment of bp's systems of internal control and risk management, based on audit work conducted during 2022. In considering these reports and assessments, the audit committee noted that bp's system of internal control and risk management is designed to manage, rather than eliminate, the risk of failure to achieve business objectives and can only provide reasonable, and not absolute, assurance against material misstatement or loss.

The board then considered the review undertaken by the audit committee and the proposed disclosures outlining the company's risk management and internal control systems prior to publication of the annual report and accounts.

A statement regarding the company's internal controls over financial reporting is set out on page 149.

## Longer-term viability

In accordance with provision 31 of the Code, the directors have assessed the prospects of the company over a period significantly longer than 12 months. The directors believe that a viability assessment period of three years remains appropriate. This assessment is based on management's reasonable expectations of the position and performance of the company over this period, it's internal detailed budgets and planning timeframes and the targets and aims that it has set out.

Our risk management system, described in how we manage risk on page 69, outlines our risk identification, assessment and management approach for all risks, including our principal risks, described on page 73.

Taking into account the company's current position and its principal risks, the directors have a reasonable expectation that the company will be able to continue in operation and meet its liabilities as they fall due over the next three years.

The directors' assessment included a review of the potential financial impact of, and the financial headroom that could be available in the event of, the most severe but plausible scenarios that could threaten the viability of the company. The assessment took into consideration the robust financial position of the group and the potential mitigations that management reasonably believes would be available to the company over this period. Mitigations considered include use of cash, access to debt facilities and credit lines, raising of capital, reductions in capital expenditure, divestments and dividend reductions.

The scenarios that have been modelled are based on the most severe but plausible outcomes and associated costs are based on actual experience where possible. The scenarios have been considered individually and as a cluster of events. They include:

- A significant process safety incident when operating facilities, drilling wells or transporting hydrocarbons.
- A sustained significant decline in oil prices over three years.
- A significant cyber-security incident.
- A loss of a significant market or producing asset for six months.

The directors also considered the impact on viability from an extended pandemic scenario, as well as the potential risks associated with climate change and the transition to a lower carbon economy. They consider that the most likely impacts of these risks are broadly captured and modelled through the sustained low oil price and loss of a producing asset scenarios.

In assessing the prospects of the company, the directors noted that such assessment is subject to a degree of uncertainty that can be expected to increase looking out over time and, accordingly, that future outcomes cannot be guaranteed or predicted with certainty.

## Fair, balanced and understandable

The board considers the annual report and financial statements, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the company's position and performance, business model and strategy.

## Going concern

In accordance with provision 30 of the Code, the directors consider it appropriate to adopt the going concern basis of accounting in preparing the financial statements.

Forecast liquidity has been assessed under a number of stressed scenarios to support this assertion. Reverse stress tests performed indicated that the group will continue to operate as a going concern for at least 12 months from the date of approval of the financial statements even if the Brent price fell to zero. For further information on financial risk factors, including liquidity risk, see Financial statements – Note 29.

# Consolidated financial statements of the bp group

# Independent auditor's report to the members of BP p.l.c.

## Report on the audit of the financial statements

### 1. Opinion

In our opinion:

- The financial statements of bp plc (the 'parent company') and its subsidiaries (the 'group') give a true and fair view of the state of the group's and of the parent company's affairs as at 31 December 2022 and of the group's loss for the year then ended.
- The group financial statements have been properly prepared in accordance with United Kingdom adopted international accounting standards and International Financial Reporting Standards (IFRSs) as issued by the International Accounting Standards Board (IASB) and as adopted by the European Union (EU).
- The parent company financial statements have been properly prepared in accordance with United Kingdom accounting standards (United Kingdom generally accepted accounting practice), including FRS 101 'Reduced Disclosure Framework'.
- The financial statements have been prepared in accordance with the requirements of the Companies Act 2006.

We have audited the financial statements of BP p.l.c which comprise the:

- group and parent company income statements
- group and parent company statements of comprehensive income
- group and parent company statements of changes in equity
- group and parent company balance sheets
- group cash flow statement
- group related Notes 1 to 37 to the financial statements, including a summary of significant accounting policies and
- parent company related Notes 1 to 13 to the financial statements, including a summary of significant accounting policies.

The financial reporting framework that has been applied in the preparation of the group financial statements is applicable law, United Kingdom adopted international accounting standards and IFRSs as issued by the IASB and as adopted by the EU. The financial reporting framework that has been applied in the preparation of the parent company financial statements is applicable law and United Kingdom accounting standards, including FRS 101 'Reduced Disclosure Framework' (United Kingdom generally accepted accounting practice).

### 2. Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the auditor's responsibilities for the audit of the financial statements section of our report.

We are independent of the group and the parent company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the Financial Reporting Council's (the 'FRC's') Ethical Standard as applied to listed public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements. The non-audit services provided to the group and parent company for the year are disclosed in Note 36 to the financial statements. We confirm that we have not provided any non-audit services prohibited by the FRC's Ethical Standard to the group or the parent company.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

## 3. Summary of our audit approach

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| **Key audit matters** | The key audit matters that we identified in the current year were:<br>• potential impact of climate change and the energy transition<br>• impairment of upstream oil and gas property, plant and equipment (PP&E) assets<br>• decommissioning provisions<br>• accounting for complex transactions executed by the trading and shipping (T&S) function to deliver against the wider group strategy and valuation of commodity financial derivatives, where fraud risks may arise in revenue recognition (potentially impacting all financial statement accounts, in particular finance debt)<br>• IT controls relating to financial systems and<br>• management override of controls.<br>All key audit matters are consistent with those we identified in the prior year and the developments in fact patterns of these previously identified key audit matters are explained in respective sections below. |
| **Materiality** | The materiality that we used for the group financial statements was $1,250 million (2021 $700 million) which was determined based on profit before tax adjusted for the exceptional charges of $25.5 billion (comprising mainly of investment impairment and recycling of accumulated exchange losses from equity) associated with the decision to exit bp's shareholding in Rosneft and underlying replacement cost profit before interest and tax.<br>In the prior year we determined materiality using profit before tax (with no adjustments) and underlying replacement cost profit before interest and tax. |
| **Scoping** | Our scope covered 204 consolidation units (cons units). Of these, 152 were full-scope audits and the remaining 52 were subject to specific procedures on certain account balances by component audit teams or the group audit team. These covered 71% of group revenue, 77% of PP&E and 71% of profit before tax. The remaining 717 cons units were subject to other procedures, including performing analytical reviews, making inquiries and evaluating and testing management's group-wide controls. |

## 4. Conclusions relating to going concern

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Our evaluation of the directors' assessment of the group's and parent company's ability to continue to adopt the going concern basis of accounting included:

- considering whether material uncertainties existed that could cast significant doubt on the entity's ability to continue as a going concern for at least 12 months after the date of approval of the financial statements
- assessing the financing facilities including the nature of the facilities, repayment terms and covenants
- assessing whether the impact of potential margin calls in respect of derivative exchange contracts used to risk manage the physical portfolio have been appropriately considered given price volatility
- challenging the assumptions used in the forecast (in particular oil and gas prices, capital expenditure, production levels and debt repayments)
- assessing management's identified potential mitigating actions and the appropriateness of the inclusion of these in the going concern assessment
- testing the clerical accuracy and appropriateness of the model used to prepare the forecasts
- assessing the historical accuracy of forecasts prepared by management
- reperforming management's sensitivity analysis and
- assessing the disclosures made within the financial statements.

Based on our assessment, we concluded that the assumptions used by management were reasonable overall and the disclosures made within the financial statements were appropriate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the group's and parent company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

In relation to the reporting on how the group has applied the UK Corporate Governance Code, we have nothing material to add or draw attention to in relation to the directors' statement in the financial statements about whether the directors considered it appropriate to adopt the going concern basis of accounting.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report.

## 5. Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial statements of the current year and include the most significant assessed risks of material misstatement (whether or not due to fraud) that we identified. These matters included those which had the greatest effect on the overall audit strategy, the allocation of resources in the audit and directing the efforts of the engagement team.

Throughout the course of our audit, we identify risks of material misstatement ('risks'). We consider both the likelihood of a risk and the potential magnitude of a misstatement in making the assessment. Certain risks are classified as 'significant' or 'higher' depending on their severity. The category of the risk determines the level of evidence we seek in providing assurance that the associated financial statement item is not materially misstated.

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The matters described below were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

### 5.1 Potential impact of climate change and the energy transition (impacting PP&E, goodwill, intangible assets, investments in joint ventures and provisions)

**Key audit matter description**

Climate change impacts bp's business in a number of ways as set out in the strategic report on pages 1 to 76 of the Annual Report and Note 1 of the financial statements on page 185. It represents a strategic challenge and a key focus of management. The related risks that we have identified for our audit are as follows:

- Forecast assumptions used in assessing the value-in-use of oil and gas PP&E assets within bp's balance sheet for impairment testing, particularly oil and gas price assumptions and their interrelationship with forecast emissions costs, may not appropriately reflect changes in supply and demand due to climate change and the energy transition (see 'Impairment of upstream oil and gas PP&E assets' below).
- The timing of expected future decommissioning expenditures in respect of oil and gas assets may need to be brought forward with a resulting increase in the present value of the associated liabilities due to the impact of climate change. In addition, there is an exposure to decommissioning obligations that may revert back to bp in respect of assets transferred to third parties through historical divestments. The risk of exposure is enhanced due to the impacts of climate change which have heightened long term financial resilience concerns for many industry participants. Furthermore, provisions for decommissioning refining assets, not generally recognised on the basis that the potential obligations cannot be measured given their indeterminate settlement dates, might need to be recognised if reductions in demand due to climate change curtail their operational lives; (see 'Decommissioning provisions' below).
- The recoverability of certain of the group's $4.2 billion total exploration and appraisal (E&A) assets capitalised as at 31 December 2022 (2021 $4.3 billion) are potentially exposed to climate change and the global energy transition risk factors (see Note 15). This is because a greater number of E&A projects may not proceed as a consequence of the energy transition leading to lower forecast future oil and gas prices, bp's intention to reduce its hydrocarbon production (by around 25% by 2030 relative to 2019 – see page 186) and potentially increased objections from stakeholders to the development of certain projects. The determination of whether and when E&A costs should be written off, impaired, or retained on the balance sheet as E&A assets, remains complex and continues to require significant management judgement.
- The carrying value of bp's refining assets within PP&E may no longer be recoverable, due to changes in supply and demand which arise as a consequence of climate change and the energy transition, for example the adoption of electric vehicles in markets where bp has significant fuel refining activity. Management identified impairment indicators in respect of certain refineries during the year. As a result, impairment tests were performed to assess the recoverability of the refineries' carrying values. As disclosed in Note 4 to the accounts on page 208, management has recorded an impairment charge of $1,366 million in respect of the Gelsenkirchen refinery in Germany, driven by changes in economic assumptions.
- bp's intention to reduce its hydrocarbon production (by around 25% by 2030 relative to 2019 – see page 186) and the group's wider strategy includes potentially disposing of certain higher emissions intensity upstream oil assets and others. As a consequence, for certain assets and investments judgement is required in the determination of the recoverable amount as to whether it should consider the estimated disposal proceeds from a third party, as a key input. Management recorded $2.9 billion (2021 $1.1 billion) of pre-tax impairment charges in 2022 for such potential disposals as described in Note 4. There is a risk that management judgements taken to determine whether impairment charges are required based on bp's view of whether transactions are likely to proceed or not, and bp's strategic appetite regarding the value of disposal consideration that would be accepted, are not reasonable.
- The carrying value of the group's investments in low carbon energy assets may no longer be recoverable due to an increase in the low carbon energy discount rate, project development costs increasing as a result of higher inflation and the impact that the increased activity within the sector, as a result of the energy transition, has had on the demand for low carbon energy supply chain goods and services.
- The useful economic lives of the group's refining assets may be shortened as society moves towards 'net zero' emissions targets and bp seeks to achieve its net zero ambition, such that the depreciation charge is materially understated. Of the total refining assets carried in the balance sheet, all but an immaterial residual value relating primarily to land and buildings, will be fully depreciated by 2050. As disclosed in Note 1 to the accounts on page 186, management concluded that demand for refined products is expected to remain sufficient for the existing refineries to continue operating for the duration of their remaining useful lives and hence no changes to the useful economic lives of its refinery assets were required.

- The total goodwill balance as at 31 December 2022 is $12.4 billion, of which $7.2 billion relates to upstream oil and gas assets. The carrying values of goodwill may no longer be recoverable as a consequence of climate change and therefore may need to be impaired. For oil production & operations (OP&O), goodwill is allocated to CGUs in aggregate at the segment level and for gas & low carbon energy (G&LCE) goodwill is allocated to the hydrocarbon CGUs within the segment. The most significant assumption in the goodwill impairment tests affected by climate change relates to future oil and gas prices (see 'Impairment of upstream oil and gas PP&E assets' below). Given the significant level of headroom in the goodwill impairment tests, management identified no other assumption that could lead to a material misstatement of goodwill due to the energy transition and other climate change factors. Disclosures in relation to sensitivities for goodwill are included within Note 14 on page 221. The C&P segment has a goodwill balance of $4.7 billion, of which the most significant element is $2.5 billion relating to the Lubricants business. Notwithstanding the expected global transition to electric vehicles which may reduce demand for Lubricants, due to the substantial headroom in the most recent impairment test (as described in Note 14), management has assessed as remote the likelihood that the recoverable amount of goodwill is less than its carrying value.
- Climate change-related litigation brought against bp, as disclosed in Note 33 to the financial statements, may lead to an outflow of funds requiring provision.

The above considerations were a significant focus of management during the period which led to this being a matter that we communicated to the audit committee, and which had a significant effect on the overall audit strategy. We therefore identified this as a key audit matter.

**How the scope of our audit responded to the key audit matter**

**Overall response**

We held discussions with management, with our Climate Change specialists and within the group engagement team to identify the areas where we felt climate change could have a potential impact on the financial statements.

We also continued to utilise a climate change steering committee comprising a group of senior partners with specific climate change and technical audit and accounting expertise within Deloitte to provide an independent challenge to our key decisions and conclusions with respect to this area.

**Audit procedures**

The audit response related to two of the audit risks identified is set out under the key audit matters for 'Impairment of upstream oil and gas PP&E assets' on pages 157-159 and 'Decommissioning provisions' on pages 160-161. Other procedures are as follows:

In respect of the recoverability of E&A assets capitalised as at 31 December 2022:

- We obtained an understanding of the group's E&A write-off and impairment assessment processes and tested relevant internal controls, which specifically consider climate change related risks.
- We challenged and evaluated management's key E&A judgements with regards to the impairment criteria of IFRS 6 and bp's accounting policy. We corroborated key judgements with internal and external evidence for assets that remained on the balance sheet. This included analysing evidence of future E&A plans, budgets and capital allocation decisions, assessing management's key accounting judgement papers, reading meeting minutes and reviewing licence documentation and evidence of active dialogue with partners and regulators including negotiations to renew licences or modify key terms.
- We assessed whether the progression of any projects that remain on the balance sheet would be inconsistent with elements of bp's strategy and in particular its net zero carbon commitments and bp's intention to reduce its hydrocarbon production (by around 25% by 2030 relative to 2019 – see page 186).

We have considered the impact of potential changes in supply and demand on the group's refining portfolio and reviewed internal and external market studies of future supply and demand. In relation to the Gelsenkirchen refinery impairment test, we assessed the valuation methodology, tested the integrity and mechanical accuracy of the impairment model and assessed the appropriateness of key assumptions and inputs, notably forecast refining margins and energy input costs, challenging and evaluating management's assumptions by reference to third party data where available. We also evaluated management's ability to forecast future cash flows and margins by comparing actual results to historical forecasts and tested management's internal controls over the impairment test and related inputs.

We challenged management's analysis that identified the specific assets that are likely to be disposed of by bp as part of its strategy. Where relevant, we challenged bp's asset impairment assessments based on their estimated disposal proceeds and whether transactions are judged likely to proceed or not. We obtained evidence of any negotiations with third parties, carefully considered bp's strategic intent in this context and challenged management's assessment of the recoverable amounts for material transactions. We also tested relevant controls which covered both the recoverable amounts determined and the likelihood of transaction completion. .

In respect of the impairment tests performed on certain low carbon energy investments, we tested the result by:

- Testing the relevant controls over low carbon energy impairment tests including controls over key assumptions and the discount rate
- Assessing the low carbon energy discount rate with input from our valuation specialists

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| | • Challenging and evaluating the key assumptions within the impairment tests, which included capital and operating cost assumptions, forecast yield and power price assumptions, debt and interest assumptions, and the applicability of the Inflation Reduction Act legislation on investment credit assumptions and<br>• Testing the mechanical accuracy of the impairment models.<br>We challenged management's assertion that no changes are required to the assessed useful economic lives of refining assets as a consequence of climate change factors. In doing this, we obtained third party reports assessing future refined petroleum product demand for those countries which are included in our group full audit scope for the C&P segment. In particular, we considered the forecasts as set out in the IEA World Energy Outlook 2022 which shows that demand for refined petroleum products is expected to remain sufficient for at least the current remaining useful economic lives of the refineries such that current depreciation rates are appropriate, including under the Announced Pledges Scenario which is associated with a temperature rise of 1.7 °C in 2100 (with a 50% probability).<br>We performed procedures to satisfy ourselves that, other than future oil and gas price assumptions, there were no other assumptions in management's oil and gas goodwill impairment tests to which reasonably possible changes due to the energy transition and other climate change factors could cause goodwill to be materially misstated. We obtained evidence which supported management's conclusion that goodwill relating to the C&P segment activities is not impaired due to climate change or other factors.<br>With regard to climate change litigation, we designed procedures specifically to respond to the risks that provisions could be understated or that contingent liability disclosures may be omitted or be inaccurate including:<br>• Holding discussions with the group general counsel and other senior bp lawyers regarding climate change matters<br>• Conducting a search for climate change litigation and claims brought against the group<br>• Making written inquiries of, and holding discussions with, external legal counsel advising bp in relation to climate change litigation and<br>• Reviewing the contingent liability disclosures in the annual report on pages 257-259.<br>We read the other information included in the Annual Report and considered (a) whether there was any material inconsistency between the other information and the financial statements; or (b) whether there was any material inconsistency between the other information and our understanding of the business based on audit evidence obtained and conclusions reached in the audit. |
| **Key observations** | Key observations in relation to oil and gas price assumptions used in oil and gas PP&E asset impairment tests, and the impact of climate change on decommissioning provisions are set out in the relevant key audit matter below.<br>We concluded that the key E&A assessments had been appropriately determined and the judgements management had made were appropriately supported. We did not identify any additional impairments or write-offs from the work we performed. We also confirmed management's view that they did not consider that the progression of any of their E&A assets would be inconsistent with bp's current strategy and management's capital frame and capital allocation intentions in light of climate change and the energy transition.<br>We are satisfied:<br>• with the results of our procedures relating to the carrying value of refining assets and that the impairments recorded are reasonable<br>• that management's planned disposal related asset impairment assessments are reasonable and we did not identify any additional material impairments<br>• with the results of the low carbon energy impairment tests, noting that the investment valuations remain sensitive in particular to capital and operating cost assumptions, the ability to secure project financing at the interest rates assumed, and for certain projects the pricing that can be secured under future power purchase contracts. The discount rate used by management was lower than we would have expected but this did not impact the outcome of the tests<br>• with the results of our procedures relating to the assessment of the useful economic lives of refining assets and therefore depreciation charges, based on the market studies we read<br>• with the sensitivity analysis disclosures around the energy transition and other climate change factors performed in respect of the goodwill balances; and that the group's goodwill balances are not materially misstated<br>• with management's assertion that no provision should currently be made in respect of climate change litigation. Based on the audit evidence obtained both from internal and external legal counsel, we concluded that management's disclosure of the contingent liabilities in respect of these matters is appropriate and<br>• that management's other disclosures in the Annual Report relating to climate change are consistent with the financial statements and our understanding of the business.<br>Whilst many of bp's oil and gas properties and refining assets are long term in nature, by 2050, the remaining carrying value of assets currently being depreciated will be immaterial, this date being the target set by the majority of governments with 'net zero' emissions targets and also by bp, being Aim 1 of the 'Getting to net zero' strategy set out on page 45. At current rates of depreciation, depletion and amortisation (DD&A), the average remaining depreciable life of the upstream oil and gas PP&E (within the OP&O and G&LCE segments) is just six years and the refining assets (within the C&P segment) is thirteen years. |

**5.2 Impairment of upstream oil and gas property, plant and equipment (PP&E) assets**

**Key audit matter description**

The group balance sheet as at 31 December 2022 includes PP&E of $106 billion (2021 $113 billion), of which $76 billion (2021 $74 billion) is oil and gas properties within the OP&O ($48 billion) and G&LCE ($28 billion) segments.

Management's oil and gas price assumptions for value-in-use impairment tests were revised in 2022 as set out in Note 1 on page 192. Brent oil price assumptions were increased in the short and medium term, reflecting management's expectation of supply constraints over the next decade due to restrictions on Russian exports, although there has been no significant change to longer term Brent oil forecasts reflecting bp's unchanged view on the longer term speed of the low carbon energy transition. Henry Hub gas price assumptions have increased until 2050, reflecting a view that US domestic gas production will need to grow, in large part to offset the loss of Russian gas exports.

Management has also revised bp's 'best estimate' discount rate assumptions for value-in-use impairment tests in 2022, as set out in Note 1 on page 192. bp's post-tax nominal weighted average cost of capital, being the starting point for setting discount rates used for impairment testing for oil and gas assets, has increased to 7% (2021 6%), reflecting the impact of observable increases in risk free rates on bp's weighted average cost of capital.

Given the significance of the price and discount rate assumption revisions during 2022, alongside certain CGU specific new indicators, management has tested all oil and gas CGUs for impairment and/or impairment reversal during the year. Management recorded $2.2 billion (2021 $4.8 billion) of pre-tax oil and gas CGU impairment reversals, principally due to the oil and gas price upward revisions detailed above, and $5.2 billion of pre-tax oil and gas CGU impairment charges (2021 $2.4 billion) due principally to increased expenditure forecasts and the increased discount rate. Further information has been provided in Note 1 on page 192 and Note 4 on page 207.

We identified three key management estimates in management's determination of the level of impairment charge and/or impairment reversal. These are:

**Oil and gas prices** - bp's oil and gas price assumptions have a significant impact on many CGU impairment assessments performed across the OP&O and G&LCE segments and are inherently uncertain. The estimation of future prices is subject to increased uncertainty given climate change, the global energy transition, macro-economic factors and disruption in global supply due to the Russian-Ukraine war. There is a risk that management do not forecast reasonable 'best estimate' oil and gas price forecasts when assessing CGUs for impairment charge and/or impairment reversal, leading to material misstatements. These price assumptions are highly judgmental and are pervasive inputs to bp's oil and gas CGU valuations, such that any misstatements would also aggregate. There is also a risk that management's oil and gas price related disclosures are not reasonable.

Aside from 2023 where oil and gas prices reflect near-term expected market conditions, bp's oil and gas price assumptions for value-in use impairment assessments are aligned with bp's investment appraisal assumptions, except that potential future emissions costs that could be borne by bp are included in investment appraisals as bp costs without assuming incremental revenue.

As described in Note 1 on page 185, emissions costs forecasts interrelate with bp's oil and gas prices, because bp's price assumptions for value-in-use estimates represent 'net producer prices', i.e., net of any further emissions costs that may be enacted in the future. Management's judgement is that the potential impact of such further emissions costs being borne by producers including bp is not expected to have a material impact on bp's oil and gas CGU carrying values as costs would effectively be borne by oil and gas end users via overall higher commodity prices. There is a risk that management's judgement is not reasonable.

**Discount rates** – Given the long timeframes involved, certain CGU impairment assessments are sensitive to the discount rate applied. Discount rates should reflect the return required by the market and the risks inherent in the cash flows being discounted. There is a risk that management does not assume reasonable discount rates, adjusted as applicable for country risks and relevant tax rates, leading to material misstatements. Determining a reasonable discount rate is highly judgmental and, consistent with price assumptions above, the discount rate assumption is also a pervasive input across bp's oil and gas CGU valuations, before adjustments for asset specific risks and tax rates, such that any misstatements would also aggregate.

**Reserves and resources estimates** – A key input to certain CGU impairment assessments is the oil and gas production forecast, which is based on underlying reserves estimates and field specific development assumptions. Certain CGU production forecasts include specific risk adjusted resource volumes, in addition to proven and/or probable reserves estimates, that are inherently less certain than reserves; and assumptions related to these volumes can be particularly judgemental. There is a risk that material misstatements could arise from unreasonable production forecasts for individually material CGUs and/or from the aggregation of systematic flaws in bp's reserves and resources estimation policies across the OP&O and G&LCE segments.

We identified certain individual CGUs with a total carrying value of $17 billion (2021 $33 billion) which we determined would be most at risk of material impairment charges as a result of a reasonably possible change in the oil and gas price assumptions. This population includes $4 billion of previously impaired assets which are also at risk of material impairment reversal resulting from potential oil and gas price assumption changes. We identified that a subset of these CGUs were also individually materially sensitive to the discount rate assumption. Accordingly, we identified these as significant audit risks.

We also identified CGUs with a further $13 billion (2021 $12 billion) of combined carrying value which were less sensitive. We identified these as a higher audit risk as they would be potentially at risk, in aggregate, to a material impairment by a reasonably possible change in some or all of the key assumptions. No impairment reversals are available for these CGUs. Further information regarding these sensitivities is given in Note 1 on page 193.

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| | Impairment charge and/or impairment reversal assessments of upstream oil and gas PP&E assets remain a key audit matter because recoverable values are reliant on forecasts that are inherently judgemental and complex for management to estimate, and the magnitude of the potential misstatement risk is material to the group. |
| **How the scope of our audit responded to the key audit matter** | We tested relevant internal controls over the estimation of oil and gas prices, discount rates, and reserve and resources estimates, as well as key internal controls over the performance of the impairment charge and/or impairment reversal assessments where we identified audit risks. In addition, we conducted the following substantive procedures.<br><br>**Oil and gas prices**<br>• We independently developed a reasonable range of forecasts based on external data obtained, against which we compared management's oil and gas price assumptions in order to challenge whether they are reasonable.<br>• In developing this range, we obtained a variety of reputable and reliable third party forecasts, peer information and other relevant market data.<br>• In challenging management's price assumptions, we considered the extent to which they and each of the forecast pricing scenarios obtained from third parties reflect the impact of lower oil and gas demand due to climate change and the energy transition.<br>• The 2015 Conference of the Parties (CoP) 21 Paris Agreement goals of 'holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels' was reaffirmed at CoP 27 in Cairo during November 2022. We specifically analysed third party forecasts stated, or interpreted by us, as being consistent with scenarios achieving the Paris 'well below 2°C goal' and/or '1.5°C ambition' and evaluated whether they presented contradictory audit evidence.<br>• We challenged management's judgement, described in Note 1 on page 185, that the potential impact of further emission costs being borne by producers including bp is not expected to have a material impact on bp's oil and gas CGU carrying values. We inquired of certain third party forecasters included in our reasonable range and read their forecast price reports, to understand whether their oil and gas prices are forecast on a 'net producer prices' basis, (i.e., net of potential future emissions costs that are assumed to be borne by oil and gas end users), consistent with the basis of bp's value-in-use price assumptions.<br>• We assessed management's disclosures in Notes 1 and 4, including the sensitivity of forecast revenue cash inflows to lower oil and gas prices and how climate change and the energy transition, potential future emissions costs and/or reduced demand scenarios may impact bp to a greater extent than currently anticipated in bp's value-in-use estimates for oil and gas CGUs.<br><br>**Discount rates**<br>• We independently evaluated bp's discount rates used in impairment tests with input from our valuation specialists, against relevant third party market and peer data.<br>• We assessed whether specific country risks and tax adjustments were reasonably reflected in bp's discount rates.<br>• We challenged and evaluated management's disclosures in Notes 1 and 4 including in relation to the sensitivity of discount rate assumptions.<br><br>**Reserves and resources estimates**<br>• With the assistance of our oil and gas reserves specialists we: assessed bp's reserves and resources estimation methods and policies<br>• assessed how these policies had been applied to a sample of bp's reserves and resources estimates which included those that we judged to represent the greatest risk of material misstatement<br>• read a sample of reports provided by management's external reserves experts and assessed the scope of work and findings of these third parties<br>• assessed the competence, capabilities and objectivity of bp's internal and external reserve experts, through understanding their relevant professional qualifications and experience<br>• compared the production forecasts used in the impairment tests with management's approved reserves and resources estimates and<br>• performed a retrospective assessment to check for indications of estimation bias over time.<br><br>**Other procedures**<br>• We challenged and assessed management's CGU determinations, including the evaluation of contradictory evidence.<br>• We assessed whether bp's impairment methodology was acceptable under IFRS and tested the integrity and mechanical accuracy of certain impairment models.<br>• For certain CGUs we challenged and assessed specific valuation input assumptions, including but not limited to material cost and tax forecasts, by comparing forecasts to approved internal and third party budgets, development plans, independent expectations and historical actuals.<br>• We assessed whether management's production forecasts are consistent overall with bp's strategy, including the group's expectation to reduce its hydrocarbon production (by around 25% by 2030 relative to 2019 - see page 186).<br>• Where relevant, we assessed management's historical forecasting accuracy and whether the estimates had been determined and applied on a consistent basis across the group. |

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| Key observations | Oil and gas prices |
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| | For the purpose of PP&E impairment tests, management is required under IAS 36 to apply its current 'best estimate' of future oil and gas prices. We determined that bp's 'best estimate' assumptions are reasonable when compared against a range of third party forecasts and peer information that we identified as being appropriate for this purpose. In forming this view, we included each forecaster's 'base case', 'central case' or 'most likely' estimate. |
| | We further observed that, as well as publishing a 'base case', 'central case' or 'most likely' estimate, certain third party price forecasters (including the IEA and the WBCSD Catalogue from April 2022) published other price forecasts including some that were stated as, or were interpreted by us as being, Paris 'well below 2ºC goal' or Paris '1.5ºC ambition' scenarios. We observed that none of those third party forecasters described their 'Paris consistent' scenarios as their 'base case', 'central case' or 'most likely' estimate. |
| | Management notes on page 185 that they consider their 'best estimate' prices to be in line with a range of transition paths consistent with the Paris climate goal of limiting global warming to well below 2ºC as well as the ambition to limit global warming to no greater than 1.5ºC. We observed that for oil, whilst being within the lower half of our range of 'best estimate' forecasts described above, bp's Brent price assumptions were overall within the higher half of our range of Paris 'well below 2ºC goal' and '1.5ºC ambition' scenarios. This is consistent with bp's prior period positioning within our Brent oil range. For Henry Hub gas, management's decision to adopt higher gas price assumptions until 2050 has moved bp's best estimate into the top half of our 'best estimate' range in the short and medium term, before settling towards the middle of our range in the longer term. The gas price assumptions are close to the top of our range of Paris 'well below 2ºC goal' and '1.5ºC ambition' scenarios in the short and medium term and remain in the top half in the longer term. This reflects an increase compared to the prior period, when bp's gas price assumptions were in the lower half of our 'best estimate' range and towards the midpoint of our range of Paris 'well below 2ºC goal' and '1.5ºC ambition' scenarios. We also noted certain other reputable third party sources that set out or implied even higher prices under both Paris 'well below 2ºC goal' and '1.5ºC ambition' scenarios, highlighting the large inherent uncertainty regarding 'Paris consistent' pathways and the very wide range of potential price forecasts. Accordingly, we consider management's statement as set out above to be reasonable. |
| | By inquiry and analysis, we confirmed that the third party oil and gas price forecasts used to develop our independent range are on a net producer price basis. Accordingly, we are satisfied management's judgement is reasonable that the potential impact of further emission costs being borne by bp is not expected to have a material impact on the group's oil and gas CGU carrying values. |
| | We reviewed the disclosures included in Note 1 to the accounts in respect of oil and gas price assumptions, including the sensitivity analysis presented therein. We observed that management's downside sensitivity, in which oil and gas prices are lower than the 'best estimate' in all future periods, is broadly in the middle of our range of third party Paris 'well below 2°C goal' and Paris '1.5°C ambition' scenarios between 2025 and 2030 and thereafter close to the bottom of the range for both Brent oil and Henry Hub gas. |
| | **Discount rates** |
| | bp's post-tax nominal 7% weighted average cost of capital, being the starting point for setting discount rates used for impairment testing for oil and gas assets, was within the independent range calculated by our valuation specialists. |
| | We were also satisfied with the calculation of country risk premia. Accordingly, we are satisfied with the discount rates used in the impairment charge and impairment reversal testing. |
| | **Reserves and resources** |
| | We found that the production forecasts used in the oil and gas CGU valuations that we tested were reasonable and appropriately risked where applicable, for the purposes of management's impairment charge and impairment reversal tests. |
| | **Other procedures** |
| | We observed that management's production forecasts are not consistent in aggregate with bp's strategy because bp expects to dispose of certain non-core assets in future periods (see 'Potential impact of climate change and the energy transition' above and page 55 of Annual Report). |

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| 5.3 Decommissioning provisions | |
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| **Key audit matter description** | A decommissioning provision of $12.3 billion is recorded in the financial statements as at 31 December 2022 (2021 $16.4 billion). The estimation of decommissioning provisions is a highly judgemental area as it involves a number of key estimates related to the cost and timing of decommissioning, in particular inflation and discount rate assumptions. Given management expects hydrocarbon production to be around 25% lower by 2030 relative to 2019 as stated on page 186, consistency of that expectation with the timing of decommissioning expenditure and underlying cost assumptions remains a key consideration.<br><br>Due to sustained levels of high global inflation, particularly in key geographies such as the U.S. and U.K., where a majority of bp's future decommissioning cost obligations are located, the impact of inflation on bp's decommissioning provision represents an area of particular risk. Consistent with prior years, management estimates that the average rate of forecast inflation applicable to the substantial majority of bp's decommissioning cost estimates is 1.5%, which is 0.5% lower than its estimated long term general inflation rate of 2%. The extent to which average future decommissioning cost inflation will differ from the general inflation rate depends on industry demand and supply of rigs and other relevant services at the time future decommissioning occurs, which in turn will be influenced by future oil and gas demand, and increasingly by structural changes in the industry supply chain driven by the energy transition, which are uncertain. As a result, the decommissioning inflation rate assumption is particularly judgemental and we have identified a significant risk of material misstatement in relation to this judgement.<br><br>The estimated undiscounted cost of its obligations and the timing of future payment are set out in Note 1 on page 199. Economic factors, future activities and the legislative environments that bp operates in are used to inform cost estimates, whereas the timing of decommissioning activities is dependent on cessation of production (CoP) dates, which are sensitive to changes in bp's price forecasts as price estimates determine economic cut off of oil and gas reserve estimates.<br><br>bp increased its discount rate used in calculating its decommissioning provisions from 2.0% as at 31 December 2021 to 3.5% as at 31 December 2022. The increase was primarily driven by the increased US treasury bond rates.<br><br>Additionally, bp is exposed to decommissioning obligations that could revert back to bp in respect of historical divestments to third parties. Judgement is required to assess the potential risk of reversion and if applicable, the estimated exposure, for each historically divested asset. The risk of reversion could be elevated by the potential impact of the energy transition, in particular the potential for lower oil and gas prices in the longer term which could result in financial resilience concerns for some industry participants. The risk further increased following a US legal judgement in 2020 which required a specific provision and increased the likelihood of decommissioning liabilities reverting to former owners as part of a bankruptcy proceeding.<br><br>Provisions for decommissioning refining assets, not generally recognised on the basis that the potential obligations cannot be measured given their indeterminate settlement dates, might need to be recognised if reductions in demand due to climate change curtail their operational lives. As disclosed in Note 1 on page 199 management concluded that, although obligations may arise if refineries cease manufacturing operations, they would only be recognised at the point when sufficient information became available to determine potential settlement dates. Accordingly, other than where a decision has been made to cease refining operations, no triggers for assessing the need to record a decommissioning provision have been identified. |
| **How the scope of our audit responded to the key audit matter** | We obtained an understanding of the group's decommissioning estimate and provisioning process and evaluated the effectiveness of the relevant controls.<br><br>**Long term inflation rate**<br>• We tested the control related to the determination of the decommissioning specific inflation rate assumption.<br>• We tested how management derived the decommissioning specific inflation rate assumption of 1.5%, and the evidence on which it is based, by gaining an understanding of the process used by management, testing management's calculations of the assumption, and evaluating the evidence relevant to management's assumption, both supporting and contradictory.<br>• As the 1.5% decommissioning specific inflation rate assumption is determined by making an adjustment to management's 2.0% general long term inflation rate assumption, we evaluated, with the help of our valuation specialists, the general long term inflation rate assumption used of 2.0%, comparing it against latest external market data.<br>• We made inquiries with, and evaluated the competence, capabilities and objectivity, of management's decommissioning experts who derived the decommissioning specific inflation rate.<br>• We inspected analyst forecasts and reports in respect of the future decommissioning market and related costs for evidence of supporting and contradictory evidence, with particular focus on the future rig market.<br>• We particularly considered the expectation that demand for oil and gas products and related activities will decrease, primarily in response to climate change and energy transition effects pivoting future energy industry investment and development activity towards renewable sources. We challenged management's assessment of the impact this will have on the decommissioning market and related inflation assumption.<br>• We analysed historical trends of rig market rates against oil prices and historical inflation to challenge management's assumption that the decommissioning inflation assumption does not inflate at the same rate as general inflation. |

**Cost and timing estimates**

- We tested the controls over the year end decommissioning cost and timing assumptions used within management's decommissioning provision estimate.
- We assessed the completeness and accuracy of the assets subject to decommissioning, including understanding the process to establish whether a legal or constructive obligation existed.
- We evaluated changes in key cost assumptions including rig rates, vessel rates, well plug and abandonment duration and non-productive time assumptions. We challenged whether the impact of inflation experienced in 2022 was appropriately considered and reflected where relevant within bp's cost assumptions, and also assessed the reasonableness of key cost assumptions with reference to internal and appropriate third party data.
- We assessed changes in assumptions for the estimated date of decommissioning and evaluated whether CoP dates used for decommissioning estimation are aligned with CoP assumptions in other areas, including PP&E impairment testing and oil and gas reserve estimation.
- We assessed the accuracy of bp's additional disclosure of the estimated undiscounted cost of its obligations and the timing of future decommissioning payments.

**Discount rates**

- We tested the control related to the determination of the discount rate assumption.
- With the help of our valuation specialists, we evaluated the discount rate assumption used, comparing it against latest external market data.

**Reversion risk**

- We obtained an understanding of bp's decommissioning reversion risk assessment process and tested relevant internal controls including those controls over the completeness and accuracy of the previously divested asset data.
- We challenged and evaluated management's key judgements related to the decommissioning reversion risk and conclusions as to whether any additional provision should be recognised, or specific contingent liability disclosure made. We assessed the relevant internal and external evidence used in forming this judgement, including the financial health of the counterparty or counterparties in the ownership chain for the divested assets and the existence of any other pertinent factors which could indicate a higher probability of decommissioning obligations reverting to bp.

**Potential decommissioning of refinery assets**

- We challenged and evaluated management's analysis which supported the judgement that no decommissioning provisions should be recognised in respect of refineries where there is ongoing activity and management has no current intention to cease these activities.
- We have reviewed analysis undertaken by management, as well as third party studies, of forecast demand for refined products in regions served by bp's refineries. Furthermore, we read external profitability benchmarking which supported a conclusion that the group's remaining refineries would likely remain operational for longer than many of their regional competitors, in the event of refining capacity reductions.
- We also met with refinery management to understand the potential alternative use cases under consideration for refineries in the future and obtained evidence that management is developing plans for the existing refinery sites remaining in the portfolio which would be compatible with net zero emissions, for instance through the production of alternative low carbon and sustainable fuels.

We tested the decommissioning models, assessing the application of cost, timing, inflation and discount rate assumptions.

**Key observations**

We concluded that the assumed inflation rate of 1.5% remains reasonable as a long-term inflation rate for decommissioning liabilities. We accept as reasonable that the high level of general inflation experienced in 2022 does not require a change to bp's long term average inflation assumption. With respect to the extent to which average future decommissioning cost inflation will differ from the general inflation rate, which is influenced by the demand and supply of rigs and other relevant services at the time future decommissioning occurs, we concluded that market forecasts support the assertion that demand for rigs will not increase in the long term as a result of the impact of the energy transition and therefore that inflation of rig costs will be limited.

We concluded that the cost and timing assumptions used in the decommissioning provision calculation were reasonable and the assumptions are appropriately supported by industry data. The disclosure included on page 199 with respect to the estimated undiscounted cost of bp's decommissioning obligations and the timing of future decommissioning payments are consistent with these conclusions.

bp's increased 3.5% discount rate was within a reasonable range based on latest market data.

No material additional decommissioning provisions have been made in respect of historical divestments where bp are exposed to decommissioning reversion risk as a result of the potential future bankruptcy of the current asset owner. Based on our review and challenge of management's assessment, we consider this judgement to be reasonable. We also consider the contingent liability disclosure to be reasonable.

In respect of the group's refining assets, taking into consideration both the IEA 2022 demand forecasts and management's strategic plans for the group's refineries, including developing production of low carbon and sustainable fuels, we are satisfied that it is not currently possible for management to estimate reliably a settlement date for any decommissioning obligations prior to a decision being made to cease refining operations. Accordingly, we have not identified any triggers that would require a decommissioning provision to be recorded.

| 5.4 Accounting for complex transactions executed by the trading and shipping (T&S) function to deliver against the wider group strategy and valuation of commodity financial derivatives, where fraud risks may arise in revenue recognition (potentially impacting all financial statement accounts, in particular finance debt) | |
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| **Key audit matter description** | In the normal course of business, T&S enters into a variety of transactions for delivering value across the group's supply chain. In pursuit of achieving bp's 'net zero' ambition and to support the overall group strategy, T&S as a function is increasingly focused on securing long term renewable power offtake/supply contracts in existing and new markets whilst providing solutions to bp's customers through offering eco-friendly hydrocarbons. Given the nature of these transactions, we direct significant audit effort towards challenging management's adopted accounting treatment and/or valuation estimates.<br><br>Throughout the year, we have kept our risk assessment updated by undertaking an iterative review of the underlying portfolio composition. This process facilitated a deeper understanding of the impact of commodity price volatility, demand destruction and the changing structure of the markets resulting from supply dislocations due to the Russian-Ukraine war allowing us to focus our audit effort to areas of highest risk.<br><br>**Accounting for structured commodity transactions (SCTs):**<br><br>T&S may also enter into a variety of transactions which we refer to as structured commodity transactions (SCTs). We generally refer to the following factors to identify a SCT:<br><br>• two or more counterparties with non-standard contractual terms;<br>• reference multiple commodity-based transactions; or<br>• contractual arrangements entered into in contemplation of each other.<br><br>SCTs are often long-dated, can have a significant multi-year financial impact, and may require the use of complex valuation models or unobservable inputs when determining their fair value, in which case they will be classified as level 3 financial instruments under IFRS 13, 'Fair Value Measurement'.<br><br>Accounting for SCTs is typically complex and initially involves significant judgment, as a feature of these transactions is that they often include multiple elements that will have a material impact on the presentation and disclosure in the financial statements and on key performance measures, including in particular the classification of liabilities as finance debt. Accordingly, we have identified a significant audit risk around the accounting for SCTs that have a quantitative impact of $487 million or higher on balances that affect group KPIs.<br><br>Although we have assessed new SCTs entered into during the year, we have not identified any new types of SCT transactions which we assess to be a significant risk.<br><br>**Valuation of commodity derivatives:**<br><br>Commodity markets remained volatile during the year on the back of continuing demand uncertainty as a result of the global energy transition, macro-economic factors and disruptions in global supply due to the Russian-Ukraine war. In response to the volatility observed, we focused our audit efforts on the valuation of all commodity derivatives and designed procedures specifically to test for management bias.<br><br>Unlike other financial instruments whose values or inputs are readily observable and therefore more easily independently corroborated, there are certain transactions for which the valuation is inherently more subjective due to the use of either complex valuation models and/or unobservable inputs. These instruments are classified as level 3 financial assets or liabilities. This degree of subjectivity also gives rise to a risk of potential fraud through management incorporating bias in determining fair values. Accordingly, we have identified these as a significant audit risk.<br><br>As at 31 December 2022, the group's total derivative financial assets and liabilities measured at fair value were $24.4 billion (2021 $12.8 billion) and $26.2 billion (2021 $13.9 billion), of which level 3 derivative financial assets were $8.8 billion (2021 $5.5 billion) and level 3 derivative financial liabilities were $7.0 billion (2021 $3.9 billion). |

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| **How the scope of our audit responded to the key audit matter** | **Accounting for structured commodity transactions:**<br>For structured commodity transactions, we:<br>• Tested controls related to the accounting for complex transactions.<br>• Developed an understanding of the commercial rationale of the transactions through discussions with management and reading transaction documents and executed agreements.<br>• Performed a detailed accounting analysis for a sample of SCTs involving significant offtake arrangements and/or significant contractual commitments.<br>• Selected a sample of existing working capital arrangements and financing structures to assess whether associated trading activity was in compliance with pre-determined boundary conditions and whether the conclusions reached remained in compliance with relevant accounting standards.<br>For SCTs which were identified during the prior years and that continue through 2022, we have refreshed our assessment in 2022 taking account of any amendments to the contracts. We assessed whether the conclusions reached previously remain appropriate and in accordance with relevant accounting standards.<br>To assess the appropriateness of the accounting treatment of SCTs, we embedded technical accounting specialists within the audit team.<br>**Valuation of commodity derivatives:**<br>In response to the continuing high volatility observed in the market and to test for management bias, we altered the extent and timing of our procedures by performing an independent valuation of a sample of derivatives at 30 June and of distinct samples of both Level 2 and Level 3 derivatives at 30 September and 31 December. In addition, we focused our testing on price inputs where bp has substantial exposure to illiquid (Level 3) or long dated (Level 2) curves.<br>To address the complexities associated with auditing the value of level 3 financial instruments, the engagement team included valuation specialists having significant quantitative and modelling expertise to assist in performing our audit procedures. Our valuation audit included the following control and substantive procedures:<br>• We tested the group's valuation controls including the:<br>– model certification control, which is designed to review a model's theoretical soundness and the appropriateness of its valuation methodology; and<br>– independent price verification control, which is designed to review the appropriateness of valuation inputs that are not observable and are significant to the financial instrument's valuation.<br>• We performed substantive valuation testing procedures at interim and year-end balance sheet dates, including:<br>– comparing management's input assumptions against the expected assumptions of other market participants and observable market data;<br>– evaluating management's valuation methodologies against standard valuation practice and analysing whether a consistent framework is applied across the business period over period; and<br>– engaging our valuation specialists to challenge models, develop fair value estimates and evaluate consistency in management's modelling and input assumptions throughout the year. Our independent estimates were established using independently sourced inputs (where available). We evaluated whether the differences between our independent estimates and management's estimates were within a reasonable range. In situations where we utilised management's inputs, these were compared to external data sources to determine whether they were reasonable. |
| **Key observations** | We assessed the features of the SCTs and determined that the accounting adopted for each of them was appropriate and in accordance with IFRS.<br>We concluded that management's valuations relating to commodity derivatives were appropriate.<br>We did not identify any indications of inappropriate misrepresentation of revenue recognition in the transactions, valuation estimates or accounting entries that we tested.<br>We did not identify any issues in our testing of the controls related to the accounting for complex transactions and found these to be operating effectively. |

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| 5.5 IT controls relating to financial systems | |
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| **Key audit matter description** | The group's financial systems environment is complex, with 119 separate systems scoped as being relevant for the group audit. Due to the reliance on financial systems within the group, IT controls which support these systems are critical to maintaining an effective control environment.<br><br>**User Access Management:**<br><br>From 2018 to 2021 we identified a number of deficiencies relating to user access management across the group's IT environment (together 'access deficiencies'). Management implemented a remediation programme and as at 31 December 2021, the remaining deficiencies related to the implementation and sustainability of controls specifically over the review and control of IT privileged access. In 2022, management redesigned these controls but the new controls were not in operation for the entire year and therefore management continued to operate mitigating controls. See the Audit Committee Report on page 104.<br><br>Access deficiencies increase the risk that individuals across bp had inappropriate access during the period. This results in an increased risk that data, reports and automated controls from and within the affected systems are not reliable. These deficiencies impact all components within the scope of our group audit.<br><br>The above considerations continued to be a significant focus of management during the period which led to this being a matter that we communicated to the audit committee, and which had a significant effect on the overall audit strategy. We therefore identified this as a key audit matter. |
| **How the scope of our audit responded to the key audit matter** | We obtained an understanding of management's processes and relevant financial systems, and tested the associated general IT controls and automated business controls. We also tested the integrity of key reports. In responding to the identified access deficiencies our IT specialists performed procedures to:<br>• test the controls that management has implemented or re-designed in order to remediate the deficiencies<br>• assess and test the mitigating controls that management identified, including directly testing those controls operated by IT service organisations and<br>• determine the impact that utilising inappropriate levels of access could feasibly have had on the affected systems including assessing the likelihood of inappropriate user access impacting the financial statements. We tested controls implemented by management to identify instances of the use of inappropriate access and performed additional mitigating procedures independently. |
| **Key observations** | For the period the controls were ineffective, management identified and operated appropriate mitigating controls and our testing confirmed that they operated effectively. In addition, our independent testing did not identify any instances of inappropriate access being exploited.<br><br>Accordingly, we continued to adopt an audit approach which places reliance on the operating effectiveness of financial controls. Under our methodology, this enables us to apply lower sample sizes in our substantive testing. |

| 5.6 Management override of controls (potentially impacting all financial statement accounts) | |
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| **Key audit matter description** | We conducted an assessment of the fraud risks arising from management override of controls by considering potential areas where the group's financial statements could be manipulated. In performing this assessment, we considered pressures or incentives to achieve certain IFRS or non-GAAP measures cue to the remuneration arrangements of people in Financial Reporting Oversight Roles (FRORs), including management and senior executives, as well as other incentives which could exist in light of bp's share buyback commitments communicated to its shareholders.<br><br>Our considerations included the potential for:<br>• inappropriate accounting estimates and judgements<br>• the posting of fictitious or fraudulent journal entries or<br>• inappropriate accounting for significant unusual transactions arising from changes to the business.<br><br>Management has implemented a number of new journal controls in 2021 and 2022 to address deficiencies identified during prior period audits. During the year we identified deficiencies in these new controls but mitigating controls to address the risk associated with the deficiencies were identified. These included low-level analytical reviews, controls over closing balances, period-end analytical review controls and certain automated business controls.<br><br>This had a significant bearing again this year on the allocation of audit resources and has been discussed with the audit committee throughout the year. Accordingly, we identified this as a key audit matter. |

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| **How the scope of our audit responded to the key audit matter** | We tested the mitigating controls to respond to the risk of fraudulent journal entries. In addition, we:<br>• made inquiries of individuals involved in the financial reporting process about inappropriate or unusual activity relating to the processing of journal entries and other adjustments<br>• identified and tested relevant entity-level controls, in particular those related to the bp Code of Conduct, whistleblowing (bp OpenTalk) and controls monitoring financial reporting processes and financial results<br>• used our data analytics tools to select for testing journal entries and other adjustments made at the end of a reporting period or otherwise having characteristics associated with common fraud schemes<br>• tested journal entries and other adjustments recorded in the general ledger throughout the period, with a particular focus on adjustments that occur late in the financial close process<br>We assessed accounting estimates for bias and evaluated whether the circumstances producing the bias, if any, represent a risk of material misstatement due to fraud. A number of the most significant estimates are covered by the other Key Audit Matters set out above. This assessment included:<br>• evaluating whether the judgements and decisions made by management in making the accounting estimates included in the financial statements, even if they are individually reasonable, indicate a possible bias on the part of bp's management that may represent a risk of material misstatement due to fraud; and<br>• performing a retrospective analysis of management judgements and assumptions related to significant accounting estimates reflected in the financial statements of the prior year.<br>We considered whether there were any significant transactions that are outside the normal course of business, or that otherwise appear to be unusual due to their nature, timing or size.<br>The risks and responses to the revenue recognition risks within the trading and shipping function are set out on pages 162-163. |
| **Key observations** | Our testing of the mitigating controls indicated that they were operating effectively.<br>Our substantive testing of journal entries and other adjustments, selected through the use of our data analytics tools, did not identify any inappropriate items.<br>We did not identify evidence of overall bias or any significant unusual transactions for which the business rationale (or the lack thereof) of the transaction suggested that it may have been entered into to engage in fraudulent financial reporting or to conceal misappropriation of assets. |

## 6. Our application of materiality

### 6.1 Materiality

We define materiality as the magnitude of misstatement in the financial statements that makes it probable that the economic decisions of a reasonably knowledgeable person would be changed or influenced. We use materiality both in planning the scope of our audit work and in evaluating the results of our work.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

<table>
<tr><th></th><th>Group financial statements</th><th>Parent company financial statements</th></tr>
<tr><td>Materiality</td><td colspan="2">We set materiality for both the group and parent company at $1,250 million. Group and parent company planning materiality for the current year was set at $1,000 million and our audit scoping and all the audit testing performed by our component teams was conducted using this planning materiality.<br>In 2021, we used a materiality of $700 million and $1,000 million for the group financial statements and the parent company financial statements respectively. The increase in materiality is due to the significant increase in the profitability of the group.</td></tr>
<tr><td>Basis for determining materiality</td><td>Consistent with the prior year we concluded that it is appropriate to use profit before tax as a materiality benchmark; however profit before tax was adjusted for the exceptional charges of $25.5 billion (comprising mainly of investment impairment and recycling of accumulated exchange losses from equity) associated with the decision to exit BP's shareholding in Rosneft.<br><br>We also continue to use underlying replacement cost profit before interest and tax as a benchmar[illegible] materiality.<br><br>Materiality was determined to be $1,250 million, which is 3.1% of normalized profit before tax and 2.7% of underlying replacement cost profit before tax.<br><br>In 2021, we determined materiality to be $700 million, which represented 4.6% of profit before tax and 3.1% of underlying replacement cost profit before tax.</td><td>We determined materiality for our audit of the standalone parent using 1.1% (2021 1%) of net assets.</td></tr>
<tr><td>Rationale for the benchmark applied</td><td>We conducted an assessment of which line items are the most important to investors and analysts by reading analyst reports and bp's communications to shareholders and lenders, as well as the communications of peer companies.<br><br>Profit before tax is the benchmark ordinarily considered by us when auditing listed entities. It provides comparability against companies across all sectors but has limitations when auditing companies whose earnings are strongly correlated to commodity prices, which can be volatile from one period to the next, and therefore may not be representative of the volume of transactions and the overall size of the business in the year.<br><br>This resulted in us selecting profit before tax and underlying replacement cost profit before interest and tax as the most appropriate benchmarks. We further note that the non-GAAP measure underlying replacement cost profit before interest and tax is one of the key metrics communicated by management in bp's results announcements and therefore is considered to be an appropriate benchmark.<br><br>As noted above, in the basis for determining materiality section, given the nature and size of Russian exit charges we have normalised profit before tax for these charges.</td><td>The materiality determined for the standalone parent company is based on net assets as the company is non-trading and operates primarily as a holding company; we believe the net asset position is the most appropriate benchmark to use.<br><br>Whilst, in accordance with our benchmarks we could have set parent company materiality higher we decided to align it with group materiality of $1,250 million.</td></tr>
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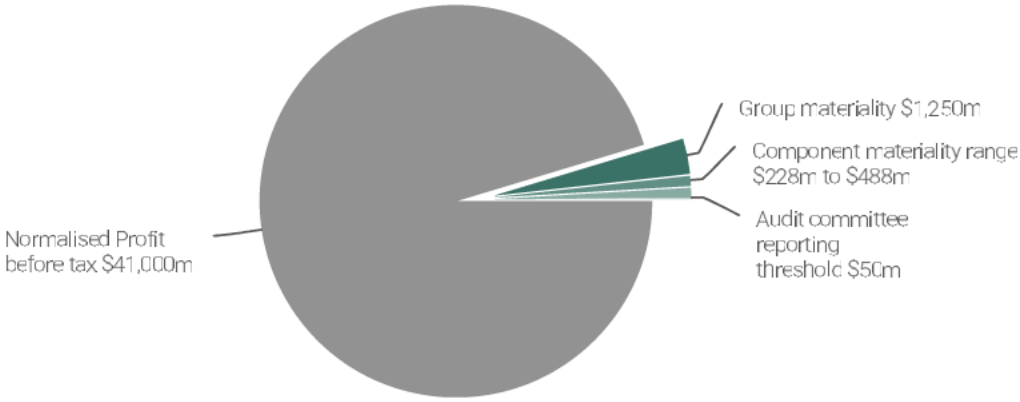
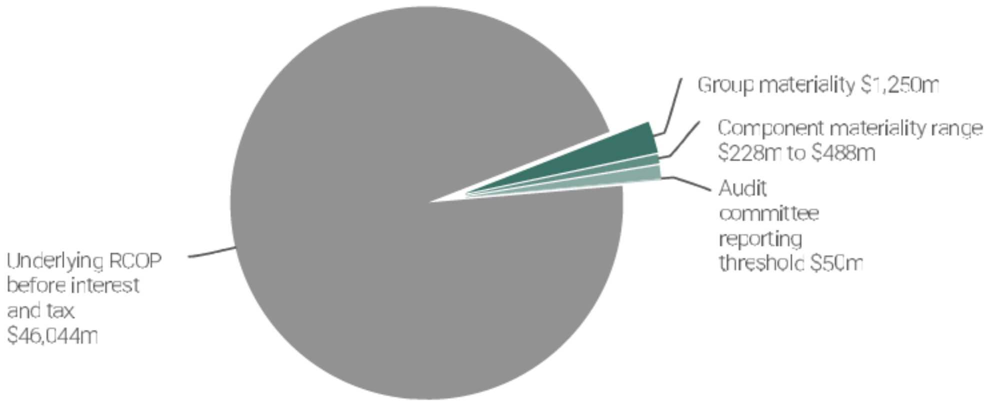



*Normalized profit before tax of $41 billion is derived as PBT of $15.4 billion adjusted for the exceptional charges of $25.6 billion associated with the decision to exit bp's shareholding in Rosneft.

### 6.2 Performance materiality

We set performance materiality at a level lower than materiality to reduce the probability that, in aggregate, uncorrected and undetected misstatements exceed the materiality for the financial statements as a whole.

| | Group financial statements | Parent company financial statements |
|---|---|---|
| **Performance materiality** | Group and parent company performance materiality was set at 65% of planning materiality for the 2022 audit (2021 65% of materiality). | |
| **Basis and rationale for determining performance materiality** | Consistent with the prior year performance materiality of 65% reflects the overall quality of the control environment, the magnitude of misstatements identified in the current and prior years, as well as the fact that management is generally willing to correct any such misstatements. | |

### 6.3 Error reporting threshold

We agreed with the audit committee that we would report to the Committee all audit differences in excess of $50 million (2021 $35 million), as well as differences below that threshold that, in our view, warranted reporting on qualitative grounds. We also report to the audit committee on disclosure matters that we identified when assessing the overall presentation of the financial statements.

## 7. An overview of the scope of our audit

### 7.1 Identification and scoping of components

As a result of the highly disaggregated nature of the group, with operations in over 60 countries through approximately 920 cons units, a significant portion of our audit planning effort was ensuring that the scope of our work is appropriate in addressing the identified risks of material misstatement.

The factors that we considered when assessing the scope of the bp audit, and the level of work to be performed at the cons units that are in scope for group reporting purposes, included the following:

- The financial significance of an operating unit (which will typically include multiple cons units) to bp's revenue and profit before tax, or PP&E, including consideration of the financial significance of specific account balances or transactions.
- The significance of specific risks relating to an operating unit, history of unusual or complex transactions, identification of significant audit issues or the potential for, or a history of, material misstatements.
- The effectiveness of the control environment and monitoring activities, including entity-level controls.
- The findings, observations and audit differences that we noted as a result of our 2021 audit engagement.
- Our audit approach was generally to place reliance on management's controls over financial reporting.

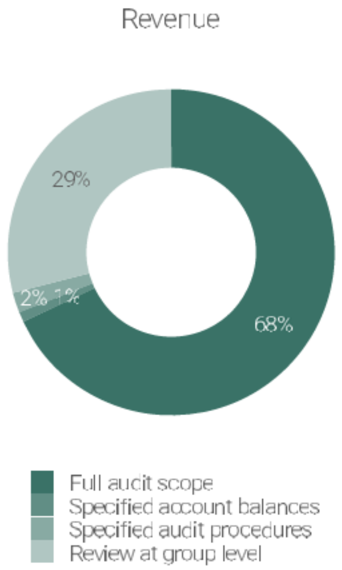
To ensure we were able to obtain sufficient, appropriate audit evidence for the purposes of our audit of the financial statements, we performed full scope audit procedures for 152 reporting cons units (2021 174) which were selected based on their size or risk characteristics. There are certain cons units which have fallen out of scope due to disposals, asset impairments and non-recurring one off transactions which were in scope in the prior year. Our full-scope audits are in the UK, US, Australia, Azerbaijan and Germany.

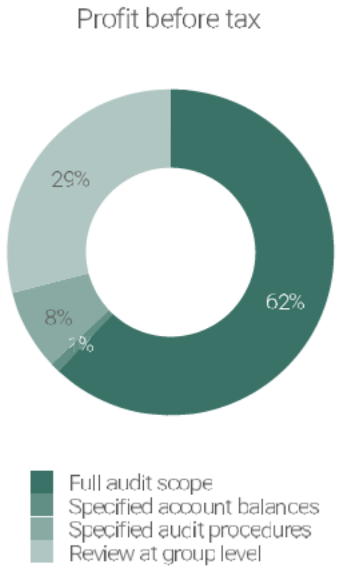
In addition, component teams performed audit procedures on specified account balances in 19 cons units (2021 32) also covering Angola, Trinidad & Tobago, Mauritania & Senegal Egypt, India, UAE and China. The group engagement team performed audit procedures on specified account balances to component materiality, with certain additional specific procedures performed by component teams, covering an additional 33 cons units (2021 20).

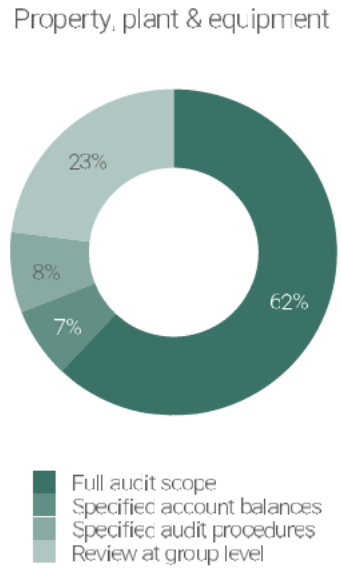
The remaining cons units are not significant individually and include many small, low risk components and balances. On average, they each represent 0.03% of group revenue (2021 0.04%), 0.03% of property, plant and equipment (2021 0.03%) and 0.04% of profit before tax (2021 0.03%).

In our assessment of the residual balances not covered by the above procedures, we have considered in particular the risk that there could be a material misstatement within the large number of geographically dispersed businesses, in particular within the C&P segment. This assessment included use of our analytic tools to interrogate data, preparation of trend analysis and comparison of business performance to market benchmark prices. We also tested management's group-wide controls across a range of locations and segments. We concluded that through this additional risk assessment, we have reduced the audit risk of such a misstatement arising to a sufficiently low level.

Our audit coverage of 'Property, plant and equipment', 'Sales and other operating revenue' and 'Profit before tax' is materially the same as in the prior year.




**7.2 Our consideration of the control environment**

Our audit approach was generally to place reliance on management's relevant controls over all business cycles affecting in scope financial statement line items. As part of our controls testing, we assessed the design and implementation of controls and tested a sample for operating effectiveness through a combination of tests of inquiry, observation, inspection and re-performance.

In limited situations where we were not able to take a controls reliance approach due to controls being deficient and there not being sufficient mitigating or alternative controls we could rely on instead, we adopted a non-controls reliance approach. All control deficiencies which we considered to be significant, were communicated to the audit committee. All other deficiencies were communicated to management. For all deficiencies identified we considered the impact and updated our audit plan accordingly.

The group's financial systems environment is complex, with 119 separate IT systems scoped as being relevant to the audit for the following key locations (UK, US, Germany, Angola, Azerbaijan and Australia) as well as other minor locations. These systems are all directly or indirectly relevant to the entity's financial reporting process.

We planned to rely on the General IT Controls (GITCs) associated with these systems, where the GITCs were appropriately designed and implemented, and these were operating effectively. To assess the operating effectiveness of GITCs we performed testing on access security, change management, data centre operations and network operations. We have included our observations on the IT controls in our key audit matter section, (see 'IT controls relating to financial systems' above).

This page does not form part of bp's Annual Report on Form 20-F as filed with the SEC.

### 7.3 Working with other auditors

The group audit team are responsible for the scope and direction of the audit process and provide direct oversight, review, and coordination of our component audit teams. We interacted regularly with the component Deloitte teams during each stage of the audit and reviewed key working papers. We maintained continuous and open dialogue with our component teams in addition to holding formal meetings quarterly to ensure that we were fully aware of their progress and results of their procedures.

Due to relaxation in COVID-19 restrictions during the year, after a two year gap the senior statutory auditor and other group audit partners and staff conducted visits to meet with the component teams responsible for all of the full scope locations during the year as well as Egypt and Trinidad & Tobago. These visits included attending planning meetings, discussing the audit approach including the risk assessments and any issues arising from the component team's work, meetings with local management, and reviewing key audit working papers on higher and significant-risk areas to drive a consistent and high-quality audit. In addition, a global audit planning meeting was held in London for three days in July led by the senior statutory auditor and involving the group audit team, partners and staff from all full scope component teams, audit teams responsible for testing at key GBS locations, senior management from bp and the audit committee chair.

Following the group's decision to exit Rosneft in February 2022, Rosneft is no longer classified as a reportable segment and the investment was fully impaired. Accordingly, Rosneft was no longer a significant component in scope of the group audit and we therefore did not require reporting from Rosneft's auditor. The group audit team audited the impairment and other Rosneft related adjustments including the decision not to recognise dividends.

## 8. Other information

***We have nothing to report in respect of these matters.***

The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. The directors are responsible for the other information contained within the annual report.

Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

Our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the course of the audit, or otherwise appears to be materially misstated.

If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether this gives rise to a material misstatement in the financial statements themselves. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

As part of our work on other information and given the importance attached to the Underlying Replacement Cost Operating Profit metric in the annual report, we have considered the adjusting items set out on pages 353. In that context we assessed the Fair Value Accounting Effects (FVAE) adjustments, which are included within Adjusting items (as defined on page 393) which are treated as a reconciling adjustment to derive Underlying Replacement Cost Operating Profit and related underlying measures which are non-GAAP measures.

For the year ended 31 December 2022, the FVAE adjustment was a gain of $3,501 million in arriving at underlying replacement cost profit before tax (2021 $8,075 million gain); the cumulative unrealised gain recognised as at 31 December 2022 was $11,436 million (2021 $ 7,932 million). These amounts are analysed by segment on page 353; of the cumulative gain recognised, $9,960 million (2021 $8,149 million) relates to the gas & low carbon energy segment.

As noted on page 393, physical forward LNG contracts are not considered by bp to meet the definition of a derivative under IFRS and are therefore subject to accrual accounting meaning the fair value of forward sale and purchase contracts is not reflected in the IFRS reported results. Nevertheless, the financial contracts executed to manage price risk associated with the forward physical LNG volumes are accounted for as derivatives within the IFRS reported results, thereby creating an asymmetry.

We obtained an understanding of the amounts reported for LNG contracts within FVAE to assess consistency with the definition included within the annual report (on page 393) and with the internal policies of the group that govern the recognition and measurement of items reported within FVAE. This included understanding, and, where necessary, challenging management's application of judgement regarding the future realisation of LNG physical forward contracts.

## 9. Responsibilities of directors

As explained more fully in the directors' responsibilities statement, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the group's and the parent company's ability to continue as a going concern, disclosing as applicable matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the group or the parent company or to cease operations, or have no realistic alternative but to do so.

## 10. Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the FRC's website at: frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

This page does not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 11. Extent to which the audit was considered capable of detecting irregularities, including fraud

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below.

### 11.1 Identifying and assessing potential risks related to irregularities

In identifying and assessing risks of material misstatement in respect of irregularities, including fraud and non-compliance with laws and regulations, we considered the following:

- our meetings throughout the year with the Group Head of Ethics and Compliance and reviews of bp's internal ethics and compliance reporting summaries, including those concerning investigations
- enquiries of management, internal audit, and the audit committee, including obtaining and reviewing supporting documentation, concerning the group's policies and procedures relating to:
  - identifying, evaluating and complying with laws and regulations and whether they were aware of any instances of non-compliance
  - detecting and responding to the risks of fraud and whether they have knowledge of any actual, suspected or alleged fraud and
  - the internal controls established to mitigate risks related to fraud or non-compliance with laws and regulations.
- review of the terms of reference of the Fraud Governance Board set up by management to support the creation and delivery of the Group Fraud Risk Strategy, periodically monitor the threat outlook and review the risk appetite.
- review of the Fraud Governance Board's meeting minutes and its fraud risk assessment.
- the group's remuneration policies, key drivers for remuneration and bonus levels and
- discussions among the engagement team regarding how and where fraud might occur in the financial statements and any potential indicators of fraud. The engagement team includes audit partners and staff who have extensive experience of working with companies in the same sectors as bp operates, and this experience was relevant to the discussion about where fraud risks may arise. The discussions also involved fraud specialists who advised the engagement team of fraud schemes that had arisen in similar sectors and industries, and they participated in the initial fraud risk assessment discussions.

In common with all audits under ISAs (UK), we are also required to perform specific procedures to respond to the risk of management override.

We also obtained an understanding of the legal and regulatory frameworks that the group operates in, focusing on provisions of those laws and regulations that had a direct effect on the determination of material amounts and disclosures in the financial statements. The key laws and regulations we considered in this context included the UK Companies Act, UK Corporate Governance Code, United Kingdom adopted international accounting standards and IFRSs as issued by the IASB and as adopted by the EU, FRS 101, US Securities Exchange Act 1934 and relevant SEC regulations, as well as laws and regulations prevailing in each country in which we identified a full-scope component.

In addition, we considered provisions of other laws and regulations that do not have a direct effect on the financial statements but compliance with which may be fundamental to the group's ability to operate or to avoid a material penalty. These included the group's operating licences and environmental regulations.

### 11.2 Audit response to risks identified

As a result of performing the above, we did not identify any key audit matters related to the potential risk of non-compliance with laws and regulations. We did identify two key audit matters relating to fraud risks, as described above, being the accounting for SCTs and Level 3 instruments within T&S, and management override of controls. The key audit matters section of our report explains the matters in more detail and also describes the specific procedures we performed in response to those key audit matters.

In addition to the above, procedures to respond to risks identified included the following:

- reviewing the financial statement disclosures and testing to supporting documentation to assess compliance with provisions of relevant laws and regulations described as having a direct effect on the financial statements
- enquiring of management, the audit committee and in-house legal counsel concerning actual and potential litigation and claims
- obtaining confirmations from external legal counsel concerning open litigation and claims
- performing analytical procedures to identify any unusual or unexpected relationships that may indicate risks of material misstatement due to fraud and
- reading minutes of meetings of those charged with governance, reviewing internal audit reports and reviewing correspondence with HMRC and the IRS.

We also communicated relevant identified laws and regulations and potential fraud risks to all engagement team members including internal specialists and significant component audit teams and remained alert to any indications of fraud or non-compliance with laws and regulations throughout the audit.

## Report on other legal and regulatory requirements

### 12. Opinions on other matters prescribed by the Companies Act 2006

In our opinion the part of the directors' remuneration report to be audited has been properly prepared in accordance with the Companies Act 2006.

In our opinion, based on the work undertaken in the course of the audit:

- The information given in the strategic report and the directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements.
- The strategic report and the directors' report have been prepared in accordance with applicable legal requirements.

In the light of the knowledge and understanding of the group and the parent company and their environment obtained in the course of the audit, we have not identified any material misstatements in the strategic report or the directors' report

### 13. Corporate Governance Statement

The Listing Rules require us to review the directors' statement in relation to going concern, longer-term viability and that part of the Corporate Governance Statement relating to the group's compliance with the provisions of the UK Corporate Governance Code specified for our review.

Based on the work undertaken as part of our audit, we have concluded that each of the following elements of the Corporate Governance Statement is materially consistent with the financial statements and our knowledge obtained during the audit:

- the directors' statement with regards to the appropriateness of adopting the going concern basis of accounting and any material uncertainties identified set out on page 150
- the directors' explanation as to its assessment of the group's prospects, the period this assessment covers and why the period is appropriate set out on page 150
- the directors' statement on fair, balanced and understandable set out on page 150
- the board's confirmation that it has carried out a robust assessment of the emerging and principal risks set out on page 69
- the section of the annual report that describes the review of effectiveness of risk management and internal control systems set out on page 149 and
- the section describing the work of the audit committee set out on pages 102-109.

### 14. Matters on which we are required to report by exception

#### 14.1 Adequacy of explanations received and accounting records

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- we have not received all the information and explanations we require for our audit or
- adequate accounting records have not been kept by the parent company, or returns adequate for our audit have not been received from branches not visited by us or

***We have nothing to report in respect of these matters.***

#### 14.2 Directors' remuneration

Under the Companies Act 2006 we are also required to report if in our opinion certain disclosures of directors' remuneration have not been made or the part of the directors' remuneration report to be audited is not in agreement with the accounting records and returns.

***We have nothing to report in respect of these matters.***

This page does not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 15. Other matters which we are required to address

### 15.1 Auditor tenure

The board appointed Deloitte as the company's auditor with effect from 29 March 2018 to fill the vacancy arising from the resignation of the previous auditor. On 12 May 2022, shareholders resolved at the annual general meeting to reappoint Deloitte as auditor from the conclusion of the meeting until the conclusion of the annual general meeting to be held in 2023 and authorized the directors to set the audit fees.

The first accounting period we audited was the 12 month period ended 31 December 2018. The period of total uninterrupted engagement including previous renewals and reappointments of the firm is 5 years, covering the years ending 31 December 2018 to 31 December 2022.

### 15.2 Consistency of the audit report with the additional report to the audit committee

Our audit opinion is consistent with the additional report to the audit committee we are required to provide in accordance with ISAs (UK).

## 16. Use of our report

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

In due course, as required by the Financial Conduct Authority (FCA) Disclosure Guidance and Transparency Rule (DTR) 4.1.14R, these financial statements will form part of the ESEF-prepared Annual Financial Report filed on the National Storage Mechanism of the UK FCA in accordance with the ESEF Regulatory Technical Standard (ESEF RTS). This auditor's report provides no assurance over whether the annual financial report has been prepared using the single electronic format specified in the ESEF RTS.

[redacted]

For and on behalf of Deloitte LLP
Statutory Auditor
London, United Kingdom
10 March 2023

# Consolidated financial statements of the bp group

## Report of Independent Registered Public Accounting Firm

### To the shareholders and board of directors of BP p.l.c.

#### Opinion on the financial statements

We have audited the accompanying consolidated group balance sheets of BP p.l.c. and subsidiaries (together 'bp' or 'the group') as at 31 December 2022 and 2021, the related consolidated group income statements, group statements of comprehensive income, group statements of changes in equity and group cash flow statements, for each of the three years in the period ended 31 December 2022, and the related notes (collectively referred to as the 'financial statements'). In our opinion, the financial statements present fairly, in all material respects, the financial position of the group as at 31 December 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended 31 December 2022 in accordance with United Kingdom adopted international accounting standards and International Financial Reporting Standards (IFRSs) as issued by the International Accounting Standards Board (IASB) and as adopted by the European Union (EU).

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), bp's internal control over financial reporting as of 31 December 2022, based on criteria established in the UK Financial Reporting Council's Guidance on Risk Management, Internal Control and Related Financial and Business reporting relating to internal control over financial reporting and our report dated 10 March 2023 expressed an unqualified opinion on bp's internal control over financial reporting.

#### Basis for opinion

These financial statements are the responsibility of bp's management. Our responsibility is to express an opinion on bp's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to bp in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

#### Critical Audit Matters

The critical audit matters communicated below are matters arising from the current-period audit of the financial statements that were communicated or required to be communicated to the audit committee and that (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

#### 1.Impairment of upstream oil and gas property, plant and equipment (PP&E) assets – Notes 1, 4 and 12 to the financial statements

#### Critical Audit Matter Description

The group balance sheet as at 31 December 2022 includes PP&E of $106 billion, of which $76 billion is oil and gas properties within the OP&O ($48 billion) and G&LCE ($28 billion) segments.

Management's oil and gas price assumptions for value-in-use impairment tests were revised in 2022 as set out in Note 1 on page 192. Brent oil price assumptions were increased in the short and medium term, reflecting management's expectation of supply constraints over the next decade due to restrictions on Russian exports, although there has been no significant change to longer term Brent oil forecasts reflecting bp's unchanged view on the longer term speed of the low carbon energy transition. Henry Hub gas price assumptions have increased until 2050, reflecting a view that US domestic gas production will need to grow, in large part to offset the loss of Russian gas exports.

Management has also revised bp's 'best estimate' discount rate assumptions for value-in-use impairment tests in 2022, as set out in Note 1 on page 192. bp's post-tax nominal weighted average cost of capital, being the starting point for setting discount rates used for impairment testing for oil and gas assets, has increased to 7%, reflecting the impact of observable increases in risk free rates on bp's weighted average cost of capital.

Given the significance of the price and discount rate assumption revisions during 2022, alongside certain CGU specific new indicators, management has tested all oil and gas CGUs for impairment and/or impairment reversal during the year. Management recorded $2.2 billion of pre-tax oil and gas CGU impairment reversals, principally due to the oil and gas price upward revisions detailed above, and $5.2 billion of pre-tax oil and gas CGU impairment charges due principally to increased expenditure forecasts and the increased discount rate. Further information has been provided in Note 1 on page 192 and Note 4 on page 207.

We identified three key management estimates in management's determination of the level of impairment charge and/or impairment reversal. These are:

**Oil and gas prices** - bp's oil and gas price assumptions have a significant impact on many CGU impairment assessments performed across the OP&O and G&LCE segments and are inherently uncertain. The estimation of future prices is subject to increased uncertainty given climate change, the global energy transition, macro-economic factors and disruption in global supply due to the Russian-Ukraine war. There is a risk that management do not forecast reasonable 'best estimate' oil and gas price forecasts when assessing CGUs for impairment charge and/or impairment reversal, leading to material misstatements. These price assumptions are highly judgmental and are pervasive inputs to bp's oil and gas CGU valuations, such that any misstatements would also aggregate. There is also a risk that management's oil and gas price related disclosures are not reasonable.

Aside from 2023 where oil and gas prices reflect near-term expected market conditions, bp's oil and gas price assumptions for value-in use impairment assessments are aligned with bp's investment appraisal assumptions, except that potential future emissions costs that could be borne by bp are included in investment appraisals as bp costs without assuming incremental revenue.

As described in Note 1 on page 185, emissions costs forecasts interrelate with bp's oil and gas prices, because bp's price assumptions for value-in-use estimates represent 'net producer prices', i.e., net of any further emissions costs that may be enacted in the future. Management's judgement is that the potential impact of such further emissions costs being borne by producers including bp is not expected to have a material impact on bp's oil and gas CGU carrying values as costs would effectively be borne by oil and gas end users via overall higher commodity prices. There is a risk that management's judgement is not reasonable.

**Discount rates** - Given the long timeframes involved, certain CGU impairment assessments are sensitive to the discount rate applied. Discount rates should reflect the return required by the market and the risks inherent in the cash flows being discounted. There is a risk that management does not assume reasonable discount rates, adjusted as applicable for country risks and relevant tax rates, leading to material misstatements. Determining a reasonable discount rate is highly judgmental and, consistent with price assumptions above, the discount rate assumption is also a pervasive input across bp's oil and gas CGU valuations, before adjustments for asset specific risks and tax rates, such that any misstatements would also aggregate.

**Reserves and resources estimates** - A key input to certain CGU impairment assessments is the oil and gas production forecast, which is based on underlying reserves estimates and field specific development assumptions. Certain CGU production forecasts include specific risk adjusted resource volumes, in addition to proven and/or probable reserves estimates, that are inherently less certain than reserves; and assumptions related to these volumes can be particularly judgemental. There is a risk that material misstatements could arise from unreasonable production forecasts for individually material CGUs and/or from the aggregation of systematic flaws in bp's reserves and resources estimation policies across the OP&O and G&LCE segments.

We identified certain individual CGUs which we determined would be most at risk of material impairment charges as a result of a reasonably possible change in the oil and gas price assumptions. This population includes previously impaired assets which are also at risk of material impairment reversal resulting from potential oil and gas price assumption changes. We identified that a subset of these CGUs were also individually materially sensitive to the discount rate assumption.

We also identified CGUs which were less sensitive as they would be potentially at risk, in aggregate, to a material impairment by a reasonably possible change in some or all of the key assumptions. No impairment reversals are available for these CGUs. Further information regarding these sensitivities is given in Note 1 on page 193.

Impairment charge and/or impairment reversal assessments of upstream oil and gas PP&E assets remain a critical audit matter because recoverable values are reliant on forecasts that are inherently judgemental and complex for management to estimate, and the magnitude of the potential misstatement risk is material to the group.

### How the Critical Audit Matter was addressed in the Audit

We tested relevant internal controls over the estimation of oil and gas prices, discount rates, and reserve and resources estimates, as well as key internal controls over the performance of the impairment charge and/or impairment reversal assessments where we identified audit risks. In addition, we conducted the following substantive procedures.

#### Oil and gas prices

- We independently developed a reasonable range of forecasts based on external data obtained, against which we compared management's oil and gas price assumptions in order to challenge whether they are reasonable.
- In developing this range, we obtained a variety of reputable and reliable third party forecasts, peer information and other relevant market data.
- In challenging management's price assumptions, we considered the extent to which they and each of the forecast pricing scenarios obtained from third parties reflect the impact of lower oil and gas demand due to climate change and the energy transition.
- The 2015 Conference of the Parties (CoP) 21 Paris Agreement goals of 'holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels' was reaffirmed at CoP 27 in Cairo during November 2022. We specifically analysed third party forecasts stated, or interpreted by us, as being consistent with scenarios achieving the Paris 'well below 2°C goal' and/or '1.5°C ambition' and evaluated whether they presented contradictory audit evidence.
- We challenged management's judgement, described in Note 1 on page 185, that the potential impact of further emission costs being borne by producers including bp is not expected to have a material impact on bp's oil and gas CGU carrying values. We inquired of certain third party forecasters included in our reasonable range and read their forecast price reports, to understand whether their oil and gas prices are forecast on a 'net producer prices' basis, (i.e., net of potential future emissions costs that are assumed to be borne by oil and gas end users), consistent with the basis of bp's value-in-use price assumptions.
- We assessed management's disclosures in Notes 1 and 4, including the sensitivity of forecast revenue cash inflows to lower oil and gas prices and how climate change and the energy transition, potential future emissions costs and/or reduced demand scenarios may impact bp to a greater extent than currently anticipated in bp's value-in-use estimates for oil and gas CGUs.

#### Discount rates

- We independently evaluated bp's discount rates used in impairment tests with input from our valuation specialists, against relevant third party market and peer data.
- We assessed whether specific country risks and tax adjustments were reasonably reflected in bp's discount rates.
- We challenged and evaluated management's disclosures in Notes 1 and 4 including in relation to the sensitivity of discount rate assumptions.

#### Reserves and resources estimates

With the assistance of our oil and gas reserves specialists we:

- assessed bp's reserves and resources estimation methods and policies;
- assessed how these policies had been applied to a sample of bp's reserves and resources estimates;
- read a sample of reports provided by management's external reserves experts and assessed the scope of work and findings of these third parties;
- assessed the competence, capabilities and objectivity of bp's internal and external reserve experts, through understanding their relevant professional qualifications and experience;
- compared the production forecasts used in the impairment tests with management's approved reserves and resources estimates; and

- performed a retrospective assessment to check for indications of estimation bias over time.

Other procedures

- We challenged and assessed management's CGU determinations including the evaluation of contradictory evidence.
- We assessed whether bp's impairment methodology was acceptable under IFRS and tested the integrity and mechanical accuracy of certain impairment models.
- For certain CGUs we challenged and assessed specific valuation input assumptions, including but not limited to material cost and tax forecasts, by comparing forecasts to approved internal and third party budgets, development plans, independent expectations and historical actuals.
- We assessed whether management's production forecasts are consistent overall with bp's strategy, including the group's expectation to reduce its hydrocarbon production (by around 25% by 2030 relative to 2019 – see page 186).
- Where relevant, we assessed management's historical forecasting accuracy and whether the estimates had been determined and applied on a consistent basis across the group.

## 2. Decommissioning provisions – Notes 1 and 23

### Critical Audit Matter Description

A decommissioning provision of $12.3 billion is recorded in the financial statements as at 31 December 2022. The estimation of decommissioning provisions is a highly judgemental area as it involves a number of key estimates related to the cost and timing of decommissioning, in particular inflation and discount rate assumptions. Given management expects hydrocarbon production to be around 25% lower by 2030 relative to 2019 as stated on page 186, consistency of that expectation with the timing of decommissioning expenditure and underlying cost assumptions remains a key consideration.

Due to sustained levels of high global inflation, particularly in key geographies such as the U.S. and U.K., where a majority of bp's future decommissioning cost obligations are located, the impact of inflation on bp's decommissioning provision represents an area of particular risk. Consistent with prior years, management estimates that the average rate of forecast inflation applicable to the substantial majority of bp's decommissioning cost estimates is 1.5%, which is 0.5% lower than its estimated long term general inflation rate of 2%. As a result, the decommissioning inflation rate assumption is particularly judgmental.

The estimated undiscounted cost of its obligations and the timing of future payment are set out in Note 1 on page 199. Economic factors, future activities and the legislative environments that bp operates in are used to inform cost estimates, whereas the timing of decommissioning activities is dependent on cessation of production (CoP) dates, which are sensitive to changes in bp's price forecasts as price estimates determine economic cut off of oil and gas reserve estimates.

bp increased its discount rate used in calculating its decommissioning provisions from 2.0% as at 31 December 2021 to 3.5% as at 31 December 2022. The increase was primarily driven by the increased US treasury bond rates.

Additionally, bp is exposed to decommissioning obligations that could revert back to bp in respect of historical divestments to third parties. Judgement is required to assess the potential risk of reversion and if applicable, the estimated exposure, for each historically divested asset. The risk of reversion could be elevated by the potential impact of the energy transition in particular the potential for lower oil and gas prices in the longer term which could result in financial resilience concerns for some industry participants. The risk further increased following a US legal judgement in 2020 which required a specific provision and increased the likelihood of decommissioning liabilities reverting to former owners as part of a bankruptcy proceeding.

Provisions for decommissioning refining assets, not generally recognised on the basis that the potential obligations cannot be measured given their indeterminate settlement dates, might need to be recognised if reductions in demand due to climate change curtail their operational lives. As disclosed in Note 1 on page 199 management concluded that, although obligations may arise if refineries cease manufacturing operations, they would only be recognised at the point when sufficient information became available to determine potential settlement dates. Accordingly, other than where a decision has been made to cease refining operations, no triggers for assessing the need to record a decommissioning provision have been identified.

### How the Critical Audit Matter was addressed in the Audit

We obtained an understanding of the group's decommissioning estimate and provisioning process and evaluated the effectiveness of the relevant controls.

Long term Inflation rate

- We tested the control related to the determination of the decommissioning specific inflation rate assumption.
- We tested how management derived the decommissioning specific inflation rate assumption of 1.5%, and the evidence on which it is based, by gaining an understanding of the process used by management, testing management's calculations of the assumption, and evaluating the evidence relevant to management's assumption, both supporting and contradictory.
- As the 1.5% decommissioning specific inflation rate assumption is determined by making an adjustment to management's 2.0% general long term inflation rate assumption, we evaluated, with the help of our valuation specialists, the general long term inflation rate assumption used of 2.0%, comparing it against latest external market data.
- We made inquiries with, and evaluated the competence, capabilities and objectivity, of management's decommissioning experts who derived the decommissioning specific inflation rate.
- We inspected analyst forecasts and reports in respect of the future decommissioning market and related costs for evidence of supporting and contradictory evidence, with particular focus on the future rig market.
- We particularly considered the expectation that demand for oil and gas products and related activities will decrease, primarily in response to climate change and energy transition effects pivoting future energy industry investment and development activity towards renewable sources. We challenged management's assessment of the impact this will have on the decommissioning market and related inflation assumption.
- We analysed historical trends of rig market rates against oil prices and historical inflation to challenge management's assumption that the decommissioning inflation assumption does not inflate at the same rate as general inflation.

### Cost and timing estimates

- We tested the controls over the year end decommissioning cost and timing assumptions used within management's decommissioning provision estimate.
- We assessed the completeness and accuracy of the assets subject to decommissioning, including understanding the process to establish whether a legal or constructive obligation existed.
- We evaluated changes in key cost assumptions including rig rates, vessel rates, well plug and abandonment duration and non-productive time assumptions. We challenged whether the impact of inflation experienced in 2022 was appropriately considered and reflected where relevant within bp's cost assumptions, and also assessed the reasonableness of key cost assumptions with reference to internal and appropriate third party data.
- We assessed changes in assumptions for the estimated date of decommissioning and evaluated whether CoP dates used for decommissioning estimation are aligned with CoP assumptions in other areas, including PP&E impairment testing and oil and gas reserve estimation.
- We assessed the accuracy of bp's additional disclosure of the estimated undiscounted cost of its obligations and the timing of future decommissioning payments.

### Discount rates

- We tested the control related to the determination of the discount rate assumption.
- With the help of our valuation specialists, we evaluated the discount rate assumption used, comparing it against latest external market data.

### Reversion risk

- We obtained an understanding of bp's decommissioning reversion risk assessment process and tested relevant internal controls including those controls over the completeness and accuracy of the previously divested asset data.
- We challenged and evaluated management's key judgements related to the decommissioning reversion risk and conclusions as to whether any additional provision should be recognised, or specific contingent liability disclosure made. We assessed the relevant internal and external evidence used in forming this judgement, including the financial health of the counterparty or counterparties in the ownership chain for the divested assets and the existence of any other pertinent factors which could indicate a higher probability of decommissioning obligations reverting to bp.

### Potential decommissioning of refinery assets

- We challenged and evaluated management's analysis which supported the judgement that no decommissioning provisions should be recognised in respect of refineries where there is ongoing activity and management has no current intention to cease these activities.
- We have reviewed analysis undertaken by management, as well as third party studies, of forecast demand for refined products in regions served by bp's refineries. Furthermore, we read external profitability benchmarking which supported a conclusion that the group's remaining refineries would likely remain operational for longer than many of their regional competitors, in the event of refining capacity reductions.
- We also met with refinery management to understand the potential alternative use cases under consideration for refineries in the future and obtained evidence that management is developing plans for the existing refinery sites remaining in the portfolio which would be compatible with net zero emissions, for instance through the production of alternative low carbon and sustainable fuels.

We tested the decommissioning models, assessing the application of cost, timing, inflation and discount rate assumptions.

## 3. Accounting for complex transactions executed by the trading and shipping (T&S) function to deliver against the wider group strategy and valuation of commodity financial derivatives, where fraud risks may arise in revenue recognition (potentially impacting all financial statement accounts, in particular finance debt) - Notes 1, 20, 22, 29 and 30 to the financial statements

### Critical Audit Matter Description

In the normal course of business, T&S enters into a variety of transactions for delivering value across the group's supply chain. Given the nature of these transactions, we direct significant audit effort towards challenging management's adopted accounting treatment and/or valuation estimates.

Throughout the year, we have kept our risk assessment updated by undertaking an iterative review of the underlying portfolio composition. This process facilitated a deeper understanding of the impact of commodity price volatility, demand destruction and the changing structure of the markets resulting from supply dislocations due to the Russian-Ukraine war allowing us to focus our audit effort to areas of highest risk.

### Accounting for structured commodity transactions (SCTs):

T&S may also enter into a variety of transactions which we refer to as structured commodity transactions (SCTs). We generally refer to the following factors to identify a SCT:

- two or more counterparties with non-standard contractual terms
- reference multiple commodity-based transactions or
- contractual arrangements entered into in contemplation of each other.

SCTs are often long-dated, can have a significant multi-year financial impact, and may require the use of complex valuation models or unobservable inputs when determining their fair value, in which case they will be classified as level 3 financial instruments under IFRS 13, 'Fair Value Measurement'.

Accounting for SCTs is typically complex and initially involves significant judgment, as a feature of these transactions is that they often include multiple elements that will have a material impact on the presentation and disclosure in the financial statements, including in particular the classification of liabilities as finance debt.

### Valuation of commodity derivatives:

Commodity markets remained volatile during the year on the back of continuing demand uncertainty as a result of the global energy transition, macro-economic factors and disruptions in global supply due to the Russian-Ukraine war. In response to the volatility observed, we focused our audit efforts on the valuation of all commodity derivatives and designed procedures specifically to test for management bias.

Unlike other financial instruments whose values or inputs are readily observable and therefore more easily independently corroborated, there are certain transactions for which the valuation is inherently more subjective due to the use of either complex valuation models and/or unobservable inputs. These instruments are classified as level 3 financial assets or liabilities. This degree of subjectivity also gives rise to a risk of potential fraud through management incorporating bias in determining fair values.

As at 31 December 2022, bp's total derivative financial assets and liabilities measured at fair value were $24.4 billion and $26.2 billion, of which level 3 derivative financial assets were $8.8 billion and level 3 derivative financial liabilities were $7.0 billion.

### How the Critical Audit Matter was addressed in the Audit

Accounting for structured commodity transactions:

For structured commodity transactions, we:

- Tested controls related to the accounting for complex transactions.
- Developed an understanding of the commercial rationale of the transactions through discussions with management and reading transaction documents and executed agreements.
- Performed a detailed accounting analysis for a sample of SCTs involving significant offtake arrangements and/or significant contractual commitments.
- Selected a sample of existing working capital arrangements and financing structures to assess whether associated trading activity was in compliance with pre-determined boundary conditions and whether the conclusions reached remained in compliance with relevant accounting standards.
- For SCTs which were identified during the prior years and that continue through 2022, we have refreshed our assessment in 2022 taking account of any amendments to the contracts. We assessed whether the conclusions reached previously remain appropriate and in accordance with relevant accounting standards.

To assess the appropriateness of the accounting treatment of SCTs, we embedded technical accounting specialists within the audit team.

Valuation of commodity derivatives:

In response to the continuing high volatility observed in the market and to test for management bias, we altered the extent and timing of our procedures by performing an independent valuation of a sample of derivatives at 30 June and of distinct samples of both Level 2 and Level 3 derivatives at 30 September and 31 December. In addition, we focused our testing on price inputs where bp has substantial exposure to illiquid (Level 3) or long dated (Level 2) curves.

To address the complexities associated with auditing the value of level 3 financial instruments, the engagement team included valuation specialists having significant quantitative and modelling expertise to assist in performing our audit procedures. Our valuation audit included the following control and substantive procedures:

- We tested the group's valuation controls including the:
  - model certification control, which is designed to review a model's theoretical soundness and the appropriateness of its valuation methodology and
  - independent price verification control, which is designed to review the appropriateness of valuation inputs that are not observable and are significant to the financial instrument's valuation.
- We performed substantive valuation testing procedures at interim and year-end balance sheet dates, including:
  - comparing management's input assumptions against the expected assumptions of other market participants and observable market data;
  - evaluating management's valuation methodologies against standard valuation practice and analysing whether a consistent framework is applied across the business period over period; and
  - engaging our valuation specialists to challenge models, develop fair value estimates and evaluate consistency in management's modelling and input assumptions throughout the year. Our independent estimates were established using independently sourced inputs (where available). We evaluated whether the differences between our independent estimates and management's estimates were within a reasonable range. In situations where we utilised management's inputs, these were compared to external data sources to determine whether they were reasonable.

### 4. Impairment of E&A assets, investments in joint ventures and refinery PP&E as a consequence, inter alia, of climate change and the energy transition – Notes 1, 4, 15 and 16

### Critical Audit Matter Description

Intangible Assets

The recoverability of certain of the group's $4.2 billion total exploration and appraisal (E&A) assets capitalised as at 31 December 2022 are potentially exposed to climate change and the global energy transition risk factors (see Note 15). This is because a greater number of E&A projects may not proceed as a consequence of the energy transition leading to lower forecast future oil and gas prices and bp's intention to reduce its hydrocarbon production (by around 25% by 2030 relative to 2019 – see page 186). The determination of whether and when E&A costs should be written off, impaired, or retained on the balance sheet as E&A assets, remains complex and continues to require significant management judgement.

PP&E and Investment in joint ventures

The carrying value of bp's refining assets within PP&E may no longer be recoverable, due to changes in supply and demand which arise as a consequence of climate change and the energy transition. Management identified impairment indicators in respect of certain refineries during the year. As a result, impairment tests were performed to assess the recoverability of the refineries' carrying values. As disclosed in Note 4 to the accounts on page 208, management has recorded an impairment charge of $1,366 million in respect of the Gelsenkirchen refinery in Germany, driven by changes in economic assumptions.

bp's intention to reduce its hydrocarbon production (by around 25% by 2030 relative to 2019 - see page 186) and the group's wider strategy includes potentially disposing of certain higher emissions intensity upstream oil assets and others. As a consequence, for certain assets and investments judgement is required in the determination of the recoverable amount as to whether it should consider the estimated disposal proceeds from a third party as a key input. Management recorded $2.9 billion of pre-tax impairment charges in 2022 for such potential disposals as described in Note 4. There is a risk that management judgements taken to determine whether impairment charges are required based on bp's view of whether transactions are likely to proceed or not, and bp's strategic appetite regarding the value of disposal consideration that would be accepted, are not reasonable.

The carrying value of the group's investments in low carbon energy assets may no longer be recoverable due to an increase in the low carbon energy discount rate, project development costs increasing as a result of higher inflation and the impact that the increased activity within the sector, as a result of the energy transition, has had on the demand for low carbon energy supply chain goods and services.

### How the Critical Audit Matter Was Addressed in the Audit

We utilised a climate change steering committee comprising a group of senior partners with specific climate change and technical audit and accounting expertise within Deloitte to provide an independent challenge to our key decisions and conclusions with respect to this area.

#### Intangible Assets

In respect of the recoverability of E&A assets capitalised as at 31 December 2022:

- We obtained an understanding of the group's E&A write-off and impairment assessment processes and tested relevant internal controls, which specifically consider climate change related risks.
- We challenged and evaluated management's key E&A judgements, with regards to the impairment criteria of IFRS 6 and bp's accounting policy. We corroborated key judgements with internal and external evidence for assets that remained on the balance sheet. This included analysing evidence of future E&A plans, budgets and capital allocation decisions, assessing management's key accounting judgement papers, reading meeting minutes and reviewing licence documentation and evidence of active dialogue with partners and regulators including negotiations to renew licences or modify key terms.
- We assessed whether the progression of any projects that remain on the balance sheet would be inconsistent with elements of bp's strategy and in particular its net zero carbon commitments and bp's intention to reduce its hydrocarbon production (by around 25% by 2030 relative to 2019 - see page 186).

#### PP&E and Investment in joint ventures

We have considered the impact of potential changes in supply and demand on the group's refining portfolio and reviewed internal and external market studies of future supply and demand. In relation to the Gelsenkirchen refinery impairment test, we assessed the valuation methodology, tested the integrity and mechanical accuracy of the impairment model and assessed the appropriateness of key assumptions and inputs, notably forecast refining margins and energy input costs, challenging and evaluating management's assumptions by reference to third party data where available. We also evaluated management's ability to forecast future cash flows and margins by comparing actual results to historical forecasts and tested management's internal controls over the impairment test and related inputs.

We challenged management's analysis, that identified the specific assets that are likely to be disposed of by bp as part of its strategy. Where relevant, we challenged bp's asset impairment assessments based on their estimated disposal proceeds and whether transactions are judged likely to proceed or not. We obtained evidence of any negotiations with third parties, carefully considered bp's strategic intent in this context and challenged management's assessment of the recoverable amounts for material transactions. We also tested related relevant controls which covered both the recoverable amounts determined and the likelihood of transaction completion.

In respect of the impairment tests performed on certain low carbon energy investments, we tested the result by:

- Testing the relevant controls over low carbon energy impairment tests including controls over key assumptions and the discount rate
- Assessing the low carbon energy discount rate with input from our valuation specialists
- Challenging and evaluating the key assumptions within the impairment tests, which included capital and operating cost assumptions, forecast yield and power price assumptions, debt and interest assumptions, and the applicability of the Inflation Reduction Act legislation on investment credit assumptions and
- Testing the mechanical accuracy of the impairment models.

/s/ Deloitte LLP

London
United Kingdom
10 March 2023

We have served as the bp's auditor since 2018.

# Consolidated financial statements of the bp group
# Report of Independent Registered Public Accounting Firm

## To the shareholders and board of directors of BP p.l.c.

### Opinion on internal control over financial reporting

We have audited the internal control over financial reporting of BP p.l.c. and its subsidiaries (the 'group') as of 31 December 2022, based on the criteria established in the UK Financial Reporting Council's Guidance on Risk Management, Internal Control and Related Financial and Business Reporting relating to internal control over financial reporting (UK FRC Guidance). In our opinion, the group maintained, in all material respects, effective internal control over financial reporting as of 31 December 2022, based on the criteria established in the UK FRC Guidance.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as at and for the year ended 31 December 2022, of the group and our report dated 10 March 2023 expressed an unqualified opinion on those financial statements.

As described in Management's report on internal control over financial reporting, management excluded from its assessment the internal control over financial reporting at 'Archaea Energy' and 'EDF Energy Services', which were acquired on 28 December 2022 and 30 November 2022 respectively. Archaea Energy's financial statements constitute 5.6% and 2.1% of net and total assets, respectively, Nil % of 'Sales and other operating revenues', and 2.2% of 'profit (loss) for the year' of the consolidated financial statement amounts as of and for the year ended 31 December 2022. EDF Energy Services financial statements constitute 0.7% and 1.0% of net and total assets, respectively, Nil % of 'Sales and other operating revenues', and 1.3% of 'profit (loss) for the year' of the consolidated financial statement amounts as of and for the year ended 31 December 2022. Accordingly, our audit did not include the internal control over financial reporting at Archaea Energy and EDF Energy Services.

### Basis for opinion

The group's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's report on internal control over financial reporting. Our responsibility is to express an opinion on the group's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the group in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

### Definition and limitations of internal control over financial reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Deloitte LLP
London, United Kingdom
10 March 2023

1. **The maintenance and integrity of the BP p.l.c. web site is the responsibility of BP p.l.c.; the work carried out by the auditors does not involve consideration of these matters and, accordingly, the auditors accept no responsibility for any changes that may have occurred to the financial statements since they were initially presented on the web site.**
2. **Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.**

## Group income statement

| For the year ended 31 December | | | | $ million |
|---|---|---|---|---|
| | Note | 2022 | 2021 | 2020 |
| Sales and other operating revenues | 6 | **241,392** | 157,739 | 105,944 |
| Earnings from joint ventures – after interest and tax | 16 | **1,128** | 543 | (302) |
| Earnings from associates – after interest and tax | 17 | **1,402** | 3,456 | (101) |
| Interest and other income | 7 | **1,103** | 581 | 663 |
| Gains on sale of businesses and fixed assets | 4 | **3,866** | 1,876 | 2,874 |
| **Total revenues and other income** | | **248,891** | 164,195 | 109,078 |
| Purchases | 19 | **141,043** | 92,923 | 57,682 |
| Production and manufacturing expenses | | **28,610** | 25,843 | 22,494 |
| Production and similar taxes | 5 | **2,325** | 1,308 | 695 |
| Depreciation, depletion and amortization | 5 | **14,318** | 14,805 | 14,889 |
| Net impairment and losses on sale of businesses and fixed assets | 4 | **30,522** | (1,121) | 14,381 |
| Exploration expense | 8 | **585** | 424 | 10,280 |
| Distribution and administration expenses | | **13,449** | 11,931 | 10,397 |
| **Profit (loss) before interest and taxation** | | **18,039** | 18,082 | (21,740) |
| Finance costs | 7 | **2,703** | 2,857 | 3,115 |
| Net finance (income) expense relating to pensions and other post-retirement benefits | 24 | **(69)** | (2) | 33 |
| **Profit (loss) before taxation** | | **15,405** | 15,227 | (24,888) |
| Taxation | 9 | **16,762** | 6,740 | (4,159) |
| **Profit (loss) for the year** | | **(1,357)** | 8,487 | (20,729) |
| Attributable to | | | | |
| bp shareholders | | **(2,487)** | 7,565 | (20,305) |
| Non-controlling interests | | **1,130** | 922 | (424) |
| | | **(1,357)** | 8,487 | (20,729) |
| **Earnings per share** | | | | |
| Profit (loss) for the year attributable to bp shareholders | | | | |
| Per ordinary share (cents) | | | | |
| Basic | 11 | **(13.10)** | 37.57 | (100.42) |
| Diluted | 11 | **(13.10)** | 37.33 | (100.42) |
| Per ADS (dollars) | | | | |
| Basic | 11 | **(0.79)** | 2.25 | (6.03) |
| Diluted | 11 | **(0.79)** | 2.24 | (6.03) |

## Group statement of comprehensive income[a]

| For the year ended 31 December | | | | $ million |
|---|---|---|---|---|
| | Note | **2022** | 2021 | 2020 |
| Profit (loss) for the year | | **(1,357)** | 8,487 | (20,729) |
| Other comprehensive income | | | | |
| **Items that may be reclassified subsequently to profit or loss** | | | | |
| Currency translation differences | | **(3,786)** | (921) | (1,843) |
| Exchange (gains) losses on translation of foreign operations reclassified to gain or loss on sale of businesses and fixed assets | | **10,759** | 36 | (353) |
| Cash flow hedges marked to market | 30 | **(825)** | (430) | 78 |
| Cash flow hedges reclassified to the income statement | 30 | **1,502** | 255 | (37) |
| Costs of hedging marked to market | 30 | **61** | (105) | 42 |
| Costs of hedging reclassified to the income statement | 30 | **25** | 21 | 22 |
| Share of items relating to equity-accounted entities, net of tax | 16, 17 | **402** | 44 | 312 |
| Income tax relating to items that may be reclassified | 9 | **(334)** | 65 | 66 |
| | | **7,804** | (1,035) | (1,713) |
| **Items that will not be reclassified to profit or loss** | | | | |
| Remeasurements of the net pension and other post-retirement benefit liability or asset | 24 | **340** | 4,416 | 170 |
| Cash flow hedges that will subsequently be transferred to the balance sheet | 30 | **(4)** | 1 | 7 |
| Income tax relating to items that will not be reclassified | 9 | **68** | (1,317) | (105) |
| | | **404** | 3,100 | 72 |
| Other comprehensive income | | **8,208** | 2,065 | (1,641) |
| **Total comprehensive income** | | **6,851** | 10,552 | (22,370) |
| Attributable to | | | | |
| bp shareholders | | **5,782** | 9,654 | (21,983) |
| Non-controlling interests | | **1,069** | 898 | (387) |
| | | **6,851** | 10,552 | (22,370) |

[a] See Note 32 for further information.

## Group statement of changes in equity[a]

$ million

| | Share capital and capital reserves | Treasury shares | Foreign currency translation reserve | Fair value reserves | Profit and loss account | bp shareholders' equity | Non-controlling interests Hybrid bonds | Non-controlling interests Other interest | Total equity |
|---|---|---|---|---|---|---|---|---|---|
| **At 1 January 2022** | **46,871** | **(12,624)** | **(9,572)** | **(1,027)** | **51,815** | **75,463** | **13,041** | **1,935** | **90,439** |
| Profit for the year | – | – | – | – | **(2,487)** | **(2,487)** | **519** | **611** | **(1,357)** |
| Other comprehensive income | – | – | **6,914** | **770** | **585** | **8,269** | – | **(61)** | **8,208** |
| **Total comprehensive income** | – | – | **6,914** | **770** | **(1,902)** | **5,782** | **519** | **550** | **6,851** |
| Dividends[b] | – | – | – | – | **(4,365)** | **(4,365)** | – | **(294)** | **(4,659)** |
| Cash flow hedges transferred to the balance sheet, net of tax | – | – | – | **1** | – | **1** | – | – | **1** |
| Issue of ordinary share capital | **820** | – | – | – | – | **820** | – | – | **820** |
| Repurchase of ordinary share capital | – | – | – | – | **(10,493)** | **(10,493)** | – | – | **(10,493)** |
| Share-based payments, net of tax | **182** | **471** | – | – | **194** | **847** | – | – | **847** |
| Share of equity-accounted entities' changes in equity, net of tax | – | – | – | – | – | – | – | – | – |
| Issue of perpetual hybrid bonds | – | – | – | – | **(4)** | **(4)** | **374** | – | **370** |
| Payments on perpetual hybrid bonds | – | – | **15** | – | – | **15** | **(544)** | – | **(529)** |
| Tax on issue of perpetual hybrid bonds | – | – | – | – | – | – | – | – | – |
| Transactions involving non-controlling interests, net of tax | – | – | – | – | **(513)** | **(513)** | – | **(144)** | **(657)** |
| **At 31 December 2022** | **47,873** | **(12,153)** | **(2,643)** | **(256)** | **34,732** | **67,553** | **13,390** | **2,047** | **82,990** |
| | | | | | | | | | |
| **At 1 January 2021** | 46,701 | (13,224) | (8,719) | (808) | 47,300 | 71,250 | 12,076 | 2,242 | 85,568 |
| Profit for the year | – | – | – | – | 7,565 | 7,565 | 507 | 415 | 8,487 |
| Other comprehensive income | – | – | (846) | (209) | 3,144 | 2,089 | – | (24) | 2,065 |
| **Total comprehensive income** | – | – | (846) | (209) | 10,709 | 9,654 | 507 | 391 | 10,552 |
| Dividends[b] | – | – | – | – | (4,316) | (4,316) | – | (311) | (4,627) |
| Cash flow hedges transferred to the balance sheet, net of tax | – | – | – | (10) | – | (10) | – | – | (10) |
| Repurchase of ordinary share capital | – | – | – | – | (3,151) | (3,151) | – | – | (3,151) |
| Share-based payments, net of tax | 170 | 600 | – | – | (138) | 632 | – | – | 632 |
| Share of equity-accounted entities' changes in equity, net of tax | – | – | – | – | 556 | 556 | – | – | 556 |
| Issue of perpetual hybrid bonds | – | – | – | – | (26) | (26) | 950 | – | 924 |
| Payments on perpetual hybrid bonds | | | (7) | | | (7) | (492) | | (499) |
| Tax on issue of perpetual hybrid bonds | | | | | | | | | |
| Transactions involving non-controlling interests, net of tax | | | | | 881 | 881 | | (387) | 494 |
| **At 31 December 2021** | 46,871 | (12,624) | (9,572) | (1,027) | 51,815 | 75,463 | 13,041 | 1,935 | 90,439 |
| | | | | | | | | | |
| **At 1 January 2020** | 46,525 | (14,412) | (6,495) | (912) | 73,706 | 98,412 | – | 2,296 | 100,708 |
| Profit for the year | – | – | – | – | (20,305) | (20,305) | 256 | (680) | (20,729) |
| Other comprehensive income | – | – | (2,224) | 98 | 448 | (1,678) | – | 37 | (1,641) |
| **Total comprehensive income** | – | – | (2,224) | 98 | (19,857) | (21,983) | 256 | (643) | (22,370) |
| Dividends[b] | – | – | – | – | (6,367) | (6,367) | – | (238) | (6,605) |
| Cash flow hedges transferred to the balance sheet, net of tax | – | – | – | 6 | – | 6 | – | – | 6 |
| Repurchase of ordinary share capital | – | – | – | – | (776) | (776) | – | – | (776) |
| Share-based payments, net of tax | 176 | 1,188 | – | – | (638) | 726 | – | – | 726 |
| Share of equity-accounted entities' changes in equity, net of tax | – | – | – | – | 1,341 | 1,341 | – | – | 1,341 |
| Issue of perpetual hybrid bonds | – | – | – | – | (48) | (48) | 11,909 | – | 11,861 |
| Payments on perpetual hybrid bonds | – | – | – | – | – | – | (89) | – | (89) |
| Tax on issue of perpetual hybrid bonds | – | – | – | – | 3 | 3 | – | – | 3 |
| Transactions involving non-controlling interests, net of tax | – | – | – | – | (64) | (64) | – | 827 | 763 |
| **At 31 December 2020** | 46,701 | (13,224) | (8,719) | (808) | 47,300 | 71,250 | 12,076 | 2,242 | 85,568 |

a See Note 31 for further information.
b See Note 10 for further information.

## Group balance sheet

| At 31 December | Note | 2022 | $ million 2021 |
|---|---|---|---|
| **Non-current assets** | | | |
| Property, plant and equipment | 12 | **106,044** | 112,902 |
| Goodwill | 14 | **11,960** | 12,373 |
| Intangible assets | 15 | **10,200** | 6,451 |
| Investments in joint ventures | 16 | **12,400** | 9,982 |
| Investments in associates[a] | 17 | **8,201** | 21,001 |
| Other investments | 18 | **2,670** | 2,544 |
| **Fixed assets** | | **151,475** | 165,253 |
| Loans | | **1,271** | 922 |
| Trade and other receivables | 20 | **1,092** | 2,693 |
| Derivative financial instruments | 30 | **12,841** | 7,006 |
| Prepayments | | **576** | 479 |
| Deferred tax assets | 9 | **3,908** | 6,410 |
| Defined benefit pension plan surpluses | 24 | **9,269** | 11,919 |
| | | **180,432** | 194,682 |
| **Current assets** | | | |
| Loans | | **315** | 355 |
| Inventories | 19 | **28,081** | 23,711 |
| Trade and other receivables | 20 | **34,010** | 27,139 |
| Derivative financial instruments | 30 | **11,554** | 5,744 |
| Prepayments | | **2,092** | 2,486 |
| Current tax receivable | | **621** | 542 |
| Other investments | 18 | **578** | 280 |
| Cash and cash equivalents | 25 | **29,195** | 30,681 |
| | | **106,446** | 90,938 |
| Assets classified as held for sale | 2 | **1,242** | 1,652 |
| | | **107,688** | 92,590 |
| **Total assets** | | **288,120** | 287,272 |
| **Current liabilities** | | | |
| Trade and other payables | 22 | **63,984** | 52,611 |
| Derivative financial instruments | 30 | **12,618** | 7,565 |
| Accruals | | **6,398** | 5,638 |
| Lease liabilities | 28 | **2,102** | 1,747 |
| Finance debt | 26 | **3,198** | 5,557 |
| Current tax payable | | **4,065** | 1,554 |
| Provisions | 23 | **6,332** | 5,256 |
| | | **98,697** | 79,928 |
| Liabilities directly associated with assets classified as held for sale | 2 | **321** | 359 |
| | | **99,018** | 80,287 |
| **Non-current liabilities** | | | |
| Other payables | 22 | **10,387** | 10,567 |
| Derivative financial instruments | 30 | **13,537** | 6,356 |
| Accruals | | **1,233** | 968 |
| Lease liabilities | 28 | **6,447** | 6,864 |
| Finance debt | 26 | **43,746** | 55,619 |
| Deferred tax liabilities | 9 | **10,526** | 8,780 |
| Provisions | 23 | **14,992** | 19,572 |
| Defined benefit pension plan and other post-retirement benefit plan deficits | 24 | **5,244** | 7,820 |
| | | **106,112** | 116,546 |
| **Total liabilities** | | **205,130** | 196,833 |
| **Net assets** | | **82,990** | 90,439 |
| Equity | | | |
| bp shareholders' equity | 32 | **67,553** | 75,463 |
| Non-controlling interests | 32 | **15,437** | 14,976 |
| **Total equity** | 32 | **82,990** | 90,439 |

a See Note 1 - Significant judgements and estimate: investment in Rosneft for further information.

[redacted]

10 March 2023

## Group cash flow statement

| For the year ended 31 December | | | | $ million |
|---|---|---|---|---|
| | Note | 2022 | 2021 | 2020 |
| **Operating activities** | | | | |
| Profit (loss) before taxation | | **15,405** | 15,227 | (24,888) |
| Adjustments to reconcile profit before taxation to net cash provided by operating activities | | | | |
| Exploration expenditure written off | 8 | **385** | 167 | 9,920 |
| Depreciation, depletion and amortization | 5 | **14,318** | 14,805 | 14,889 |
| Impairment and (gain) loss on sale of businesses and fixed assets | 4 | **26,656** | (2,997) | 11,507 |
| Earnings from joint ventures and associates | | **(2,530)** | (3,999) | 403 |
| Dividends received from joint ventures and associates | | **1,700** | 1,842 | 1,442 |
| Interest receivable | | **(444)** | (235) | (258) |
| Interest received | | **414** | 320 | 74 |
| Finance costs | 7 | **2,703** | 2,857 | 3,115 |
| Interest paid | | **(2,208)** | (2,474) | (2,728) |
| Net finance expense relating to pensions and other post-retirement benefits | 24 | **(69)** | (2) | 33 |
| Share-based payments | | **795** | 627 | 723 |
| Net operating charge for pensions and other post-retirement benefits, less contributions and benefit payments for unfunded plans | 24 | **(257)** | (655) | (282) |
| Net charge for provisions, less payments | | **440** | 2,934 | 735 |
| (Increase) decrease in inventories | | **(5,492)** | (7,458) | 3,963 |
| (Increase) decrease in other current and non-current assets | | **(18,584)** | (13,263) | 4,230 |
| Increase (decrease) in other current and non-current liabilities | | **17,806** | 20,095 | (8,278) |
| Income taxes paid | | **(10,106)** | (4,179) | (2,438) |
| **Net cash provided by operating activities** | | **40,932** | 23,612 | 12,162 |
| **Investing activities** | | | | |
| Expenditure on property, plant and equipment, intangible and other assets | | **(12,069)** | (10,887) | (12,306) |
| Acquisitions, net of cash acquired | 3 | **(3,530)** | (186) | (44) |
| Investment in joint ventures | | **(600)** | (1,440) | (567) |
| Investment in associates | | **(131)** | (335) | (1,138) |
| **Total cash capital expenditure** | | **(16,330)** | (12,848) | (14,055) |
| Proceeds from disposals of fixed assets | 4 | **709** | 1,145 | 491 |
| Proceeds from disposals of businesses, net of cash disposed | 4 | **1,841** | 5,812 | 4,989 |
| Proceeds from loan repayments | | **67** | 197 | 717 |
| **Net cash used in investing activities** | | **(13,713)** | (5,694) | (7,858) |
| **Financing activities** | | | | |
| Repurchase of shares | | **(9,996)** | (3,151) | (776) |
| Lease liability payments | | **(1,961)** | (2,082) | (2,442) |
| Proceeds from long-term financing | | **2,013** | 6,987 | 14,736 |
| Repayments of long-term financing | | **(11,697)** | (16,804) | (12,179) |
| Net increase (decrease) in short-term debt | | **(1,392)** | 1,077 | (1,234) |
| Issue of perpetual hybrid bonds | | **370** | 924 | 11,861 |
| Payments relating to perpetual hybrid bonds | | **(708)** | (538) | (89) |
| Payments relating to transactions involving non-controlling interests (other) | | **(9)** | (560) | (8) |
| Receipts relating to transactions involving non-controlling interests (other) | | **11** | 683 | 665 |
| Dividends paid | | | | |
| bp shareholders | 10 | **(4,358)** | (4,304) | (6,340) |
| Non-controlling interests | | **(294)** | (311) | (238) |
| **Net cash provided by (used in) financing activities** | | **(28,021)** | (18,079) | 3,956 |
| Currency translation differences relating to cash and cash equivalents | | **(684)** | (269) | 379 |
| Increase (decrease) in cash and cash equivalents | | **(1,486)** | (430) | 8,639 |
| Cash and cash equivalents at beginning of year | | **30,681** | 31,111 | 22,472 |
| **Cash and cash equivalents at end of year** | | **29,195** | 30,681 | 31,111 |

# Notes on financial statements

## 1. Significant accounting policies, judgements, estimates and assumptions

### Authorization of financial statements and statement of compliance with International Financial Reporting Standards

The consolidated financial statements of BP p.l.c and its subsidiaries (collectively referred to as bp or the group) for the year ended 31 December 2022 were approved and signed by the chief executive officer and chairman on 10 March 2023 having been duly authorized to do so by the board of directors. BP p.l.c. is a public limited company incorporated and domiciled in England and Wales. The consolidated financial statements have been prepared in accordance with United Kingdom adopted international accounting standards and International Financial Reporting Standards (IFRSs) as issued by the International Accounting Standards Board (IASB) and as adopted by the European Union (EU) and in accordance with the provisions of the UK Companies Act 2006 as applicable to companies reporting under international accounting standards. IFRS as adopted by the UK does not differ from IFRS as adopted by the EU. IFRS as adopted by the UK and EU differs in certain respects from IFRS as issued by the IASB. The differences have no impact on the group's consolidated financial statements for the years presented. The significant accounting policies and accounting judgements, estimates and assumptions of the group are set out below.

### Basis of preparation

The consolidated financial statements have been prepared on a going concern basis and in accordance with IFRS and IFRS Interpretations Committee (IFRIC) interpretations issued and effective for the year ended 31 December 2022. The accounting policies that follow have been consistently applied to all years presented, except where otherwise indicated.

The consolidated financial statements are presented in US dollars and all values are rounded to the nearest million dollars ($ million), except where otherwise indicated.

### Significant accounting policies: use of judgements, estimates and assumptions

Inherent in the application of many of the accounting policies used in preparing the consolidated financial statements is the need for bp management to make judgements, estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities, and the reported amounts of revenues and expenses. Actual outcomes could differ from the estimates and assumptions used. The accounting judgements and estimates that have a significant impact on the results of the group are set out in boxed text below, and should be read in conjunction with the information provided in the Notes on financial statements.

The areas requiring the most significant judgement and estimation in the preparation of the consolidated financial statements are: accounting for the investments in Rosneft and Aker BP; the formation of Azule Energy, exploration and appraisal intangible assets; the recoverability of asset carrying values, including the estimation of reserves; supplier financing arrangements; derivative financial instruments; provisions and contingencies; pensions and other post-retirement benefits; and taxation. Judgements and estimates, not all of which are significant, made in assessing the impact of the current economic and geopolitical environment, and climate change and the transition to a lower carbon economy on the consolidated financial statements are also set out in boxed text below. Where an estimate has a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities within the next financial year this is specifically noted within the boxed text.

#### Judgements and estimates made in assessing the impact of climate change and the transition to a lower carbon economy

Climate change and the transition to a lower carbon economy were considered in preparing the consolidated financial statements. These may have significant impacts on the currently reported amounts of the group's assets and liabilities discussed below and on similar assets and liabilities that may be recognized in the future. The group's assumptions for investment appraisal (see page 28) form part of an investment decision-making framework for currently unsanctioned future capital expenditure on property, plant and equipment, and intangibles including exploration and appraisal assets, that is designed to support the effective and resilient implementation of bp's strategy. The price assumptions used for investment appraisal include oil and gas price assumptions, which are producer prices and are therefore net of any future carbon prices that the purchaser may be required to pay, and an assumption of a single carbon emissions cost imposed on the producer in respect of operational greenhouse gas (GHG) emissions (carbon dioxide and methane) in order to incentivize engineering solutions to mitigate GHG emissions on projects. The group's oil and gas price assumptions for value-in-use impairment testing are aligned with those investment appraisal assumptions, except for 2023 oil and gas prices which reflect near-term market conditions. The assumptions for future carbon emissions costs in value-in-use impairment testing differ from the investment appraisal assumptions and are described below.

##### Impairment of property, plant and equipment and goodwill

The energy transition is likely to impact the future prices of commodities such as oil and natural gas which in turn may affect the recoverable amount of property, plant and equipment and goodwill in the oil and gas industry. Management's best estimate of oil and natural gas price assumptions for value-in-use impairment testing were revised during 2022. Prices are disclosed in real 2021 terms. The Brent oil assumption from 2024 up to 2030 was increased to $70 per barrel to reflect near-term supply constraints before steadily declining to $45 per barrel by 2050 continuing to reflect the assumption that as the energy system decarbonizes, falling oil demand will cause oil prices to decline. The price assumptions for Henry Hub gas up to 2035 and up to 2050 were increased to $4.00 per mmBtu and $3.50 per mmBtu respectively, reflecting increased demand for US gas production to offset reduced Russian gas flows. The revised assumptions sit within the range of external scenarios considered by management and are in line with a range of transition paths consistent with the temperature goal of the Paris climate change agreement, of holding the increase in the global average temperature to well beow 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels.

As noted above, the group's investment appraisal process includes a single carbon emissions price assumption for the investment economics which is applied to bp's anticipated share of bp's forecast of the investments assets' scope 1 and 2 GHG emissions where they exceed defined thresholds, and is assumed to be payable by bp as the producer or as a non-operator. However, for value-in-use impairment testing on bp's existing cash generating units (CGUs), consistent with all other relevant cash flows estimated, bp is required to reflect management's best estimate of any expected applicable carbon emission costs payable by bp, including where bp is not the operator, in the future for each jurisdiction in which the group has interests. This requires management's best estimate of how future changes to relevant carbon emission cost policies and/or legislation are likely to affect the future cash flows of the group's applicable CGUs, whether currently enacted or not. Future potential carbon pricing and/or costs of carbon emissions allowances are included in the value-in-use calculations to the extent management has sufficient information to make such an estimate. Currently this results in limited application of carbon price assumptions in value-in-use impairment tests given that carbon pricing legislation in most impacted jurisdictions where the group has interests is not in place and there is not sufficient information available as to the relevant policy makers' future intentions regarding carbon pricing to support an estimate.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

Where we consider that the outcome of a value-in-use impairment test could be significantly affected by a carbon price in place in any jurisdiction, this is incorporated into the value-in use impairment testing cash flows. The most significant instances where a carbon price has been incorporated in this way are for the UK North Sea and Gelsenkirchen refinery, where assumptions of approximately £100/t$CO_2$e and an average of approximately €70/t$CO_2$e were applied in the 2022 value-in-use impairment tests respectively.

However, as bp's forecast future prices are producer prices, the group considers it reasonable to assume that if, in addition to the costs already in place, further scope 1 and 2 emission costs were partially to be borne directly by oil and gas producers including bp in future and the prevalence of such costs were to become widespread, the gross oil and gas prices realised by producers would be correspondingly higher over the long term, resulting in no expected overall materially negative impacts on the group's net cash flows. See significant judgements and estimates: recoverability of asset carrying values for further information including sensitivity analysis in relation to reasonably possible changes in the price assumptions and carbon costs.

Production assumptions within upstream property, plant and equipment and goodwill value-in-use impairment tests reflect management's current best estimate of future production of the existing upstream portfolio. The group sees the expected reduction in upstream hydrocarbon production by around 25% by 2030 from its 2019 baseline (see page 11) being achieved through future active management, including divestments, and high-grading of the portfolio. Changes in upstream production since 2019 will be included in the best estimate to the extent the divestments have been announced or completed however, as the specific future changes to the remainder of the portfolio are not yet known, the current best estimate used for accounting purposes does not include the full extent of the expected upstream production reduction. See significant judgements and estimates: recoverability of asset carrying values and Note 14 for sensitivity analyses in relation to reasonably possible changes in production for upstream oil and gas properties and goodwill respectively.

Impairment reversals were recognized on certain upstream oil and gas properties partly as a result of the higher near-term assumptions. See Note 4 for further information.

For the customers & products segment, though the energy transition may impact demand for certain refined products in the future, management anticipates sufficiently robust demand for the remainder of each refinery's useful life.

Management will continue to review price assumptions as the energy transition progresses and this may result in impairment charges or reversals in the future.

### Exploration and appraisal intangible assets

The energy transition may affect the future development or viability of exploration prospects. A significant proportion of the group's exploration and appraisal intangible assets were written off in 2020 and the recoverability of the remaining intangibles was considered during 2022. No significant write-offs were identified. These assets will continue to be assessed as the energy transition progresses. See significant judgement: exploration and appraisal intangible assets and Note 8 for further information.

### Property, plant and equipment – depreciation and expected useful lives

The energy transition may curtail the expected useful lives of oil and gas industry assets thereby accelerating depreciation charges. However, a significant majority of bp's existing upstream oil and natural gas properties are likely to be fully depreciated within the next 10 years and, as outlined in bp's strategy, oil and natural gas production will remain an important part of bp's business activities over that period. The significant majority of refining assets, recognized on the group's balance sheet at 31 December 2022 that are subject to depreciation, will be depreciated within the next 12 years; demand for refined products is expected to remain sufficient to support the remaining useful lives of existing assets. Therefore, management does not expect the useful lives of bp's reported property, plant and equipment to change and do not consider this to be a significant accounting judgement or estimate. Significant capital expenditure is still required for ongoing projects as well as renewal and/or replacement of aged assets and therefore the useful lives of future capital expenditure may be different. See significant accounting policy: property, plant and equipment for more information.

### Provisions: decommissioning

The energy transition may bring forward the decommissioning of oil and gas industry assets thereby increasing the present value of associated decommissioning provisions. The majority of bp's existing upstream oil and gas properties are expected to start decommissioning within the next two decades. The group's expectation to reduce its upstream hydrocarbon production by around 25% by 2030 from its 2019 baseline (see page 11) is expected to be achieved through future active management, including divestments, and high-grading of the portfolio. Any resulting increases or decreases to the weighted average timing of decommissioning will be driven by the profile of assets held in the revised portfolio. Currently, the expected timing of decommissioning expenditures for the upstream oil and gas assets in the group's portfolio has not materially been brought forward. Management does not expect a reasonably possible change of two years in the expected timing of all decommissioning to have a material effect on the upstream decommissioning provisions, assuming cash flows remain unchanged.

Decommissioning cost estimates are based on the known regulatory and external environment. These cost estimates may change in the future, including as a result of the transition to a lower carbon economy. For refineries, decommissioning provisions are generally not recognized as the associated obligations have indeterminate settlement dates, typically driven by the cessation of manufacturing. Management will continue to review facts and circumstances to assess if decommissioning provisions need to be recognized. Decommissioning provisions relating to refineries at 31 December 2022 are not material. See significant judgements and estimates: provisions for further information.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

### Judgements and estimates made in assessing the impact of the geopolitical and economic environment

In preparing the consolidated financial statements, the following areas involving judgement and estimates were identified as most relevant with regards to the impact of the current geopolitical and economic environment.

#### Oil and gas price assumptions

The near-term oil and gas price assumptions applied in value-in-use impairment testing have been increased to reflect current supply constraints and increased demand for gas to replace Russian supply. See significant judgements and estimates: recoverability of asset carrying values for further information.

#### Discount rate assumptions

The discount rates used for impairment testing and provisions were reassessed during the year in light of changing economic and geopolitical outlooks. The nominal discount rate applied to provisions was increased twice during the year to reflect rising US Treasury yields. The principal impact of these rate increases was a $3.2 billion decrease in the decommissioning provision with an associated decrease in the carrying amount of property, plant and equipment of $2.5 billion and a pre-tax credit to the income statement of $0.7 billion. Impairment discount rates were also increased from those reported in 2021. See significant judgements and estimates: recoverability of asset carrying values and provisions for further information.

#### Pensions and other post-retirement benefits

The volatility in the financial markets during 2022 impacted the assumptions used for determining the fair value of plan assets and the present value of defined benefit obligations in the group's defined benefit pension plans. See significant estimate: pensions and other post-retirement benefits and Note 24 for further information.

### Basis of consolidation

The consolidated group financial statements consolidate the financial statements of BP p.l.c. and its subsidiaries drawn up to 31 December each year. Subsidiaries are consolidated from the date of their acquisition, being the date on which the group obtains control, including when control is obtained via potential voting rights, and continue to be consolidated until the date that control ceases.

The financial statements of subsidiaries are prepared for the same reporting year as the parent company, using consistent accounting policies. Intra-group balances and transactions, including unrealized profits arising from intra-group transactions, have been eliminated. Unrealized losses are eliminated unless the transaction provides evidence of an impairment of the asset transferred.

Non-controlling interests represent the equity in subsidiaries that is not attributable, directly or indirectly, to bp shareholders. Included within non-controlling interests are perpetual subordinated hybrid securities issued by subsidiaries and for which the group has the unconditional right to avoid transferring cash or another financial asset to the holders. Profit or loss attributable to bp shareholders is adjusted to reflect the coupon/interest related to these hybrid securities whether or not such distribution has been deferred.

### Interests in other entities

#### Business combinations and goodwill

Business combinations are accounted for using the acquisition method. The identifiable assets acquired and liabilities assumed are recognized at their fair values at the acquisition date.

Goodwill is initially measured as the excess of the aggregate of the consideration transferred, the amount recognized for any non-controlling interest and the acquisition-date fair values of any previously held interest in the acquiree over the fair value of the identifiable assets acquired and liabilities assumed at the acquisition date. The amount recognized for any non-controlling interest is measured at the present ownership's proportionate share in the recognized amounts of the acquiree's identifiable net assets. At the acquisition date, any goodwill acquired is allocated to each of the cash-generating units, or groups of cash-generating units, expected to benefit from the combination's synergies. Following initial recognition, goodwill is measured at cost less any accumulated impairment losses. Goodwill arising on business combinations prior to 1 January 2003 is stated at the previous carrying amount under UK generally accepted accounting practice, less subsequent impairments.

Goodwill may arise upon investments in joint ventures and associates, being the surplus of the cost of investment over the group's share of the net fair value of the identifiable assets and liabilities. Any such goodwill is recorded within the corresponding investment in joint ventures and associates.

Goodwill may also arise upon acquisition of interests in joint operations that meet the definition of a business. The amount of goodwill separately recognized is the excess of the consideration transferred over the group's share of the net fair value of the identifiable assets and liabilities.

#### Interests in joint arrangements

The results, assets and liabilities of joint ventures are incorporated in these consolidated financial statements using the equity method of accounting as described below.

Certain of the group's activities, particularly in the oil production & operations and gas & low carbon energy segments, are conducted through joint operations. bp recognizes, on a line-by-line basis in the consolidated financial statements, its share of the assets, liabilities and expenses of these joint operations incurred jointly with the other partners, along with the group's income from the sale of its share of the output and any liabilities and expenses that the group has incurred in relation to the joint operation.

For joint arrangements in a separate entity, judgement may be required as to whether the arrangement should be classified as a joint venture or if the legal form, contractual arrangements or other facts and circumstances indicate that the group has rights to the assets and obligations for the liabilities of the arrangement, rather than rights to the net assets, and therefore should be classified as a joint operation. No such judgement made by the group is considered significant.

#### Interests in associates

The results, assets and liabilities of associates are incorporated in these consolidated financial statements using the equity method of accounting as described below.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

### Significant judgement: investment in Aker BP

Judgement is required in assessing the level of control or influence over another entity in which the group holds an interest. For bp, the judgement that the group continues to have significant influence over Aker BP, a Norwegian oil and gas company, following completion of Aker BP's acquisition of Lundin Energy's oil and gas business, is significant.

As a consequence of this judgement, bp uses the equity method of accounting for its investment and bp's share of Aker BP's oil and natural gas reserves is included in the group's estimated net proved reserves of equity-accounted entities. If significant influence was not present, the investment would be accounted for as an investment in an equity instrument measured at fair value as described under 'Financial assets' below and no share of Aker BP's oil and natural gas reserves would be reported.

Significant influence is defined in IFRS as the power to participate in the financial and operating policy decisions of the investee but is not control or joint control of those decisions. Significant influence is presumed when an entity owns 20% or more of the voting power of the investee. Significant influence is presumed not to be present when an entity owns less than 20% of the voting power of the investee. IFRS identifies several indicators that may provide evidence of significant influence, including representation on the board of directors of the investee and participation in policy-making processes.

bp owned 27.85% of the voting shares of Aker BP at 31 December 2021 and significant influence was presumed. On completion of Aker BP's acquisition of Lundin Energy's oil and gas business on 30 June 2022, bp's interest was diluted to 15.9% of the voting shares of Aker BP as a result of new Aker BP shares being issued as partial consideration to Lundin Energy shareholders. bp owned 15.9% of the voting shares at 31 December 2022.

bp's group chief financial officer, Murray Auchincloss, has been a member of the Aker BP board since 2017. bp's other nominated director, Kate Thomson has been a member of the Aker BP board since formation of that company in 2016. She is also a member of the Aker BP board's Audit and Risk Committee. bp also holds the voting rights at general meetings of shareholders conferred by its stake in Aker BP. bp's management considers, therefore, that the group retained significant influence, as defined by IFRS, over Aker BP following the acquisition of Lundin Energy's oil and gas business and continues to have significant influence at 31 December 2022.

### Significant judgements and estimate: investment in Rosneft

On 27 February 2022, bp announced it will exit its shareholding in Rosneft and bp's two nominated Rosneft directors both stepped down from Rosneft's board. As a result, the significant judgement on significant influence over Rosneft was reassessed and a new significant estimate was identified for the fair value of bp's equity investment in Rosneft. From that date, bp accounts for its interest in Rosneft as a financial asset measured at fair value within 'Other investments'. Russia has implemented a number of counter-sanctions including restrictions on the divestment of Russian assets by foreign investors. Further, bp is not able to sell its Rosneft shares on the Moscow Stock Exchange and is unable to ascribe probabilities to possible outcomes of any exit process. As a result, it is considered that any measure of fair value, other than $nil, would be subject to such high measurement uncertainty that no estimate would provide useful information even if it were accompanied by a description of the estimate made in producing it and an explanation of the uncertainties that affect the estimate. Accordingly, it is not currently possible to estimate any carrying value other than $nil when determining the measurement of the interest in Rosneft as at 31 December 2022. Events or outcomes within the next financial year, that are different to those outlined above, could materially change the fair value of the investment.

During 2022, Rosneft has held shareholder meetings to approve resolutions to pay dividends. bp did not participate in those meetings. In line with the resolutions, bp would be entitled to dividend income. Russia has imposed restrictions on the payments of dividends to certain foreign shareholders, including those based in the UK, requiring such dividends to be paid in roubles into restricted bank accounts and a requirement for approval of the Russian government for transfers from any such bank accounts out of Russia. Given the restrictions applicable to such accounts, management has made the significant judgement that the criteria for recognizing any dividend income from Rosneft for the year to 31 December 2022 have not been met.

Since the first quarter 2022, bp has also determined that its other businesses with Rosneft within Russia, which are included in the oil production & operations segment also have a fair value of $nil and are subject to similar sanctions and restrictions with respect to the receipt of dividends as described above. Management considers that the criteria for recognizing dividend income from other businesses with Rosneft within Russia that declared a dividend during 2022 have not been met.

The total pre-tax charge during the year-ended 31 December 2022 relating to bp's investment in Rosneft and other businesses with Rosneft in Russia is $25,520 million.

### Significant judgement: formation of Azule Energy

On 1 August 2022, Azule Energy, an independent incorporated 50:50 joint venture, between bp and Eni, was formed through the combination of the two companies' Angolan businesses. As part of the consideration for contributing its assets, bp received 500,000 shares in Azule Energy. The group determined that the fair value of these shares at the date of the transaction was $6.9 billion and the transaction resulted in a gain on disposal of $3.9 billion, of which 50% has been deferred against the investment on the balance sheet and will be amortised over time, consistent with bp's accounting policy for unrealized gains on transactions between the group and equity-accounted entities. The fair value was determined using a discounted cash flow analysis with judgments over the assumptions including capital expenditure, costs, production and commodity price forecasts, and a post-tax discount rate that would be applied by a market participant.

### The equity method of accounting

Under the equity method, an investment is carried on the balance sheet at cost plus post-acquisition changes in the group's share of net assets of the entity, less distributions received and less any impairment in value of the investment. Loans advanced to equity-accounted entities that have the characteristics of equity financing are also included in the investment on the group balance sheet. The group income statement reflects the group's share of the results after tax of the equity-accounted entity, adjusted to account for depreciation, amortization and any impairment of the equity-accounted entity's assets based on their fair values at the date of acquisition. The group statement of comprehensive income includes the group's share of the equity-accounted entity's other comprehensive income. The group's share of amounts recognized directly in equity by an equity-accounted entity is recognized in the group's statement of changes in equity.

Financial statements of equity-accounted entities are typically prepared for the same reporting year as the group. Where material differences arise in the accounting policies used by the equity-accounted entity and those used by bp, adjustments are made to those financial statements to bring the accounting policies used into line with those of the group. Unrealized gains on transactions, apart from those that meet the definition of a derivative, between the group and its equity-accounted entities are eliminated to the extent of the group's interest in the equity-accounted entity. This includes unrealized gains arising on contribution of a business on formation of an equity-accounted entity.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

### Segmental reporting

The group's operating segments are established on the basis of those components of the group that are evaluated regularly by the chief executive officer, bp's chief operating decision maker, in deciding how to allocate resources and in assessing performance.

The accounting policies of the operating segments are the same as the group's accounting policies described in this note, except that IFRS requires that the measure of profit or loss disclosed for each operating segment is the measure that is provided regularly to the chief operating decision maker. For bp, this measure of profit or loss is replacement cost profit before interest and tax which reflects the replacement cost of inventories sold in the period and is arrived at by excluding inventory holding gains and losses from profit before interest and tax. Replacement cost profit for the group is not a recognized measure under IFRS. bp changed its segmental reporting during 2022, see 'Changes in segmentation' below.

For further information see Note 5.

### Foreign currency translation

In individual subsidiaries, joint ventures and associates, transactions in foreign currencies are initially recorded in the functional currency of those entities at the spot exchange rate on the date of the transaction. Monetary assets and liabilities denominated in foreign currencies are retranslated into the functional currency at the spot exchange rate on the balance sheet date. Any resulting exchange differences are included in the income statement, unless hedge accounting is applied. Non-monetary items, other than those measured at fair value, are not retranslated subsequent to initial recognition.

In the consolidated financial statements, the assets and liabilities of non-US dollar functional currency subsidiaries, joint ventures, associates, and related goodwill, are translated into US dollars at the spot exchange rate on the balance sheet date. The results and cash flows of non-US dollar functional currency subsidiaries, joint ventures and associates are translated into US dollars using average rates of exchange. In the consolidated financial statements, exchange adjustments arising when the opening net assets and the profits for the year retained by non-US dollar functional currency subsidiaries, joint ventures and associates are translated into US dollars are recognized in a separate component of equity and reported in other comprehensive income. Exchange gains and losses arising on long-term intra-group foreign currency borrowings used to finance the group's non-US dollar investments are also reported in other comprehensive income if the borrowings form part of the net investment in the subsidiary, joint venture or associate. On disposal or for certain partial disposals of a non-US dollar functional currency subsidiary, joint venture or associate, the related accumulated exchange gains and losses recognized in equity are reclassified from equity to the income statement.

### Non-current assets held for sale

Non-current assets and disposal groups classified as held for sale are measured at the lower of carrying amount and fair value less costs to sell.

Significant non-current assets and disposal groups are classified as held for sale if their carrying amounts will be recovered through a sale transaction rather than through continuing use. This condition is regarded as met only when the sale is highly probable and the asset or disposal group is available for immediate sale in its present condition subject only to terms that are usual and customary for sales of such assets. Management must be committed to the sale, which should be expected to qualify for recognition as a completed sale within one year from the date of classification as held for sale, and actions required to complete the plan of sale should indicate that it is unlikely that significant changes to the plan will be made or that the plan will be withdrawn.

Property, plant and equipment and intangible assets are not depreciated or amortized, and equity accounting of associates and joint ventures is ceased once classified as held for sale.

### Intangible assets

Intangible assets, other than goodwill, include expenditure on the exploration for and evaluation of oil and natural gas resources, biogas rights agreements, digital assets, patents, licences and trademarks and are stated at the amount initially recognized, less accumulated amortization and accumulated impairment losses.

Intangible assets are carried initially at cost unless acquired as part of a business combination. Any such asset is measured at fair value at the date of the business combination and is recognized separately from goodwill if the asset is separable or arises from contractual or other legal rights.

Intangible assets with a finite life, other than capitalized exploration and appraisal costs as described below, are amortized on a straight-line basis over their expected useful lives. For patents, licences and trademarks, expected useful life is the shorter of the duration of the legal agreement and economic useful life, and can range from three to fifteen years. The expected useful life of biogas rights agreements is the shorter of the duration of the legal agreement and economic useful life and can be up to 50 years. Digital asset costs generally have a useful life of three to five years.

The expected useful lives of assets and the amortization method are reviewed on an annual basis and, if necessary, changes in useful lives or the amortization method are accounted for prospectively.

#### Oil and natural gas exploration and appraisal expenditure

Oil and natural gas exploration and appraisal expenditure is accounted for using the principles of the successful efforts method of accounting as described below.

#### Licence and property acquisition costs

Exploration licence and leasehold property acquisition costs are capitalized within intangible assets and are reviewed at each reporting date to confirm that there is no indication that the carrying amount exceeds the recoverable amount. This review includes confirming that exploration drilling is still under way or planned or that it has been determined, or work is under way to determine, that the discovery is economically viable based on a range of technical and commercial considerations, and sufficient progress is being made on establishing development plans and timing. If no future activity is planned, the remaining balance of the licence and property acquisition costs is written off. Lower value licences are pooled and amortized on a straight-line basis over the estimated period of exploration. Upon internal approval for development and recognition of proved or sanctioned probable reserves of oil and natural gas, the relevant expenditure is transferred to property, plant and equipment.

#### Exploration and appraisal expenditure

Geological and geophysical exploration costs are recognized as an expense as incurred. Costs directly associated with an exploration well are initially capitalized as an intangible asset until the drilling of the well is complete and the results have been evaluated. These costs include employee remuneration, materials and fuel used, rig costs and payments made to contractors. If potentially commercial quantities of hydrocarbons are not found, the exploration well costs are written off. If hydrocarbons are found and, subject to further appraisal activity, are likely to be capable of commercial development, the costs continue to be carried as an asset. If it is determined that development will not occur, that is, the efforts are not successful, then the costs are expensed.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

Costs directly associated with appraisal activity undertaken to determine the size, characteristics and commercial potential of a reservoir following the initial discovery of hydrocarbons, including the costs of appraisal wells where hydrocarbons were not found, are initially capitalized as an intangible asset. Upon internal approval for development and recognition of proved or sanctioned probable reserves, the relevant expenditure is transferred to property, plant and equipment. If development is not approved and no further activity is expected to occur, then the costs are expensed.

The determination of whether potentially economic oil and natural gas reserves have been discovered by an exploration well is usually made within one year of well completion, but can take longer, depending on the complexity of the geological structure. Exploration wells that discover potentially economic quantities of oil and natural gas and are in areas where major capital expenditure (e.g. an offshore platform or a pipeline) would be required before production could begin, and where the economic viability of that major capital expenditure depends on the successful completion of further exploration or appraisal work in the area, remain capitalized on the balance sheet as long as such work is under way or firmly planned.

Significant judgement: exploration and appraisal intangible assets

Judgement is required to determine whether it is appropriate to continue to carry costs associated with exploration wells and exploratory-type stratigraphic test wells on the balance sheet. This includes costs relating to exploration licences or leasehold property acquisitions. It is not unusual to have such costs remaining suspended on the balance sheet for several years while additional appraisal drilling and seismic work on the potential oil and natural gas field is performed or while the optimum development plans and timing are established. The costs are carried based on the current regulatory and political environment or any known changes to that environment. All such carried costs are subject to regular technical, commercial and management review on at least an annual basis to confirm the continued intent to develop, or otherwise extract value from, the discovery. Where this is no longer the case, the costs are immediately expensed.

The carrying amount of capitalized costs are included in Note 8.

### Property, plant and equipment

Property, plant and equipment owned by the group is stated at cost, less accumulated depreciation and accumulated impairment losses. The initial cost of an asset comprises its purchase price or construction cost, any costs directly attributable to bringing the asset into the location and condition necessary for it to be capable of operating in the manner intended by management, the initial estimate of any decommissioning obligation, if applicable, and, for assets that necessarily take a substantial period of time to get ready for their intended use, directly attributable general or specific finance costs. The purchase price or construction cost is the aggregate amount paid and the fair value of any other consideration given to acquire the asset.

Expenditure on major maintenance refits or repairs comprises the cost of replacement assets or parts of assets, inspection costs and overhaul costs. Where an asset or part of an asset that was separately depreciated is replaced and it is probable that future economic benefits associated with the item will flow to the group, the expenditure is capitalized and the carrying amount of the replaced asset is derecognized. Inspection costs associated with major maintenance programmes are capitalized and amortized over the period to the next inspection. Overhaul costs for major maintenance programmes, and all other maintenance costs are expensed as incurred.

Expenditure on the construction, installation and completion of infrastructure facilities such as platforms, pipelines and the drilling of development wells, including service and unsuccessful development or delineation wells, is capitalized within property, plant and equipment and is depreciated from the commencement of production.

Oil and natural gas properties, including certain related pipelines, are depreciated using a unit-of-production method. The cost of producing wells is amortized over proved developed reserves. Licence acquisition, common facilities and future decommissioning costs are amortized over total proved reserves. The unit-of-production rate for the depreciation of common facilities takes into account expenditures incurred to date, together with estimated future capital expenditure expected to be incurred relating to as yet undeveloped reserves expected to be processed through these common facilities. Information on the carrying amounts of the group's oil and natural gas properties, together with the amounts recognized in the income statement as depreciation, depletion and amortization is contained in Note 12 and Note 5 respectively.

Estimates of oil and natural gas reserves determined in accordance with US Securities and Exchange Commission (SEC) regulations, including the application of prices using 12-month historical price data in assessing the commerciality of technical volumes, are typically used to calculate depreciation, depletion and amortization charges for the group's oil and gas properties. Therefore, where this approach is adopted, charges are not dependent on management forecasts of future oil and gas prices.

However, for certain oil and natural gas assets, the use of reserves determined in accordance with SEC regulations would result in a charge that is not reflective of the pattern in which the future economic benefits are expected to be consumed. In these limited instances other approaches are applied to determine the reserves base used to calculate depreciation, depletion and amortization, including the use of management's best estimate of price assumptions as disclosed in Significant judgements and estimates: recoverability of asset carrying values, to determine the commerciality of technical proved reserves.

The impact of changes in estimated proved reserves is dealt with prospectively by amortizing the remaining carrying value of the asset over the expected future production.

The estimation of oil and natural gas reserves and bp's process to manage reserves bookings is described in Supplementary information on oil and natural gas on page 263, which is unaudited. Details on bp's proved reserves and production compliance and governance processes are provided on page 361. The 2022 movements in proved reserves are reflected in the tables showing movements in oil and natural gas reserves by region in Supplementary information on oil and natural gas (unaudited) on page 263.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

Other property, plant and equipment is depreciated on a straight-line basis over its expected useful life. The typical useful lives of the group's other property, plant and equipment on initial recognition are as follows:

| | |
|---|---|
| Land improvements | 15 to 25 years |
| Buildings | 20 to 50 years |
| Refineries | 20 to 30 years |
| Pipelines | 10 to 50 years |
| Service stations | 15 years |
| Office equipment | 3 to 10 years |
| Fixtures and fittings | 5 to 15 years |

The expected useful lives and depreciation method of property, plant and equipment are reviewed on an annual basis and, if necessary, changes in useful lives or the depreciation method are accounted for prospectively. An item of property, plant and equipment is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the item) is included in the income statement in the period in which the item is derecognized.

### Impairment of property, plant and equipment, intangible assets, goodwill, and equity-accounted entities

The group assesses assets or groups of assets, called cash-generating units (CGUs), for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset or CGU may not be recoverable; for example, changes in the group's business plans, plans to dispose rather than retain assets, changes in the group's assumptions about commodity prices, low plant utilization, evidence of physical damage or, for oil and gas assets, significant downward revisions of estimated reserves or increases in estimated future development expenditure or decommissioning costs. If any such indication of impairment exists, the group makes an estimate of the asset's or CGU's recoverable amount. Individual assets are grouped into CGUs for impairment assessment purposes at the lowest level at which there are identifiable cash inflows that are largely independent of the cash inflows of other groups of assets. A CGU's recoverable amount is the higher of its fair value less costs of disposal and its value in use. If it is probable that the value of the CGU will be primarily recovered through a disposal transaction, the expected disposal proceeds are considered in determining the recoverable amount. Where the carrying amount of a CGU exceeds its recoverable amount, the CGU is considered impaired and is written down to its recoverable amount.

The business segment plans, which are approved on an annual basis by senior management, are the primary source of information for the determination of value in use. They contain forecasts for oil and natural gas production, power generation, refinery throughputs, sales volumes for various types of refined products (e.g. gasoline and lubricants), revenues, costs and capital expenditure. Carbon taxes and costs of emissions allowances are included in estimates of future cash flows, where applicable, based on the regulatory environment in each jurisdiction in which the group operates. As an initial step in the preparation of these plans, various assumptions regarding market conditions, such as oil prices, natural gas prices, power prices, refining margins, refined product margins and cost inflation rates are set by senior management. These assumptions take account of existing prices, global supply-demand equilibrium for oil and natural gas, other macroeconomic factors and historical trends and variability. In assessing value in use, the estimated future cash flows are adjusted for the risks specific to the asset group to the extent that they are not already reflected in the discount rate and are discounted to their present value typically using a pre-tax discount rate that reflects current market assessments of the time value of money.

Fair value less costs of disposal is the price that would be received to sell the asset in an orderly transaction between market participants and does not reflect the effects of factors that may be specific to the group and not applicable to entities in general. Fair value may be determined by reference to agreed or expected sales proceeds, recent market transactions for similar assets or using discounted cash flow analyses. Where discounted cash flow analyses are used to calculate fair value less costs of disposal, estimates are made about the assumptions market participants would use when pricing the asset, CGU or group of CGUs containing goodwill and the test is performed on a post-tax basis.

An assessment is made at each reporting date as to whether there is any indication that previously recognized impairment losses may no longer exist or may have decreased. If such an indication exists, the recoverable amount is estimated. A previously recognized impairment loss is reversed only if there has been a change in the estimates used to determine the asset's or CGU's recoverable amount since the last impairment loss was recognized. If that is the case, the carrying amount of the asset or CGU is increased to the lower of its recoverable amount and the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognized for the asset or CGU in prior years. Impairment reversals are recognized in profit or loss. After a reversal, the depreciation charge is adjusted in future periods to allocate the asset's or CGU's revised carrying amount, less any residual value, on a systematic basis over its remaining useful life.

Goodwill is reviewed for impairment annually or more frequently if events or changes in circumstances indicate the recoverable amount of the group of CGUs to which the goodwill relates should be assessed. In assessing whether goodwill has been impaired, the carrying amount of the group of CGUs to which goodwill has been allocated is compared with its recoverable amount. Where the recoverable amount of the group of CGUs is less than the carrying amount (including goodwill), an impairment loss is recognized. An impairment loss recognized for goodwill is not reversed in a subsequent period.

The group assesses investments in equity-accounted entities for impairment whenever there is objective evidence that the investment is impaired, after recognizing its share of any losses of the equity-accounted entity itself. If any such objective evidence of impairment exists, the carrying amount of the investment is compared with its recoverable amount, being the higher of its fair value less costs of disposal and value in use. If the carrying amount exceeds the recoverable amount, the investment is written down to its recoverable amount.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

### Significant judgements and estimates: recoverability of asset carrying values

Determination as to whether, and by how much, an asset, CGU, or group of CGUs containing goodwill is impaired involves management estimates on highly uncertain matters such as the effects of inflation and deflation on operating expenses, discount rates, capital expenditure, carbon pricing (where applicable), production profiles, reserves and resources, and future commodity prices, including the outlook for global or regional market supply-and-demand conditions for crude oil, natural gas, power and refined products. Judgement is required when determining the appropriate grouping of assets into a CGU or the appropriate grouping of CGUs for impairment testing purposes. For example, individual oil and gas properties may form separate CGUs whilst certain oil and gas properties with shared infrastructure may be grouped together to form a single CGU. Alternative groupings of assets or CGUs may result in a different outcome from impairment testing. See Note 14 for details on how these groupings have been determined in relation to the impairment testing of goodwill.

As described above, the recoverable amount of an asset is the higher of its value in use and its fair value less costs of disposal. Fair value less costs of disposal may be determined based on expected sales proceeds or similar recent market transaction data.

Details of impairment charges and reversals recognized in the income statement are provided in Note 4 and details on the carrying amounts of assets are shown in Note 12, Note 14 and Note 15.

The estimates for assumptions made in impairment tests in 2022 relating to discount rates and oil and gas properties are discussed below. Changes in the economic environment including as a result of the energy transition or other facts and circumstances may necessitate revisions to these assumptions and could result in a material change to the carrying values of the group's assets within the next financial year.

#### Discount rates

For discounted cash flow calculations, future cash flows are adjusted for risks specific to the CGU. Value-in-use calculations are typically discounted using a pre-tax discount rate based upon the cost of funding the group derived from an established model, adjusted to a pre-tax basis and incorporating a market participant capital structure and country risk premiums. Fair value less costs of disposal discounted cash flow calculations use a post-tax discount rate.

The discount rates applied in impairment tests are reassessed each year and, in 2022, the post-tax discount rate was 7% (2021 6%) other than for low carbon energy assets. Where the CGU is located in a country that was judged to be higher risk an additional premium of 1% to 2% was reflected in the post-tax discount rate (2021 1% to 3%). The judgement of classifying a country as higher risk and the applicable premium takes into account various economic and geopolitical factors. The pre-tax discount rate, other than for low carbon energy assets, typically ranged from 7% to 18% (2021 7% to 15%) depending on the risk premium and applicable tax rate in the geographic location of the CGU. For low carbon energy assets where the risk profile of expected cash flows supports a lower rate, the post-tax discount rate for fair value less costs of disposal impairment tests was 6%.

#### Oil and natural gas properties

For oil and natural gas properties in the oil production & operations and gas & low carbon energy segments, expected future cash flows are estimated using management's best estimate of future oil and natural gas prices, production and reserves and certain resources volumes. Forecast cash flows include the impact of all approved emission reduction projects. The estimated future level of production in all impairment tests is based on assumptions about future commodity prices, production and development costs, field decline rates, current fiscal regimes and other factors.

In 2022, the group identified oil and gas properties in these segments with carrying amounts totalling $11,652 million (2021 $26,341 million) where the headroom, based on the most recent impairment test performed in the year on those assets, was less than or equal to 20% of the carrying value. A change in the discount rate, reserves, resources or the oil and gas price assumptions in the next financial year may result in a recoverable amount of one or more of these assets above or below the current carrying amount and therefore there is a risk of impairment reversals or charges in that period. Management considers that reasonably possible changes in the discount rate or forecast revenue, arising from a change in oil and natural gas prices and/or production could result in a material change in their carrying amounts within the next financial year, see Sensitivity analyses, below.

The recoverability of intangible exploration and appraisal expenditure is covered under Oil and natural gas exploration, appraisal and development expenditure above.

*Oil and natural gas prices*

The price assumptions used for value-in-use impairment testing are based on those used for investment appraisal. bp's carbon emissions cost assumptions and their interrelationship with oil and gas prices are described in 'Judgements and estimates made in assessing the impact of climate change and the transition to a lower carbon economy' on page 185. The investment appraisal price assumptions are recommended by the senior vice president economic & energy insights after considering a range of external price sets, and supply and demand profiles associated with various energy transition scenarios. They are reviewed and approved by management. As a result of the current uncertainty over the pace of transition to lower-carbon supply and demand and the social, political and environmental actions that will be taken to meet the goals of the Paris climate change agreement, the scenarios considered include those where those goals are met as well as those where they are not met.

During the year, bp's price assumptions applied in value-in-use impairment testing (in real 2021 terms) for Brent oil from 2024 up to 2030 was increased to $70 per barrel to reflect near term supply constraints before steadily declining to $45 per barrel by 2050 continuing to reflect the assumption that as the energy system decarbonises, falling oil demand will cause oil prices to decline. The price assumptions for Henry Hub gas up to 2035 and up to 2050 were increased to $4.00 per mmBtu and $3.50 per mmBtu respectively to reflect the increased demand for US gas production to offset reduced Russian gas flows. These price assumptions are derived from the central case investment appraisal assumptions, adjusted where applicable to reflect short-term market conditions (see page 28). A summary of the group's revised price assumptions for Brent oil and Henry Hub gas, applied in 2022 and 2021 in real 2021 terms, is provided below. The assumptions represent management's best estimate of future prices at the balance sheet date, which sit within the range of external scenarios considered as appropriate for the purpose. They are considered by bp to be in line with a range of transition paths consistent with the temperature goal of the Paris climate change agreement, of holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels. However, they do not correspond to any specific Paris-consistent scenario. An inflation rate of 2% (2021 2%) is applied to determine the price assumptions in nominal terms.

The majority of bp's reserves and resources that support the carrying value of the group's existing oil and gas properties are expected to be produced over the next 10 years.

The recoverability of deferred tax assets is also affected by the group's oil and natural gas price assumptions as these could impact the estimate of future taxable profits. See Note 9 for further information.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

| 2022 price assumptions | 2023 | 2025 | 2030 | 2040 | 2050 |
|---|---|---|---|---|---|
| Brent oil ($/bbl) | 77 | 70 | 70 | 58 | 45 |
| Henry Hub gas ($/mmBtu) | 4.00 | 4.00 | 4.00 | 3.50 | 3.50 |

| 2021 price assumptions | 2022 | 2025 | 2030 | 2040 | 2050 |
|---|---|---|---|---|---|
| Brent oil ($/bbl) | 71 | 61 | 61 | 56 | 46 |
| Henry Hub gas ($/mmBtu) | 4.08 | 3.06 | 3.06 | 3.06 | 2.80 |

Global oil production increased by 4.9% in 2022. Despite western sanctions on Russian oil exports, Russian export volumes remain at 97% of pre-invasion levels, as oil shipments to the EU and OECD Asian countries are redirected to China, India, and Türkiye. Global oil demand continued its post-COVID-19 recovery, increasing by 2.3% in 2022. Europe's energy crisis, a strong US dollar, and persistent COVID-19 lockdowns in China all contributed to slower energy demand growth and weaker oil demand growth. Brent increased by $30 per barrel in 2022 as a result of the rebound in oil demand and the oil risk premium associated with the Russia-Ukraine war. bp's long-term assumption for oil prices is lower than the 2022 price average, based on the judgement that, in the long term, oil demand is likely to fall so that the price levels needed to encourage sufficient investment to meet declining global oil demand is also lower.

US gas prices increased around two-thirds to $6.4 per mmBtu in 2022. The higher prices reflect much tighter demand supply balance for most of 2022. Through April, lower production particularly in Appalachia, depleted gas stocks to 90% of the five-year average, increasing prices. Thereafter, while production recovered, a record warm summer and lower coal stocks at power plants increased the call on gas fired generation, keeping demand strong and preventing gas stocks from rebuilding, This, was despite an outage at the Freeport LNG terminal since June reducing the demand for LNG exports. Further, industrial demand was further boosted by geopolitical disruptions that increased global product prices, favouring US firms due to relatively lower feedstock costs. Prices only moderated in the fourth quarter when growth in production and moderate weather allowed gas inventories to be replenished. The level of US gas prices in 2022 is above bp's long term price assumption based on the judgement of the price level required to incentivize new production.

*Oil and natural gas reserves*

In addition to oil and natural gas prices, significant technical and commercial assessments are required to determine the group's estimated oil and natural gas reserves. Reserves estimates are regularly reviewed and updated. Factors such as the availability of geological and engineering data, reservoir performance data, acquisition and divestment activity and drilling of new wells all impact on the determination of the group's estimates of its oil and natural gas reserves. bp bases its reserves estimates on the requirement of reasonable certainty with rigorous technical and commercial assessments based on conventional industry practice and regulatory requirements.

Reserves assumptions for value-in-use tests reflect the reserves and resources that management currently intend to develop. The recoverable amount of oil and gas properties is determined using a combination of inputs including reserves, resources and production volumes. Risk factors may be applied to reserves and resources which do not meet the criteria to be treated as proved or probable.

*Sensitivity analyses*

Management considers discount rates, oil and natural gas prices and production to be the key sources of estimation uncertainty in determining the recoverable amount of upstream oil and gas assets. The sensitivity analyses below, in addition to covering the key sources of estimation uncertainty, also indicate how the energy transition, potential future carbon emissions costs for operational GHG emissions and/or reduced demand for oil and gas may further impact forecast revenue cash inflows to a greater extent than currently anticipated in the group's value-in-use estimates for oil and gas CGUs, if carbon emissions costs were to be implemented as a deduction against revenue cash flows. The analyses therefore represent a net revenue sensitivity.

A change in net revenue from upstream oil and gas properties can arise either due to changes in oil and natural gas prices, carbon emissions costs/carbon prices, changes in oil and natural gas production, or a combination of these.

Management tested the impact of changes in net revenue cash flows in value-in-use impairment testing under the following sensitivity analyses: an increase in net revenues of 10% in all years up to 2030, 25% in all subsequent years to 2040 and 40% in all remaining years to 2050; and a decrease in net revenues of 25% in all years up to 2030, 50% in all subsequent years to 2040 and 60% in all remaining years to 2050.

Net revenue reductions of this magnitude in isolation could indicatively lead to a reduction in the carrying amount of bp's currently held upstream oil and gas properties in the range of $15-16 billion, which is approximately 14-15% of the net book value of property, plant and equipment as at 31 December 2022. If this net revenue reduction was due to reductions in prices in isolation, it reflects an indicative decrease in the carrying amount of using price assumptions for Brent oil trending broadly towards the bottom of the range of prices associated with the World Business Council for Sustainable Development (WBCSD) 'family' of scenarios considered to be consistent with limiting global average temperature to 1.5°C above pre-industrial levels. This 'family' of scenarios is also used in bp's TCFD scenario analysis (see page 50).

Net revenue increases of this magnitude in isolation could indicatively lead to an increase in the carrying amount of bp's currently held upstream oil and gas properties in the range of $1-2 billion, which is approximately 1-2% of the net book value of property, plant and equipment as at 31 December 2022. This potential increase in the carrying amount would arise due to reversals of previously recognized impairments and represents approximately half of the total impairment reversal capacity available at 31 December 2022. If this net revenue increase was due to increases in prices in isolation, it reflects an indicative increase in the carrying amount of using price assumptions for Brent oil trending broadly towards the top end until 2040, and then towards the mean average at 2050, of the range of prices associated with the WBCSD 'family' of scenarios considered to be consistent with limiting global average temperature to 1.5°C above pre-industrial levels. This 'family' of scenarios is also used in bp's TCFD scenario analysis.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

These sensitivity analyses do not, however, represent management's best estimate of any impairment charges or reversals that might be recognized as they do not fully incorporate consequential changes that may arise, such as changes in costs and business plans and phasing of development. For example, costs across the industry are more likely to decrease as oil and natural gas prices fall. The analyses also assume the impact of increases in carbon price on operational GHG emissions are fully absorbed as a decrease in net revenue (and vice versa) rather than reflecting how carbon prices or other carbon emissions costs may ultimately be incorporated by the market. The above sensitivity analyses therefore do not reflect a linear relationship between net revenue and value that can be extrapolated. The interdependency of these inputs and factors plus the diverse characteristics of the group's upstream oil and gas properties limits the practicability of estimating the probability or extent to which the overall recoverable amount is impacted by changes to the price assumptions or production volumes.

Management also tested the impact of a one percentage point change in the discount rate used for value-in-use impairment testing of upstream oil and gas properties. This level of change reflects past experience of a reasonable change in rate that could arise within the next financial year. If the discount rate was one percentage point higher across all tests performed, the net impairment reversal recognized in 2022 would have been approximately $0.5 billion lower. If the discount rate was one percentage point lower, the net impairment reversal recognized would have been approximately $0.5 billion higher.

#### Goodwill

Irrespective of whether there is any indication of impairment, bp is required to test annually for impairment of goodwill acquired in business combinations. The group carries goodwill of $12.0 billion on its balance sheet (2021 $12.4 billion), principally relating to the Atlantic Richfield, Burmah Castrol, Devon Energy and Reliance transactions. Of this, $7.2 billion relates to goodwill in the oil production & operations and gas & low carbon energy segments (2021 $7.6 billion), for which oil and gas price and production assumptions are key sources of estimation uncertainty. Sensitivities and additional information relating to impairment testing of goodwill in these segments are provided in Note 14.

### Inventories

Inventories, other than inventories held for short-term trading purposes, are stated at the lower of cost and net realizable value. Cost is typically determined by the first-in first-out method and comprises direct purchase costs, cost of production, transportation and manufacturing expenses. Net realizable value is determined by reference to prices existing at the balance sheet date, adjusted where the sale of inventories after the reporting period gives evidence about their net realizable value at the end of the period.

Inventories held for short-term trading purposes are stated at fair value less costs to sell and any changes in fair value are recognized in the income statement.

Supplies are valued at the lower of cost on a weighted-average basis and net realizable value.

### Leases

Agreements that convey the right to control the use of an identified asset for a period of time in exchange for consideration are accounted for as leases. The right to control is conveyed if bp has both the right to obtain substantially all of the economic benefits from, and the right to direct the use of, the identified asset throughout the period of use. An asset is identified if it is explicitly or implicitly specified by the agreement and any substitution rights held by the lessor over the asset are not considered substantive.

Agreements that convey the right to control the use of an intangible asset including rights to explore for or use hydrocarbons are not accounted for as leases. See significant accounting policy: intangible assets.

A lease liability is recognized on the balance sheet on the lease commencement date at the present value of future lease payments over the lease term. The discount rate applied is the rate implicit in the lease if readily determinable, otherwise an incremental borrowing rate is used. For the majority of the leases in the group, there is not sufficient information available to readily determine the rate implicit in the lease, and therefore the incremental borrowing rate is used. The incremental borrowing rate is determined based on factors such as the group's cost of borrowing, lessee legal entity credit risk, currency and lease term. The lease term is the non-cancellable period of a lease together with any periods covered by an extension option that bp is reasonably certain to exercise, or periods covered by a termination option that bp is reasonably certain not to exercise. The future lease payments included in the present value calculation are any fixed payments, payments that vary depending on an index or rate, payments due for the reasonably certain exercise of options and expected residual value guarantee payments. Repayments of principal are presented as financing cash flows and payments of interest are presented as operating cash flows.

Payments that vary based on factors other than an index or a rate such as usage, sales volumes or revenues are not included in the present value calculation and are recognized in the income statement and presented as operating cash flows. The lease liability is recognized on an amortized cost basis with interest expense recognized in the income statement over the lease term, except for where capitalized as exploration, appraisal or development expenditure.

The right-of-use asset is recognized on the balance sheet as property, plant and equipment at a value equivalent to the initial measurement of the lease liability adjusted for lease prepayments, lease incentives, initial direct costs and any restoration obligations. The right-of-use asset is depreciated typically on a straight-line basis over the lease term. The depreciation charge is recognized in the income statement except for where capitalized as exploration, appraisal or development expenditure. Right-of-use assets are assessed for impairment in line with the accounting policy for impairment of property, plant and equipment, intangible assets and goodwill.

Agreements may include both lease and non-lease components. Payments for lease and non-lease components are allocated on a relative stand-alone selling price basis except for leases of retail service stations where the group has elected not to separate non-lease payments from the calculation of the lease liability and right-of-use asset.

If the lease term at commencement of the agreement is less than 12 months, a lease liability and right-of-use asset are not recognized, and a lease expense is recognized in the income statement on a straight-line basis.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

If a significant event or change in circumstances, within the control of bp, arises that affects the reasonably certain lease term or there are changes to the lease payments, the present value of the lease liability is remeasured using the revised term and payments, with the right-of-use asset adjusted by an equivalent amount.

Modifications to a lease agreement beyond the original terms and conditions are accounted for as a re-measurement of the lease liability with a corresponding adjustment to the right-of-use asset. Any gain or loss on modification is recognized in the income statement. Modifications that increase the scope of the lease at a price commensurate with the stand-alone selling price are accounted for as a separate new lease.

The group recognizes the full lease liability, rather than its working interest share, for leases entered into on behalf of a joint operation if the group has the primary responsibility for making the lease payments. This may be the case if for example bp, as operator of the joint operation, is the sole signatory to the lease agreement. In such cases, bp's working interest share of the right-of-use asset is recognized if it is jointly controlled by the group and the other joint operators, and a receivable is recognized for the share of the asset transferred to the other joint operators. If bp is a non-operator, a payable to the operator is recognized if they have the primary responsibility for making the lease payments and bp has joint control over the right-of-use asset, otherwise no balances are recognized.

### Financial assets

Financial assets are recognized initially at fair value, normally being the transaction price. In the case of financial assets not measured at fair value through profit or loss, directly attributable transaction costs are also included. The subsequent measurement of financial assets depends on their classification, as set out below. The group derecognizes financial assets when the contractual rights to the cash flows expire or the rights to receive cash flows have been transferred to a third party and either substantially all of the risks and rewards of the asset have been transferred, or substantially all the risks and rewards of the asset have neither been retained nor transferred but control of the asset has been transferred. This includes the derecognition of receivables for which discounting arrangements are entered into.

The group classifies its financial asset debt instruments as measured at amortized cost, fair value through other comprehensive income or fair value through profit or loss. The classification depends on the business model for managing the financial assets and the contractual cash flow characteristics of the financial asset.

#### Financial assets measured at amortized cost

Financial assets are classified as measured at amortized cost when they are held in a business model the objective of which is to collect contractual cash flows and the contractual cash flows represent solely payments of principal and interest. Such assets are carried at amortized cost using the effective interest method if the time value of money is significant. Gains and losses are recognized in profit or loss when the assets are derecognized or impaired and when interest income is recognized using the effective interest method. This category of financial assets includes trade and other receivables.

#### Financial assets measured at fair value through other comprehensive income

Financial assets are classified as measured at fair value through other comprehensive income when they are held in a business model the objective of which is both to collect contractual cash flows and sell the financial assets, and the contractual cash flows represent solely payments of principal and interest.

#### Financial assets measured at fair value through profit or loss

Financial assets are classified as measured at fair value through profit or loss when the asset does not meet the criteria to be measured at amortized cost or fair value through other comprehensive income. Such assets are carried on the balance sheet at fair value with gains or losses recognized in the income statement. Derivatives, other than those designated as effective hedging instruments, are included in this category.

#### Investments in equity instruments

Investments in equity instruments are subsequently measured at fair value through profit or loss unless an election is made on an instrument-by-instrument basis to recognize fair value gains and losses in other comprehensive income.

#### Derivatives designated as hedging instruments in an effective hedge

Derivatives designated as hedging instruments in an effective hedge are carried on the balance sheet at fair value. The treatment of gains and losses arising from revaluation is described below in the accounting policy for derivative financial instruments and hedging activities.

#### Cash equivalents

Cash equivalents are short-term highly liquid investments that are readily convertible to known amounts of cash, are subject to insignificant risk of changes in value and generally have a maturity of three months or less from the date of acquisition. Cash equivalents are classified as financial assets measured at amortized cost or, in the case of certain money market funds, fair value through profit or loss.

#### Impairment of financial assets measured at amortized cost

The group assesses on a forward-looking basis the expected credit losses associated with financial assets measured at amortized cost at each balance sheet date. Expected credit losses are measured based on the maximum contractual period over which the group is exposed to credit risk. As lifetime expected credit losses are recognized for trade receivables and the tenor of substantially all other in-scope financial assets is less than 12 months there is no significant difference between the measurement of 12-month and lifetime expected credit losses for the group. The measurement of expected credit losses is a function of the probability of default, loss given default and exposure at default. The expected credit loss is estimated as the difference between the asset's carrying amount and the present value of the future cash flows the group expects to receive discounted at the financial asset's original effective interest rate. The carrying amount of the asset is adjusted, with the amount of the impairment gain or loss recognized in the income statement.

A financial asset or group of financial assets classified as measured at amortized cost is considered to be credit-impaired if there is reasonable and supportable evidence that one or more events that have a detrimental impact on the estimated future cash flows of the financial asset (or group of financial assets) have occurred. Financial assets are written off where the group has no reasonable expectation of recovering amounts due.

### Equity instruments

Instruments are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements. Instruments that cannot be settled in the group's own equity instruments and that include no contractual obligation to deliver cash or another financial asset or to exchange financial assets or financial liabilities with another entity that are potentially unfavourable are classified as equity. Equity instruments issued by the group are recognized at the proceeds received, net of directly attributable issue costs.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

### Financial liabilities

Financial liabilities are recognized when the group becomes party to the contractual provisions of the instrument. The group derecognizes financial liabilities when the obligation specified in the contract is discharged, cancelled or expired. The measurement of financial liabilities depends on their classification, as follows:

#### Financial liabilities measured at fair value through profit or loss

Financial liabilities that meet the definition of held for trading are classified as measured at fair value through profit or loss. Such liabilities are carried on the balance sheet at fair value with gains or losses recognized in the income statement. Derivatives, other than those designated as effective hedging instruments, are included in this category.

#### Derivatives designated as hedging instruments in an effective hedge

Derivatives designated as hedging instruments in an effective hedge are carried on the balance sheet at fair value. The treatment of gains and losses arising from revaluation is described below in the accounting policy for derivative financial instruments and hedging activities.

#### Financial liabilities measured at amortized cost

All other financial liabilities are initially recognized at fair value, net of directly attributable transaction costs. For interest-bearing loans and borrowings this is typically equivalent to the fair value of the proceeds received, net of issue costs associated with the borrowing.

After initial recognition, other financial liabilities are subsequently measured at amortized cost using the effective interest method. Amortized cost is calculated by taking into account any issue costs and any discount or premium on settlement. Gains and losses arising on the repurchase, settlement or cancellation of liabilities are recognized in interest and other income and finance costs respectively.

This category of financial liabilities includes trade and other payables and finance debt.

#### Significant judgement: supplier financing arrangements

The group's trade payables include some supplier arrangements that utilize letter of credit facilities. Judgement is required to assess the payables subject to these arrangements to determine whether they should continue to be classified as trade payables and give rise to operating cash flows or finance debt and financing cash flows. The criteria used in making this assessment include the payment terms for the amount due relative to terms commonly seen in the markets in which bp operates and whether the arrangements significantly change the nature of the liability. Liabilities subject to these arrangements with payment terms of up to approximately 60 days are generally considered to be trade payables and give rise to operating cash flows. At 31 December 2022, trade payables subject to these arrangements and this significant judgement included $9.5 billion (2021 $9.2 billion) payable to the providers of the letters of credit. See Note 29 - Liquidity risk for further information.

### Financial guarantees

The group issues financial guarantee contracts to make specified payments to reimburse holders for losses incurred if certain associates, joint ventures or third-party entities fail to make payments when due in accordance with the original or modified terms of a debt instrument such as a loan. The liability for a financial guarantee contract is initially measured at fair value and subsequently measured at the higher of the contract's estimated expected credit loss and the amount initially recognized less, where appropriate, cumulative amortization.

### Derivative financial instruments and hedging activities

The group uses derivative financial instruments to manage certain exposures to fluctuations in foreign currency exchange rates, interest rates and commodity prices, as well as for trading purposes. These derivative financial instruments are recognized initially at fair value on the date on which a derivative contract is entered into and subsequently remeasured at fair value. Derivatives are carried as assets when the fair value is positive and as liabilities when the fair value is negative.

Contracts to buy or sell a non-financial item (for example, oil, oil products, gas or power) that can be settled net in cash, with the exception of contracts that were entered into and continue to be held for the purpose of the receipt or delivery of a non-financial item in accordance with the group's expected purchase, sale or usage requirements, are accounted for as financial instruments. Gains or losses arising from changes in the fair value of derivatives that are not designated as effective hedging instruments are recognized in the income statement.

If, at inception of a contract, the valuation cannot be supported by observable market data, any gain or loss determined by the valuation methodology is not recognized in the income statement but is deferred on the balance sheet and is commonly known as a 'day-one gain or loss'. This deferred gain or loss is recognized in the income statement over the life of the contract until substantially all the remaining contractual cash flows can be valued using observable market data at which point any remaining deferred gain or loss is recognized in the income statement. Changes in valuation subsequent to the initial valuation at inception of a contract are recognized immediately in the income statement.

For the purpose of hedge accounting, hedges are classified as:

- Fair value hedges when hedging exposure to changes in the fair value of a recognized asset or liability.
- Cash flow hedges when hedging exposure to variability in cash flows that is attributable to either a particular risk associated with a recognized asset or liability or a highly probable forecast transaction.

Hedge relationships are formally designated and documented at inception, together with the risk management objective and strategy for undertaking the hedge. The documentation includes identification of the hedging instrument, the hedged item or transaction, the nature of the risk being hedged, the existence at inception of an economic relationship and subsequent measurement of the hedging instrument's effectiveness in offsetting the exposure to changes in the hedged item's fair value or cash flows attributable to the hedged risk, the hedge ratio and sources of hedge ineffectiveness. Hedges meeting the criteria for hedge accounting are accounted for as follows:

#### Fair value hedges

The change in fair value of a hedging derivative is recognized in profit or loss. The change in the fair value of the hedged item attributable to the risk being hedged is recorded as part of the carrying value of the hedged item and is also recognized in profit or loss, where it offsets. The group applies fair value hedge accounting when hedging interest rate risk and certain currency risks on fixed rate finance debt.

Fair value hedge accounting is discontinued only when the hedging relationship or a part thereof ceases to meet the qualifying criteria. This includes when the risk management objective changes or when the hedging instrument is sold, terminated or exercised. The accumulated adjustment to the carrying amount of a hedged item at such time is then amortized prospectively to profit or loss as finance interest expense over the hedged item's remaining period to maturity.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

### Cash flow hedges

The effective portion of the gain or loss on a cash flow hedging instrument is reported in other comprehensive income, while the ineffective portion is recognized in profit or loss. Amounts reported in other comprehensive income are reclassified to the income statement when the hedged transaction affects profit or loss.

Where the hedged item is a highly probably forecast transaction that results in the recognition of a non-financial asset or liability, such as a forecast foreign currency transaction for the purchase of property, plant and equipment, the amounts recognized within other comprehensive income are transferred to the initial carrying amount of the non-financial asset or liability. Where the hedged item is an equity investment, the amounts recognized in other comprehensive income remain in the separate component of equity until the hedged cash flows affect profit or loss or when accounting under the equity method is discontinued. Where the hedged item is recognized directly in profit or loss, the amounts recognized in other comprehensive income are reclassified to production and manufacturing expenses or sales and other operating revenues as appropriate.

Cash flow hedge accounting is discontinued only when the hedging relationship or a part thereof ceases to meet the qualifying criteria. This includes when the designated hedged forecast transaction or part thereof is no longer considered to be highly probable to occur, or when the hedging instrument is sold, terminated or exercised without replacement or rollover. When cash flow hedge accounting is discontinued amounts previously recognized within other comprehensive income remain in equity until the forecast transaction occurs and are reclassified to profit or loss or transferred to the initial carrying amount of a non-financial asset or liability as above. If the forecast transaction is no longer expected to occur, amounts previously recognized within other comprehensive income will be immediately reclassified to profit or loss.

### Costs of hedging

The foreign currency basis spread of cross-currency interest rate swaps are excluded from hedge designations and accounted for as costs of hedging. Changes in fair value of the foreign currency basis spread are recognized in other comprehensive income to the extent that they relate to the hedged item.

For time-period related hedged items, the amount recognized in other comprehensive income is amortized to profit or loss on a straight line basis over the term of the hedging relationship.

### Fair value measurement

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. The group categorizes assets and liabilities measured at fair value into one of three levels depending on the ability to observe inputs employed in their measurement. Level 1 inputs are quoted prices in active markets for identical assets or liabilities. Level 2 inputs are inputs that are observable, either directly or indirectly, other than quoted prices included within level 1 for the asset or liability. Level 3 inputs are unobservable inputs for the asset or liability reflecting significant modifications to observable related market data or bp's assumptions about pricing by market participants.

### Significant estimate and judgement: derivative financial instruments

In some cases the fair values of derivatives are estimated using internal models due to the absence of quoted prices or other observable, market-corroborated data. This primarily applies to the group's longer-term derivative contracts. The majority of these contracts are valued using models with inputs that include price curves for each of the different products that are built up from available active market pricing data (including volatility and correlation) and modelled using the maximum available external information. Additionally, where limited data exists for certain products, prices are determined using historical and long-term pricing relationships. The use of alternative assumptions or valuation methodologies may result in significantly different values for these derivatives. A reasonably possible change in the price assumptions used in the models relating to index price would not have a material impact on net assets and the Group income statement primarily as a result of offsetting movements between derivative assets and liabilities.

In some cases, judgement is required to determine whether contracts to buy or sell commodities meet the definition of a derivative or to determine appropriate presentation and classification of transactions in certain cases. In particular, contracts to buy and sell LNG are not considered to meet the definition as they are not considered capable of being net settled due to a lack of liquidity in the LNG market and the inability or lack of history of net settlement and are accounted for on an accruals basis, rather than as a derivative. Under IFRS, bp fair values the derivative financial instruments used to risk-manage the LNG contracts themselves, resulting in a measurement mismatch.

For more information, including the carrying amounts of level 3 derivatives, see Note 30.

### Offsetting of financial assets and liabilities

Financial assets and liabilities are presented gross in the balance sheet unless both of the following criteria are met: the group currently has a legally enforceable right to set off the recognized amounts; and the group intends to either settle on a net basis or realize the asset and settle the liability simultaneously. A right of set off is the group's legal right to settle an amount payable to a creditor by applying against it an amount receivable from the same counterparty. The relevant legal jurisdiction and laws applicable to the relationships between the parties are considered when assessing whether a current legally enforceable right to set off exists.

### Provisions and contingencies

Provisions are recognized when the group has a present legal or constructive obligation as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. Where appropriate, the future cash flow estimates are adjusted to reflect risks specific to the liability.

If the effect of the time value of money is material, provisions are determined by discounting the expected future cash flows at a pre-tax risk-free rate that reflects current market assessments of the time value of money. Where discounting is used, the increase in the provision due to the passage of time is recognized within finance costs. Provisions are discounted using a nominal discount rate of 3.5% (2021 2.0%).

Provisions are split between amounts expected to be settled within 12 months of the balance sheet date (current) and amounts expected to be settled later (non-current).

Contingent liabilities are possible obligations whose existence will only be confirmed by future events not wholly within the control of the group, or present obligations where it is not probable that an outflow of resources will be required or the amount of the obligation cannot be measured with sufficient reliability. Contingent liabilities are not recognized in the consolidated financial statements but are disclosed, if material, unless the possibility of an outflow of economic resources is considered remote.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

### Decommissioning

Liabilities for decommissioning costs are recognized when the group has an obligation to plug and abandon a well, dismantle and remove a facility or an item of plant and to restore the site on which it is located, and when a reliable estimate of that liability can be made. Where an obligation exists for a new facility or item of plant, such as oil and natural gas production or transportation facilities, this liability will be recognized on construction or installation. Similarly, where an obligation exists for a well, this liability is recognized when it is drilled. An obligation for decommissioning may also crystallize during the period of operation of a well, facility or item of plant through a change in legislation or through a decision to terminate operations; an obligation may also arise in cases where an asset has been sold but the subsequent owner is no longer able to fulfil its decommissioning obligations, for example due to bankruptcy. The amount recognized is the present value of the estimated future expenditure determined in accordance with local conditions and requirements. The provision for the costs of decommissioning wells, production facilities and pipelines at the end of their economic lives is estimated using existing technology, at future prices, depending on the expected timing of the activity, and discounted using a nominal discount rate.

An amount equivalent to the decommissioning provision is recognized as part of the corresponding intangible asset (in the case of an exploration or appraisal well) or property, plant and equipment. The decommissioning portion of the property, plant and equipment is subsequently depreciated at the same rate as the rest of the asset. Other than the unwinding of discount on or utilization of the provision, any change in the present value of the estimated expenditure is reflected as an adjustment to the provision and the corresponding asset where that asset is generating or is expected to generate future economic benefits.

### Environmental expenditures and liabilities

Environmental expenditures that are required in order for the group to obtain future economic benefits from its assets are capitalized as part of those assets. Expenditures that relate to an existing condition caused by past operations that do not contribute to future earnings are expensed.

Liabilities for environmental costs are recognized when a clean-up is probable and the associated costs can be reliably estimated. Generally, the timing of recognition of these provisions coincides with the commitment to a formal plan of action or, if earlier, on divestment or on closure of inactive sites.

The amount recognized is the best estimate of the expenditure required to settle the obligation. Provisions for environmental liabilities have been estimated using existing technology, at future prices and discounted using a nominal discount rate.

### Emissions

Liabilities for emissions are recognized when the cumulative volumes of gases emitted by the group at the end of the reporting period exceed the allowances granted free of charge held for own use or a set baseline for emissions. The provision is measured at the best estimate of the expenditure required to settle the present obligation at the balance sheet date. It is based on the excess of actual emissions over the free allowances held or set baseline in tonnes (or other appropriate quantity) and is valued at the actual cost of any allowances that have been purchased and held for own use on a first-in-first-out (FIFO) basis, and, if insufficient allowances are held, for the remaining requirement on the basis of the spot market price of allowances at the balance sheet date. The majority of these provisions are typically settled within 12 months of the balance sheet date however certain schemes may have longer compliance periods. The cost of allowances purchased to cover a shortfall is recognized separately on the balance sheet as an intangible asset unless the emission allowances acquired or generated by the group are risk-managed by the shipping & trading function, then they are recognized on the balance sheet as inventory.

### Restructuring provisions

Restructuring provisions are recognized where a detailed formal plan exists, and a valid expectation of risk of redundancy has been made to those affected but where the specific outcomes remain uncertain. Where formal redundancy offers have been made, the obligations for those amounts are reported as payables and, if not, as provisions if unpaid at the year-end.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

### Significant judgements and estimates: provisions

The group holds provisions for the future decommissioning of oil and natural gas production facilities and pipelines at the end of their economic lives. The largest decommissioning obligations facing bp relate to the plugging and abandonment of wells and the removal and disposal of oil and natural gas platforms and pipelines around the world. Most of these decommissioning events are many years in the future and the precise requirements that will have to be met when the removal event occurs are uncertain. Decommissioning technologies and costs are constantly changing, as are political, environmental, safety and public expectations. The timing and amounts of future cash flows are subject to significant uncertainty and estimation is required in determining the amounts of provisions to be recognized. Any changes in the expected future costs are reflected in both the provision and, where still recognized, the asset.

If oil and natural gas production facilities and pipelines are sold to third parties, judgement is required to assess whether the new owner will be unable to meet their decommissioning obligations, whether bp would then be responsible for decommissioning, and if so the extent of that responsibility. This typically requires assessment of the local legal requirements and the financial standing of the owner. If the standing deteriorates significantly, for example, bankruptcy of the owner, a provision may be required. The group has assessed that $0.8 billion of decommissioning provisions should be recognized as at 31 December 2022 (2021 $0.5 billion) for assets previously sold to third parties where the sale transferred the decommissioning obligation to the new owner. See Note 33 for further information.

Decommissioning provisions associated with downstream refineries are generally not recognized, as the potential obligations cannot be measured, given their indeterminate settlement dates. Obligations may arise if refineries cease manufacturing operations and any such obligations would be recognized in the period when sufficient information becomes available to determine potential settlement dates. See Note 33 for further information.

The group performs periodic reviews of its downstream refineries for any changes in facts and circumstances including those relating to the energy transition, that might require the recognition of a decommissioning provision. Portfolio strength and flexibility are such that the point of cessation of manufacturing at the group's operating refineries cannot yet be reliably determined for the purposes of determining a decommissioning provision.

The provision for environmental liabilities is estimated based on current legal and constructive requirements, technology, price levels and expected plans for remediation. Actual costs and cash outflows can differ from current estimates because of changes in laws and regulations, public expectations, prices, discovery and analysis of site conditions and changes in clean-up technology.

The timing and amount of future expenditures relating to decommissioning and environmental liabilities are reviewed annually. The interest rate used in discounting the cash flows is reviewed quarterly. The nominal interest rate used to determine the balance sheet obligations at the end of 2022 was 3.5% (2021 2.0%), which was based on long-dated US government bonds. The weighted average period over which decommissioning and environmental costs are generally expected to be incurred is estimated to be approximately 17 years (2021 17 years) and 6 years (2021 6 years) respectively. Costs at future prices are typically determined by applying an inflation rate of 1.5% (2021 1.5%) to decommissioning costs and 2% (2021 2%) for all other provisions. A lower rate is typically applied to decommissioning as certain costs are expected to remain fixed at current or past prices.

The estimated phasing of undiscounted cash flows in real terms for upstream decommissioning is approximately $5.6 billion (2021 $5.3 billion) within the next 10 years, $5.3 billion (2021 $6.9 billion) in 10 to 20 years and the remainder of approximately $6.0 billion (2021 $6.0 billion) after 20 years. The timing and amount of decommissioning cash flows are inherently uncertain and therefore the phasing is management's current best estimate but may not be what will ultimately occur.

Further information about the group's provisions is provided in Note 23. Changes in assumptions in relation to the group's provisions could result in a material change in their carrying amounts within the next financial year. A 1.0 percentage point increase in the nominal discount rate applied could decrease the group's provision balances by approximately $1.8 billion (2021 $2.6 billion). The pre-tax impact on the group income statement would be a credit of approximately $0.5 billion (2021 $0.7 billion). This level of change reflects past experience of a reasonable change in rate that could arise within the next financial year.

The discounting impact on the group's decommissioning provisions for oil and gas properties in the oil productions & operations and gas & low carbon energy segments of a two-year change in the timing of expected future decommissioning expenditures is approximately $0.5 billion (2021 $0.2 billion). Management currently does not consider a change of greater than two years to be reasonably possible in the next financial year and therefore the timing of upstream decommissioning expenditure is not a key source of estimation uncertainty.

If all expected future decommissioning expenditures were 10% higher, then these decommissioning provisions would increase by approximately $1.2 billion (2021 $1.6 billion) and a pre-tax charge of approximately $0.3 billion (2021 $0.4 billion) would be recognized. A one percentage point increase in the inflation rate applied to upstream decommissioning costs to determine the nominal cash flows could increase the decommissioning provision by approximately $2.0 billion (2021 $2.9 billion) with a pre-tax charge of approximately $0.5 billion (2021 $0.7 billion).

As described in Note 33, the group is subject to claims and actions for which no provisions have been recognized. The facts and circumstances relating to particular cases are evaluated regularly in determining whether a provision relating to a specific litigation should be recognized or revised. Accordingly, significant management judgement relating to provisions and contingent liabilities is required, since the outcome of litigation is difficult to predict.

### Employee benefits

Wages, salaries, bonuses, social security contributions, paid annual leave and sick leave are accrued in the period in which the associated services are rendered by employees of the group. Deferred bonus arrangements that have a vesting date more than 12 months after the balance sheet date are valued on an actuarial basis using the projected unit credit method and amortized on a straight-line basis over the service period until the award vests. The accounting policies for share-based payments and for pensions and other post-retirement benefits are described below.

### Share-based payments

#### Equity-settled transactions

The cost of equity-settled transactions with employees is measured by reference to the fair value of the equity instruments on the date on which they are granted and is recognized as an expense over the vesting period, which ends on the date on which the employees become fully entitled to the award. A corresponding credit is recognized within equity. Fair value is determined by using an appropriate, widely used valuation model. In valuing equity-settled transactions, no account is taken of any vesting conditions, other than conditions linked to the price of the shares of the company (market conditions). Non-vesting conditions, such as the condition that employees contribute to a savings-related plan, are taken into account in the grant-date fair value, and failure to meet a non-vesting condition, where this is within the control of the employee is treated as a cancellation and any remaining unrecognized cost is expensed.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

For other equity-settled share-based payment transactions, the goods or services received and the corresponding increase in equity are measured at the fair value of the goods or services received unless their fair value cannot be reliably estimated. If the fair value of the goods and services received cannot be reliably estimated, the transaction is measured by reference to the fair value of the equity instruments granted.

#### Cash-settled transactions

The cost of cash-settled transactions is recognized as an expense over the vesting period, measured by reference to the fair value of the corresponding liability which is recognized on the balance sheet. The liability is remeasured at fair value at each balance sheet date until settlement, with changes in fair value recognized in the income statement.

### Pensions and other post-retirement benefits

The cost of providing benefits under the group's defined benefit plans is determined separately for each plan using the projected unit credit method, which attributes entitlement to benefits to the current period to determine current service cost and to the current and prior periods to determine the present value of the defined benefit obligation. Past service costs, resulting from either a plan amendment or a curtailment (a reduction in future obligations as a result of a material reduction in the plan membership), are recognized immediately when the company becomes committed to a change.

Net interest expense relating to pensions and other post-retirement benefits, which is recognized in the income statement, represents the net change in present value of plan obligations and the value of plan assets resulting from the passage of time, and is determined by applying the discount rate to the present value of the benefit obligation at the start of the year, and to the fair value of plan assets at the start of the year, taking into account expected changes in the obligation or plan assets during the year.

Remeasurements of the defined benefit liability and asset, comprising actuarial gains and losses, and the return on plan assets (excluding amounts included in net interest described above) are recognized within other comprehensive income in the period in which they occur and are not subsequently reclassified to profit and loss.

The defined benefit pension plan surplus or deficit recognized on the balance sheet for each plan comprises the difference between the present value of the defined benefit obligation (using a discount rate based on high quality corporate bonds) and the fair value of plan assets out of which the obligations are to be settled directly. Fair value is based on market price information and, in the case of quoted securities, is the published bid price. Defined benefit pension plan surpluses are only recognized to the extent they are recoverable, either by way of a refund from the plan or reductions in future contributions to the plan.

Contributions to defined contribution plans are recognized in the income statement in the period in which they become payable.

#### Significant estimate: pensions and other post-retirement benefits

Accounting for defined benefit pensions and other post-retirement benefits involves making significant estimates when measuring the group's pension plan surpluses and deficits. These estimates require assumptions to be made about many uncertainties.

Pensions and other post-retirement benefit assumptions are reviewed by management at the end of each year. These assumptions are used to determine the projected benefit obligation at the year end and hence the surpluses and deficits recorded on the group's balance sheet and pension and other post-retirement benefit expense for the following year.

The assumptions that are the most significant to the amounts reported are the discount rate, inflation rate and mortality levels. Assumptions about these variables are based on the environment in each country. The assumptions used vary from year to year, with resultant effects on future net income and net assets. Changes to some of these assumptions, in particular the discount rate and inflation rate, could result in material changes to the carrying amounts of the group's pension and other post-retirement benefit obligations within the next financial year, in particular for the UK, US and Eurozone plans. Any differences between these assumptions and the actual outcome will also affect future net income and net assets.

The values ascribed to these assumptions and a sensitivity analysis of the impact of changes in the assumptions on the benefit expense and obligation used are provided in Note 24.

### Income taxes

Income tax expense represents the sum of current tax and deferred tax.

Income tax is recognized in the income statement, except to the extent that it relates to items recognized in other comprehensive income or directly in equity, in which case the related tax is recognized in other comprehensive income or directly in equity.

Current tax is based on the taxable profit for the period. Taxable profit differs from net profit as reported in the income statement because it is determined in accordance with the rules established by the applicable taxation authorities. It therefore excludes items of income or expense that are taxable or deductible in other periods as well as items that are never taxable or deductible. The group's liability for current tax is calculated using tax rates and laws that have been enacted or substantively enacted by the balance sheet date.

Deferred tax is provided, using the liability method, on temporary differences at the balance sheet date between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes. Deferred tax liabilities are recognized for all taxable temporary differences except:

- Where the deferred tax liability arises on the initial recognition of goodwill.
- Where the deferred tax liability arises on the initial recognition of an asset or liability in a transaction that is not a business combination, at the time of the transaction, affects neither accounting profit nor taxable profit or loss and, at the time of the transaction, does not give rise to equal taxable and deductible temporary differences.
- In respect of taxable temporary differences associated with investments in subsidiaries and associates and interests in joint arrangements, where the group is able to control the timing of the reversal of the temporary differences and it is probable that the temporary differences will not reverse in the foreseeable future.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

Deferred tax assets are recognized for deductible temporary differences, carry-forward of unused tax credits and unused tax losses, to the extent that it is probable that taxable profit will be available against which the deductible temporary differences and the carry-forward of unused tax credits and unused tax losses can be utilized, except where the deferred tax asset relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination, at the time of the transaction, affects neither accounting profit nor taxable profit or loss and, at the time of the transaction, does not give rise to equal taxable and deductive temporary differences.

In respect of deductible temporary differences associated with investments in subsidiaries and associates and interests in joint arrangements, deferred tax assets are recognized only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilized.

The carrying amount of deferred tax assets is reviewed at each balance sheet date and reduced to the extent that it is no longer probable or increased to the extent that it is probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilized.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the period when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the balance sheet date. Deferred tax assets and liabilities are not discounted.

Deferred tax assets and liabilities are offset only when there is a legally enforceable right to set off current tax assets against current tax liabilities and when the deferred tax assets and liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities where there is an intention to settle the current tax assets and liabilities on a net basis or to realize the assets and settle the liabilities simultaneously.

Where tax treatments are uncertain, if it is considered probable that a taxation authority will accept the group's proposed tax treatment, income taxes are recognized consistent with the group's income tax filings. If it is not considered probable, the uncertainty is reflected within the carrying amount of the applicable tax asset or liability using either the most likely amount or an expected value, depending on which method better predicts the resolution of the uncertainty.

The computation of the group's income tax expense and liability involves the interpretation of applicable tax laws and regulations in many jurisdictions throughout the world. The resolution of tax positions taken by the group, through negotiations with relevant tax authorities or through litigation, can take several years to complete and in some cases it is difficult to predict the ultimate outcome. Therefore, judgement is required to determine whether provisions for income taxes are required and, if so, estimation is required of the amounts that could be payable.

In addition, the group has carry-forward tax losses and tax credits in certain taxing jurisdictions that are available to offset against future taxable profit. However, deferred tax assets are recognized only to the extent that it is probable that taxable profit will be available against which the unused tax losses or tax credits can be utilized. Management judgement is exercised in assessing whether this is the case and estimates are required to be made of the amount of future taxable profits that will be available. Such judgements are inherently impacted by estimates affecting future taxable profits such as oil and natural gas prices and decommissioning expenditure, see significant judgements and estimates: recoverability of asset carrying values and provisions.

### Significant judgement and estimate: taxation

The value of deferred tax assets and liabilities is an area involving inherent uncertainty and estimation and balances are therefore subject to risk of material change as a result of underlying assumptions and judgements used, in particular the forecast of future profitability used to determine the recoverability of deferred tax, for example future oil and gas prices, see 'Significant judgement and estimates - Recoverability of asset carrying values'. It is impracticable to disclose the extent of the possible effects of profitability assumptions on the group's deferred tax assets. It is reasonably possible that to the extent that actual outcomes differ from management's estimates, material income tax charges or credits, and material changes in current and deferred tax assets or liabilities, may arise within the next financial year and in future periods.

Judgement is required when determining whether a particular tax is an income tax or another type of tax (for example, a production tax). The attributes of the tax, including whether it is calculated on profits or another measure such as production or revenues, the extent of deductibility of costs and the interaction with existing income taxes, are considered in determining the classification of the tax. Accounting for deferred tax is applied to income taxes as described above but is not applied to other types of taxes; rather such taxes are recognized in the income statement in accordance with the applicable accounting policy such as Provisions and contingencies.

This judgement is considered significant only in relation to the group's taxes payable under the fiscal terms of bp's onshore concession in Abu Dhabi. These are principally reported as income taxes rather than as production taxes.

For more information see Note 9 and Note 33.

### Customs duties and sales taxes

Customs duties and sales taxes that are passed on or charged to customers are excluded from revenues and expenses. Assets and liabilities are recognized net of the amount of customs duties or sales tax except:

- Customs duties or sales taxes incurred on the purchase of goods and services which are not recoverable from the taxation authority are recognized as part of the cost of acquisition of the asset.
- Receivables and payables are stated with the amount of customs duty or sales tax included.

The net amount of sales tax recoverable from, or payable to, the taxation authority is included within receivables or payables in the balance sheet.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

### Own equity instruments – treasury shares

The group's holdings in its own equity instruments are shown as deductions from shareholders' equity. Treasury shares represent bp shares repurchased and available for specific and limited purposes. For accounting purposes, shares held in Employee Share Ownership Plans (ESOPs) to meet the future requirements of the employee share-based payment plans are treated in the same manner as treasury shares and are, therefore, included in the consolidated financial statements as treasury shares. The cost of treasury shares subsequently sold or reissued is calculated on a weighted-average basis. Consideration, if any, received for the sale of such shares is also recognized in equity. No gain or loss is recognized in the income statement on the purchase, sale, issue or cancellation of equity shares. Shares repurchased under the share buy-back programme which are immediately cancelled are not shown as treasury shares, but are shown as a deduction from the profit and loss account reserve in the group statement of changes in equity.

### Revenue and other income

Revenue from contracts with customers is recognized when or as the group satisfies a performance obligation by transferring control of a promised good or service to a customer. The transfer of control of oil, natural gas, natural gas liquids, LNG, petroleum and chemical products, and other items usually coincides with title passing to the customer and the customer taking physical possession. The group principally satisfies its performance obligations at a point in time; the amounts of revenue recognized relating to performance obligations satisfied over time are not significant.

When, or as, a performance obligation is satisfied, the group recognizes as revenue the amount of the transaction price that is allocated to that performance obligation. The transaction price is the amount of consideration to which the group expects to be entitled. The transaction price is allocated to the performance obligations in the contract based on standalone selling prices of the goods or services promised.

Contracts for the sale of commodities are typically priced by reference to quoted prices. Revenue from term commodity contracts is recognized based on the contractual pricing provisions for each delivery. Certain of these contracts have pricing terms based on prices at a point in time after delivery has been made. Revenue from such contracts is initially recognized based on relevant prices at the time of delivery and subsequently adjusted as appropriate. All revenue from these contracts, both that recognized at the time of delivery and that from post-delivery price adjustments, is disclosed as revenue from contracts with customers.

Sales and purchase of commodities accounted for under IFRS 15 are presented on a gross basis in Revenue from contracts with customers and Purchases respectively. Physically settled derivatives which represent trading or optimization activities are presented net alongside financially settled derivative contracts in Other operating revenues within Sales and other operating income. Certain physically settled sale and purchase derivative contracts which are not part of trading and optimization activities are presented gross within Other operating revenues and Purchases respectively. Changes in the fair value of derivative assets and liabilities prior to physical delivery are also classified as other operating revenues.

Physical exchanges with counterparties in the same line of business in order to facilitate sales to customers are reported net, as are sales and purchases made with a common counterparty, as part of an arrangement similar to a physical exchange.

Where the group acts as agent on behalf of a third party to procure or market energy commodities, any associated fee income is recognized but no purchase or sale is recorded.

Interest income is recognized as the interest accrues (using the effective interest rate, that is, the rate that exactly discounts estimated future cash receipts through the expected life of the financial instrument to the net carrying amount of the financial asset).

Dividend income from investments is recognized when the shareholders' right to receive the payment is established.

Contract asset and contract liability balances are included within amounts presented for trade receivables and other payables respectively.

### Finance costs

Finance costs directly attributable to the acquisition, construction or production of qualifying assets, which are assets that necessarily take a substantial period of time to get ready for their intended use, are added to the cost of those assets until such time as the assets are substantially ready for their intended use. All other finance costs are recognized in the income statement in the period in which they are incurred.

### Updates to significant accounting policies

#### Impact of new International Financial Reporting Standards

There are no new or amended standards or interpretations adopted during the year that have a significant impact on the consolidated financial statements.

#### Impact of new International Financial Reporting Standards - Not yet adopted

The following pronouncements from the IASB have not been adopted by the group in these financial statements as they will only become effective for future financial reporting periods. There are no other standards, amendments or interpretations in issue but not yet adopted that the directors anticipate will have a material effect on the reported income or net assets of the group.

##### IFRS 17 ' Insurance Contracts'

IFRS 17 'Insurance Contracts' provides a new general model for accounting for contracts where the issuer accepts significant insurance risk from another party and agrees to compensate that party if a future uncertain event adversely affects them. IFRS 17 replaces IFRS 4 'Insurance Contracts' and will be effective for bp for the financial reporting period commencing 1 January 2023. The standard has been endorsed by the UK and the EU. The new standard is not expected to have a material effect on bp's net assets as at 1 January 2023 or 1 January 2022.

#### Other changes to significant accounting policies

##### Change in segmentation

As a result of bp's decision to exit its shareholding in Rosneft on 27 February 2022, the group has ceased to report Rosneft as a separate segment in its financial reporting for 2022. Rosneft results up to 27 February 2022 are included within other businesses & corporate (OB&C), and 2021 and 2020 comparatives have been restated to include the Rosneft segment as per the table below:

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

| | | | | | | $ million |
|---|---|---|---|---|---|---|
| | | | 2021 | | | 2020 |
| | OB&C (as previously reported) | Rosneft (as previously reported) | OB&C restated | OB&C (as previously reported) | Rosneft (as previously reported) | OB&C restated |
| Profit (loss) before interest and tax | (2,777) | 2,688 | (89) | (579) | (238) | (817) |
| Inventory holding (gains) losses* | — | (259) | (259) | — | 89 | 89 |
| **RC profit (loss) before interest and tax** | (2,777) | 2,429 | (348) | (579) | (149) | (728) |
| Net (favourable) adverse impact of adjusting items | 1,394 | 291 | 1,685 | (303) | 205 | (98) |
| **Underlying RC profit (loss) before interest and tax** | (1,383) | 2,720 | 1,337 | (882) | 56 | (826) |
| Taxation on an underlying RC basis | 294 | (269) | 25 | 37 | (3) | 34 |
| **Underlying RC profit (loss) before interest** | (1,089) | 2,451 | 1,362 | (845) | 53 | (792) |

## 2. Non-current assets held for sale

The carrying amount of assets classified as held for sale at 31 December 2022 is $1,242 million (2021 $1,652 million), with associated liabilities of $321 million (2021 $359 million).

### gas & low carbon energy

On 7 September 2022, bp announced that it had agreed to sell its upstream business in Algeria to Eni. The sale completed on 28 February 2023. Assets of $511 million and associated liabilities of $48 million were classified as held for sale in the group balance sheet at 31 December 2022.

### customers & products

On 8 August 2022, bp announced an agreement to sell its 50% interest in the bp-Husky Toledo refinery in Ohio US, to Cenovus Energy, its partner in the facility. Following a fire at the refinery, it has been shut down since 20 September 2022. Assets of $731 million and associated liabilities of $273 million were classified as held for sale in the group balance sheet at 31 December 2022. The sale completed on 28 February 2023.

Transactions that have been classified as held for sale during 2022, but were completed by 31 December 2022, are described below.

### oil production & operations

On 12 June 2022, bp entered into an agreement to sell its 50% interest in the Sunrise oil sands project in Canada to Cenovus Energy Inc. for C$600 million (Canadian dollars) cash (subject to customary closing adjustments), up to C$600 million of contingent consideration expiring after two years and Cenovus's 35% position in the undeveloped Bay du Nord project offshore Canada. The transaction closed on 31 August 2022.

On 11 March 2022, bp and Eni signed an agreement to form Azule Energy, an independent incorporated 50:50 joint venture, through the combination of the two companies' Angolan businesses. The transaction closed on 1 August 2022 and, from that date, bp reported an equity accounted investment in Azule Energy. This investment was initially recognized at a fair value of $4,922 million (net of deferred gain) and the transaction resulted in a non-taxable accounting gain of $1,932 million and a deferred gain of the same amount that will be recognized over time as the Azule Energy assets are depreciated.

The assets held for sale balance at 31 December 2021 consisted of assets of $1,009 million and associated liabilities of $333 million relating to the agreement to establish Basra Energy Company (BECL) between bp and PetroChina, an incorporated entity, to own and manage the companies' interests in the Rumaila field in Iraq. The transaction closed on 1 June 2022 and bp now reports an equity accounted investment in BECL.

In addition, at 31 December 2021, $595 million of bp's investment in Aker BP was classified as held for sale in the group's balance sheet as a result of Aker BP's proposed acquisition of Lundin Energy for consideration in cash and new Aker BP shares which resulted in bp's 27.9% interest in Aker BP being diluted to a 15.9% interest in the combined company following the completion of the acquisition. The transaction completed on 30 June 2022 and a gain of $904 million was recognized.

The total assets and liabilities held for sale at 31 December 2022 and 2021, which are all in the gas & low carbon energy, oil production and operations and customers & products segments, are set out in the table below.

| | | $ million |
|---|---|---|
| | **2022** | 2021 |
| Property, plant and equipment | **693** | 35 |
| Goodwill | **58** | 137 |
| Investments in associates | **—** | 632 |
| Inventories | **255** | 152 |
| Cash | **35** | — |
| Trade and other receivables | **201** | 696 |
| **Assets classified as held for sale** | **1,242** | 1,652 |
| Trade and other payables | **(256)** | (238) |
| Lease liabilities | **(14)** | (74) |
| Provisions | **(36)** | (47) |
| Deferred tax liabilities | **(15)** | — |
| **Liabilities directly associated with assets classified as held for sale** | **(321)** | (359) |

## 3. Business combinations and other significant transactions

### Business combinations

The group undertook a number of business combinations during 2022. Total consideration paid in cash amounted to $3,671 million, offset by cash acquired of $141 million.

### Archaea Energy

On 28 December 2022, bp acquired 100% of the issued common stock of Archaea Energy Inc. a leading producer of renewable natural gas (RNG) in the US, that was listed on the New York Stock Exchange.

The acquisition expands bp's presence in the US biogas industry, enhancing its ability to support customers' decarbonization goals and progressing its aim to reduce the average lifecycle carbon intensity of the energy products it sells.

The total cash consideration for the transaction, all paid at completion, was $3,137 million.

The transaction has been accounted for as a business combination using the acquisition method. The provisional fair values of the identifiable assets and liabilities acquired, as at the date of acquisition, are shown in the table below. The intangible assets recognized are primarily the biogas rights agreements Archaea Energy has with landfill owners. The goodwill recognized reflects the part of the project development pipeline that did not qualify for separate recognition at the acquisition date and goodwill arising from recognition of deferred tax liabilities on fair value uplifts. The goodwill balance is not expected to be deductible for tax purposes.

The transaction included a step acquisition of the Mavrix LLC joint venture, which bp and Archaea Energy each held a 50% interest in prior to this transaction. The fair value of bp's interest in Mavrix LLC immediately before the acquisition date was $373 million and the gain recognized in 'Interest and other income' as a result of remeasuring this interest to fair value was $267 million.

| | $ million |
|---|---|
| | 2022 |
| **Assets** | |
| Property plant and equipment | 885 |
| Goodwill | 409 |
| Intangible assets | 3,475 |
| Investments in equity-accounted entities | 917 |
| Inventory | 42 |
| Trade and other receivables | 67 |
| Cash and cash equivalents | 107 |
| **Liabilities** | |
| Trade and other payables | (1,032) |
| Finance debt | (1,044) |
| Deferred tax liabilities | (293) |
| Provisions | (16) |
| Non-controlling interest | (7) |
| Total consideration | 3,510 |
| **Of which:** | |
| Cash | 3,137 |
| Fair value of previously held interest in Mavrix LLC | 373 |

As the transaction completed shortly prior to the end of the reporting period, the acquisition-date fair values of the assets and liabilities acquired are provisional. As we gain further understanding of the acquired assets and development pipeline, these fair values may be subsequently adjusted, including goodwill.

An analysis of the cash flows relating to the acquisition included within the cash flow statement for the full year 2022 is provided below.

| | $ million |
|---|---|
| | 2022 |
| Transaction costs of the acquisition (included in cash flows from operating activities) | 56 |
| Cash consideration paid, net of cash acquired (included in cash flows from investing activities) | 3,030 |
| **Total net cash outflow for the acquisition** | 3,086 |
| Settlement of acquired debt and warrants liabilities immediately after completion (included in cash flows from financing activities) | 1,044 |
| **Total net cash outflow related to the acquisition** | 4,130 |

The revenues and profit before tax generated by the acquired activities from the date of acquisition to 31 December 2022 were immaterial. If the business combination had taken place on 1 January 2022, it is estimated that the acquired activities would have generated revenues of $370 million and losses before tax of $169 million.

### Other acquisitions

The fair value of the net assets (including goodwill) recognized from other business combinations in the full year was $611 million. This principally related to the acquisitions of the Flat Ridge 2 onshore wind farm and EDF Energy Services in North America.

## 4. Disposals and impairment

The following amounts were recognized in the income statement in respect of disposals and impairments. The impacts of bp's decision taken on 27 February 2022 to exit its shareholding in Rosneft are included within this note - for further information see Note 1 - Significant judgements and estimate: investment in Rosneft and Note 17 Investments in associates.

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| **Gains on sale of businesses and fixed assets** | | | |
| gas & low carbon energy | **45** | 1,034 | — |
| oil production & operations | **3,446** | 869 | 360 |
| customers & products | **374** | (52) | 2,320 |
| other businesses & corporate | **1** | 25 | 194 |
| | **3,866** | 1,876 | 2,874 |

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| **Losses on sale of businesses and fixed assets, and closures** | | | |
| gas & low carbon energy | **—** | 1 | 9 |
| oil production & operations | **921** | 86 | 375 |
| customers & products | **177** | 142 | 296 |
| other businesses & corporate | **11,083** | 1 | 1 |
| | **12,181** | 230 | 681 |
| **Impairment losses** | | | |
| gas & low carbon energy | **745** | 834 | 6,214 |
| oil production & operations | **4,480** | 1,617 | 6,723 |
| customers & products | **1,874** | 962 | 840 |
| other businesses & corporate | **13,536** | 63 | 12 |
| | **20,635** | 3,476 | 13,789 |
| **Impairment reversals** | | | |
| gas & low carbon energy | **(1,333)** | (2,338) | (3) |
| oil production & operations | **(893)** | (2,479) | (86) |
| customers & products | **(68)** | (7) | — |
| other businesses & corporate | **—** | (3) | — |
| | **(2,294)** | (4,827) | (89) |
| **Impairment and losses on sale of businesses and fixed assets, and closures** | **30,522** | (1,121) | 14,381 |

### Disposals

Disposal proceeds and principal gains and losses on disposals by segment are described below.

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Proceeds from disposals of fixed assets | **709** | 1,145 | 491 |
| Proceeds from disposals of businesses, net of cash disposed | **1,841** | 5,812 | 4,989 |
| | **2,550** | 6,957 | 5,480 |
| **By business** | | | |
| gas & low carbon energy | **22** | 2,425 | 38 |
| oil production & operations | **1,935** | 3,022 | 1,157 |
| customers & products | **592** | 1,050 | 3,959 |
| other businesses & corporate | **1** | 460 | 326 |
| | **2,550** | 6,957 | 5,480 |

Proceeds from disposals of businesses in 2022 includes $669 million relating to the formation of Azule Energy through the combination of bp's and Eni's Angolan businesses and $310 million relating to the disposal of bp's interest in the Sunrise Oil Sands project in Canada. At 31 December 2022 deferred consideration relating to disposals amounted to $191 million receivable within one year (2021 $205 million and 2020 $1,291 million) and $194 million receivable after one year (2021 $823 million and 2020 $2,402 million). The amounts of deferred consideration are reported within Trade and other receivables in Receivables related to disposals in the group balance sheet - see Note 20 for further information. In addition, contingent consideration receivable relating to disposals amounted to $1,896 million at 31 December 2022 (2021 $1,917 million and 2020 $1,999 million). The contingent consideration at 31 December 2022 relates to the prior period disposals of our Alaskan business and certain assets in the North Sea and the disposal of our 50% interest in the Sunrise oil sands project in Canada. These amounts of contingent consideration are reported within Other investments on the group balance sheet - see Note 18 for further information.

### Gains and losses on sale of businesses and fixed assets, and closures

gas & low carbon energy

In 2021 gains on disposal of businesses and fixed assets were principally related to a $1,031 million gain on disposal of a 20% participating interest in Block 61 in Oman.

## 4. Disposals and impairment – continued

### oil production & operations

In 2022 gains principally related to a gain of $1,932 million arising from the contribution of bp's Angolan business to Azule Energy, a gain of $904 million related to the deemed disposal of 12% of the group's interest in Aker BP, an associate of bp, following completion of Aker BP's acquisition of Lundin Energy, and $349 million in relation to the disposal of the group's interest in the Rumaila field in Iraq to Basra Energy Company, an associate of bp.

Losses included $479 million of accumulated exchange losses previously charged to equity and taken to the income statement as a result of the decision to exit bp's other businesses with Rosneft within Russia.

In 2021 gains principally resulted from adjustments to disposals in prior periods. Gains include $171 million from the disposal of a 2.1% interest in Aker BP in the North Sea, $100 million from the disposal of certain exploration assets in Brazil, and $502 million fair value movements in relation to deferred and contingent consideration in relation to prior disposals in Alaska and the North Sea.

In 2020, gains principally resulted from adjustments to disposals in prior periods. Gains include $130 million from the disposal of our Alaska operations and interests and $166 million fair value movements in relation to deferred and contingent consideration in relation to the Alaska disposal and prior disposals in the North Sea. Losses included $134 million fair value movements in relation to deferred and contingent consideration arising from prior period disposals in the North Sea, $120 million in relation to the likely disposal of an exploration asset and $78 million from the disposal of certain properties in the US.

### customers & products

In 2022, gains principally relate to a gain of $268 million arising from the divestment of our Swiss retail assets. In 2020, gains principally resulted from the $2,300 million gain recognized on the disposal of our Petrochemicals business which completed in December 2020. The gain was adjusted in 2021 as a result of post settlement adjustments. In 2020, losses included $229 million in relation to cessation of manufacturing operations at the Kwinana Refinery following the decision to cease fuel production.

### other businesses and corporate

In 2022 the losses on disposal of businesses and fixed assets was $11,082 million in respect of the decision to exit our holding in Rosneft which resulted in the reclassification to the income statement of $10,372 million of accumulated exchange losses, a cash flow hedge reserve of $651 million relating to the original acquisition of Rosneft shares and bp's cumulative share of Rosneft's other comprehensive income of $59 million which were all previously charged to equity.

In 2020 the gain on disposal of businesses and fixed assets was principally in respect of the sale and leaseback of our St James's Square London headquarters.

Summarized financial information relating to the sale of businesses is shown in the table below.

The principal transactions categorized as a business disposal in 2022 were the formation of Azule Energy, the formation of Basra Energy Company and the sale of our 50% interest in the Sunrise oil sands project in Canada.

The principal transaction categorized as a business disposal in 2021 was the sale of a 20% participating interest from bp's 60% participating interest in Block 61 in Oman.

The principal transactions categorized as a business disposal in 2020 were the sales of our Petrochemical and Alaskan businesses.

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Non-current assets | **3,681** | 1,620 | 9,092 |
| Current assets | **2,972** | 69 | 1,539 |
| Non-current liabilities | **(1,869)** | (287) | (1,639) |
| Current liabilities | **(1,074)** | (3) | (782) |
| **Total carrying amount of net assets disposed** | **3,710** | 1,399 | 8,210 |
| Recycling of foreign exchange on disposal | **(26)** | 35 | (328) |
| Costs on disposal | **488** | (5) | 13 |
| | **4,172** | 1,429 | 7,895 |
| Gains (losses) on sale of businesses | **6,219** | 1,632 | 2,570 |
| **Total consideration** | **10,391** | 3,061 | 10,465 |
| Non-cash consideration | **(8,999)** | (108) | (219) |
| Consideration received (receivable) | **449** | 2,859 | (5,257) |
| **Proceeds from the sale of businesses, net of cash disposed[a]** | **1,841** | 5,812 | 4,989 |

[a] Proceeds are stated net of cash and cash equivalents disposed of $318 million (2021 $2 million and 2020 $101 million).

### Impairments

Impairment losses and impairment reversals in each segment are described below. For information on significant estimates and judgements made in relation to impairments see Impairment of property, plant and equipment, intangibles, goodwill and equity-accounted entities within Note 1. See also Note 12 and Note 15 for further information on impairments by asset category.

### gas & low carbon energy

The 2022 impairment loss of $745 million primarily relates to losses incurred in respect of certain assets in Mauritania & Senegal ($729 million) and principally arose as a result of increased forecast future expenditure. The 2022 impairment reversal of $1,333 million primarily relates to the Trinidad CGU ($1,331 million) and principally arose as a result of changes to the group's oil and gas price assumptions. The recoverable amount of all CGUs for which impairment charges or reversals were recognized in 2022 in total, based on their value in use, is $9,609 million.

## 4. Disposals and impairment – continued

The 2021 impairment loss of $834 million primarily relates to losses incurred in respect of certain assets in Mauritania & Senegal ($819 million) and principally arose as a result of increased forecast future expenditure. The 2021 impairment reversal of $2,338 million primarily relates to reversals in respect of producing assets in the KGD6 CGU in India ($1,229 million) and the Trinidad CGU ($600 million) and principally arose as a result of changes to the group's oil and gas price assumptions and re-assessment of reserves. The recoverable amount of these CGUs on which significant impairment charges or reversals were recognized, based on their value in use, is $7,365 million. The recoverable amount of all CGUs for which impairment charges or reversals were recognized in 2021 in total, based on their value in use, is $17,330 million.

The 2020 impairment loss of $6,214 million primarily relates to losses incurred in respect of producing and development assets in Trinidad ($2,416 million), Mauritania and Senegal ($1,909 million) and India ($1,313 million). Impairment losses were primarily driven by a reduction in bp's future oil and gas price assumptions and, to a lesser extent, certain technical reserves revisions. The recoverable amount of the impaired CGUs in total was $13,563 million.

### oil production & operations

Impairment losses and reversals in all years relate primarily to producing assets and, in 2022, equity accounted investments.

The 2022 impairment loss of $4,480 million primarily relates to impairment of the Pan American Energy Group S.L. joint venture as a result of expected portfolio changes ($2,900 million) and the decision to exit bp's other businesses with Rosneft within Russia ($1,043 million). The 2022 impairment reversal of $893 million principally relates to changes in price and reserves assumptions in the North Sea ($643 million). The recoverable amount of all CGUs for which impairment charges or reversals were recognized in 2022 in total, based on their value in use, is $7,831 million.

The 2021 impairment loss of $1,617 million principally relates to the decision to exit the Sunrise oil sands project in Canada ($1,109 million). The 2021 impairment reversals of $2,479 million principally arose as a result of changes to the group's oil and gas price assumptions and re-assessment of reserves. They include amounts in BPX Energy ($1,356 million) and the North Sea ($950 million). The principal CGU on which a significant impairment reversal was recognized was $982 million for Hawkville in BPX Energy. The recoverable amount of these CGUs on which significant impairment charges or reversals were recognized, based on their value in use, is $6,760 million. The recoverable amount of all CGUs for which impairment charges or reversals were recognized in 2021, based on their value in use, is $16,586 million.

The 2020 impairment loss of $6,723 million primarily relates to losses incurred in respect of producing and development assets in the UK North Sea ($2,796 million), the US ($2,744 million), and Canada ($865 million). Impairment losses were primarily driven by a reduction in bp's future oil and gas price assumptions and, to a lesser extent, certain technical reserves revisions.

### customers & products

The 2022 impairment loss of $1,874 million primarily relates to changes in economic assumptions in the Products business including the impairment of the Gelsenkirchen refinery in Germany ($1,366 million), and announced portfolio changes. The recoverable amounts of the CGUs were based on value-in-use calculations. The recoverable amount of all CGUs for which impairment charges or reversals were recognized in 2022 in total, based on their value in use, is $1,648 million.

2021 impairment loss of $962 million principally relates to announced portfolio changes in the products business ($595 million).

2020 impairment loss of $840 million principally relates to portfolio changes in the fuels business, including the conversion of Kwinana refinery to an import terminal. None of the impairment charges were individually material.

### Other businesses and corporate

The 2022 impairment loss of $13,536 million arises primarily a result of bp's decision to exit its shareholding in Rosneft ($13,479 million, including $528 million which relates to estimated earnings in the first two months of the year prior to the loss of significant influence). The recoverable amount of the CGU which comprises Rosneft is estimated to be $nil.

Impairment losses totalling $63 million and $12 million were recognized in 2021 and 2020 respectively.

## 5. Segmental analysis

The group's organizational structure reflects the various activities in which bp is engaged as well as how performance and resource allocation is evaluated by the chief operating decision maker. At 31 December 2022, bp has three reportable segments: Gas & low carbon energy, Oil production & operations, and Customers & products. Each are managed separately, with decisions taken for the segment as a whole, and represent a single operating segment that does not result from aggregating two or more segments.

Gas & low carbon energy comprises regions with upstream businesses that predominantly produce natural gas, gas marketing and trading activities and the group's solar, wind and hydrogen businesses.

Oil production & operations comprises regions with upstream activities that predominantly produce crude oil.

Customers & products comprises the group's customer-focused businesses, which includes convenience and retail fuels, EV charging, as well as Castrol, aviation and B2B and midstream. It also includes our products businesses, refining & oil trading, as well as our bioenergy businesses.

The group ceased to report Rosneft as a separate segment in the group's financial reporting for 2022 and its results are included in other businesses and corporate. See Note 1 - *Investment in Rosneft*. Comparative information for 2021 and 2020 has been restated to reflect the change in reportable segments.

Other businesses and corporate also comprises the group's shipping and treasury functions, and corporate activities worldwide.

The accounting policies of the operating segments are the same as the group's accounting policies described in Note 1. However, IFRS requires that the measure of profit or loss disclosed for each operating segment is the measure that is provided regularly to the chief operating decision maker for the purposes of performance assessment and resource allocation. For bp, this measure of profit or loss is replacement cost profit or loss before interest and tax which reflects the replacement cost of supplies by excluding from profit or loss before interest and tax inventory holding gains and losses[a]. Replacement cost profit or loss before interest and tax for the group is not a recognized measure under IFRS.

Sales between segments are made at prices that approximate market prices, taking into account the volumes involved. Segment revenues and segment results include transactions between business segments. These transactions and any unrealized profits and losses are eliminated on consolidation, unless unrealized losses provide evidence of an impairment of the asset transferred. Sales to external customers by region are based on the location of the group subsidiary which made the sale. The UK region includes the UK-based international activities of customers & products.

All surpluses and deficits recognized on the group balance sheet in respect of pension and other post-retirement benefit plans are allocated to Other businesses and corporate. However, the periodic expense relating to these plans is allocated to the operating segments based upon the business in which the employees work.

Certain financial information is provided separately for the US as this is an individually material country for bp, and for the UK as this is bp's country of domicile.

[a] Inventory holding gains and losses represent the difference between the cost of sales calculated using the replacement cost of inventory and the cost of sales calculated on the first-in first-out (FIFO) method after adjusting for any changes in provisions where the net realizable value of the inventory is lower than its cost. Under the FIFO method, which we use for IFRS reporting, the cost of inventory charged to the income statement is based on its historical cost of purchase or manufacture, rather than its replacement cost. In volatile energy markets, this can have a significant distorting effect on reported income. The amounts disclosed represent the difference between the charge to the income statement for inventory on a FIFO basis (after adjusting for any related movements in net realizable value provisions) and the charge that would have arisen based on the replacement cost of inventory. For this purpose, the replacement cost of inventory is calculated using data from each operation's production and manufacturing system, either on a monthly basis, or separately for each transaction where the system allows this approach. The amounts disclosed are not separately reflected in the financial statements as a gain or loss. No adjustment is made in respect of the cost of inventories held as part of a trading position and certain other temporary inventory positions.

## 5. Segmental analysis – continued

| | | | | | | $ million |
|---|---|---|---|---|---|---|
| | | | | | | 2022 |
| By business | gas & low carbon energy | oil production & operations | customers & products | other businesses & corporate | Consolidation adjustment and eliminations | Total group |
| **Segment revenues** | | | | | | |
| Sales and other operating revenues | 56,255 | 33,193 | 188,623 | 2,299 | (38,978) | 241,392 |
| Less: sales and other operating revenues between segments | (5,913) | (30,294) | (1,418) | (1,353) | 38,978 | – |
| Third party sales and other operating revenues | 50,342 | 2,899 | 187,205 | 946 | – | 241,392 |
| Earnings from joint ventures and associates – after interest and tax | 148 | 1,609 | 248 | 525 | – | 2,530 |
| **Segment results** | | | | | | |
| Replacement cost profit (loss) before interest and taxation | 14,696 | 19,721 | 8,869 | (26,737) | 139 | 16,688 |
| Inventory holding gains (losses)[a] | (8) | (7) | 1,366 | – | – | 1,351 |
| **Profit (loss) before interest and taxation** | 14,688 | 19,714 | 10,235 | (26,737) | 139 | 18,039 |
| Finance costs | | | | | | (2,703) |
| Net finance expense relating to pensions and other post-retirement benefits | | | | | | 69 |
| **Profit before taxation** | | | | | | 15,405 |
| **Other income statement items** | | | | | | |
| Depreciation, depletion and amortization | | | | | | |
| US | 75 | 3,141 | 1,328 | 80 | – | 4,624 |
| Non-US | 4,933 | 2,423 | 1,542 | 796 | – | 9,694 |
| Charges for provisions, net of write-back of unused provisions, including change in discount rate | (234) | 213 | 3,955 | 143 | – | 4,077 |
| **Segment assets** | | | | | | |
| Investments in joint ventures and associates | 5,299 | 11,370 | 3,875 | 57 | – | 20,601 |
| Additions to non-current assets[b] | 4,439 | 15,098 | 9,541 | 1,047 | – | 30,125 |

a See explanation of inventory holding gains and losses on page 209.
b Includes additions to property, plant and equipment; goodwill; intangible assets; investments in joint ventures; and investments in associates.

## 5. Segmental analysis – continued

| | | | | | | $ million |
|---|---|---|---|---|---|---|
| | | | | | | 2021 |
| By business | gas & low carbon energy | oil production & operations | customers & products | other businesses & corporate | Consolidation adjustment and eliminations | Total group |
| **Segment revenues** | | | | | | |
| Sales and other operating revenues | 30,840 | 24,519 | 130,095 | 1,724 | (29,439) | 157,739 |
| Less: sales and other operating revenues between segments | (4,563) | (22,408) | (1,226) | (1,242) | 29,439 | — |
| Third party sales and other operating revenues | 26,277 | 2,111 | 128,869 | 482 | — | 157,739 |
| Earnings from joint ventures and associates – after interest and tax | 426 | 576 | 385 | 2,612 | — | 3,999 |
| **Segment results** | | | | | | |
| Replacement cost profit (loss) before interest and taxation | 2,133 | 10,501 | 2,208 | (348) | (67) | 14,427 |
| Inventory holding gains (losses)[a] | 33 | 8 | 3,355 | 259 | — | 3,655 |
| **Profit (loss) before interest and taxation** | 2,166 | 10,509 | 5,563 | (89) | (67) | 18,082 |
| Finance costs | | | | | | (2,857) |
| Net finance expense relating to pensions and other post-retirement benefits | | | | | | 2 |
| **Profit before taxation** | | | | | | 15,227 |
| **Other income statement items** | | | | | | |
| Depreciation, depletion and amortization | | | | | | |
| US | 80 | 3,174 | 1,349 | 94 | — | 4,697 |
| Non-US | 4,384 | 3,354 | 1,651 | 719 | — | 10,108 |
| Charges for provisions, net of write-back of unused provisions, including change in discount rate | 173 | 7 | 3,063 | 477 | — | 3,720 |
| **Segment assets** | | | | | | |
| Investments in joint ventures and associates | 5,224 | 8,044 | 3,291 | 14,424 | — | 30,983 |
| Additions to non-current assets[b] | 4,963 | 6,090 | 3,940 | 1,007 | — | 16,000 |

a See explanation of inventory holding gains and losses on page 209.
b Includes additions to property, plant and equipment; goodwill; intangible assets; investments in joint ventures; and investments in associates.

## 5. Segmental analysis – continued

| By business | gas & low carbon energy | oil production & operations | customers & products | other businesses & corporate | Consolidation adjustment and eliminations | Total group |
|---|---|---|---|---|---|---|
| | | | | | | $ million |
| | | | | | | 2020 |
| **Segment revenues** | | | | | | |
| Sales and other operating revenues | 16,275 | 17,234 | 90,744 | 1,666 | (19,975) | 105,944 |
| Less: sales and other operating revenues between segments | (2,708) | (15,879) | (158) | (1,230) | 19,975 | |
| Third party sales and other operating revenues | 13,567 | 1,355 | 90,586 | 436 | – | 105,944 |
| Earnings from joint ventures and associates – after interest and tax | (45) | (327) | 214 | (245) | – | (403) |
| **Segment results** | | | | | | |
| Replacement cost profit (loss) before interest and taxation | (7,068) | (14,583) | 3,418 | (728) | 89 | (18,872) |
| Inventory holding gains (losses)[a] | 19 | (2) | (2,796) | (89) | – | (2,868) |
| **Profit (loss) before interest and taxation** | (7,049) | (14,585) | 622 | (817) | 89 | (21,740) |
| Finance costs | | | | | | (3,115) |
| Net finance expense relating to pensions and other post-retirement benefits | | | | | | (33) |
| **Profit before taxation** | | | | | | (24,888) |
| **Other income statement items** | | | | | | |
| Depreciation, depletion and amortization | | | | | | |
| US | 96 | 3,700 | 1,359 | 39 | – | 5,194 |
| Non-US | 3,361 | 4,087 | 1,631 | 616 | – | 9,695 |
| Charges for provisions, net of write-back of unused provisions, including change in discount rate | (2) | 58 | 1,903 | 543 | – | 2,502 |
| **Segment assets** | | | | | | |
| Investments in joint ventures and associates | 3,663 | 8,154 | 3,671 | 11,849 | – | 27,337 |
| Additions to non-current assets[b] | 3,507 | 5,321 | 5,359 | 570 | – | 14,757 |

[a] See explanation of inventory holding gains and losses on page 209.
[b] Includes additions to property, plant and equipment; goodwill; intangible assets; investments in joint ventures; and investments in associates.

| By geographical area | US | Non-US | Total |
|---|---|---|---|
| | | | $ million |
| | | | **2022** |
| **Revenues** | | | |
| Third party sales and other operating revenues[a] | **71,118** | **170,274** | **241,392** |
| **Other income statement items** | | | |
| Production and similar taxes | **194** | **2,131** | **2,325** |
| **Non-current assets** | | | |
| Non-current assets[b c] | **60,237** | **89,144** | **149,381** |

[a] Non-US region includes UK $36,541 million
[b] Non-US region includes UK $24,813 million
[c] Includes property, plant and equipment; goodwill; intangible assets; investments in joint ventures; investments in associates; and non-current prepayments.

| By geographical area | US | Non-US | Total |
|---|---|---|---|
| | | | $ million |
| | | | 2021 |
| **Revenues** | | | |
| Third party sales and other operating revenues[a] | 53,748 | 103,991 | 157,739 |
| **Other income statement items** | | | |
| Production and similar taxes | 108 | 1,200 | 1,308 |
| **Non-current assets** | | | |
| Non-current assets[b c] | 54,395 | 108,793 | 163,188 |

[a] Non-US region includes UK $11,248 million.
[b] Non-US region includes UK $19,530 million.
[c] Includes property, plant and equipment; goodwill; intangible assets; investments in joint ventures; investments in associates; and non-current prepayments.

## 5. Segmental analysis – continued

| | | | $ million |
|---|---|---|---|
| | | | 2020 |
| By geographical area | US | Non-US | Total |
| **Revenues** | | | |
| Third party sales and other operating revenues[a] | 27,413 | 78,531 | 105,944 |
| **Other income statement items** | | | |
| Production and similar taxes | 57 | 638 | 695 |
| **Non-current assets** | | | |
| Non-current assets[b c] | 52,493 | 108,786 | 161,279 |

a Non-US region includes UK $13,836 million.
b Non-US region includes UK $19,583 million.
c Includes property, plant and equipment; goodwill; intangible assets; investments in joint ventures; investments in associates; and non-current prepayments.

## 6. Sales and other operating revenues

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Crude oil | **6,309** | 5,483 | 5,048 |
| Oil products | **149,854** | 101,418 | 63,564 |
| Natural gas, LNG and NGLs | **41,770** | 24,378 | 10,762 |
| Non-oil products and other revenues from contracts with customers | **7,896** | 6,082 | 9,779 |
| **Revenue from contracts with customers** | **205,829** | 137,361 | 89,153 |
| Other operating revenues[a] | **35,563** | 20,378 | 16,791 |
| **Total sales and other operating revenues** | **241,392** | 157,739 | 105,944 |

a Principally relates to commodity derivative transactions including sales of bp own production in trading books.

An analysis of third-party sales and other operating revenues by segment and region is provided in Note 5.

The group's sales to customers of crude oil and oil products were substantially all made by the customers & products segment. The group's sales to customers of natural gas, LNG and NGLs were made by the gas & low carbon energy segment. A significant majority of the group's sales of non-oil products and other revenues from contracts with customers were made by the customers & products segment.

## 7. Income statement analysis

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| **Interest and other income** | | | |
| Interest income from | | | |
| Financial assets measured at amortized cost | **371** | 221 | 215 |
| Financial assets measured at fair value through profit or loss | **59** | 5 | 25 |
| Other income | **673** | 355 | 423 |
| | **1,103** | 581 | 663 |
| Currency exchange losses charged to the income statement[a] | **160** | 345 | 38 |
| Expenditure on research and development | **274** | 266 | 332 |
| Costs relating to the Gulf of Mexico oil spill (pre-interest and tax)[b] | **84** | 70 | 255 |
| **Finance costs** | | | |
| Interest expense on lease liabilities | **245** | 288 | 337 |
| Interest expense on other liabilities measured at amortized cost[c] | **2,070** | 1,820 | 2,166 |
| Capitalized at 3.56% (2021 2.63% and 2020 2.75%)[d] | **(464)** | (287) | (345) |
| Losses arising on finance debt risk management activities[e] | **43** | 145 | |
| Unwinding of discount on provisions | **369** | 391 | 437 |
| Unwinding of discount on other payables measured at amortized cost | **440** | 500 | 520 |
| | **2,703** | 2,857 | 3,115 |

a Excludes exchange gains and losses arising on financial instruments measured at fair value through profit or loss.
b Included within production and manufacturing expenses.
c 2022 includes a gain of $37 million (2021 loss of $195 million and 2020 loss of $158 million) associated with the buyback of finance debt.
d Tax relief on capitalized interest is approximately $108 million (2021 $66 million and 2020 $83 million).
e From 2021 temporary valuation differences associated with the group's interest rate and foreign currency exchange risk management of finance debt are being presented within finance costs. Previously these were presented within production and manufacturing expenses. Relevant amounts in the comparative period were not reclassified as the amounts were not material.

## 8. Exploration for and evaluation of oil and natural gas resources

The following financial information represents the amounts included within the group totals relating to activity associated with the exploration for and evaluation of oil and natural gas resources. All such activity is recorded within the gas & low carbon energy and oil production & operations segments.

For information on significant judgements made in relation to oil and natural gas accounting see Intangible assets in Note 1.

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Exploration and evaluation costs | | | |
| Exploration expenditure written off[a] | **385** | 167 | 9,920 |
| Other exploration costs | **200** | 257 | 360 |
| Exploration expense for the year | **585** | 424 | 10,280 |
| Impairment losses | **2** | 1 | 156 |
| Intangible assets – exploration and appraisal expenditure[b] | **4,213** | 4,289 | 4,113 |
| Liabilities | **88** | 98 | 71 |
| Net assets | **4,125** | 4,191 | 4,042 |
| Cash used in operating activities | **200** | 257 | 360 |
| Cash used in investing activities | **909** | 369 | 674 |

[a] 2020 includes $2,643 million in the Gulf of Mexico primarily relating to the Paleogene assets, $2,539 million in Canada primarily relating to Terre de Grace, $2,141 million in Brazil, $952 million in Egypt and $832 million in Angola.

[b] Amount capitalized at 31 December 2022, 2021 and 2020 relates to assets in various regions. The largest of these is approximately $600 million capitalized in the Middle East region (2021 approximately $700 million and 2020 approximately $700 million capitalized in the Middle East Region).

## 9. Taxation

### Tax on profit

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| **Current tax** | | | |
| Charge for the year | **12,523** | 4,808 | 2,095 |
| Adjustment in respect of prior years | **145** | 138 | 50 |
| | **12,668** | 4,946 | 2,145 |
| **Deferred tax[a]** | | | |
| Origination and reversal of temporary differences in the current year | **4,768** | 3,366 | (7,826) |
| Adjustment in respect of prior years | **(674)** | (1,572) | 1,522 |
| | **4,094** | 1,794 | (6,304) |
| **Tax charge (credit) on profit or loss** | **16,762** | 6,740 | (4,159) |

[a] Origination and reversal of temporary differences in the current year include the impact of tax rate changes on deferred tax balances. 2022 includes a charge of $1,834 million in respect of the introduction of the UK Energy Profits Levy. The adjustment in respect of prior years reflect the reassessment of the deferred tax balances for prior periods in light of changes in facts and circumstances during the year, including changes to price assumptions and profit forecasts.

In 2022, the total tax charge recognized within other comprehensive income was $266 million (2021 $1,252 million charge and 2020 $39 million charge). In 2022 this primarily comprises a release of deferred withholding tax on other comprehensive income movements relating to Rosneft. In 2021 and 2020 this primarily comprises the deferred tax impact of the remeasurements of the net pension and other post-retirement benefit liability or asset. See Note 32 for further information.

The total tax credit recognized directly in equity was $214 million (2021 $170 million charge and 2020 $154 million charge). In 2022 and 2021 this mainly relates to transactions involving non-controlling interests and 2020 principally relates to a non-controlling interest transaction entered into by Rosneft.

## 9. Taxation – continued

### Reconciliation of the effective tax rate

The following table provides a reconciliation of the group weighted average statutory corporate income tax rate to the effective tax rate of the group on profit or loss before taxation. For 2022 the items presented in the reconciliation are affected by the impacts of Rosneft. In order to provide a more meaningful analysis of the effective tax rate for 2022, the table also presents a separate reconciliation for the group excluding the impacts of Rosneft, and for the impacts of Rosneft in isolation.

| | | | | | $ million |
|---|---|---|---|---|---|
| | 2022 excluding impact of Rosneft | 2022 impact of Rosneft[a] | 2022 | 2021 | 2020 |
| **Profit (loss) before taxation** | **40,925** | **(25,520)** | **15,405** | 15,227 | (24,888) |
| Tax charge (credit) on profit or loss[b] | **17,823** | **(1,061)** | **16,762** | 6,740 | (4,159) |
| Effective tax rate | **44%** | **4%** | **109%** | 44% | 17% |

| | | | | | % |
|---|---|---|---|---|---|
| Tax rate computed at the weighted average statutory rate[c] | **42** | **20** | **77** | 54 | 31 |
| Increase (decrease) resulting from | | | | | |
| Tax reported in equity-accounted entities[d] | **(1)** | **—** | **(4)** | (3) | — |
| Adjustments in respect of prior years | **(1)** | **—** | **(3)** | (9) | (6) |
| Deferred tax not recognized | **(1)** | **—** | **(2)** | 8 | (3) |
| Tax incentives for investment | **—** | **—** | **(1)** | (1) | 1 |
| Disposal impacts[e] | **(3)** | **—** | **(8)** | (4) | — |
| Foreign exchange | **1** | **—** | **3** | 1 | (1) |
| Items not deductible for tax purposes | **2** | **—** | **5** | 1 | (3) |
| Impact of bp's decision to exit its shareholding in Rosneft | **—** | **(16)** | **27** | — | — |
| Tax rate change effect of UK Energy Profits Levy[f] | **4** | **—** | **12** | — | — |
| Other | **1** | **—** | **3** | (3) | (2) |
| **Effective tax rate** | **44** | **4** | **109** | 44 | 17 |

a Includes the impact of bp's decision to exit its shareholding in Rosneft and its other businesses with Rosneft in Russia. See also Note 1 - Significant judgements and estimate: investment in Rosneft.
b The tax credit regarding the impact of Rosneft relates to the release of deferred withholding tax on unremitted earnings.
c Calculated based on the statutory corporate income tax rate applicable in the countries in which the group operates, weighted by the profits and losses before tax in the respective countries. 2022 includes the higher North Sea tax rate as a result of the UK Energy Profits Levy.
d Includes withholding tax in respect of distributions from equity-accounted entities.
e 2022 primarily relates to the contribution of bp's Angolan business to Azule Energy and 2021 primarily relates to the divestment of a 20% stake in Oman Block 61.
f 2022 comprises the deferred tax impact of the UK Energy Profits Levy on existing temporary differences.

### Deferred tax

| | | $ million |
|---|---|---|
| Analysis of movements during the year in the net deferred tax (asset) liability | 2022 | 2021 |
| **At 1 January** | **2,370** | (913) |
| Exchange adjustments[a] | **(334)** | 9 |
| Charge for the year in the income statement | **4,094** | 1,794 |
| Charge for the year in other comprehensive income | **272** | 1,302 |
| Charge (credit) for the year in equity | **(214)** | 170 |
| Acquisitions and disposals[b] | **430** | 8 |
| **At 31 December** | **6,618** | 2,370 |

a 2022 primarily relates to the foreign currency retranslation effect on the deferred tax liability on pension plan surpluses in the UK.
b 2022 primarily relates to the Archaea Energy acquisition and the contribution of bp's Angolan business to Azule Energy.

## 9. Taxation – continued

The following table provides an analysis of deferred tax in the income statement and the balance sheet by category of temporary difference:

| | | | | | $ million |
|---|---|---|---|---|---|
| | Income statement | | | Balance sheet | |
| | **2022** | 2021 | 2020 | **2022** | 2021 |
| **Deferred tax liability** | | | | | |
| Depreciation | **1,863** | 899 | (7,295) | **18,025** | 16,276 |
| Pension plan surpluses | **42** | 105 | 69 | **3,022** | 3,898 |
| Derivative financial instruments | **(21)** | (33) | 33 | **—** | 24 |
| Other taxable temporary differences[a] | **(992)** | 180 | (32) | **1,000** | 1,782 |
| | **892** | 1,151 | (7,225) | **22,047** | 21,980 |
| **Deferred tax asset** | | | | | |
| Depreciation | **(309)** | (846) | (849) | **(1,974)** | (1,678) |
| Lease liabilities | **(8)** | (43) | 286 | **(1,047)** | (1,128) |
| Pension plan and other post-retirement benefit plan deficits | **47** | 119 | 2 | **(647)** | (1,221) |
| Decommissioning, environmental and other provisions | **770** | (744) | 438 | **(6,653)** | (7,891) |
| Derivative financial instruments | **(6)** | (9) | — | **(282)** | (75) |
| Tax credits | **1,578** | 1,282 | 310 | **(779)** | (2,359) |
| Loss carry forward | **1,536** | 1,064 | 543 | **(2,669)** | (4,202) |
| Other deductible temporary differences[b] | **(406)** | (180) | 191 | **(1,378)** | (1,056) |
| | **3,202** | 643 | 921 | **(15,429)** | (19,610) |
| **Net deferred tax charge (credit) and net deferred tax liability** | **4,094** | 1,794 | (6,304) | **6,618** | 2,370 |
| Of which – deferred tax liabilities | | | | **10,526** | 8,780 |
| – deferred tax assets | | | | **3,908** | 6,410 |

[a] The 2022 income statement and 2021 balance sheet include amounts relating to deferred withholding tax on unremitted earnings of Rosneft. The 2022 balance sheet amount does not include any temporary differences that are individually significant in their nature.
[b] The 2022 and 2021 balance sheet amounts do not include any temporary differences that are individually significant in their nature.

Of the $3,908 million of deferred tax assets recognized on the group balance sheet at 31 December 2022 (2021 $6,410 million), $2,779 million (2021 $6,342 million) relates to entities that have suffered a loss in either the current or preceding period. This amount is supported by forecasts consistent with bp's future oil and gas price assumptions (see Note 1 for further information) and for the UK, forecast profits associated with long-term LNG contracts, that indicate sufficient future taxable profits will be available to utilize such assets within any applicable expiry period. For 2022, this mainly includes $1,333 million in the UK, $505 million in Mauritania and $370 million in Senegal (2021 mainly included $2,224 million in the US, $892 million in the UK, $762 million in India and $541 million in Angola).

A summary of temporary differences, unused tax credits and unused tax losses for which deferred tax has not been recognized is shown in the table below.

| | | $ billion |
|---|---|---|
| At 31 December | **2022** | 2021 |
| Unused US state tax losses[a] | **2.1** | 2.5 |
| Unused tax losses – other jurisdictions[b] | **5.4** | 6.0 |
| Unused tax credits | **28.6** | 28.2 |
| of which – arising in the UK[c] | **24.6** | 24.6 |
| – arising in the US[d] | **4.0** | 3.6 |
| Deductible temporary differences[e] | **22.7** | 49.0 |
| Taxable temporary differences associated with investments in subsidiaries and equity-accounted entities | **0.7** | 0.7 |

[a] For 2022 these losses expire in the period 2023-2042 with applicable tax rates ranging from 3% to 10%.
[b] 2022 and 2021 mainly relate to the UK, Canada and Brazil. The majority of the unused tax losses have no fixed expiry date.
[c] The UK unused tax credits arise predominantly in overseas branches of UK entities based in jurisdictions with higher statutory corporate income tax rates than the UK. No deferred tax asset has been recognized on these tax credits as they are unlikely to have value in the future; UK taxes on these overseas branches are largely mitigated by double tax relief in respect of overseas tax. These tax credits have no fixed expiry date. 2022 includes $0.7 billion in respect of Algeria. These amounts will be eliminated following the disposal of bp's interests in Algeria in February 2023.
[d] The US unused tax credits predominantly comprise foreign tax credits. No deferred tax asset has been recognized on these tax credits as they are unlikely to have value in the future. For 2022 these tax credits expire in the period 2023-2032.
[e] The majority comprises fixed asset temporary differences in overseas branches of UK entities and the reduction in the year mainly reflects the contribution of bp's Angolan business to Azule Energy. Substantially all of the temporary differences have no expiry date. 2022 includes $2.0 billion in respect of Algeria. These amounts will be eliminated following the disposal of bp's interests in Algeria in February 2023.

| | | | $ million |
|---|---|---|---|
| Impact of previously unrecognized deferred tax or write-down of deferred tax assets on tax charge | **2022** | 2021 | 2020 |
| Current tax benefit relating to the utilization of previously unrecognized deferred tax assets | **492** | 331 | 46 |
| Deferred tax benefit arising from the reversal of a previous write-down of deferred tax assets | **—** | 773 | 11 |
| Deferred tax benefit relating to the recognition of previously unrecognized deferred tax assets | **792** | 820 | — |
| Deferred tax expense arising from the write-down of a previously recognized deferred tax asset | **—** | 29 | 1,622 |

## 10. Dividends

The quarterly dividend which is expected to be paid on 31 March 2023 in respect of the fourth quarter 2022 is 6.610 cents per ordinary share ($0.39660 per American Depositary Share (ADS)). The corresponding amount in sterling will be announced on 14 March 2023.

| | Pence per share | | | Cents per share | | | $ million | | |
|---|---|---|---|---|---|---|---|---|---|
| | **2022** | 2021 | 2020 | **2022** | 2021 | 2020 | **2022** | 2021 | 2020 |
| Dividends announced and paid in cash | | | | | | | | | |
| Preference shares | | | | | | | **1** | 2 | 1 |
| Ordinary shares | | | | | | | | | |
| March | **4.1595** | 3.7684 | 8.1558 | **5.460** | 5.250 | 10.500 | **1,068** | 1,063 | 2,102 |
| June | **4.3556** | 3.7118 | 8.3421 | **5.460** | 5.250 | 10.500 | **1,061** | 1,062 | 2,119 |
| September | **5.1684** | 3.9529 | 4.0433 | **6.006** | 5.460 | 5.250 | **1,140** | 1,100 | 1,059 |
| December | **4.9402** | 4.1045 | 3.9169 | **6.006** | 5.460 | 5.250 | **1,088** | 1,077 | 1,059 |
| | **18.6237** | 15.5376 | 24.4581 | **22.932** | 21.420 | 31.500 | **4,358** | 4,304 | 6,340 |
| Dividend announced, paid in March 2023 | | | | **6.61** | | | **1,188** | | |

The amount of unclaimed dividends recognized as a liability in other payables at 31 December 2022 is $69 million (2021 $62 million).

The board decided not to offer a scrip dividend alternative in respect of any dividends announced since the third quarter 2019, including the fourth quarter 2022 dividend expected to be paid on 31 March 2023.

The financial statements for the year ended 31 December 2022 do not reflect the dividend announced on 7 February 2023 and which is expected to be paid in March 2023; this will be treated as an appropriation of profit in the year ending 31 December 2023.

## 11. Earnings per share

| | | | Cents per share |
|---|---|---|---|
| Per ordinary share | **2022** | 2021 | 2020 |
| Basic earnings per share | **(13.10)** | 37.57 | (100.42) |
| Diluted earnings per share | **(13.10)** | 37.33 | (100.42) |

| | | | Dollars per share |
|---|---|---|---|
| Per American Depositary Share (ADS)[a] | **2022** | 2021 | 2020 |
| Basic earnings per share | **(0.79)** | 2.25 | (6.03) |
| Diluted earnings per share | **(0.79)** | 2.24 | (6.03) |

[a] One ADS is equivalent to six ordinary shares.

Basic earnings per ordinary share amounts are calculated by dividing the profit for the year attributable to bp ordinary shareholders by the weighted average number of ordinary shares outstanding during the year.

The weighted average number of shares outstanding includes certain shares that will be issuable in the future under employee share-based payment plans and excludes treasury shares, which includes shares held by the Employee Share Ownership Plan trusts (ESOPs).

For the diluted earnings per share calculation, the weighted average number of shares outstanding during the year is adjusted for the average number of shares that are potentially issuable in connection with employee share-based payment plans. If the inclusion of potentially issuable shares would decrease loss per share, the potentially issuable shares are excluded from the weighted average number of shares outstanding used to calculate diluted earnings per share.

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Profit (loss) attributable to bp shareholders | **(2,487)** | 7,565 | (20,305) |
| Less: dividend requirements on preference shares | **1** | 2 | 1 |
| **Profit (loss) for the year attributable to bp ordinary shareholders** | **(2,488)** | 7,563 | (20,306) |

| | | | Shares thousand |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Basic weighted average number of ordinary shares[a] | **18,987,936** | 20,128,862 | 20,221,514 |
| Potential dilutive effect of ordinary shares issuable under employee share-based payment plans | **—** | 131,526 | — |
| **Weighted average number of ordinary shares outstanding used to calculate diluted earnings per share** | **18,987,936** | 20,260,388 | 20,221,514 |

| | | | Shares thousand |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Basic weighted average number of ordinary shares – ADS equivalent | **3,164,656** | 3,354,810 | 3,370,252 |
| Potential dilutive effect of ordinary shares (ADS equivalent) issuable under employee share-based payment plans | **—** | 21,921 | — |
| **Weighted average number of ordinary shares (ADS equivalent) outstanding used to calculate diluted earnings per share** | **3,164,656** | 3,376,731 | 3,370,252 |

[a] Excludes treasury shares. See Note 31 for further information.

## 11. Earnings per share – continued

The number of ordinary shares outstanding at 31 December 2022, excluding treasury shares, and including certain shares that will be issuable in the future under employee share-based payment plans was 17,974,112,648 (2021 19,642,221,041). Between 31 December 2022 and 17 February 2023, the latest practicable date before the completion of these financial statements, there was a net increase of 6,834,739 of ordinary shares primarily as a result of share issues in relation to employee share-based payment plans partially offset by share buy backs. For additional information on share buy backs see Note 31.

### Employee share-based payment plans

The group operates share and share option plans for directors and certain employees to obtain ordinary shares and ADSs in the company. Information on these plans for directors is shown in the Directors remuneration report on pages 112-147.

The following table shows the number of shares potentially issuable under equity-settled employee share option plans, including the number of options outstanding, the number of options exercisable at the end of each year, and the corresponding weighted average exercise prices. The dilutive effect of these plans at 31 December is also shown.

| Share options | 2022 | | 2021 | |
|---|---|---|---|---|
| | Number of options[a b] thousand | Weighted average exercise price $ | Number of options[a b] thousand | Weighted average exercise price $ |
| Outstanding | **564,079** | **4.00** | 590,961 | 4.26 |
| Exercisable | **342** | **4.99** | 1,080 | 4.73 |
| Dilutive effect | **83,204** | **n/a** | 3,588 | n/a |

a Numbers of options shown are ordinary share equivalents (one ADS is equivalent to six ordinary shares)
b At 31 December 2022 the quoted market price of one bp ordinary share was £4.75 (2021 £3.31).

In addition, the group operates a number of equity-settled employee share plans under which share units are granted to the group's senior leaders and certain other employees. These plans typically have a three-year performance or restricted period during which the units accrue net notional dividends which are treated as having been reinvested. Leaving employment will normally preclude the conversion of units into shares, but special arrangements apply for participants that leave for qualifying reasons. The number of shares that are expected to vest each year under employee share plans are shown in the table below. The dilutive effect of the employee share plans at 31 December is also shown.

| Share plans | 2022 | 2021 |
|---|---|---|
| Vesting | Number of shares[a] thousand | Number of shares[a] thousand |
| Within one year | **167,672** | 92,210 |
| 1 to 2 years | **192,734** | 149,077 |
| 2 to 3 years | **226,027** | 179,449 |
| 3 to 4 years | **2,595** | 109,265 |
| Over 4 years | **173** | 928 |
| | **589,201** | 530,929 |
| **Dilutive effect** | **244,886** | 152,899 |

a Numbers of shares shown are ordinary share equivalents (one ADS is equivalent to six ordinary shares)

There has been a net increase of 20,346,389 in the number of potential ordinary shares relating to employee share-based payment plans between 31 December 2022 and 17 February 2023.

## 12. Property, plant and equipment (PP&E)

$ million

| | Land and land improvements | Buildings | Oil and gas properties[a] | Plant, machinery and equipment | Fittings, fixtures and office equipment | Transportation | Oil depots, storage tanks and service stations | Total |
|---|---|---|---|---|---|---|---|---|
| **Cost - owned PP&E** | | | | | | | | |
| At 1 January 2022 | **3,713** | **1,245** | **208,034** | **44,037** | **2,231** | **3,033** | **10,241** | **272,534** |
| Exchange adjustments | **(184)** | **(30)** | **—** | **(599)** | **(83)** | **(14)** | **(590)** | **(1,500)** |
| Additions | **51** | **31** | **6,221** | **2,188** | **252** | **42** | **993** | **9,778** |
| Acquisitions | **1** | **40** | **—** | **998** | **—** | **37** | **3** | **1,079** |
| Transfers from intangible assets | **—** | **—** | **357** | **—** | **—** | **—** | **—** | **357** |
| Reclassified as assets held for sale | **(49)** | **—** | **(4,351)** | **(1,408)** | **—** | **—** | **—** | **(5,808)** |
| Deletions and disposals | **(19)** | **(336)** | **(31,977)** | **(554)** | **(180)** | **(22)** | **(558)** | **(33,646)** |
| **At 31 December 2022** | **3,513** | **950** | **178,284** | **44,662** | **2,220** | **3,076** | **10,089** | **242,794** |
| **Depreciation - owned PP&E** | | | | | | | | |
| At 1 January 2022 | **706** | **654** | **134,550** | **21,841** | **1,792** | **2,388** | **5,783** | **167,714** |
| Exchange adjustments | **(26)** | **(21)** | **—** | **(299)** | **(61)** | **(11)** | **(354)** | **(772)** |
| Charge for the year | **47** | **26** | **9,770** | **1,457** | **135** | **72** | **501** | **12,008** |
| Impairment losses | **6** | **14** | **1,251** | **1,487** | **—** | **4** | **336** | **3,098** |
| Impairment reversals | **—** | **—** | **(2,221)** | **(65)** | **—** | **(5)** | **—** | **(2,291)** |
| Reclassified as assets held for sale | **(18)** | **—** | **(3,972)** | **(1,164)** | **—** | **—** | **—** | **(5,154)** |
| Deletions and disposals | **(15)** | **(172)** | **(28,688)** | **(354)** | **(177)** | **(17)** | **(447)** | **(29,870)** |
| **At 31 December 2022** | **700** | **501** | **110,690** | **22,903** | **1,689** | **2,431** | **5,819** | **144,733** |
| Owned PP&E - net book amount at 31 December 2022 | **2,813** | **449** | **67,594** | **21,759** | **531** | **645** | **4,270** | **98,061** |
| Right-of-use assets - net book amount at 31 December 2022[b] | **—** | **1,157** | **17** | **926** | **7** | **2,333** | **3,543** | **7,983** |
| **Total PP&E - net book amount at 31 December 2022** | **2,813** | **1,606** | **67,611** | **22,685** | **538** | **2,978** | **7,813** | **106,044** |
| **Cost - owned PP&E** | | | | | | | | |
| At 1 January 2021 | 3,872 | 1,210 | 214,323 | 42,914 | 2,418 | 3,049 | 10,276 | 278,062 |
| Exchange adjustments | (205) | (19) | — | (736) | (31) | (16) | (627) | (1,634) |
| Additions | 68 | 59 | 7,931 | 2,187 | 171 | 40 | 762 | 11,218 |
| Acquisitions | — | — | — | 1 | — | — | — | 1 |
| Transfers from intangible assets | — | — | 38 | — | — | — | — | 38 |
| Reclassified as assets held for sale | — | — | (7,399) | — | — | — | — | (7,399) |
| Deletions and disposals | (22) | (5) | (6,859) | (329) | (327) | (40) | (170) | (7,752) |
| **At 31 December 2021** | 3,713 | 1,245 | 208,034 | 44,037 | 2,231 | 3,033 | 10,241 | 272,534 |
| **Depreciation - owned PP&E** | | | | | | | | |
| At 1 January 2021 | 692 | 631 | 140,551 | 20,031 | 1,845 | 2,381 | 5,786 | 171,917 |
| Exchange adjustments | (29) | (10) | — | (370) | (21) | (12) | (373) | (815) |
| Charge for the year | 48 | 36 | 10,193 | 1,502 | 158 | 71 | 523 | 12,531 |
| Impairment losses | 4 | — | 2,340 | 937 | — | 12 | 4 | 3,297 |
| Impairment reversals | — | (3) | (4,794) | — | — | (30) | — | (4,827) |
| Reclassified as assets held for sale | — | — | (7,399) | — | — | — | — | (7,399) |
| Deletions and disposals | (9) | — | (6,341) | (259) | (190) | (34) | (157) | (6,990) |
| **At 31 December 2021** | 706 | 654 | 134,550 | 21,841 | 1,792 | 2,388 | 5,783 | 167,714 |
| Owned PP&E - net book amount at 31 December 2021 | 3,007 | 591 | 73,484 | 22,196 | 439 | 645 | 4,458 | 104,820 |
| Right-of-use assets - net book amount at 31 December 2021[b] | — | 1,331 | 32 | 617 | 15 | 2,513 | 3,574 | 8,082 |
| **Total PP&E - net book amount at 31 December 2021** | 3,007 | 1,922 | 73,516 | 22,813 | 454 | 3,158 | 8,032 | 112,902 |
| Assets under construction included above | | | | | | | | |
| **At 31 December 2022** | | | | | | | | **22,313** |
| At 31 December 2021 | | | | | | | | 19,704 |
| Depreciation charge for the year on right-of-use assets | | | | | | | | |
| **2022** | | **190** | **18** | **321** | **10** | **853** | **577** | **1,969** |
| 2021 | | 209 | 27 | 279 | 10 | 844 | 613 | 1,982 |

[a] For information on significant estimates and judgements made in relation to the estimation of oil and natural reserves see Property, plant and equipment within Note 1.

[b] $560 million (2021 $203 million) of drilling rig right-of-use assets and $2,208 million (2021 $2,230 million) of shipping vessel right-of-use assets are included in Plant, machinery and equipment and Transportation respectively.

## 13. Capital commitments

Authorized future capital expenditure for property, plant and equipment (excluding right-of-use assets) by group companies for which contracts had been signed at 31 December 2022 amounted to $9,381 million (2021 $8,208 million, 2020 $8,009 million). bp has contracted capital commitments amounting to $1,764 million (2021 $1,075 million, 2020 $1,087 million) in relation to joint ventures and $18 million (2021 $126 million, 2020 $183 million) in relation to associates.

## 14. Goodwill and impairment review of goodwill

| | | $ million |
|---|---|---|
| | **2022** | 2021 |
| **Cost** | | |
| At 1 January | **12,991** | 13,093 |
| Exchange adjustments | **(367)** | (91) |
| Acquisitions and other additions | **573** | 139 |
| Reclassified as assets held for sale | **(58)** | (137) |
| Deletions and disposals | **(562)** | (13) |
| **At 31 December** | **12,577** | 12,991 |
| **Impairment losses** | | |
| At 1 January | **618** | 613 |
| Exchange adjustments | **(1)** | (1) |
| Impairment losses for the year | **—** | 7 |
| Deletions and disposals | **—** | (1) |
| **At 31 December** | **617** | 618 |
| **Net book amount at 31 December** | **11,960** | 12,373 |
| Net book amount at 1 January | **12,373** | 12,480 |

### Impairment review of goodwill

| | | $ million |
|---|---|---|
| Goodwill at 31 December | **2022** | 2021 |
| gas & low carbon energy | **2,232** | 2,147 |
| oil production & operations | **4,925** | 5,464 |
| customers & products | **4,740** | 4,697 |
| other businesses & corporate | **63** | 65 |
| | **11,960** | 12,373 |

Goodwill acquired through business combinations has been allocated to groups of cash-generating units (CGUs) that are expected to benefit from the synergies of the acquisition. For oil production & operations goodwill is allocated to CGUs in aggregate at the segment level, for gas & low carbon energy goodwill is allocated to the hydrocarbon CGUs within the segment. For customers and products, goodwill has been allocated to Castrol, US Fuels, European Fuels and Other.

For information on significant estimates and judgements made in relation to impairments see Impairment of property, plant and equipment, intangible assets and goodwill in Note 1.

### gas & low carbon energy and oil production & operations

| | | $ million | | $ million |
|---|---|---|---|---|
| | gas & low carbon energy | | oil production & operations | |
| | **2022** | 2021 | **2022** | 2021 |
| Goodwill | **2,232** | 2,147 | **4,925** | 5,464 |
| Excess of recoverable amount over carrying amount | **12,971** | 3,991 | **36,045** | 32,438 |

The table above shows the carrying amount of goodwill for the segments at the period end and the excess of the recoverable amount, based on a pre-tax value-in-use calculation, over the carrying amount (headroom) at the date of the most recent test. The increase in headroom for both segments relates to movements due to the passage of time and price impacts.

No impairment of the goodwill balances in either gas & low carbon energy or oil production & operations was recognized during 2022 (2021 $nil).

## 14. Goodwill and impairment review of goodwill – continued

The value in use for relevant CGUs in both gas & low carbon energy and oil production & operations is based on the cash flows expected to be generated by the projected production profiles up to the expected dates of cessation of production of each field, based on appropriately risked estimates of reserves and resources. Midstream and supply and trading activities and equity-accounted entities are generally not included in the impairment reviews of goodwill, as they do not represent part of the grouping of CGUs to which the goodwill balances relate and which are used to monitor the goodwill balances for internal management purposes. Where such activities form part of wider CGUs to which goodwill relates they are reflected in the test. As the production profile and related cash flows can be estimated from bp's past experience, management believes that the cash flows generated over the estimated life of field is the appropriate basis upon which to assess goodwill and individual assets for impairment in both gas & low carbon energy and oil & production operations. The estimated date of cessation of production depends on the interaction of a number of variables, such as the recoverable quantities of hydrocarbons, the production profile of the hydrocarbons, the cost of the development of the infrastructure necessary to recover the hydrocarbons, production costs, the contractual duration of the production concession and the selling price of the hydrocarbons produced. As each field has specific reservoir characteristics and economic circumstances, the cash flows of each field are computed using appropriate individual economic models and key assumptions agreed by bp management.

Estimated production volumes and cash flows up to the date of cessation of production on a field-by-field basis, including operating and capital expenditure, are derived from the business segment plans. The production profiles used are consistent with the reserve and resource volumes approved as part of bp's centrally controlled process for the estimation of proved and probable reserves and total resources.

The average production for the purposes of goodwill impairment testing in the gas & low carbon energy segment over the next 15 years is 191 mmboe per year (2021 261 mmboe per year) and in the oil production and operations segment is 346 mmboe per year (2021 604 mmboe per year). Production assumptions used for the goodwill impairment tests in both gas & low carbon energy and oil production & operations reflect management's best estimate of future production of the existing portfolio at the time of the calculation. The group's expectation to reduce upstream hydrocarbon production by around 25% by 2030 from its 2019 baseline is expected to be achieved through future active management, including divestments, and high-grading of the portfolio. Changes in upstream production since 2019 will be included in the best estimates however as the specific future changes to the portfolio are not yet known, these best estimates do not include the full extent of the expected upstream production reductions.

The weighted average pre-tax discount rate used in the review for the oil production & operations segment is 16%, and 10% for the gas & low carbon energy segment (2021 11% for both segments).

The most recent reviews for impairment for the oil production & operations and gas & low carbon energy segments were carried out in the fourth quarter. The key assumptions used in the value-in-use calculations are oil and natural gas prices, production volumes and the discount rate. The value-in-use calculations have been prepared for the purposes of determining whether the goodwill balances were impaired. Estimated future cash flows were prepared on the basis of certain assumptions prevailing at the time of the tests. The actual outcomes may differ from the assumptions made. For example, reserves and resources estimates and production forecasts are subject to revision as further technical information becomes available and economic conditions change. Due to economic developments, regulatory change and emissions reduction activity arising from climate concern and other factors, future commodity prices and other assumptions may differ from the forecasts used in the calculations.

Sensitivities to different variables have been estimated using certain simplifying assumptions. For example, lower oil and gas price or production sensitivities do not fully reflect the specific impacts for each contractual arrangement and will not capture all favourable impacts that may arise from cost deflation or savings. A detailed calculation in either segment at any given price or production profile may, therefore, produce a different result.

It is estimated that a 27% (2021 33%) reduction in revenue throughout each year of the remaining life of those assets, either as a result of adverse price or production conditions or a combination of each, would cause the recoverable amount to be equal to the carrying amount of goodwill and related net non-current assets of the oil production and operations segment. For gas & low carbon energy an 18% (2021 20%) reduction would have the same result.

It is estimated that no reasonably possible change in the discount rate would cause the recoverable amount to be equal to the carrying amount of goodwill and related net non-current assets of either segment.

### customers & products

| | | | | | | | | | | $ million |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2022 | | | | | 2021 | | | | |
| | **Castrol** | **US Fuels** | **European Fuels** | **Other** | **Total** | Castrol | US Fuels | European Fuels | Other | Total |
| Goodwill | **2,524** | **606** | **815** | **795** | **4,740** | 2,837 | 606 | 862 | 392 | 4,697 |

Cash flows for each CGU are derived from the business segment plans, which cover a period of up to five years. To determine the value in use for each of the cash-generating units, cash flows for a period of 10 years are discounted and aggregated with a terminal value. It is estimated that no reasonably possible change in the key assumptions used in the US Fuels and European Fuels goodwill impairment assessments would cause the recoverable amount to be equal to the carrying amount of goodwill and related net non-current assets.

### Castrol

The key assumptions to which the calculation of value in use for the Castrol unit is most sensitive are operating unit margins, sales volumes, and discount rate. Operating margin and sales volumes assumptions used in the detailed impairment review of goodwill calculation are consistent with the assumptions used in the Castrol unit's business plan. A pre-tax discount rate of 8% (2021 9%) is applied in the test. No reasonably possible change in any of these key assumptions would cause the unit's recoverable amount to be equal to the carrying amount of goodwill and related net non-current assets. Cash flows beyond the plan period are extrapolated using a nominal 3.4% (2021 2.8%) growth rate.

## 15. Intangible assets

| | | | | | | | $ million |
|---|---|---|---|---|---|---|---|
| | | | | 2022 | | | 2021 |
| | Exploration and appraisal expenditure[a] | Biogas rights agreements | Other intangibles | Total | Exploration and appraisal expenditure[a] | Other intangibles | Total |
| **Cost** | | | | | | | |
| At 1 January | **14,311** | **—** | **6,152** | **20,463** | 14,417 | 5,622 | 20,039 |
| Exchange adjustments | **—** | **—** | **(216)** | **(216)** | — | (137) | (137) |
| Acquisitions[b] | **—** | **3,398** | **194** | **3,592** | — | 47 | 47 |
| Additions | **894** | **—** | **831** | **1,725** | 409 | 628 | 1,037 |
| Transfers to property, plant and equipment | **(357)** | **—** | **—** | **(357)** | (38) | — | (38) |
| Reclassified as assets held for sale | **(9)** | **—** | **(7)** | **(16)** | — | — | — |
| Deletions and disposals | **(2,268)** | **—** | **(137)** | **(2,405)** | (477) | (8) | (485) |
| **At 31 December** | **12,571** | **3,398** | **6,817** | **22,786** | 14,311 | 6,152 | 20,463 |
| **Amortization** | | | | | | | |
| At 1 January | **10,022** | **—** | **3,990** | **14,012** | 10,304 | 3,642 | 13,946 |
| Exchange adjustments | **—** | **—** | **(128)** | **(128)** | — | (86) | (86) |
| Exploration expenditure written off | **385** | **—** | **—** | **385** | 167 | | 167 |
| Charge for the year | **—** | **—** | **491** | **491** | — | 427 | 427 |
| Impairment losses | **2** | **—** | **21** | **23** | 1 | 15 | 16 |
| Impairment reversals | **—** | **—** | **(3)** | **(3)** | | | |
| Reclassified as assets held for sale | **(9)** | **—** | **(7)** | **(16)** | — | — | — |
| Deletions and disposals | **(2,042)** | **—** | **(136)** | **(2,178)** | (450) | (8) | (458) |
| **At 31 December** | **8,358** | **—** | **4,228** | **12,586** | 10,022 | 3,990 | 14,012 |
| **Net book amount at 31 December** | **4,213** | **3,398** | **2,589** | **10,200** | 4,289 | 2,162 | 6,451 |
| Net book amount at 1 January | **4,289** | **—** | **2,162** | **6,451** | 4,113 | 1,980 | 6,093 |

[a] For further information see Intangible assets within Note 1 and Note 8.

[b] 2022 acquisitions primarily relates to the acquisition of Archaea Energy Inc. See Note 3.

## 16. Investments in joint ventures

The following table provides aggregated summarized financial information for the group's joint ventures as it relates to the amounts recognized in the group income statement and on the group balance sheet.

| | | | | | $ million |
|---|---|---|---|---|---|
| | | | Income statement | | Balance sheet |
| | | | Earnings from joint ventures - after interest and tax | | Investments in joint ventures |
| | **2022** | 2021 | 2020 | **2022** | 2021 |
| Azule Energy | **540** | — | — | **5,264** | — |
| Pan American Energy Group | **538** | (217) | (208) | **2,000** | 4,396 |
| Other joint ventures | **50** | 760 | (94) | **5,136** | 5,586 |
| | **1,128** | 543 | (302) | **12,400** | 9,982 |

The joint ventures that are material to the group at 31 December 2022 are Azule Energy, which was formed during 2022 and in which bp owns a 50% stake, and Pan American Energy Group S.L. in which bp also owns a 50% stake.

bp classifies its investments in Azule Energy Holdings Limited and Pan American Energy Group S.L. as joint ventures because, per the terms of the shareholders' agreements, bp has joint control over Azule Energy and Pan American Energy Group S.L.. Azule Energy Holdings Limited is based in Angola and its functional currency is USD. Pan American Energy Group S.L is based in Argentina and its functional currency is USD.

The following table provides summarized financial information relating to Azule Energy and Pan American Energy Group. This information is presented on a 100% basis and reflects adjustments made by bp to Azule Energy and Pan American Energy Group's own results in applying the equity method of accounting. bp adjusts Azule Energy Holdings Limited and Pan American Energy Group's results for the accounting required under IFRS relating to bp's purchase of its interests in Azule Energy Holdings Limited and Pan American Energy Group S.L..

The operational and financial information of Azule Energy Holdings Limited and Pan American Energy Group S.L. is based on preliminary operational and financial results of Azule Energy Holdings Limited for 2022 and Pan American Energy Group S.L. for 2022, 2021 and 2020. Actual results may differ from these amounts - immaterial adjustments to the 2021 and 2020 numbers for Pan America Energy Group S.L. below have been included in the 2022 and 2021 numbers respectively.

## 16. Investments in joint ventures – continued

| | | | | $ million |
|---|---|---|---|---|
| | | | | Gross amount |
| | 2022 | | 2021 | 2020 |
| | Azule Energy | PAEG | PAEG | PAEG |
| **Sales and other operating revenues** | **2,274** | **6,408** | 4,394 | 3,505 |
| Profit (loss) before interest and taxation | **1,460** | **1,560** | 806 | (366) |
| Finance costs | **218** | **376** | 262 | 250 |
| **Profit (loss) before taxation**[a] | **1,242** | **1,184** | 544 | (616) |
| Taxation[b] | **162** | **108** | 978 | (200) |
| **Profit (loss) for the year** | **1,080** | **1,076** | (434) | (416) |
| Other comprehensive income | **—** | **—** | — | — |
| **Total comprehensive income** | **1,080** | **1,076** | (434) | (416) |
| Non-current assets | **22,218** | **14,598** | 14,206 | |
| Current assets[c] | **4,132** | **3,054** | 1,864 | |
| **Total assets** | **26,350** | **17,652** | 16,070 | |
| Current liabilities[d] | **2,594** | **1,996** | 2,034 | |
| Non-current liabilities[e] | **13,228** | **5,856** | 5,244 | |
| **Total liabilities** | **15,822** | **7,852** | 7,278 | |
| **Net assets** | **10,528** | **9,800** | 8,792 | |
| Less: non-controlling interests | **—** | **—** | — | |
| | **10,528** | **9,800** | 8,792 | |

a Azule Energy includes depreciation and amortisation of $1,145 million, interest income of $11 million and interest expense of $218 million. PAEG includes depreciation and amortisation of $1,039 million (2021 $930 million and 2020 $937 million), interest income of $29 million (2021 $19 million and 2020 $18 million) and interest expense of $375 million (2021 $262 million and 2020 $250 million).
b PAEG 2021 net income expense includes a deferred tax charge of $415 million related to a change in the income tax rate.
c Azule Energy includes cash and cash equivalents of $1,031 million. PAEG includes cash and cash equivalents of $1,012 million (2021 $893 million).
d Azule Energy includes current financial liabilities of $2,077 million. PAEG includes current financial liabilities of $751 million (2021 $767 million).
e Azule Energy includes non-current financial liabilities of $4,700 million. PAEG includes non-current financial liabilities of $2,151 million (2021 $2,132 million).

The group received dividends, net of withholding tax, of $35 million from Pan American Energy Group S.L in 2022 (2021 $nil and 2020 $18 million).

The group received dividends, net of withholding tax of $500 million from Azule Energy Holdings Limited in 2022.

The following table provides aggregated summarized financial information relating to the group's share of joint ventures.

| | | | | | | | | | | $ million |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | bp share |
| | | | | 2022 | | | 2021 | | | 2020 |
| | Azule Energy | PAEG | Other | Total | PAEG | Other | Total | PAEG | Other | Total |
| **Sales and other operating revenues** | **1,137** | **3,204** | **9,770** | **14,111** | 2,197 | 9,048 | 11,245 | 1,753 | 8,793 | 10,545 |
| Profit (loss) before interest and taxation | **730** | **780** | **255** | **1,765** | 403 | 927 | 1,330 | (183) | 32 | (151) |
| Finance costs | **109** | **188** | **137** | **434** | 131 | 58 | 189 | 125 | 76 | 201 |
| **Profit (loss) before taxation** | **621** | **592** | **118** | **1,331** | 272 | 869 | 1,141 | (308) | (44) | (352) |
| Taxation | **81** | **54** | **67** | **202** | 489 | 107 | 596 | (100) | 49 | (51) |
| Non-controlling interest | **—** | **—** | **1** | **1** | — | 2 | 2 | — | 1 | 1 |
| **Profit (loss) for the year** | **540** | **538** | **50** | **1,128** | (217) | 760 | 543 | (208) | (94) | (302) |
| Other comprehensive income | **—** | **—** | **50** | **50** | — | 5 | 5 | — | (5) | (5) |
| **Total comprehensive income** | **540** | **538** | **100** | **1,178** | (217) | 765 | 548 | (208) | (99) | (307) |
| Non-current assets | **11,109** | **7,299** | **7,775** | **26,183** | 7,103 | 7,702 | 14,805 | | | |
| Current assets | **2,066** | **1,527** | **2,778** | **6,371** | 932 | 2,385 | 3,317 | | | |
| **Total assets** | **13,175** | **8,826** | **10,553** | **32,554** | 8,035 | 10,087 | 18,122 | | | |
| Current liabilities | **1,297** | **998** | **1,713** | **4,008** | 1,017 | 1,272 | 2,289 | | | |
| Non-current liabilities | **6,614** | **2,928** | **3,687** | **13,229** | 2,622 | 3,219 | 5,841 | | | |
| **Total liabilities** | **7,911** | **3,926** | **5,400** | **17,237** | 3,639 | 4,491 | 8,130 | | | |
| **Net assets** | **5,264** | **4,900** | **5,153** | **15,317** | 4,396 | 5,596 | 9,992 | | | |
| Less: non-controlling interests | **—** | **—** | **(13)** | **(13)** | — | 5 | 5 | | | |
| | **5,264** | **4,900** | **5,140** | **15,304** | 4,396 | 5,591 | 9,987 | | | |
| **Group investment in joint ventures** | | | | | | | | | | |
| Group share of net assets (as above) | **5,264** | **4,900** | **5,140** | **15,304** | 4,396 | 5,591 | 9,987 | | | |
| Impairment charge for the year | **—** | **(2,900)** | **—** | **(2,900)** | — | — | — | | | |
| Loans made by group companies to joint ventures | **—** | **—** | **(4)** | **(4)** | — | (5) | (5) | | | |
| | **5,264** | **2,000** | **5,136** | **12,400** | 4,396 | 5,586 | 9,982 | | | |

## 16. Investments in joint ventures – continued

Transactions between the group and its joint ventures are summarized below.

| | | | | | | $ million |
|---|---|---|---|---|---|---|
| Sales to joint ventures | | 2022 | | 2021 | | 2020 |
| Product | Sales | Amount receivable at 31 December | Sales | Amount receivable at 31 December | Sales | Amount receivable at 31 December |
| LNG, crude oil and oil products, natural gas | **4,212** | **316** | 3,923 | 292 | 2,974 | 180 |

| Purchases from joint ventures | | 2022 | | 2021 | | 2020 |
|---|---|---|---|---|---|---|
| Product | Purchases | Amount payable at 31 December | Purchases | Amount payable at 31 December | Purchases | Amount payable at 31 December |
| LNG, crude oil and oil products, natural gas, refinery operating costs, plant processing fees | **1,893** | **574** | 716 | 93 | 959 | 84 |

In the normal course of business, bp enters into various arm's length transactions with joint ventures including fixed price commitments to sell and to purchase commodities, forward sale and purchase contracts and agency agreements.

The terms of the outstanding balances receivable from joint ventures are typically 30 to 45 days. The balances are unsecured and will be settled in cash. There are no significant provisions for doubtful debts relating to these balances and no significant expense recognized in the income statement in respect of bad or doubtful debts. Dividends receivable are not included in the table above.

The majority of sales to joint ventures in 2022 relate to heating oil, gasoline, diesel and lubricant product transactions with Mobene and Ocwen Energy. The majority of purchases from joint ventures in 2022 relate to crude oil and oil products transactions with Azule Energy.

The bp investment in Pan American Energy Group S.L. joint venture has been impaired in 2022 by $2,900 million as a result of expected portfolio changes.

bp's share of net impairment charges recognized by joint ventures in 2022 was $256 million (2021 reversals of $214 million) of which $276 million charge (2021 $nil) was in the gas and low carbon energy segment and $20 million reversals (2021 reversals of $214 million) was in the oil production & operations segment.

## 17. Investments in associates

The following table provides aggregated summarized financial information for the group's associates as it relates to the amounts recognized in the group income statement and on the group balance sheet. There were no individually material associates to the Group at 31 December 2022. The associate which was material to the Group at both 31 December 2021 and 2020 was Rosneft. At 31 December 2021 and 2020 bp classified its investment in Rosneft as an associate because, in management's judgement, bp had significant influence over Rosneft. On 27 February 2022, bp announced it would exit its shareholding in Rosneft and bp's two nominated Rosneft directors both stepped down from Rosneft's board. As a result, the significant judgement on significant influence over Rosneft was reassessed and a new significant estimate was identified for the fair value of bp's equity investment in Rosneft. From that date, bp accounts for its interest in Rosneft as a financial asset measured at fair value within 'Other investments'. The total pre-tax charge during the year-ended 31 December 2022 relating to bp's investment in Rosneft is $24,561 million consisting of $11,082 million included in losses on disposal, primarily relating to the recycling to the income statement of accumulated exchange losses, and a $13,479 million impairment charge including $528 million which relates to estimated earnings in the first two months of the year prior to the loss of significant influence. For further information see Note 1 - *Investment in Rosneft* and Note 4 Disposals and impairment. As a result of bp's decision to exit its other businesses with Rosneft in Russia, which were primarily accounted for as investments in associates, an additional impairment charge of $1,043 million including $35 million which relates to estimated earnings in the first two months of the year and accumulated exchange losses of $479 million previously charged to equity have been taken to the income statement. The total pre-tax charge in 2022 relating to bp's investment in Rosneft and other businesses with Rosneft in Russia is $25,520 million.

| | | | | | $ million |
|---|---|---|---|---|---|
| | Income statement | | | Balance sheet | |
| | Earnings from associates - after interest and tax | | | Investments in associates | |
| | 2022 | 2021 | 2020 | 2022 | 2021 |
| Rosneft[a] | **528** | 2,694 | (229) | **—** | 14,354 |
| Other associates | **874** | 762 | 128 | **8,201** | 6,647 |
| | **1,402** | 3,456 | (101) | **8,201** | 21,001 |

[a] See also Note 1 – Significant judgements and estimate: investment in Rosneft.

The group recognized dividends, net of withholding tax, of $nil from Rosneft in 2022 (2021 $640 million and 2020 $480 million).

## 17. Investments in associates – continued

The following table provides summarized financial information relating to Rosneft for 2021 and 2020. This information is presented on a 100% basis and reflects adjustments made by bp to Rosneft's own results in applying the equity method of accounting. bp adjusted Rosneft's results for the accounting required under IFRS relating to bp's purchase of its interest in Rosneft and the amortization of the deferred gain relating to the disposal of bp's interest in TNK-BP.

| | | $ million |
|---|---|---|
| | | Gross amount |
| | 2021 | 2020 |
| **Sales and other operating revenues** | 118,755 | 82,786 |
| Profit before interest and taxation | 18,537 | 1,270 |
| Finance costs | 1,357 | 1,742 |
| **Profit (loss) before taxation** | 17,180 | (472) |
| Taxation | 3,209 | 208 |
| Non-controlling interests | 1,743 | 482 |
| **Profit (loss) for the year** | 12,228 | (1,162) |
| Other comprehensive income | 54 | 1,653 |
| **Total comprehensive income** | 12,282 | 491 |
| Non-current assets | 155,898 | |
| Current assets | 45,790 | |
| **Total assets** | 201,688 | |
| Current liabilities | 47,061 | |
| Non-current liabilities | 78,117 | |
| **Total liabilities** | 125,178 | |
| **Net assets** | 76,510 | |
| Less: non-controlling interests | 11,357 | |
| | 65,153 | |

Summarized financial information for the group's share of associates is shown below.

| | | | | | | | $ million |
|---|---|---|---|---|---|---|---|
| | | | | | | | bp share |
| | **2022** | | | 2021 | | | 2020 |
| | **Total** | Rosneft | Other | Total | Rosneft | Other | Total |
| **Sales and other operating revenues** | **14,841** | 26,163 | 10,005 | 36,168 | 17,535 | 5,946 | 23,481 |
| Profit before interest and taxation | **3,053** | 4,084 | 1,602 | 5,686 | 295 | 276 | 571 |
| Finance costs | **73** | 299 | 73 | 372 | 372 | 80 | 452 |
| **Profit (loss) before taxation** | **2,980** | 3,785 | 1,529 | 5,314 | (77) | 196 | 119 |
| Taxation | **1,498** | 707 | 767 | 1,474 | 51 | 67 | 118 |
| Non-controlling interests | **80** | 384 | — | 384 | 101 | 1 | 102 |
| **Profit (loss) for the year** | **1,402** | 2,694 | 762 | 3,456 | (229) | 128 | (101) |
| Other comprehensive income | **352** | 12 | 27 | 39 | 336 | (19) | 317 |
| **Total comprehensive income** | **1,754** | 2,706 | 789 | 3,495 | 107 | 109 | 216 |
| Non-current assets | **11,993** | 34,346 | 9,259 | 43,605 | | | |
| Current assets | **3,368** | 10,088 | 2,418 | 12,506 | | | |
| **Total assets** | **15,361** | 44,434 | 11,677 | 56,111 | | | |
| Current liabilities | **2,936** | 10,368 | 1,876 | 12,244 | | | |
| Non-current liabilities | **4,255** | 17,210 | 3,298 | 20,508 | | | |
| **Total liabilities** | **7,191** | 27,578 | 5,174 | 32,752 | | | |
| **Net assets** | **8,170** | 16,856 | 6,503 | 23,359 | | | |
| Less: non-controlling interests | **—** | 2,502 | — | 2,502 | | | |
| | **8,170** | 14,354 | 6,503 | 20,857 | | | |
| **Group investment in associates** | | | | | | | |
| Group share of net assets (as above) | **8,170** | 14,354 | 6,503 | 20,857 | | | |
| Loans made by group companies to associates | **31** | — | 144 | 144 | | | |
| | **8,201** | 14,354 | 6,647 | 21,001 | | | |

## 17. Investments in associates – continued

Transactions between the group and its associates are summarized below.

| | | | | | | $ million |
|---|---|---|---|---|---|---|
| Sales to associates | 2022 | | 2021 | | 2020 | |
| Product | Sales | Amount receivable at 31 December | Sales | Amount receivable at 31 December | Sales | Amount receivable at 31 December |
| LNG, crude oil and oil products, natural gas | 1,042 | 417 | 852 | 201 | 855 | 169 |

| | | | | | | $ million |
|---|---|---|---|---|---|---|
| Purchases from associates | 2022 | | 2021 | | 2020 | |
| Product | Purchases | Amount payable at 31 December | Purchases | Amount payable at 31 December | Purchases | Amount payable at 31 December |
| Crude oil and oil products, natural gas, transportation tariff | 6,199 | 2,086 | 7,683 | 2,072 | 4,926 | 1,280 |

In the normal course of business, bp enters into various arm's length transactions with associates including fixed price commitments to sell and to purchase commodities, forward sale and purchase contracts and agency agreements.

The terms of the outstanding balances receivable from associates are typically 30 to 45 days. The balances are unsecured and will be settled in cash. There are no significant provisions for doubtful debts relating to these balances and no significant expense recognized in the income statement in respect of bad or doubtful debts. Dividends receivable are not included in the table above.

The majority of purchases from associates in 2022 relate to crude oil and oil products transactions with Aker BP. The majority of purchases from associates in 2021 relate to crude oil and oil products transactions with Rosneft. Sales to associates are related to various entities.

bp has commitments amounting to $8,488 million (2021 $9,930 million), primarily in relation to contracts with its associates for the purchase of transportation capacity. For information on capital commitments in relation to associates see Note 13.

bp's share of impairment charges taken by associates in 2022 was $nil (2021 $291 million).

## 18. Other investments

| | | | | $ million |
|---|---|---|---|---|
| | 2022 | | 2021 | |
| | Current | Non-current | Current | Non-current |
| Equity investments[a] | — | 1,040 | — | 717 |
| Contingent consideration | 364 | 1,522 | 237 | 1,680 |
| Other | 214 | 108 | 43 | 147 |
| | 578 | 2,670 | 280 | 2,544 |

a The majority of equity investments are unlisted.

Contingent consideration relates to amounts arising on disposals which are financial assets classified as measured at fair value through profit or loss. The fair value is determined using an estimate of discounted future cash flows that are expected to be received and is considered a level 3 valuation under the fair value hierarchy. Future cash flows are estimated based on inputs including oil and natural gas prices, production volumes and operating costs related to the disposed operations. The discount rate used is based on a risk-free rate adjusted for asset-specific risks. The contingent consideration principally relates to the disposal of our Alaskan business.

## 19. Inventories

| | | $ million |
|---|---|---|
| | 2022 | 2021 |
| Crude oil | 3,608 | 3,259 |
| Natural gas | 825 | 474 |
| Emissions allowances | 436 | 290 |
| Refined petroleum and petrochemical products | 7,920 | 6,638 |
| | 12,789 | 10,661 |
| Trading inventories | 14,004 | 11,525 |
| | 26,793 | 22,186 |
| Supplies | 1,288 | 1,525 |
| | 28,081 | 23,711 |
| Cost of inventories expensed in the income statement | 141,043 | 92,923 |

The inventory valuation at 31 December 2022 is stated net of a provision of $483 million (2021 $432 million) to write down inventories to their net realizable value, of which $195 million (2021 $64 million) relates to hydrocarbon inventories. The net charge to the income statement in the year in respect of inventory net realizable value provisions was $199 million (2021 $153 million credit), of which $195 million charge (2021 $151 million credit) related to hydrocarbon inventories.

Trading inventories are valued using quoted benchmark prices adjusted as appropriate for location and quality differentials. They are predominantly categorized within level 2 of the fair value hierarchy.

## 20. Trade and other receivables

| | | | | $ million |
|---|---|---|---|---|
| | | 2022 | | 2021 |
| | Current | Non-current | Current | Non-current |
| **Financial assets** | | | | |
| Trade receivables | **28,229** | **12** | 22,307 | 17 |
| Amounts receivable from joint ventures and associates | **654** | **79** | 404 | 89 |
| Receivables related to disposals[a] | **191** | **194** | 205 | 823 |
| Other receivables | **3,762** | **414** | 2,874 | 472 |
| | **32,836** | **699** | 25,790 | 1,401 |
| **Non-financial assets** | | | | |
| Sales taxes and production taxes | **1,037** | **379** | 1,131 | 474 |
| Other receivables | **137** | **14** | 218 | 818 |
| | **1,174** | **393** | 1,349 | 1,292 |
| | **34,010** | **1,092** | 27,139 | 2,693 |

a For further information see Note 4 • Disposals and impairment.

In both 2022 and 2021 the group entered into non-recourse arrangements to discount certain receivables in support of supply and trading activities and the management of credit risk.

Trade and other receivables are predominantly non-interest bearing.

See Note 29 for further information.

## 21. Valuation and qualifying accounts

| | | | | | | $ million |
|---|---|---|---|---|---|---|
| | | 2022 | | 2021 | | 2020 |
| | Trade and other receivables | Fixed asset investments | Trade and other receivables | Fixed asset investments | Trade and other receivables | Fixed asset investments |
| **At 1 January** | **584** | **169** | 555 | 186 | 509 | 249 |
| Charged to costs and expenses | **143** | **17,471** | 136 | 3 | 214 | 103 |
| Charged to other accounts[a] | **(8)** | **(27)** | (11) | — | 2 | — |
| Deductions | **(83)** | **(41)** | (96) | (20) | (170) | (166) |
| Reclassifications | **—** | **(14,522)** | — | — | — | — |
| **At 31 December** | **636** | **3,050** | 584 | 169 | 555 | 186 |

a Principally exchange adjustments.

Valuation and qualifying accounts relating to trade and other receivables comprise expected credit loss allowances. The expected credit loss allowance comprises $513 million (2021 $456 million, 2020 $456 million) relating to receivables that were credit-impaired at the end of the year and $123 million (2021 $128 million, 2020 $99 million) relating to receivables that were not credit-impaired at the end of the year.

Valuation and qualifying accounts relating to fixed asset investments comprise impairment provisions for investments in equity-accounted entities. The amount charged to costs and expenses in the year principally relates to bp's investments in Rosneft and The Pan American Energy Group S.L.. Amounts related to bp's investments in Rosneft and other businesses with Rosneft within Russia were reclassified following bp's loss of significant influence. See Note 1 - Investment in Rosneft, Note 4 Disposals and impairment, Note 16 Investments in joint ventures and Note 17 Investments in associates.

Valuation and qualifying accounts are deducted in the balance sheet from the assets to which they apply. For further information on the group's credit risk management policies and how the group recognizes and measures expected losses see Note 29.

## 22. Trade and other payables

| | | | | $ million |
|---|---|---|---|---|
| | 2022 | | 2021 | |
| | Current | Non-current | Current | Non-current |
| **Financial liabilities** | | | | |
| Trade payables | **47,210** | **—** | 37,327 | — |
| Amounts payable to joint ventures and associates | **2,660** | **—** | 2,165 | — |
| Payables for capital expenditure and acquisitions | **2,579** | **446** | 2,063 | 764 |
| Payables related to the Gulf of Mexico oil spill | **1,213** | **8,350** | 1,276 | 9,154 |
| Other payables | **5,995** | **1,133** | 5,736 | 175 |
| | **59,657** | **9,929** | 48,567 | 10,093 |
| **Non-financial liabilities** | | | | |
| Sales taxes, customs duties, production taxes and social security | **2,361** | **124** | 2,708 | 77 |
| Other payables | **1,966** | **334** | 1,336 | 397 |
| | **4,327** | **458** | 4,044 | 474 |
| | **63,984** | **10,387** | 52,611 | 10,567 |

Materially all of bp's trade payables have payment terms in the range of 30 to 60 days and give rise to operating cash flows.

Trade and other payables, other than those relating to the Gulf of Mexico oil spill, are predominantly interest free. See Note 29 (c) for further information.

Payables related to the Gulf of Mexico oil spill include amounts payable under the 2016 consent decree and settlement agreement with the United States and five Gulf coast states, including amounts payable for natural resource damages, state claims and Clean Water Act penalties. On a discounted basis the amounts included in payables related to the Gulf of Mexico oil spill for these elements of the agreements are $4,146 million payable over 10 years, $2,263 million payable over 11 years and $3,065 million payable over 10 years respectively at 31 December 2022. Reported within net cash provided by operating activities in the group cash flow statement is a net cash outflow of $1,370 million (2021 outflow of $1,484 million, 2020 outflow of $1,786 million) related to the Gulf of Mexico oil spill, which includes payments made in relation to these agreements. For full details of these agreements, see *bp Annual Report and Form 20-F 2015* - Legal Proceedings.

Payables related to the Gulf of Mexico oil spill at 31 December 2022 also include amounts payable for settled economic loss and property damage claims which are payable over a period of up to five years.

## 23. Provisions

| | | | | | | $ million |
|---|---|---|---|---|---|---|
| | Decommissioning | Environmental | Litigation and claims | Emissions | Other | Total |
| **At 1 January 2021** | **16,665** | **1,745** | **834** | **3,753** | **1,831** | **24,828** |
| Exchange adjustments | **(286)** | **(15)** | **(3)** | **(64)** | **(83)** | **(451)** |
| Acquisitions | **33** | **—** | **—** | **—** | **—** | **33** |
| New and increase in existing provisions[a] | **1,215** | **502** | **241** | **3,695** | **223** | **5,876** |
| Write-back of unused provisions[a] | **(9)** | **(89)** | **(53)** | **(40)** | **(174)** | **(365)** |
| Unwinding of discount[b] | **310** | **35** | **14** | **—** | **10** | **369** |
| Change in discount rate | **(3,245)** | **(134)** | **(81)** | **—** | **(13)** | **(3,473)** |
| Utilization | **(44)** | **(314)** | **(171)** | **(2,282)** | **(321)** | **(3,132)** |
| Reclassified to other payables | **(369)** | **(3)** | **—** | **—** | **(5)** | **(377)** |
| Reclassified as liabilities directly associated with assets held for sale | **(32)** | **(3)** | **—** | **—** | **(1)** | **(36)** |
| Deletions | **(1,895)** | **(3)** | **(2)** | **—** | **(48)** | **(1,948)** |
| **At 31 December 2022** | **12,343** | **1,721** | **779** | **5,062** | **1,419** | **21,324** |
| Of which – current | **577** | **390** | **191** | **4,643** | **531** | **6,332** |
| – non-current | **11,766** | **1,331** | **588** | **419** | **888** | **14,992** |

a Recognized in the Group income statement, other than changes in decommissioning provisions related to owned assets.
b Recognized in the Group income statement.

The decommissioning provision primarily comprises the future cost of decommissioning oil and natural gas wells, facilities and related pipelines. The environmental provision includes provisions for costs related to the control, abatement, clean-up or elimination of environmental pollution relating to soil, groundwater, surface water and sediment contamination. The litigation and claims category includes provisions for matters related to, for example, commercial disputes, product liability, and allegations of exposures of third parties to toxic substances. Emissions provisions primarily relate to obligations under the U.S. Environmental Protection Agency Renewable Fuel Standard Program and are driven by the amount of the obligations outstanding and current price of the related credits. The provision will principally be settled through allowances already held as inventory in the group balance sheet.

For information on significant estimates and judgements made in relation to provisions, see Provisions and contingencies within Note 1.

### Gulf of Mexico oil spill

The group has recognized certain assets, payables and provisions and incurs certain residual costs relating to the Gulf of Mexico oil spill that occurred in 2010. For further information see Notes 7, 22, 29, 33. The litigation and claims provision presented in the table above includes the latest estimate for the remaining costs associated with the Gulf of Mexico oil spill. The amounts payable may differ from the amount provided and the timing of payments is uncertain.

## 24. Pensions and other post-retirement benefits

Most group companies have pension plans, the forms and benefits of which vary with conditions and practices in the countries concerned. Pension benefits may be provided through defined contribution plans (money purchase schemes) or defined benefit plans (final salary and other types of schemes with committed pension benefit payments). For defined contribution plans, retirement benefits are determined by the value of funds arising from contributions paid in respect of each employee. For defined benefit plans, retirement benefits are based on such factors as an employee's pensionable salary and length of service. Defined benefit plans may be funded or unfunded. The assets of funded plans are generally held in separately administered trusts.

For information on significant estimates and judgements made in relation to accounting for these plans see Pensions and other post-retirement benefits in Note 1.

The pension obligation in the UK consists primarily of a funded final salary pension plan under which retired employees draw the majority of their benefit as an annuity. This pension plan is governed by a corporate trustee whose board is composed of four member-nominated directors, four company-nominated directors, one independent director and one independent chair nominated by the company. The trustee board is required by law to act in the best interests of the plan participants and is responsible for setting certain policies, such as investment policies of the plan. This plan was closed to new joiners in 2010 and was closed to future accrual on 30 June 2021.

Employees in the UK are eligible for membership of a defined contribution plan.

In the US, all pension benefits now accrue under a cash balance formula. Benefits previously accrued under final salary formulas are legally protected. Retiring US employees typically take their pension benefit in the form of a lump sum payment upon retirement. The plan is funded and its assets are overseen by a fiduciary Investment Committee. During 2022 the committee was composed of seven bp employees appointed by the president of bp Corporation North America Inc. (the appointing officer). The Investment Committee is required by law to act in the best interests of the plan participants and is responsible for setting certain policies, such as the investment policies of the plan. US employees are also eligible to participate in a defined contribution (401k) plan in which employee contributions are matched with company contributions.

In the US, group companies also provide post-retirement healthcare to eligible retired employees and their dependants (and, in certain legacy cases, life insurance coverage); the entitlement to these benefits is based on the date of hire, the employee remaining in service until a specified age and completion of a minimum period of service.

In the Eurozone, there are defined benefit pension plans in Germany, France, the Netherlands and other countries. In Germany and France, the majority of the pensions are unfunded. In Germany, the group's largest Eurozone plan, employees receive a pension and also have a choice to supplement their core pension through salary sacrifice. For employees who joined since 2002, the core pension benefit is a career average plan with retirement benefits based on such factors as an employee's pensionable salary and length of service. The returns on the notional contributions made by both the company and employees are based on the interest rate which is set out in German tax law. Retired German employees take their pension benefit typically in the form of an annuity. The German plans are governed by legal agreements between bp and the works council or between bp and the trade union.

The level of contributions to funded defined benefit plans is the amount needed to provide adequate funds to meet pension obligations as they fall due. During 2022 the aggregate level of contributions was $74 million (2021 $274 million and 2020 $325 million). The aggregate level of contributions in 2023 is expected to be approximately $150 million and includes contributions in all countries that we expect to be required to make contributions by law or under contractual agreements, as well as an allowance for discretionary funding.

For the primary UK plan there is a funding agreement between the group and the trustee. On a three year cycle a schedule of contributions is agreed covering the next five years. The schedule of contributions is next scheduled to be updated after the 31 December 2023 formal actuarial valuation. No contractually committed funding was due at 31 December 2022. The closure of the defined benefit plan to future accrual eliminated the need for funding in 2022 and reduces the plan's expected future funding volatility.

The surplus relating to the primary UK pension plan is recognized on the balance sheet on the basis that the company is entitled to a refund of any remaining assets once all members have left the plan.

Minimum pension funding in the US is determined by legislation and is supplemented by discretionary contributions. No contributions were made into the US pension plan in 2022 and no statutory funding requirement is expected in the next 12 months.

The surplus relating to the US pension fund is recognized on the balance sheet on the basis that economic benefit can be gained from the surplus through a reduction in future contributions.

There was no minimum funding requirement for the US plan, and no significant minimum funding requirements in other countries at 31 December 2022.

The obligation and cost of providing pensions and other post-retirement benefits is assessed annually using the projected unit credit method. The date of the most recent actuarial review was 31 December 2022. The UK plans are subject to a formal actuarial valuation every three years; valuations are required more frequently in many other countries. The most recent formal actuarial valuation of the UK pension plans was as at 31 December 2020. A valuation of the US plan and largest Eurozone plans are carried out annually.

## 24. Pensions and other post-retirement benefits – continued

The material financial assumptions used to estimate the benefit obligations of the various plans are set out below. The assumptions are reviewed by management at the end of each year and are used to evaluate the accrued benefit obligation at 31 December and pension expense for the followng year.

| | | | % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | UK | | | US | | | Eurozone |
| Financial assumptions used to determine benefit obligation[a] | **2022** | 2021 | 2020 | **2022** | 2021 | 2020 | **2022** | 2021 | 2020 |
| Discount rate for plan liabilities | **5.0** | 1.8 | 1.4 | **5.2** | 2.7 | 2.2 | **4.2** | 1.3 | 1.0 |
| Rate of increase for pensions in payment | **2.9** | 3.2 | 2.8 | **—** | — | — | **1.8** | 1.4 | 1.3 |
| Rate of increase in deferred pensions | **2.9** | 3.2 | 2.8 | **—** | — | — | **0.6** | 0.4 | 0.5 |
| Inflation for plan liabilities | **3.1** | 3.3 | 2.9 | **2.0** | 2.1 | 1.7 | **2.1** | 1.6 | 1.5 |

| | | | | | | | | | % |
|---|---|---|---|---|---|---|---|---|---|
| | | | UK | | | US | | | Eurozone |
| Financial assumptions used to determine benefit expense | **2022** | 2021 | 2020 | **2022** | 2021 | 2020 | **2022** | 2021 | 2020 |
| Discount rate for plan service cost[b] | **N/A** | 1.5 | 2.1 | **2.8** | 2.4 | 3.2 | **1.7** | 1.4 | 1.8 |
| Discount rate for plan other finance expense[c] | **1.8** | 1.7 | 2.1 | **2.7** | 2.2 | 3.1 | **1.3** | 1.0 | 1.3 |
| Inflation for plan service cost[b] | **N/A** | 2.8 | 2.6 | **2.1** | 1.7 | 1.5 | **1.6** | 1.5 | 1.7 |

[a] Salary growth has not been a material financial assumption for the Group following the closure of the primary pension plan to future accrual in 2021. The rate of increase in salaries for the UK was 3.6% in 2020.

[b] UK discount rate and inflation rate assumptions are not significant in determining the benefit expense following the closure of the primary UK plan to future accrual in 2021. Rates for the remaining small worldwide plan administered/reported through the UK are 2.5% and 2.2% respectively.

[c] The discount rate for plan other finance expense in 2021 was 1.4% for the primary UK plan for the period before the plan closed to future accrual on 30th June 2021 and 1.9% thereafter.

The discount rate assumptions are based on third-party AA corporate bond indices and for our largest plans in the UK, US and the Eurozone we use yields that reflect the maturity profile of the expected benefit payments. The inflation rate assumptions for our UK and US plans are based on the difference between the yields on index-linked and fixed-interest long-term government bonds. In other countries, including the Eurozone, we use this approach, or advice from the local actuary depending on the information available. The inflation assumptions are used to determine the rate of increase for pensions in payment and the rate of increase in deferred pensions where there is such an increase.

In addition to the financial assumptions, we regularly review the demographic and mortality assumptions. The mortality assumptions reflect best practice in the countries in which we provide pensions and have been chosen with regard to applicable published tables adjusted where appropriate to reflect the experience of the group and an extrapolation of past longevity improvements into the future. bp's most substantial pension liabilities are in the UK, the US and the Eurozone where our mortality assumptions are as follows:

| | | | | | | | | | Years |
|---|---|---|---|---|---|---|---|---|---|
| Mortality assumptions | | | UK | | | US | | | Eurozone |
| | **2022** | 2021 | 2020 | **2022** | 2021 | 2020 | **2022** | 2021 | 2020 |
| Life expectancy at age 60 for a male currently aged 60 | **26.9** | 26.9 | 26.9 | **25.0** | 24.9 | 24.7 | **26.0** | 25.8 | 25.7 |
| Life expectancy at age 60 for a male currently aged 40 | **28.5** | 28.4 | 28.4 | **26.6** | 26.6 | 26.4 | **28.5** | 28.3 | 28.2 |
| Life expectancy at age 60 for a female currently aged 60 | **28.8** | 28.9 | 28.8 | **28.0** | 27.9 | 27.7 | **29.3** | 29.1 | 29.0 |
| Life expectancy at age 60 for a female currently aged 40 | **30.6** | 30.5 | 30.4 | **29.5** | 29.4 | 29.2 | **31.4** | 31.2 | 31.2 |

Pension plan assets are generally held in trusts, the primary objective of which is to accumulate assets sufficient to meet the obligations of the plans. The assets of the trusts are invested in a manner consistent with fiduciary obligations and principles that reflect current practices in portfolio management.

A significant proportion of the assets are held in equities, which are expected to generate a higher level of return over the long term, with an acceptable level of risk. In order to provide reasonable assurance that no single security or type of security has an unwarranted impact on the total portfolio, the investment portfolios are highly diversified.

The trustee's long-term investment objective for the primary UK plan as it matures is to invest in assets whose value changes in the same way as the plan liabilities, in order to reduce the level of funding risk. To move towards this objective, the UK plan uses a liability driven investment (LDI) approach for part of the portfolio, investing primarily in government bonds to achieve this matching effect for the most significant plan liability assumptions of interest rate and inflation rate. This is partly funded by short-term sale and repurchase agreements, whereby the plan borrows money using existing bonds as security and which will be bought back at a specified price at an agreed future date. The funds raised are used to invest in further bonds to increase the proportion of assets which match the plan liabilities. The borrowings are shown separately in the analysis of pension plan assets in the table below.

For the primary UK pension plan there is an agreement with the trustee to increase the proportion of assets with liability matching characteristics over time primarily by reducing the proportion of plan assets held as equities and increasing the proportion held as bonds. This agreement is not impacted by the closure of the plan to future accrual. There is a similar agreement in place for the primary US plan. During 2022, the asset allocation policies of the UK and the US plans switched 2% and 3% of plan assets respectively from equities to bonds (2021 5% and 13% respectively).

The current asset allocation policy for the major plans at 31 December 2022 was as follows:

| | **UK** | **US** |
|---|---|---|
| Asset category | **%** | **%** |
| Total equity (including private equity) | **10** | **24** |
| Bonds/cash (including LDI) | **83** | **76** |
| Property/real estate | **7** | **—** |

## 24. Pensions and other post-retirement benefits – continued

The amounts invested under the LDI programme by the primary UK pension plan as at 31 December 2022 were $3,981 million (2021 $7,399 million) of government-issued nominal bonds and $11,945 million (2021 $24,516 million) of index-linked bonds.

Some of the group's pension plans in the Eurozone and other countries use derivative financial instruments as part of their asset mix to manage the level of risk. The fair value of these instruments is included in other assets in the table below.

The group's main pension plans do not invest directly in either securities or property/real estate of the company or of any subsidiary.

The fair values of the various categories of assets held by the defined benefit plans at 31 December are presented in the table below, including the effects of derivative financial instruments. Movements in the fair value of plan assets during the year are shown in detail in the table on page 232.

| | | | | | $ million |
|---|---|---|---|---|---|
| | UK[a] | US[b] | Eurozone | Other | Total |
| **Fair value of pension plan assets** | | | | | |
| **At 31 December 2022** | | | | | |
| Listed equities – developed markets | **1,252** | **127** | **299** | **213** | **1,891** |
| – emerging markets | **117** | **17** | **48** | **71** | **253** |
| Private equity[c] | **2,715** | **1,126** | **—** | **2** | **3,843** |
| Government issued nominal bonds[d] | **4,039** | **1,370** | **682** | **263** | **6,354** |
| Government issued index-linked bonds[d] | **11,945** | **—** | **79** | **—** | **12,024** |
| Corporate bonds[d] | **6,317** | **2,569** | **563** | **146** | **9,595** |
| Property[e] | **2,297** | **—** | **89** | **18** | **2,404** |
| Cash | **567** | **175** | **61** | **116** | **919** |
| Other[f] | **1,088** | **33** | **56** | **357** | **1,534** |
| Debt (repurchase agreements) used to fund liability driven investments | **(5,290)** | **—** | **—** | **—** | **(5,290)** |
| | **25,047** | **5,417** | **1,877** | **1,186** | **33,527** |
| **At 31 December 2021** | | | | | |
| Listed equities – developed markets | 2,964 | 340 | 473 | 290 | 4,067 |
| – emerging markets | 252 | 45 | 67 | 76 | 440 |
| Private equity[c] | 3,233 | 1,537 | — | 3 | 4,773 |
| Government issued nominal bonds[d] | 7,491 | 2,606 | 974 | 432 | 11,503 |
| Government issued index-linked bonds[d] | 24,516 | — | 100 | — | 24,616 |
| Corporate bonds[d] | 10,128 | 2,475 | 689 | 498 | 13,790 |
| Property[e] | 2,714 | — | 110 | 22 | 2,846 |
| Cash | 1,136 | 116 | 54 | 69 | 1,375 |
| Other | 1,133 | 54 | 70 | 22 | 1,279 |
| Debt (repurchase agreements) used to fund liability driven investments | (10,723) | — | — | — | (10,723) |
| | 42,844 | 7,173 | 2,537 | 1,412 | 53,966 |
| **At 31 December 2020** | | | | | |
| Listed equities – developed markets | 5,008 | 1,112 | 542 | 318 | 6,980 |
| – emerging markets | 418 | 115 | 68 | 70 | 671 |
| Private equity[c] | 2,899 | 1,604 | — | 4 | 4,507 |
| Government issued nominal bonds[d] | 4,303 | 1,839 | 1,111 | 616 | 7,869 |
| Government issued index-linked bonds[d] | 24,576 | — | 107 | — | 24,683 |
| Corporate bonds[d] | 8,906 | 2,398 | 587 | 279 | 12,170 |
| Property[e] | 2,553 | | 110 | 28 | 2,691 |
| Cash | 1,392 | 267 | 51 | 163 | 1,873 |
| Other | 795 | 131 | 104 | 30 | 1,060 |
| Debt (repurchase agreements) used to fund liability driven investments | (9,387) | | | | (9,387) |
| | 41,463 | 7,466 | 2,680 | 1,508 | 53,117 |

a Bonds held by the UK pension plans are denominated in sterling or hedged back to sterling to minimize foreign currency exposure. Property held by the UK pension plans is in the United Kingdom.
b Bonds held by the US pension plans are denominated in US dollars or hedged back to USD to minimize foreign currency exposure.
c Private equity is valued at fair value based on the most recent transaction price or third-party net asset, revenue or earnings based valuations that generally result in the use of significant unobservable inputs.
d Bonds held by pension plans are predominantly valued using observable market data based inputs other than quoted market prices in active markets.
e Properties are valued based on an analysis of recent market transactions supported by market knowledge derived from third-party professional valuers that generally result in the use of significant unobservable inputs.
f Other includes insurance policies arising from annuity buy-in in Canada amounting to $341 million.

## 24. Pensions and other post-retirement benefits – continued

| | | | | | $ million |
|---|---|---|---|---|---|
| | | | | | 2022 |
| | UK | US | Eurozone | Other | Total |
| Analysis of the amount charged to profit or loss | | | | | |
| Current service cost[a] | 41 | 219 | 87 | 25 | 372 |
| Past service cost[b] | 23 | – | (1) | (21) | 1 |
| Settlement[b] | (8) | – | – | (4) | (12) |
| **Operating charge (credit) relating to defined benefit plans** | 56 | 219 | 86 | – | 361 |
| Payments to defined contribution plans | 110 | 132 | 6 | 36 | 284 |
| **Total operating charge (credit)** | 166 | 351 | 92 | 36 | 645 |
| Interest income on plan assets[a] | (694) | (189) | (34) | (44) | (961) |
| Interest on plan liabilities | 529 | 217 | 85 | 61 | 892 |
| **Other finance (income) expense** | (165) | 28 | 51 | 17 | (69) |
| Analysis of the amount recognized in other comprehensive income | | | | | |
| Actual asset return less interest income on plan assets | (12,955) | (1,581) | (507) | (151) | (15,194) |
| Change in financial assumptions underlying the present value of the plan liabilities | 11,531 | 2,195 | 1,903 | 221 | 15,850 |
| Change in demographic assumptions underlying the present value of the plan liabilities | 47 | – | (14) | (15) | 18 |
| Experience gains and losses arising on the plan liabilities | (146) | (15) | (159) | (14) | (334) |
| **Remeasurements recognized in other comprehensive income** | (1,523) | 599 | 1,223 | 41 | 340 |
| Movements in benefit obligation during the year | | | | | |
| Benefit obligation at 1 January | 32,834 | 8,273 | 7,108 | 1,652 | 49,867 |
| Exchange adjustments | (3,224) | – | (443) | (68) | (3,735) |
| Operating charge relating to defined benefit plans | 56 | 219 | 86 | – | 361 |
| Interest cost | 529 | 217 | 85 | 61 | 892 |
| Contributions by plan participants | 9 | – | 2 | 4 | 15 |
| Benefit payments (funded plans)[c] | (1,211) | (364) | (78) | (79) | (1,732) |
| Benefit payments (unfunded plans)[c] | (7) | (285) | (229) | (23) | (544) |
| Reclassified as assets held for sale | – | – | – | (12) | (12) |
| Disposals | (74) | – | (2) | – | (76) |
| Remeasurements | (11,432) | (2,180) | (1,730) | (192) | (15,534) |
| **Benefit obligation at 31 December[a d]** | 17,480 | 5,880 | 4,799 | 1,343 | 29,502 |
| Movements in fair value of plan assets during the year | | | | | |
| Fair value of plan assets at 1 January | 42,844 | 7,173 | 2,537 | 1,412 | 53,966 |
| Exchange adjustments | (4,258) | – | (156) | (52) | (4,466) |
| Interest income on plan assets[a e] | 694 | 189 | 34 | 44 | 961 |
| Contributions by plan participants | 9 | – | 2 | 4 | 15 |
| Contributions by employers (funded plans) | 10 | – | 45 | 19 | 74 |
| Benefit payments (funded plans)[c] | (1,211) | (364) | (78) | (79) | (1,732) |
| Reclassified as assets held for sale | – | – | – | (11) | (11) |
| Disposals | (86) | – | – | – | (86) |
| Remeasurements[e] | (12,955) | (1,581) | (507) | (151) | (15,194) |
| Fair value of plan assets at 31 December[f] | 25,047 | 5,417 | 1,877 | 1,186 | 33,527 |
| **Surplus (deficit) at 31 December** | 7,567 | (463) | (2,922) | (157) | 4,025 |
| Represented by | | | | | |
| Asset recognized | 7,716 | 1,227 | 256 | 70 | 9,269 |
| Liability recognized | (149) | (1,690) | (3,178) | (227) | (5,244) |
| | 7,567 | (463) | (2,922) | (157) | 4,025 |
| The surplus (deficit) may be analysed between funded and unfunded plans as follows | | | | | |
| Funded | 7,716 | 1,227 | 238 | 39 | 9,220 |
| Unfunded | (149) | (1,690) | (3,160) | (196) | (5,195) |
| | 7,567 | (463) | (2,922) | (157) | 4,025 |
| The defined benefit obligation may be analysed between funded and unfunded plans as follows | | | | | |
| Funded | (17,331) | (4,190) | (1,639) | (1,147) | (24,307) |
| Unfunded | (149) | (1,690) | (3,160) | (196) | (5,195) |
| | (17,480) | (5,880) | (4,799) | (1,343) | (29,502) |

a The costs of managing plan investments are offset against the investment return, the costs of administering pension plan benefits are generally included in current service cost and the costs of administering other post-retirement benefit plans are included in the benefit obligation. Following the closure of the primary UK pension plan to future accrual, current service cost in the UK consists of $30 million of costs of administering that plan and $11 million of current service cost from the remaining small worldwide plans administered and reported through the UK.
b Past service costs predominantly represent largely offsetting income and costs due to the removal of some benefits for members in Turkish plans and their replacement with new arrangements administered and reported through the UK. Settlements reflect costs associated with buyouts in Canada and in certain other small worldwide plans administered and reported through the UK.
c The benefit payments amount shown above comprises $2,217 million benefits and $8 million settlements, plus $51 million of plan expenses incurred in the administration of the benefit.
d The benefit obligation for the US is made up of $4,411 million for pension liabilities and $1,469 million for other post-retirement benefit liabilities (which are unfunded and are primarily retiree medical liabilities). The benefit obligation for the Eurozone includes $2,992 million for pension liabilities in Germany which is largely unfunded.
e The actual return on plan assets is made up of the sum of the interest income on plan assets and the remeasurement of plan assets as disclosed above.
f The fair value of plan assets includes borrowings related to the LDI programme as described on page 230.

## 24. Pensions and other post-retirement benefits – continued

| | | | | | $ million |
|---|---|---|---|---|---|
| | | | | | 2021 |
| | UK | US | Eurozone | Other | Total |
| Analysis of the amount charged to profit or loss | | | | | |
| Current service cost[a] | 154 | 246 | 105 | 31 | 536 |
| Past service cost[b] | (302) | — | (27) | 2 | (327) |
| Settlement[b] | — | — | (4) | (1) | (5) |
| **Operating charge relating to defined benefit plans** | (148) | 246 | 74 | 32 | 204 |
| Payments to defined contribution plans | 76 | 136 | 7 | 36 | 255 |
| **Total operating charge** | (72) | 382 | 81 | 68 | 459 |
| Interest income on plan assets[a] | (684) | (150) | (30) | (40) | (904) |
| Interest on plan liabilities | 559 | 209 | 78 | 56 | 902 |
| **Other finance (income) expense** | (125) | 59 | 48 | 16 | (2) |
| Analysis of the amount recognized in other comprehensive income | | | | | |
| Actual asset return less interest income on plan assets | 2,440 | 749 | 12 | 25 | 3,226 |
| Change in financial assumptions underlying the present value of the plan liabilities | (100) | 777 | 233 | 97 | 1,007 |
| Change in demographic assumptions underlying the present value of the plan liabilities | 66 | (41) | (15) | 1 | 11 |
| Experience gains and losses arising on the plan liabilities | 7 | 173 | (11) | 3 | 172 |
| **Remeasurements recognized in other comprehensive income** | 2,413 | 1,658 | 219 | 126 | 4,416 |
| Movements in benefit obligation during the year | | | | | |
| Benefit obligation at 1 January | 34,171 | 10,187 | 8,161 | 1,895 | 54,414 |
| Exchange adjustments | (255) | — | (623) | (51) | (929) |
| Operating charge relating to defined benefit plans | (148) | 246 | 74 | 32 | 204 |
| Interest cost | 559 | 209 | 78 | 56 | 902 |
| Contributions by plan participants[c] | 18 | — | 2 | 6 | 26 |
| Benefit payments (funded plans)[d] | (1,530) | (1,192) | (87) | (164) | (2,973) |
| Benefit payments (unfunded plans)[d] | (8) | (268) | (288) | (21) | (585) |
| Disposals | — | — | (2) | — | (2) |
| Remeasurements | 27 | (909) | (207) | (101) | (1,190) |
| **Benefit obligation at 31 December[a e]** | 32,834 | 8,273 | 7,108 | 1,652 | 49,867 |
| Movements in fair value of plan assets during the year | | | | | |
| Fair value of plan assets at 1 January | 41,463 | 7,466 | 2,680 | 1,508 | 53,117 |
| Exchange adjustments | (365) | — | (214) | (28) | (607) |
| Interest income on plan assets[a f] | 684 | 150 | 30 | 40 | 904 |
| Contributions by plan participants[c] | 18 | — | 2 | 6 | 26 |
| Contributions by employers (funded plans) | 134 | — | 115 | 25 | 274 |
| Benefit payments (funded plans)[d] | (1,530) | (1,192) | (87) | (164) | (2,973) |
| Disposals | — | — | (1) | — | (1) |
| Remeasurements[f] | 2,440 | 749 | 12 | 25 | 3,226 |
| Fair value of plan assets at 31 December[g] | 42,844 | 7,173 | 2,537 | 1,412 | 53,966 |
| **Surplus (deficit) at 31 December** | 10,010 | (1,100) | (4,571) | (240) | 4,099 |
| Represented by | | | | | |
| Asset recognized | 10,280 | 1,410 | 155 | 74 | 11,919 |
| Liability recognized | (270) | (2,510) | (4,726) | (314) | (7,820) |
| | 10,010 | (1,100) | (4,571) | (240) | 4,099 |
| The surplus (deficit) may be analysed between funded and unfunded plans as follows | | | | | |
| Funded | 10,280 | 1,410 | 94 | 30 | 11,814 |
| Unfunded | (270) | (2,510) | (4,665) | (270) | (7,715) |
| | 10,010 | (1,100) | (4,571) | (240) | 4,099 |
| The defined benefit obligation may be analysed between funded and unfunded plans as follows | | | | | |
| Funded | (32,564) | (5,763) | (2,443) | (1,382) | (42,152) |
| Unfunded | (270) | (2,510) | (4,665) | (270) | (7,715) |
| | (32,834) | (8,273) | (7,108) | (1,652) | (49,867) |

a The costs of managing plan investments are offset against the investment return, the costs of administering pension plan benefits are generally included in current service cost and the costs of administering other post-retirement benefit plans are included in the benefit obligation.
b The past service credit in the UK represents curtailment gains arising from the closure of the primary pension plan in the UK to future accrual. For active members of that plan on 30 June 2021, benefits payable are now linked to salary as at that date. Past service credits and settlements in the Eurozone include $18 million of curtailments and settlements due to restructuring initiatives. Remaining past service cost and settlements represent charges for special termination benefits reflecting the increased liability arising as a result of early retirements.
c Most of the contributions made by plan participants into UK pension plans were made under salary sacrifice.
d The benefit payments amount shown above comprises $3,416 million benefits and $93 million settlements, plus $49 million of plan expenses incurred in the administration of the benefit.
e The benefit obligation for the US is made up of $6,164 million for pension liabilities and $2,109 million for other post-retirement benefit liabilities (which are unfunded and are primarily retiree medical liabilities). The benefit obligation for the Eurozone includes $4,405 million for pension liabilities in Germany which is largely unfunded.
f The actual return on plan assets is made up of the sum of the interest income on plan assets and the remeasurement of plan assets as disclosed above.
g The fair value of plan assets includes borrowings related to the LDI programme as described on page 230.

## 24. Pensions and other post-retirement benefits – continued

| | | | | | $ million |
|---|---|---|---|---|---|
| | | | | | 2020 |
| | UK | US | Eurozone | Other | Total |
| **Analysis of the amount charged to profit or loss** | | | | | |
| Current service cost[a] | 250 | 292 | 103 | 38 | 683 |
| Past service cost[b] | (48) | (66) | 12 | (20) | (122) |
| Settlement | – | (23) | 10 | (1) | (14) |
| **Operating charge relating to defined benefit plans** | 202 | 203 | 125 | 17 | 547 |
| Payments to defined contribution plans | 49 | 183 | 2 | 38 | 272 |
| **Total operating charge** | 251 | 386 | 127 | 55 | 819 |
| Interest income on plan assets[a] | (725) | (210) | (33) | (40) | (1,008) |
| Interest on plan liabilities | 596 | 289 | 97 | 59 | 1,041 |
| **Other finance (income) expense** | (129) | 79 | 64 | 19 | 33 |
| **Analysis of the amount recognized in other comprehensive income** | | | | | |
| Actual asset return less interest income on plan assets | 4,108 | 1,041 | 104 | 38 | 5,291 |
| Change in financial assumptions underlying the present value of the plan liabilities | (4,207) | (1,178) | (143) | (42) | (5,570) |
| Change in demographic assumptions underlying the present value of the plan liabilities | 585 | 29 | 56 | (4) | 666 |
| Experience gains and losses arising on the plan liabilities | 54 | (101) | (178) | 8 | (217) |
| **Remeasurements recognized in other comprehensive income** | 540 | (209) | (161) | – | 170 |

a The costs of managing plan investments are offset against the investment return, the costs of administering pension plan benefits are generally included in current service cost and the costs of administering other post-retirement benefit plans are included in the benefit obligation.
b Past service costs represent curtailment gains arising from restructuring programmes in the UK, US and other countries, whilst past service costs and settlements in the Eurozone represent charges for special termination benefits reflecting the increased liability arising as a result of early retirements. Settlement costs in the US resulted from a pension risk transfer to an external carrier for a group of small benefit retirees.

### Sensitivity analysis

The discount rate, inflation and the mortality assumptions all have a significant effect on the amounts reported. A one-percentage point change, in isolation, in certain assumptions as at 31 December 2022 for the group's pensions and other post-retirement benefit expense would have had the effects shown in the tables below. The effects shown for the expense in 2023 comprise the total of current service cost and net finance income or expense.

| | | | | | | $ million |
|---|---|---|---|---|---|---|
| | | | | | One percentage point | |
| | UK | | US | | Eurozone | |
| | Increase | Decrease | Increase | Decrease | Increase | Decrease |
| **Discount rate[a]** | | | | | | |
| Effect on expense in 2023 | **(200)** | **179** | **(42)** | **48** | **(9)** | **5** |
| Effect on obligation at 31 December 2022 | **(2,043)** | **2,552** | **(480)** | **686** | **(512)** | **616** |
| **Inflation rate[b]** | | | | | | |
| Effect on expense in 2023 | **82** | **(77)** | **7** | **(6)** | **31** | **(28)** |
| Effect on obligation at 31 December 2022 | **1,646** | **(1,531)** | **39** | **(34)** | **506** | **(441)** |

a The amounts presented reflect that the discount rate is used to determine the asset interest income as well as the interest cost on the obligation.
b The amounts presented reflect the total impact of an inflation rate change on the assumptions for rate of increase in salaries, pensions in payment and deferred pensions.

| | | | $ million |
|---|---|---|---|
| | One year increase | | |
| | UK | US | Eurozone |
| **Longevity** | | | |
| Effect on expense in 2023 | **25** | **4** | **9** |
| Effect on obligation at 31 December 2022 | **504** | **68** | **182** |

### Estimated future benefit payments and the weighted average duration of defined benefit obligations

The expected benefit payments, which reflect expected future service, as appropriate, but exclude plan expenses, and the weighted average duration of the defined benefit obligations at 31 December 2022 are as follows:

| | | | | | $ million |
|---|---|---|---|---|---|
| Estimated future benefit payments | UK | US | Eurozone | Other | Total |
| 2023 | **985** | **497** | **307** | **95** | **1,884** |
| 2024 | **1,016** | **473** | **301** | **90** | **1,880** |
| 2025 | **1,022** | **477** | **307** | **90** | **1,896** |
| 2026 | **1,035** | **468** | **297** | **90** | **1,890** |
| 2027 | **1,048** | **470** | **293** | **90** | **1,901** |
| 2028-2032 | **5,371** | **2,283** | **1,376** | **459** | **9,489** |
| | | | | | Years |
| Weighted average duration | **13.0** | **9.8** | **12.0** | **10.8** | |

## 25. Cash and cash equivalents

| | | $ million |
|---|---|---|
| | **2022** | 2021 |
| Cash | **15,008** | 9,101 |
| Triparty repos and term bank deposits | **7,971** | 15,655 |
| Cash equivalents (excluding triparty repos and term bank deposits) | **6,216** | 5,925 |
| | **29,195** | 30,681 |

Cash and cash equivalents comprise cash in hand; current balances with banks and similar institutions; deposits and triparty repos of three months or less with banks and similar institutions; money market funds and treasury bills. The carrying amounts of cash, triparty repos, term bank deposits and treasury bills approximate their fair values. Substantially all of the other cash equivalents are categorized within level 1 of the fair value hierarchy.

Cash and cash equivalents at 31 December 2022 includes $5,866 million (2021 $4,740 million) that is restricted. The restricted cash balances include amounts required to cover initial margin on trading exchanges and certain cash balances which are subject to exchange controls.

The group holds $5,822 million (2021 $4,668 million) of cash and cash equivalents outside the UK and it is not expected that any significant tax will arise on repatriation.

## 26. Finance debt

| | | | | | | $ million |
|---|---|---|---|---|---|---|
| | | | **2022** | | | 2021 |
| | **Current** | **Non-current** | **Total** | Current | Non-current | Total |
| Borrowings | **3,198** | **43,746** | **46,944** | 5,557 | 55,619 | 61,176 |

The main elements of current borrowings are the current portion of long-term borrowings that is due to be repaid in the next 12 months of $2,297 million (2021 $3,366 million) and issued commercial paper of $725 million (2021 $2,163 million). Finance debt does not include accrued interest of $409 million (2021 $484 million), which is reported within other payables. As part of actively managing its debt portfolio, during the year the group bought back $7.4 billion (2021 $11.0 billion equivalent) of finance debt consisting entirely of US dollar bonds. Derivatives associated with non-US dollar debt bought back in 2021 were also terminated. These transactions have no significant impact on net debt or gearing.

The following table shows the weighted-average interest rates achieved through a combination of borrowings and derivative financial instruments entered into to manage interest rate and currency exposures.

| | | | **Fixed rate debt** | | **Floating rate debt** | **Total** |
|---|---|---|---|---|---|---|
| | **Weighted average interest rate %** | **Weighted average time for which rate is fixed Years** | **Amount $ million** | **Weighted average interest rate %** | **Amount $ million** | **Amount $ million** |
| | | | | | | **2022** |
| US dollar | **3** | **14** | **28,651** | **6** | **18,105** | **46,756** |
| Other currencies | **6** | **8** | **188** | **—** | **—** | **188** |
| | | | **28,839** | | **18,105** | **46,944** |
| | | | | | | 2021 |
| US dollar | 3 | 12 | 35,891 | 2 | 25,074 | 60,965 |
| Other currencies | 6 | 9 | 188 | 1 | 23 | 211 |
| | | | 36,079 | | 25,097 | 61,176 |

### Fair values

The estimated fair value of finance debt is shown in the table below together with the carrying amount as reflected in the balance sheet.

Long-term borrowings in the table below include the portion of debt that matures in the 12 months from 31 December 2022, whereas in the group balance sheet the amount is reported within current finance debt.

The carrying amount of the group's short-term borrowings, comprising mainly of commercial paper, approximates their fair value. The fair values of the significant majority of the group's long-term borrowings are determined using quoted prices in active markets, and so fall within level 1 of the fair value hierarchy. Where quoted prices are not available, quoted prices for similar instruments in active markets are used and such measurements are therefore categorized in level 2 of the fair value hierarchy.

| | | | | $ million |
|---|---|---|---|---|
| | | **2022** | | 2021 |
| | **Fair value** | **Carrying amount** | Fair value | Carrying amount |
| Short-term borrowings | **901** | **901** | 2,191 | 2,191 |
| Long-term borrowings | **41,689** | **46,043** | 60,755 | 58,985 |
| **Total finance debt** | **42,590** | **46,944** | 62,946 | 61,176 |

## 27. Capital disclosures and net debt

The group defines capital as total equity plus net debt. Our financial framework seeks to support the pursuit of value growth for shareholders while maintaining a secure financial base.

The group monitors capital on the basis of gearing, that is, the ratio of net debt to the total of net debt plus total equity. Net debt is calculated as finance debt, as shown in the balance sheet, plus the fair value of associated derivative financial instruments that are used to hedge foreign exchange and interest rate risks relating to finance debt for which hedge accounting is applied, less cash and cash equivalents. Net debt and gearing are non-GAAP measures. bp believes these measures provide useful information to investors. Net debt enables investors to see the economic effect of finance debt, related hedges and cash and cash equivalents in total. Gearing enables investors to see how significant net debt is relative to total equity. The derivatives are reported on the balance sheet within the headings 'Derivative financial instruments'. All components of equity are included in the denominator of the calculation.

At 31 December 2022, gearing was 20.5% (2021 25.3%).

| | | $ million |
|---|---|---|
| At 31 December | 2022 | 2021 |
| Finance debt | **46,944** | 61,176 |
| *Less: fair value asset (liability) of hedges related to finance debt*[a] | **(3,673)** | (118) |
| | **50,617** | 61,294 |
| Less: cash and cash equivalents | **29,195** | 30,681 |
| Net debt | **21,422** | 30,613 |
| Total equity | **82,990** | 90,439 |
| Gearing | **20.5%** | 25.3% |

[a] Derivative financial instruments entered into for the purpose of managing interest rate and foreign currency exchange risk associated with net debt with a fair value liability position of $91 million (2021 liability of $166 million) are not included in the calculation of net debt shown above as hedge accounting was not applied for these instruments.

An analysis of changes in liabilities arising from financing activities is provided below.

| | | | | | $ million |
|---|---|---|---|---|---|
| | Finance debt | Currency swaps[a] | Lease liabilities | Net partner payable for leases entered into on behalf of joint operations | Total liabilities arising from financing activities |
| At 1 January 2022 | **61,176** | **481** | **8,611** | **250** | **70,518** |
| Exchange adjustments | **(164)** | **—** | **(260)** | **1** | **(423)** |
| Net financing cash flow | **(10,855)** | **(192)** | **(1,961)** | **(29)** | **(13,037)** |
| Fair value (gains) losses | **(3,694)** | **5,023** | **—** | **—** | **1,329** |
| New and remeasured leases/joint operation payables | **—** | **—** | **2,367** | **21** | **2,388** |
| Other movements[b] | **481** | **—** | **(208)** | **(201)** | **72** |
| **At 31 December 2022** | **46,944** | **5,312** | **8,549** | **42** | **60,847** |
| | | | | | |
| At 1 January 2021 | 72,664 | (2,965) | 9,262 | 267 | 79,228 |
| Exchange adjustments | (185) | — | (215) | — | (400) |
| Net financing cash flow | (8,575) | (126) | (2,082) | (40) | (10,823) |
| Fair value (gains) losses | (2,578) | 3,562 | — | — | 984 |
| New and remeasured leases/joint operations payables | — | — | 1,767 | 23 | 1,790 |
| Other movements | (150) | 10 | (121) | | (261) |
| **At 31 December 2021** | 61,176 | 481 | 8,611 | 250 | 70,518 |

[a] Currency swaps include cross currency interest rate swaps.
[b] Other movements in finance debt include $1,044 million acquired with Archaea Energy Inc. and a non-cash reduction in balances related to the Alaska divestment. Other movements in the net partner payable for leases entered into on behalf of joint operations primarily represent transfers to amounts held for sale.

The finance debt and currency swap balances above do not include accrued interest, which is reported within other receivables and other payables on the balance sheet and for which the associated cash flows are presented as operating cash flows in the group cash flow statement. The currency swaps are reported on the balance sheet within the headings 'Derivative financial instruments' and are subsets of both derivatives held for trading and derivatives designated in fair value hedge relationships as detailed in Note 30. When hedge accounting is applied to these derivatives they are included in the calculation of net debt shown above.

In addition to the liabilities included in the table above the group has accrued $497 million (2021 $nil) at the balance sheet date for shares repurchased between the end of the reporting period and 3rd February 2023. $9,996 million is included in the group cash flow statement for the cash used to repurchase shares during the year.

## 28. Leases

The group leases a number of assets as part of its activities. This primarily includes drilling rigs in the oil production & operations and gas & low carbon energy segments and retail service stations, oil depots and storage tanks in the customer & products segment as well as office accommodation and vessel charters across the group. The weighted-average remaining lease term for the total lease portfolio is around 7 years (2021 8 years). Some leases have payments that vary with market interest or inflation rates. Certain leases contain residual value guarantees, which may be triggered in certain circumstances such as if market values have significantly declined at the conclusion of the lease.

The table below shows the timing of the undiscounted cash outflows for the lease liabilities included on the balance sheet.

| | | $ million |
|---|---|---|
| | 2022 | 2021 |
| **Undiscounted lease liability cash flows due:** | | |
| Within 1 year | **2,348** | 1,949 |
| 1 to 2 years | **1,728** | 1,631 |
| 2 to 3 years | **1,232** | 1,207 |
| 3 to 4 years | **740** | 1,005 |
| 4 to 5 years | **632** | 682 |
| 5 to 10 years | **1,909** | 2,089 |
| Over 10 years | **1,275** | 1,462 |
| | **9,864** | 10,025 |
| Impact of discounting | **(1,315)** | (1,414) |
| **Lease liabilities at 31 December** | **8,549** | 8,611 |
| Of which – current | **2,102** | 1,747 |
| – non-current | **6,447** | 6,864 |

The group may enter into lease arrangements a number of years before taking control of the underlying asset due to construction lead times or to secure future operational requirements. The total undiscounted amount for future commitments for leases not yet commenced as at 31 December 2022 is $5,360 million (2021 $4,996 million). The majority of this future commitment relates to the floating LNG vessel to service the Greater Tortue Ahmeyim project from 2023.

| | | $ million |
|---|---|---|
| | 2022 | 2021 |
| Total cash outflow for amounts included in lease liabilities[a] | **2,200** | 2,372 |
| Expense for variable payments not included in the lease liability[a] | **27** | 37 |
| Short-term lease expense[a] | **482** | 409 |
| Additions to right-of-use assets in the period | **2,451** | 1,807 |
| Gain (loss) on sale and leaseback transactions | **—** | (1) |

[a] The cash outflows for amounts not included in lease liabilities approximate the income statement expenses disclosed above.

An analysis of right-of-use assets and depreciation is provided in Note 12. An analysis of lease interest expense is provided in Note 7.

## 29. Financial instruments and financial risk factors

The accounting classification of each category of financial instruments and their carrying amounts are set out below.

| | | | | | $ million |
|---|---|---|---|---|---|
| At 31 December 2022 | Note | Measured at amortized cost | Mandatorily measured at fair value through profit or loss | Derivative hedging instruments | Total carrying amount |
| **Financial assets** | | | | | |
| Other investments | 18 | **26** | **3,222** | **—** | **3,248** |
| Loans | | **1,245** | **341** | **—** | **1,586** |
| Trade and other receivables | 20 | **33,535** | **—** | **—** | **33,535** |
| Derivative financial instruments | 30 | **—** | **24,395** | **—** | **24,395** |
| Cash and cash equivalents | 25 | **25,611** | **3,584** | **—** | **29,195** |
| **Financial liabilities** | | | | | |
| Trade and other payables | 22 | **(69,586)** | **—** | **—** | **(69,586)** |
| Derivative financial instruments | 30 | **—** | **(22,481)** | **(3,674)** | **(26,155)** |
| Accruals | | **(7,631)** | **—** | **—** | **(7,631)** |
| Lease liabilities | 28 | **(8,549)** | **—** | **—** | **(8,549)** |
| Finance debt | 26 | **(46,944)** | **—** | **—** | **(46,944)** |
| | | **(72,293)** | **9,061** | **(3,674)** | **(66,906)** |

## 29. Financial instruments and financial risk factors – continued

| At 31 December 2021 | Note | Measured at amortized cost | Mandatorily measured at fair value through profit or loss | Derivative hedging instruments | Total carrying amount |
|---|---|---|---|---|---|
| | | | | | $ million |
| **Financial assets** | | | | | |
| Other investments | 18 | – | 2,824 | – | 2,824 |
| Loans | | 1,045 | 232 | – | 1,277 |
| Trade and other receivables | 20 | 27,191 | | | 27,191 |
| Derivative financial instruments | 30 | – | 12,402 | 348 | 12,750 |
| Cash and cash equivalents | 25 | 27,107 | 3,574 | – | 30,681 |
| **Financial liabilities** | | | | | |
| Trade and other payables | 22 | (58,660) | – | – | (58,660) |
| Derivative financial instruments | 30 | – | (13,456) | (465) | (13,921) |
| Accruals | | (6,606) | – | – | (6,606) |
| Lease liabilities | 28 | (8,611) | – | – | (8,611) |
| Finance debt | 26 | (61,176) | – | – | (61,176) |
| | | (79,710) | 5,576 | (117) | (74,251) |

The fair value of finance debt is shown in Note 26. For all other financial instruments within the scope of IFRS 9, the carrying amount is either the fair value, or approximates the fair value.

Information on gains and losses on derivative financial assets and financial liabilities classified as measured at fair value through profit or loss is provided in the derivative gains and losses section of Note 30. Fair value gains and losses related to other assets and liabilities classified as measured at fair value through profit or loss totalled a net loss of $238 million (2021 net gain of $627 million). Dividend income of $14 million (2021 $11 million) from investments in equity instruments classified as measured at fair value through profit or loss is presented within other income.

Interest income and expenses arising on financial instruments are disclosed in Note 7.

### Financial risk factors

The group is exposed to a number of different financial risks arising from ordinary business exposures as well as its use of financial instruments including market risks relating to commodity prices; foreign currency exchange rates and interest rates; credit risk; and liquidity risk.

The group financial risk committee (GFRC) advises the chief financial officer (CFO) who oversees the management of these risks. The GFRC is chaired by the CFO and consists of a group of senior managers including the EVP trading and shipping and SVPs treasury, tax, accounting reporting control and planning & performance management. The purpose of the committee is to advise on financial risks and the appropriate financial risk governance framework for the group. The committee provides assurance to the CFO and the chief executive officer (CEO), and via the CEO to the board, that the group's financial risk-taking activity is governed by appropriate policies and procedures and that financial risks are identified, measured and managed in accordance with group policies and group risk appetite.

The group's trading activities in the oil, natural gas, LNG and power markets are managed within the trading and shipping business. Treasury holds foreign exchange and interest-rate products in the financial markets to hedge group exposures related to debt and hybrid bond issuance; the compliance, control and risk management processes for these activities are managed within the treasury business. All other foreign exchange and interest rate activities within financial markets are performed within the trading and shipping business and are also underpinned by the compliance, control and risk management infrastructure common to the activities of bp's trading and shipping business. All derivative activity is carried out by specialist teams that have the appropriate skills, experience and supervision. These teams are subject to close financial and management control.

The trading and shipping business maintains formal governance processes that provide oversight of market risk, credit risk and operational risk associated with trading activity. A policy and risk committee approves value-at-risk delegations, reviews incidents and validates risk-related policies, methodologies and procedures. A commitments committee approves the trading of new products, instruments and strategies and material commitments.

In addition, the trading and shipping business undertakes derivative activity for risk management purposes under a control framework as described more fully below.

### (a) Market risk

Market risk is the risk or uncertainty arising from possible market price movements and their impact on the future performance of a business. The primary commodity price risks that the group is exposed to include oil, natural gas and power prices that could adversely affect the value of the group's financial assets, liabilities or expected future cash flows. The group has developed a control framework aimed at managing the volatility inherent in certain of its ordinary business exposures. In accordance with the control framework the group enters into various transactions using derivatives for risk management purposes.

The major components of market risk are commodity price risk, foreign currency exchange risk and interest rate risk, each of which is discussed below.

#### (i) Commodity price risk

The group's trading and shipping business is responsible for delivering value across the overall crude, oil products, gas, LNG and power supply chains. As such, it routinely enters into spot and term physical commodity contracts in addition to optimising physical storage, pipeline and transportation capacity. These activities expose the group to commodity price risk which is managed by entering into oil, natural gas and power swaps, options and futures.

The group measures market risk exposure arising from its trading positions in liquid periods using value-at-risk techniques based on Monte Carlo simulation models. These techniques make a statistical assessment of the market risk arising from possible future changes in market prices over a one-day holding period within a 95% confidence level. Trading activity occurring in liquid periods is subject to value-at-risk and other limits for each trading activity and the aggregate of all trading activity. The calculation of potential changes in value within the liquid period considers positions, historical price movements and the correlation of these price movements. Models are regularly reviewed against actual fair value movements to ensure integrity is

## 29. Financial instruments and financial risk factors – continued

maintained. The value-at-risk measure is supplemented by stress testing and scenario analysis through simulating the financial impact of certain physical, economic and geo-political scenarios. The value-at-risk measure in respect of the aggregated trading positions in liquid periods at 31 December 2022 was $63 million (2021 $100 million) whereas the average value-at-risk measure for the period was $89 million (2021 $64 million). This measure incorporates the effect of diversification reflecting the offsetting risks across the trading portfolio. Alternative measures are used to monitor exposures which are outside of liquid periods and for which value-at-risk techniques are not appropriate.

### (ii) Foreign currency exchange risk

Since bp has global operations, fluctuations in foreign currency exchange rates can have a significant effect on the group's reported results and future expenditure commitments. The effects of most exchange rate fluctuations are absorbed in business operating results through changing cost competitiveness, lags in market adjustment to movements in rates and translation differences accounted for on specific transactions. For this reason, the total effect of exchange rate fluctuations is not identifiable separately in the group's reported results. The main underlying economic currency of the group's cash flows is the US dollar. This is because bp's major product, oil, is priced internationally in US dollars. bp's foreign currency exchange management policy is to limit economic and material transactional exposures arising from currency movements against the US dollar. The group co-ordinates the handling of foreign currency exchange risks centrally, by netting off naturally-occurring opposite exposures wherever possible and then managing any material residual foreign currency exchange risks.

Most of the group's borrowings are in US dollars or are hedged with respect to the US dollar. At 31 December 2022, the total foreign currency borrowings not swapped into US dollars amounted to $188 million (2021 $211 million). The group also has in issue perpetual subordinated hybrid bonds in euro, sterling and US dollars. Whilst the contractual terms of these instruments allow the group to defer coupon payments and the repayment of principal indefinitely, the group has chosen to manage the foreign currency exposure relating to the non-US dollar hybrid bonds to their respective first call periods.

The group manages the net residual foreign currency exposures by constantly reviewing the foreign currency economic value at risk and aims to manage such risk to keep the 12-month foreign currency value at risk below $400 million. At no point over the past three years did the value at risk exceed the maximum risk limit. A continuous assessment is made in respect of the group's foreign currency exposures to capture hedging requirements.

During the year, hedge accounting was applied to foreign currency exposure to highly probable forecast capital expenditure commitments. The group fixes the US dollar cost of non-US dollar supplies by using currency forwards for the highly probable forecast capital expenditure. At 31 December 2022 the most significant open contracts in place were for $5 million sterling (2021 $55 million sterling).

Where the group enters into foreign currency exchange contracts for entrepreneurial trading purposes the activity is controlled using trading value-at-risk techniques as explained in (i) commodity price risk above.

### (iii) Interest rate risk

bp is also exposed to interest rate risk from the possibility that changes in interest rates will affect future cash flows or the fair values of its financial instruments, principally finance debt. While the group issues debt and hybrid bonds in a variety of currencies based on market opportunities, it uses derivatives to swap the economic exposure to a floating rate basis, mainly to US dollar floating, but in certain defined circumstances maintains a US dollar fixed rate exposure for a proportion of debt. The proportion of floating rate debt net of interest rate swaps at 31 December 2022 was 39% of total finance debt outstanding (2021 41%). The weighted average interest rate on finance debt at 31 December 2022 was 4% (2021 3%) and the weighted average maturity of fixed rate debt was fourteen years (2021 twelve years).

The group's earnings are sensitive to changes in interest rates on the element of the group's finance debt that is contractually floating rate or has been swapped to floating rates. If the interest rates applicable to these floating rate instruments were to have changed by one percentage point on 1 January 2023, it is estimated that the group's finance costs for 2023 would change by approximately $181 million (2021 $251 million).

bp is exposed to benchmark interest rate components; primarily 3 month USD LIBOR. From 31 December 2021 some USD LIBOR tenors, and all EUR, GBP and CHF LIBOR tenors ceased to be published. The remaining USD LIBOR tenors, including 3 month USD LIBOR, will continue to be published until June 2023.

In October 2020 the International Swaps and Derivatives Association (ISDA) published its fallback protocol containing clauses to amend derivative contracts on the cessation of LIBOR should an entity and its counterparties adhere to the protocol. The protocol's pricing mechanism is at fair market value and bp has signed up to the protocol as this removes transition uncertainty for any interest rate and cross-currency interest rate swap contracts of the group. Market participants have mostly switched to the new risk free rates increasing market activity and liquidity as they move away from LIBOR. bp continues to monitor regulatory and market developments over the course of the transition.

During 2022, bp's internal working group for IBOR reform continued to monitor market developments and manage the transition to alternative benchmark rates. The working group has identified financial instruments that are linked to existing interest rate benchmarks, primarily borrowings and derivative contracts. As at 31 December 2022 finance debt with a carrying value of $1,873 million (2021 $2,062 million) and derivatives with a nominal value of $24,088 million (2021 $24,088 million) are exposed to USD LIBOR and are expected to transition to alternative benchmark rates. The derivatives comprise relevant derivative contracts hedging finance debt and hybrid bonds all of which are covered by the ISDA fallback protocol. For finance debt, negotiations with relevant counterparties are ongoing and transition is expected before the end of June 2023. Any derivatives not actively transitioned before the end of June 2023 will be transitioned through the ISDA protocol. New contracts are being executed based on the new risk free rates. The working group continues to implement the relevant IT and operational requirements needed. bp continues to participate in external committees and task forces dedicated to interest rate benchmark reform.

### (b) Credit risk

Credit risk is the risk that a customer or counterparty to a financial instrument will fail to perform or fail to pay amounts due causing financial loss to the group and arises from cash and cash equivalents, derivative financial instruments and deposits with financial institutions and principally from credit exposures to customers relating to outstanding receivables. Credit exposure also exists in relation to guarantees issued by group companies under which the outstanding exposure incremental to that recognized on the balance sheet at 31 December 2022 was $1,704 million (2021 $1,407 million) in respect of liabilities of joint ventures and associates and $680 million (2021 $694 million) in respect of liabilities of other third parties. An amount of $267 million (2021 $337 million) is recorded as a liability at 31 December 2022 in relation to these guarantees. For all guarantees, maturity dates vary, and the guarantees will terminate on payment and/or cancellation of the obligation. In general, a payment under the guarantee contract would be triggered by failure of the guaranteed party to fulfil its obligation covered by the guarantee.

## 29. Financial instruments and financial risk factors – continued

The group has a credit policy, approved by the CFO that is designed to ensure that consistent processes are in place throughout the group to measure and control credit risk. Credit risk is considered as part of the risk-reward balance of doing business. On entering into any business contract the extent to which the arrangement exposes the group to credit risk is considered. Key requirements of the policy include segregation of credit approval authorities from any sales, marketing or trading teams authorized to incur credit risk; the establishment of credit systems and processes to ensure that all counterparty exposure is rated and that all counterparty exposure and limits can be monitored and reported; and the timely identification and reporting of any non-approved credit exposures and credit losses. While each segment is responsible for its own credit risk management and reporting consistent with group policy, treasury holds group-wide credit risk authority and oversight responsibility for exposure to banks and financial institutions.

For the purposes of financial reporting the group calculates expected loss allowances based on the maximum contractual period over which the group is exposed to credit risk. Lifetime expected credit losses are recognized for trade receivables and the credit risk associated with the significant majority of financial assets measured at amortized cost is considered to be low. Since the tenor of substantially all of the group's in-scope financial assets is less than 12 months there is no significant difference between the measurement of 12-month and lifetime expected credit losses. Expected loss allowances for financial guarantee contracts are typically lower than their initial fair value less, where appropriate, amortization. Financial assets are considered to be credit-impaired when there is reasonable and supportable evidence that one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred. This includes observable data concerning significant financial difficulty of the counterparty; a breach of contract; concession being granted to the counterparty for economic or contractual reasons relating to the counterparty's financial difficulty, that would not otherwise be considered; it becoming probable that the counterparty will enter bankruptcy or other financial re-organization or an active market for the financial asset disappearing because of financial difficulties. The group also applies a rebuttable presumption that an asset is credit-impaired when contractual payments are more than 30 days past due. Where the group has no reasonable expectation of recovering a financial asset in its entirety or a portion thereof, for example where all legal avenues for collection of amounts due have been exhausted, the financial asset (or relevant portion) is written off.

The measurement of expected credit losses is a function of the probability of default, loss given default (i.e. the magnitude of the loss after recovery if there is a default) and the exposure at default (i.e. the asset's carrying amount). The group allocates a credit risk rating to exposures based on data that is determined to be predictive of the risk of loss, including but not limited to external ratings. Probabilities of default derived from historical, current and future-looking market data are assigned by credit risk rating with a loss given default based on historical experience and relevant market and academic research applied by exposure type. Experienced credit judgement is applied to ensure probabilities of default are reflective of the credit risk associated with the group's exposures. Credit enhancements that would reduce the group's credit losses in the event of default are reflected in the calculation when they are considered integral to the related asset.

The maximum credit exposure associated with financial assets is equal to the carrying amount. The group does not aim to remove credit risk entirely but expects to experience a certain level of credit losses. As at 31 December 2022, the group had in place credit enhancements designed to mitigate approximately \$12.6 billion (2021 \$9.5 billion) of credit risk of which approximately \$10.3 billion (2021 \$7.5 billion) related to assets in the scope of IFRS 9's impairment requirements. Credit enhancements include standby and documentary letters of credit, bank guarantees, insurance and liens which are typically taken out with financial institutions who have investment grade credit ratings, or are liens over assets held by the counterparty of the related receivables. Reports are regularly prepared and presented to the GFRC that cover the group's overall credit exposure and expected loss trends, exposure by segment, and overall quality of the portfolio.

Management information used to monitor credit risk, which reflects the impact of credit enhancements, indicates that the risk profile of financial assets which are subject to review for impairment under IFRS 9 is as set out below.

| | | % |
|---|---|---|
| As at 31 December | 2022 | 2021 |
| AAA to AA- | **9 %** | 14 % |
| A+ to A- | **49 %** | 46 % |
| BBB+ to BBB- | **15 %** | 14 % |
| BB+ to BB- | **11 %** | 8 % |
| B+ to B- | **12 %** | 16 % |
| CCC+ and below | **4 %** | 2 % |

Movements in the impairment provision for trade and other receivables are shown in Note 21.

## 29. Financial instruments and financial risk factors – continued

### Financial instruments subject to offsetting, enforceable master netting arrangements and similar agreements

The following table shows the amounts recognized for financial assets and liabilities which are subject to offsetting arrangements on a gross basis, and the amounts offset in the balance sheet.

Amounts which cannot be offset under IFRS, but which could be settled net under the terms of master netting agreements if certain conditions arise, and collateral received or pledged, are also presented in the table to show the total net exposure of the group.

$ million

| At 31 December 2022 | Gross amounts of recognized financial assets (liabilities) | Amounts set off | Net amounts presented on the balance sheet | Related amounts not set off in the balance sheet: Master netting arrangements | Related amounts not set off in the balance sheet: Cash collateral (received) pledged | Net amount |
|---|---|---|---|---|---|---|
| Derivative assets | **33,199** | **(8,804)** | **24,395** | **(3,988)** | **(918)** | **19,489** |
| Derivative liabilities | **(34,918)** | **8,804** | **(26,114)** | **3,988** | **436** | **(21,690)** |
| Trade and other receivables | **17,947** | **(8,381)** | **9,566** | **(1,325)** | **(224)** | **8,017** |
| Trade and other payables | **(20,671)** | **8,381** | **(12,290)** | **1,325** | **61** | **(10,904)** |
| At 31 December 2021 | | | | | | |
| Derivative assets | 20,519 | (7,769) | 12,750 | (3,104) | (414) | 9,232 |
| Derivative liabilities[a] | (21,683) | 7,769 | (13,914) | 3,104 | 357 | (10,453) |
| Trade and other receivables | 17,105 | (8,104) | 9,001 | (1,038) | (249) | 7,714 |
| Trade and other payables[a] | (19,279) | 8,104 | (11,175) | 1,038 | 22 | (10,115) |

a Comparative amounts for collateral pledged, and the resulting net exposure, have been updated to reflect current year presentation.

### (c) Liquidity risk

Liquidity risk is the risk that suitable sources of funding for the group's business activities may not be available. The group's liquidity is managed centrally with operating units forecasting their cash and currency requirements to the central treasury function. Unless restricted by local regulations, generally subsidiaries pool their cash surpluses to the treasury function, which will then arrange to fund other subsidiaries' requirements, or invest any net surplus in the market or arrange for necessary external borrowings, while managing the group's overall net currency positions. While there is the potential for concerns about the energy transition to impact banks' or debt investors' appetite to finance hydrocarbon activity, we do not anticipate any material change to the group's funding or liquidity in the short to medium term as a result of such concerns.

The group benefits from open credit provided by suppliers who generally sell on five to 60-day payment terms in accordance with industry norms. bp utilizes various arrangements in order to manage its working capital and reduce volatility in cash flow. This includes discounting of receivables and, in the supply and trading businesses, managing inventory, collateral and supplier payment terms within a maximum of 60 days.

It is normal practice in the oil and gas supply and trading business for customers and suppliers to utilize letter of credit (LC) facilities to mitigate credit and non-performance risk. Consequently, LCs facilitate active trading in a global market where credit and performance risk can be significant. In common with the industry, bp routinely provides LCs to some of its suppliers.

The group has committed LC facilities totalling $12,730 million (2021 $12,575 million), allowing LCs to be issued for a maximum 24-month duration. There were also uncommitted secured LC facilities in place at 31 December 2022 for $3,800 million (2021 $4,290 million), which are secured against inventories or receivables when utilized. The facilities are held with over 28 international banks. The uncommitted LC facilities can only be terminated by either party giving a stipulated termination notice to the other.

In certain circumstances, the supplier has the option to request accelerated payment from the LC provider in order to further reduce their exposure. bp's payments are made to the provider of the LC rather than the supplier according to the original contractual payment terms. At 31 December 2022, $9,520 million (2021 $9,154 million) of the group's trade payables subject to these arrangements were payable to LC providers, with no material exposure to any individual provider. If these facilities were not available, this could result in renegotiation of payment terms with suppliers such that settlement periods were shorter.

Standard & Poor's Ratings long-term credit rating for bp is A- (positive) and Moody's Investors Service rating is A2 (positive) and the Fitch Ratings' long-term credit rating is A (positive).

During 2022, a $2 billion (2021 $6 billion) long-term taxable bond was issued with a maturity term of 10 years. In addition the group drew down on perpetual hybrid capital instruments with a US dollar equivalent value of $0.4 billion (2021 $0.9 billion). Commercial paper is issued at competitive rates to meet short-term borrowing requirements as and when needed.

As a further liquidity measure, the group continues to maintain suitable levels of cash and cash equivalents, amounting to $29.2 billion at 31 December 2022 (2021 $30.7 billion), primarily invested with highly rated banks or money market funds and readily accessible at immediate and short notice. At 31 December 2022, the group had substantial amounts of undrawn borrowing facilities available, consisting of an undrawn committed $8.0 billion (2021 $8.0 billion) credit facility and $4.0 billion (2021 $4.0 billion) of standby facilities. As at 31 December 2022 the credit facility and standby facilities were available for two and four years respectively. The facilities are with 27 international banks and borrowings under them would be at pre-agreed rates. In February 2023 $11.7 billion of these facilities were extended for a further year.

For further information on the group's sources and uses of cash see Liquidity and capital resources on page 356.

The group manages liquidity risk associated with derivative contracts, other than derivative hedging instruments, based on the expected maturities of both derivative assets and liabilities as indicated in Note 30. Management does not currently anticipate any cash flows, other than noted below, that could be of a significantly different amount or could occur earlier than the expected maturity analysis provided.

## 29. Financial instruments and financial risk factors – continued

The table below shows the timing of undiscounted cash outflows relating to finance debt, trade and other payables and accruals. As part of actively managing the group's debt portfolio it is possible that cash flows in relation to finance debt could be accelerated from the profile provided.

| | | | | | | | | $ million |
|---|---|---|---|---|---|---|---|---|
| | 2022 | | | | 2021 | | | |
| | Trade and other payables[a] | Accruals | Finance debt | Interest on finance debt | Trade and other payables[a] | Accruals | Finance debt | Interest on finance debt |
| Within one year | **59,618** | **6,398** | **2,978** | **2,133** | 48,497 | 5,638 | 5,370 | 1,497 |
| 1 to 2 years | **1,625** | **230** | **2,811** | **1,923** | 1,627 | 209 | 4,425 | 1,341 |
| 2 to 3 years | **1,378** | **207** | **4,066** | **1,770** | 1,346 | 108 | 5,953 | 1,204 |
| 3 to 4 years | **1,192** | **110** | **5,077** | **1,566** | 1,328 | 144 | 5,958 | 1,047 |
| 4 to 5 years | **1,188** | **114** | **5,773** | **1,324** | 1,146 | 56 | 5,504 | 896 |
| 5 to 10 years | **6,109** | **348** | **13,621** | **4,283** | 5,695 | 218 | 16,483 | 2,705 |
| Over 10 years | **772** | **224** | **13,135** | **2,828** | 1,699 | 233 | 14,744 | 1,699 |
| | **71,882** | **7,631** | **47,461** | **15,827** | 61,338 | 6,606 | 58,437 | 10,389 |

[a] 2022 includes $11,884 million (2021 $13,170 million) in relation to the Gulf of Mexico oil spill, of which $10,660 million (2021 $11,883 million) matures in greater than one year.

The table below shows the timing of cash outflows for derivative financial instruments entered into for the purpose of managing interest rate and foreign currency exchange risk, whether or not hedge accounting is applied, based upon contractual payment dates. As part of actively managing the group's debt portfolio it is possible that cash flows in relation to associated derivatives could be accelerated from the profile provided. The amounts reflect the gross settlement amount where the pay leg of a derivative will be settled separately from the receive leg, as in the case of cross-currency swaps hedging non-US dollar finance debt or hybrid bonds. The swaps are with high investment-grade counterparties and therefore the settlement-day risk exposure is considered to be negligible. Not shown in the table are the gross settlement amounts (inflows) for the receive leg of derivatives that are settled separately from the pay leg, which amount to $23,970 million at 31 December 2022 (2021 $27,048 million) to be received on the same day as the related cash outflows.

| | | $ million |
|---|---|---|
| Cash outflows for derivative financial instruments at 31 December | **2022** | 2021 |
| Within one year | **1,492** | 1,497 |
| 1 to 2 years | **2,531** | 1,492 |
| 2 to 3 years | **2,053** | 2,531 |
| 3 to 4 years | **5,575** | 2,053 |
| 4 to 5 years | **3,584** | 5,575 |
| 5 to 10 years | **7,627** | 8,618 |
| Over 10 years | **2,772** | 5,365 |
| | **25,634** | 27,131 |

For further information on our derivative financial instruments, see Note 30.

## 30. Derivative financial instruments

In the normal course of business the group enters into derivative financial instruments (derivatives) to manage its normal business exposures in relation to commodity prices, foreign currency exchange rates and interest rates, including management of the balance between floating rate and fixed rate debt, consistent with risk management policies and objectives. An outline of the group's financial risks and the objectives and policies pursued in relation to those risks is set out in Note 29. Additionally, the group has a well-established entrepreneurial trading operation that is undertaken in conjunction with these activities using a similar range of contracts.

For information on significant estimates and judgements made in relation to the valuation of derivatives see Derivative financial instruments within Note 1.

The fair values of derivative financial instruments at 31 December are set out below.

Exchange traded derivatives are valued using closing prices provided by the exchange as at the balance sheet date. These derivatives are categorized within level 1 of the fair value hierarchy. Exchange traded derivatives are typically considered settled through the (normally daily) payment or receipt of variation margin.

Over-the-counter (OTC) financial swaps, forwards and physical commodity sale and purchase contracts are generally valued using readily available information in the public markets and quotations provided by brokers and price index developers. These quotes are corroborated with market data and are categorized within level 2 of the fair value hierarchy.

In certain less liquid markets, or for longer-term contracts, forward prices are not as readily available. In these circumstances, OTC financial swaps and physical commodity sale and purchase contracts are valued using internally developed methodologies that consider historical relationships between various commodities, and that result in management's best estimate of fair value. These contracts are categorized within level 3 of the fair value hierarchy.

## 30. Derivative financial instruments – continued

Financial OTC and physical commodity options are valued using industry standard models that consider various assumptions, including quoted forward prices for commodities, time value, volatility factors, and contractual prices for the underlying instruments, as well as other relevant economic factors. The degree to which these inputs are observable in the forward markets determines whether the option is categorized within level 2 or level 3 of the fair value hierarchy.

| | | | | $ million |
|---|---|---|---|---|
| | | 2022 | | 2021 |
| | Fair value asset | Fair value liability | Fair value asset | Fair value liability |
| **Derivatives held for trading** | | | | |
| Currency derivatives | **634** | **(2,346)** | 272 | (643) |
| Oil price derivatives | **2,753** | **(1,961)** | 2,192 | (1,567) |
| Natural gas price derivatives | **15,437** | **(12,129)** | 6,823 | (8,273) |
| Power price derivatives | **5,527** | **(6,004)** | 3,105 | (2,966) |
| Other derivatives | **44** | **—** | 10 | — |
| | **24,395** | **(22,440)** | 12,402 | (13,449) |
| **Embedded derivatives** | | | | |
| Other embedded derivatives | **—** | **(41)** | | (7) |
| | **—** | **(41)** | | (7) |
| **Cash flow hedges** | | | | |
| Currency forwards | **—** | **—** | 1 | — |
| | **—** | **—** | 1 | — |
| **Fair value hedges** | | | | |
| Currency swaps | **—** | **(3,670)** | 326 | (465) |
| Interest rate swaps | **—** | **(4)** | 21 | — |
| | **—** | **(3,674)** | 347 | (465) |
| | **24,395** | **(26,155)** | 12,750 | (13,921) |
| Of which – current | **11,554** | **(12,618)** | 5,744 | (7,565) |
| – non-current | **12,841** | **(13,537)** | 7,006 | (6,356) |

### Derivatives held for trading

The group maintains active trading positions in a variety of derivatives. The contracts may be entered into for risk management purposes, to satisfy supply requirements or for entrepreneurial trading. Certain contracts are classified as held for trading, regardless of their original business objective, and are recognized at fair value with changes in fair value recognized in the income statement. Trading activities are undertaken by using a range of contract types in combination to create incremental gains by arbitraging prices between markets, locations and time periods. The net of these exposures is monitored using market value-at-risk techniques as described in Note 29.

The following tables show further information on the fair value of derivatives and other financial instruments held for trading purposes.

Derivative assets held for trading have the following fair values and maturities.

| | | | | | | | $ million |
|---|---|---|---|---|---|---|---|
| | | | | | | | **2022** |
| | **Less than 1 year** | **1-2 years** | **2-3 years** | **3-4 years** | **4-5 years** | **Over 5 years** | **Total** |
| Currency derivatives | **536** | **14** | **10** | **10** | **9** | **55** | **634** |
| Oil price derivatives | **1,971** | **445** | **150** | **63** | **35** | **89** | **2,753** |
| Natural gas price derivatives | **7,157** | **3,740** | **749** | **442** | **316** | **3,033** | **15,437** |
| Power price derivatives | **1,848** | **1,317** | **623** | **376** | **291** | **1,072** | **5,527** |
| Other derivatives | **42** | **—** | **—** | **—** | **—** | **2** | **44** |
| | **11,554** | **5,516** | **1,532** | **891** | **651** | **4,251** | **24,395** |

| | | | | | | | $ million |
|---|---|---|---|---|---|---|---|
| | | | | | | | 2021 |
| | Less than 1 year | 1-2 years | 2-3 years | 3-4 years | 4-5 years | Over 5 years | Total |
| Currency derivatives | 168 | 52 | 1 | 1 | — | 50 | 272 |
| Oil price derivatives | 1,544 | 429 | 167 | 47 | 4 | 1 | 2,192 |
| Natural gas price derivatives | 2,678 | 847 | 547 | 456 | 368 | 1,927 | 6,823 |
| Power price derivatives | 1,322 | 553 | 285 | 174 | 124 | 647 | 3,105 |
| Other derivatives | — | 7 | — | — | — | 3 | 10 |
| | 5,712 | 1,888 | 1,000 | 678 | 496 | 2,628 | 12,402 |

## 30. Derivative financial instruments – continued

Derivative liabilities held for trading have the following fair values and maturities.

| | | | | | | | $ million |
|---|---|---|---|---|---|---|---|
| | | | | | | | **2022** |
| | **Less than 1 year** | **1-2 years** | **2-3 years** | **3-4 years** | **4-5 years** | **Over 5 years** | **Total** |
| Currency derivatives | **(587)** | **(95)** | **(3)** | **(629)** | **(319)** | **(713)** | **(2,346)** |
| Oil price derivatives | **(1,615)** | **(318)** | **(23)** | **(4)** | **(1)** | **—** | **(1,961)** |
| Natural gas price derivatives | **(7,255)** | **(1,157)** | **(539)** | **(328)** | **(214)** | **(2,636)** | **(12,129)** |
| Power price derivatives | **(2,924)** | **(1,002)** | **(506)** | **(335)** | **(273)** | **(964)** | **(6,004)** |
| | **(12,381)** | **(2,572)** | **(1,071)** | **(1,296)** | **(807)** | **(4,313)** | **(22,440)** |

| | | | | | | | $ million |
|---|---|---|---|---|---|---|---|
| | | | | | | | 2021 |
| | Less than 1 year | 1-2 years | 2-3 years | 3-4 years | 4-5 years | Over 5 years | Total |
| Currency derivatives | (191) | (2) | (13) | (5) | (173) | (259) | (643) |
| Oil price derivatives | (1,340) | (179) | (39) | (7) | (2) | | (1,567) |
| Natural gas price derivatives | (4,551) | (1,053) | (460) | (351) | (282) | (1,576) | (8,273) |
| Power price derivatives | (1,485) | (601) | (211) | (135) | (92) | (442) | (2,966) |
| | (7,567) | (1,835) | (723) | (498) | (549) | (2,277) | (13,449) |

The following table shows the fair value of derivative assets and derivative liabilities held for trading, analysed by maturity period and by methodology of fair value estimation. This information is presented on a gross basis, that is, before netting by counterparty.

| | | | | | | | $ million |
|---|---|---|---|---|---|---|---|
| | | | | | | | **2022** |
| | **Less than 1 year** | **1-2 years** | **2-3 years** | **3-4 years** | **4-5 years** | **Over 5 years** | **Total** |
| **Fair value of derivative assets** | | | | | | | |
| Level 1 | **207** | **17** | **19** | **4** | **—** | **—** | **247** |
| Level 2 | **17,161** | **5,628** | **935** | **289** | **77** | **65** | **24,155** |
| Level 3 | **1,525** | **1,014** | **783** | **659** | **601** | **4,215** | **8,797** |
| | **18,893** | **6,659** | **1,737** | **952** | **678** | **4,280** | **33,199** |
| Less: netting by counterparty | **(7,339)** | **(1,143)** | **(205)** | **(61)** | **(27)** | **(29)** | **(8,804)** |
| | **11,554** | **5,516** | **1,532** | **891** | **651** | **4,251** | **24,395** |
| **Fair value of derivative liabilities** | | | | | | | |
| Level 1 | **(281)** | **(20)** | **(22)** | **(7)** | **—** | **—** | **(330)** |
| Level 2 | **(18,116)** | **(2,901)** | **(702)** | **(915)** | **(437)** | **(805)** | **(23,876)** |
| Level 3 | **(1,323)** | **(794)** | **(552)** | **(435)** | **(397)** | **(3,537)** | **(7,038)** |
| | **(19,720)** | **(3,715)** | **(1,276)** | **(1,357)** | **(834)** | **(4,342)** | **(31,244)** |
| Less: netting by counterparty | **7,339** | **1,143** | **205** | **61** | **27** | **29** | **8,804** |
| | **(12,381)** | **(2,572)** | **(1,071)** | **(1,296)** | **(807)** | **(4,313)** | **(22,440)** |
| **Net fair value** | **(827)** | **2,944** | **461** | **(405)** | **(156)** | **(62)** | **1,955** |

| | | | | | | | $ million |
|---|---|---|---|---|---|---|---|
| | | | | | | | 2021 |
| | Less than 1 year | 1-2 years | 2-3 years | 3-4 years | 4-5 years | Over 5 years | Total |
| **Fair value of derivative assets** | | | | | | | |
| Level 1 | 63 | 25 | 4 | 6 | 1 | — | 99 |
| Level 2 | 11,418 | 1,957 | 631 | 298 | 139 | 102 | 14,545 |
| Level 3 | 888 | 600 | 510 | 416 | 382 | 2,731 | 5,527 |
| | 12,369 | 2,582 | 1,145 | 720 | 522 | 2,833 | 20,171 |
| Less: netting by counterparty | (6,657) | (694) | (145) | (42) | (26) | (205) | (7,769) |
| | 5,712 | 1,888 | 1,000 | 678 | 496 | 2,628 | 12,402 |
| **Fair value of derivative liabilities** | | | | | | | |
| Level 1 | (57) | (28) | (4) | (8) | (2) | — | (99) |
| Level 2 | (13,646) | (2,189) | (575) | (251) | (305) | (216) | (17,182) |
| Level 3 | (521) | (312) | (289) | (281) | (268) | (2,266) | (3,937) |
| | (14,224) | (2,529) | (868) | (540) | (575) | (2,482) | (21,218) |
| Less: netting by counterparty | 6,657 | 694 | 145 | 42 | 26 | 205 | 7,769 |
| | (7,567) | (1,835) | (723) | (498) | (549) | (2,277) | (13,449) |
| **Net fair value** | (1,855) | 53 | 277 | 180 | (53) | 351 | (1,047) |

## 30. Derivative financial instruments – continued

### Level 3 derivatives

The following table shows the changes during the year in the net fair value of derivatives held for trading purposes within level 3 of the fair value hierarchy.

| | | | | | | $ million |
|---|---|---|---|---|---|---|
| | **Oil price** | **Natural gas price** | **Power price** | **Currency** | **Other** | **Total** |
| Fair value contracts at 1 January 2022 | **199** | **534** | **40** | **(154)** | **10** | **629** |
| Gains (losses) recognized in the income statement | **17** | **508** | **334** | **215** | **34** | **1,108** |
| Purchases[a] | **–** | **(4)** | **(889)** | **–** | **–** | **(893)** |
| Settlements | **(73)** | **(210)** | **(32)** | **–** | **–** | **(315)** |
| Transfers out of level 3 | **(115)** | **77** | **23** | **–** | **–** | **(15)** |
| **Net fair value of contracts at 31 December 2022** | **28** | **905** | **(524)** | **61** | **44** | **514** |
| Deferred day-one gains (losses) | | | | | | **1,245** |
| **Derivative asset (liability)** | | | | | | **1,759** |

| | | | | | | $ million |
|---|---|---|---|---|---|---|
| | Oil price | Natural gas price | Power price | Currency | Other | Total |
| Fair value contracts at 1 January 2021 | 191 | 147 | (173) | 5 | 6 | 176 |
| Gains (losses) recognized in the income statement | 302 | 410 | 407 | (159) | 1 | 961 |
| Purchases | – | – | – | – | 3 | 3 |
| Settlements | (248) | (33) | (115) | – | – | (396) |
| Transfers out of level 3 | (46) | 10 | (79) | | | (115) |
| Net fair value of contracts at 31 December 2021 | 199 | 534 | 40 | (154) | 10 | 629 |
| Deferred day-one gains (losses) | | | | | | 961 |
| Derivative asset (liability) | | | | | | 1,590 |

a Primarily relates to the acquisition of EDF Energy Services.

The amount recognized in the income statement for the year relating to level 3 held-for-trading derivatives still held at 31 December 2022 was a $1,223 million gain (2021 $755 million gain related to derivatives still held at 31 December 2021).

### Derivative gains and losses

The group enters into derivative contracts including futures, options, swaps and certain forward sales and forward purchases contracts, relating to both currency and commodity trading activities. Gains or losses arise on contracts entered into for risk management purposes, optimization activity and entrepreneurial trading. They also arise on certain contracts that are for normal procurement or sales activity for the group but that are required to be fair valued under accounting standards. These gains and losses are included within sales and other operating revenues in the income statement. Also included within this line item are gains and losses on inventory held for trading purposes. The total amount relating to all these items was a net gain of $7,829 million (2021 $4,466 million net gain). This number does not include gains and losses on the change in value of contracts which are not recognized under IFRS such as transportation and storage contracts, but does include the associated financially settled contracts. The net amounts for actual gains and losses relating to these derivative contracts and all related items therefore differ significantly from the amounts disclosed above.

As outlined in Note 1- Significant estimate and judgement: derivative financial instruments, LNG contracts are only recognised in the financial statements when associated cargoes are lifted. The embedded value in these contracts is not recognised and is subject to underlying commodity price volatility, as observed during 2021 and 2022. bp expects material profits may be realised in the future as LNG cargoes are delivered. bp generally price risk manages the exposure to LNG cargoes due for delivery in the near term where there is a liquid market. It does so on a portfolio basis using derivative instruments amongst other price risk management strategies. Under IFRS, these derivative instruments, which are subject to similar price volatility, are recorded at fair value through profit and loss at each reporting period, which creates an accounting mismatch in the financial statements between the accounting for LNG contracts and the derivatives used for risk management. For the year ended 31 December 2021, LNG prices rose significantly and material losses on LNG related derivative positions were recorded. For the year ended 31 December 2022 due to active risk management and the movement in the underlying commodity prices, there were no material gains or losses recorded on the associated derivative positions. For additional information, details of management's internal measure of performance are given in the Group Performance Report on page 32 and on page 354.

The group also enters into derivative contracts relating to foreign currency risk management activities including contracts that the group has entered into to manage the foreign currency exposure relating to the non-US dollar hybrid bonds to their respective first call periods. The change in the unrealized value of these contracts was a net loss of $1,280 million (2021 $775 million net loss and 2020 $829 million net gain). Where the derivative is economically hedging finance debt, gains and losses on such derivative contracts are included within finance costs. Where the derivative is managing non-US hybrid bond exposure gains and loss are included within production and manufacturing expenses. Where these gains and losses arise on derivatives hedging finance debt they are largely offset by opposing net foreign exchange differences on retranslation of the associated non-US dollar debt. The net amounts for actual gains and losses relating to these derivative contracts and all related items therefore differ significantly from the amounts disclosed above.

### Cash flow hedges

#### (i) Foreign currency risk of highly probable forecast capital expenditure

At 31 December 2022 the group held currency forwards designated as hedging instruments in cash flow hedge relationships of highly probable forecast non-US dollar capital expenditure. Note 29 outlines the group's approach to foreign currency exchange risk management. When the highly probable forecast capital expenditure designated as a hedged item occurs, a non-financial asset is recognized and is presented within the fixed asset section of the balance sheet.

The group claims hedge accounting only for the spot value of the currency exposure in line with the strategy to fix the volatility in the spot exchange rate element. The fair value on the instrument attributable to forward points and foreign currency basis spreads is taken immediately to the income statement.

## 30. Derivative financial instruments – continued

The group applies hedge accounting where there is an economic relationship between the hedged item and hedging instrument. The existence of an economic relationship is determined at inception and prospectively by comparing the critical terms of the hedging instrument and those of the hedged item. The group enters into hedging derivatives that match the currency and notional of the hedged items on a 1:1 hedge ratio basis. The hedge ratio is determined by comparing the notional amount of the derivative with the notional designated on the forecast transaction. The group determines the extent to which it hedges highly probable forecast capital expenditures on a project by project basis.

The group has identified the following sources of ineffectiveness, which are not expected to be material:

- counterparty's credit risk, the group mitigates counterparty credit risk by entering into derivative transactions with high credit quality counterparties; and
- differences in settlement timing between the derivative and hedged items. The latter impacts the discount factor used in the calculation of the hedge ineffectiveness. The group mitigates differences in timing between the derivatives and hedged items by applying a rolling strategy and by hedging currency pairs from stable economies. The group's cash flow hedge designations are highly effective as the sources of ineffectiveness identified are expected to result in minimal hedge ineffectiveness.

The group has not designated any net positions as hedged items in cash flow hedges of foreign currency risk.

### (ii) Commodity price risk of highly probable forecast sales

During the period the group held Henry Hub NYMEX futures designated as hedging instruments in cash flow hedge relationships of certain highly probable forecast future sales. Henry Hub NYMEX futures are subject to daily settlement, where their fair value at the end of each day is required to be cash settled, such that the carrying amount of these hedging instruments within continuing hedge relationships is always zero at the end of each day.

The group is exposed to the variability in the gas price, but only applied hedge accounting to the risk of Henry Hub price movements for a percentage of future gas sales from its BPX Energy business.

The group applied hedge accounting in relation to these highly probable future sales where there was an economic relationship between the hedged item and hedging instrument. The existence of an economic relationship was determined at inception and prospectively by comparing the critical terms of the hedging instrument and those of the hedged item. The group entered into hedging derivatives that matched the notional amounts of the hedged items on a 1:1 hedge ratio basis. The hedge ratio was determined by comparing the notional amount of the derivative with the notional amount designated on the forecast transaction.

The hedge was highly effective due to the price index of the hedging instruments matching the price index of the hedged item. The group did not designate any net positions as hedged items in cash flow hedges of commodity price risk.

The tables below summarize the change in the fair value of hedging instruments and the hedged item used to calculate ineffectiveness in the period.

| | | | $ million |
|---|---|---|---|
| | **Change in fair value of hedging instrument used to calculate ineffectiveness** | **Change in fair value of hedged item used to calculate ineffectiveness** | **Hedge ineffectiveness recognized in profit or (loss)** |
| At 31 December 2022 | | | |
| **Cash flow hedges** | | | |
| Foreign exchange risk | | | |
| Highly probable forecast capital expenditure | — | — | — |
| Commodity price risk | | | |
| Highly probable forecast sales | **(825)** | **825** | **—** |

| | | | |
|---|---|---|---|
| At 31 December 2021 | | | |
| **Cash flow hedges** | | | |
| Foreign exchange risk | | | |
| Highly probable forecast capital expenditure | (1) | 1 | |
| Commodity price risk | | | |
| Highly probable forecast sales | (430) | 430 | — |

## 30. Derivative financial instruments – continued

The tables below summarize the carrying amount and nominal amount of the derivatives designated as hedging instruments in cash flow hedge relationships.

| | Carrying amount of hedging instrument | | Nominal amounts of hedging instruments | |
|---|---|---|---|---|
| | Assets | Liabilities | | |
| At 31 December 2022 | $ million | $ million | $ million | mmBtu |
| **Cash flow hedges** | | | | |
| Foreign exchange risk | | | | |
| Highly probable forecast capital expenditure | **—** | **—** | **5** | |
| Commodity price risk | | | | |
| Highly probable forecast sales | **—** | **—** | | **(469)** |
| At 31 December 2021 | | | | |
| **Cash flow hedges** | | | | |
| Foreign exchange risk | | | | |
| Highly probable forecast capital expenditure | 1 | — | 55 | |
| Commodity price risk | | | | |
| Highly probable forecast sales | — | — | | (420) |

All hedging instruments are presented within derivative financial instruments on the group balance sheet.

All of the nominal amount of hedging instruments at 31 December 2022 and 2021 relating to highly probably forecast capital expenditure matures within 12 months of the relevant balance sheet date. Of the nominal amount of hedging instruments at 31 December 2022 relating to highly probably forecast sales 349 mmBtu (2021 245 mmBtu) matures within 12 months and 120 mmBtu (2021 175 mmBtu) within one to two years.

The table below summarizes the weighted average exchange rates and the weighted average sales price in relation to the derivatives designated as hedging instruments in cash flow hedge relationships at 31 December.

| | Weighted average price/rate | | | |
|---|---|---|---|---|
| | **2022** | | 2021 | |
| At 31 December | **Forecast capital expenditure** | **Forecast sales** | Forecast capital expenditure | Forecast sales |
| Sterling/US dollar | **1.25** | | 1.33 | |
| Henry Hub $/mmBtu | | **4.03** | | 3.24 |

### Fair value hedges

At 31 December 2022, the group held interest rate and cross-currency interest rate swap contracts as fair value hedges of the interest rate risk and foreign currency risk arising from group fixed rate debt issuances. Note 29 outlines the group's approach to interest rate and foreign currency exchange risk management. The interest rate swaps are used to convert US dollar denominated fixed rate borrowings into floating rate debt. The cross-currency interest rate swaps are used to convert sterling, euro, Swiss franc, Canadian dollar and Norwegian krone denominated fixed rate borrowings into US dollar floating rate debt. The group manages all risks derived from debt issuance, such as credit risk, however, the group applies hedge accounting only to certain components of interest rate and foreign currency risk in order to minimize hedge ineffectiveness. The interest rate and foreign currency exposures are identified and hedged on an instrument-by-instrument basis. For interest rate exposures, the group designates as a fair value hedge the benchmark interest rate component only. This is an observable and reliably measurable component of interest rate risk.

All of the fair value hedge accounting relationships currently in place are directly affected by interest rate benchmark reform. The group's swaps which reference interest rates are primarily exposed to 3 month USD LIBOR. For all of the swaps that reference Inter-Bank Offered Rates (IBORs), ISDA fallback clauses to amend derivatives on the cessation of LIBOR are already available as bp and its counterparties have adhered to the protocol. The nominal amounts of the applicable hedging instruments represent the extent of the risk exposure bp manages for financial derivatives designated in fair value hedge relationships that is directly affected by the interest rate benchmark reform. These are disclosed in the table below. The interest rate benchmark reform does not change the risk management strategy for fair value hedges.

Uncertainty around the method and timing of transition from IBORs to alternative risk-free rates (RfRs) may impact the assessment of whether hedge accounting can be applied to certain hedging relationships. However, the temporary reliefs provided by IFRS 9 allow bp to assume that in the event that significant uncertainty around the reform arises:

- the interest rate benchmark component of fair value hedges only needs to be assessed as separately identifiable at initial designation; and
- the interest rate benchmark is not altered for the purposes of assessing the economic relationship between the hedged item and the hedging instrument for fair value hedges.

The reliefs above will continue to apply until the uncertainty arising from the interest benchmark reform with respect to the timing and amount of the underlying cash flows to which the group is exposed ends. The group expects this uncertainty to continue until either the ISDA fallback clauses are activated in June 2023 or the contracts that reference IBORs are modified replacing the IBOR benchmark rate with a risk free rate. The group's assumption is that any modifications to swaps will meet the 'economically equivalent' criteria with contractual changes restricted to only those changes necessary to replace the benchmark rate with a risk free rate.

At 31 December 2022 the reliefs apply and bp continues to monitor regulatory and market developments as it manages the contractual transition.

For foreign currency exposures, the group excludes from the designation the foreign currency basis spread component implicit in the cross-currency interest rate swaps. This is separately calculated at hedge designation, is recognized in other comprehensive income over the life of the hedge and amortized to the income statement on a straight-line basis, in accordance with the group's policy on costs of hedging.

## 30. Derivative financial instruments – continued

The group applies hedge accounting where there is an economic relationship between the hedged item and the hedging instrument. The existence of an economic relationship is determined initially by comparing the critical terms of the hedging instrument and those of the hedged item and it is prospectively assessed using linear regression analysis. The group issues fixed rate debt and enters into interest rate and cross-currency interest rate swaps with critical terms that match those of the debt and on a 1:1 hedge ratio basis. The hedge ratio is determined by comparing the notional amount of the derivative with the notional amount of the debt. The hedge relationship is designated for the full term and notional value of the debt. Both the hedging instrument and the hedged item are expected to be held to maturity.

The group has identified the following sources of ineffectiveness, which are not expected to be material:

- derivative counterparty's credit risk which is not offset by the hedged item. This risk is mitigated by entering into derivative transactions only with high credit quality counterparties; and
- sensitivity to interest rate between the hedged item and the derivatives. This is driven by differences in payment frequencies between the instrument and the bond.

The tables below summarize the change in the fair value of hedging instruments and the hedged item used to calculate ineffectiveness in the period. The signage convention for changes in fair value presented in this table is consistent with that presented in Note 27.

| | | | $ million |
|---|---|---|---|
| At 31 December 2022 | Change in fair value of hedging instrument used to calculate ineffectiveness | Change in fair value of hedged item used to calculate ineffectiveness | Hedge ineffectiveness recognized in profit or (loss) |
| **Fair value hedges** | | | |
| Interest rate risk on finance debt | **26** | **(27)** | **1** |
| Interest rate and foreign currency risk on finance debt | **3,519** | **(3,495)** | **(24)** |
| At 31 December 2021 | | | |
| **Fair value hedges** | | | |
| Interest rate risk on finance debt | 54 | (54) | — |
| Interest rate and foreign currency risk on finance debt | 2,565 | (2,460) | (105) |

The tables below summarize the carrying amount of the derivatives designated as hedging instruments in fair value hedge relationships at 31 December.

| | | | $ million |
|---|---|---|---|
| | Carrying amount of hedging instrument | | Nominal amounts of hedging nstruments |
| At 31 December 2022 | Assets | Liabilities | |
| **Fair value hedges** | | | |
| Interest rate risk on finance debt | — | **(4)** | **368** |
| Interest rate and foreign currency risk on finance debt | **—** | **(3,670)** | **17,032** |
| At 31 December 2021 | | | |
| **Fair value hedges** | | | |
| Interest rate risk on finance debt | 21 | — | 1,102 |
| Interest rate and foreign currency risk on finance debt | 326 | (465) | 18,880 |

All hedging instruments are presented within derivative financial instruments on the group balance sheet. Ineffectiveness arising on fair value hedges is included within finance costs in the income statement.

## 30. Derivative financial instruments – continued

The tables below summarize the profile by tenor of the nominal amount of the derivatives designated as hedging instruments in fair value hedge relationships at 31 December.

| | | | | | | | | $ million |
|---|---|---|---|---|---|---|---|---|
| At 31 December 2022 | Less than 1 year | 1-2 years | 2-3 years | 3-4 years | 4-5 years | 5-10 years | Over 10 years | Total |
| **Fair value hedges** | | | | | | | | |
| Interest rate risk on finance debt | **—** | **216** | **—** | **152** | **—** | **—** | **—** | **368** |
| Interest rate and foreign currency risk on finance debt | **1,307** | **2,238** | **1,971** | **2,244** | **1,845** | **4,869** | **2,558** | **17,032** |
| At 31 December 2021 | | | | | | | | |
| **Fair value hedges** | | | | | | | | |
| Interest rate risk on finance debt | 713 | — | 219 | — | 170 | — | — | 1,102 |
| Interest rate and foreign currency risk on finance debt | 715 | 1,426 | 2,377 | 2,114 | 2,400 | 4,471 | 5,377 | 18,880 |

The table below summarizes the weighted average floating interest rate and the weighted average exchange rates in relation to the derivatives designated as hedging instruments in fair value hedge relationships at 31 December.

| At 31 December | | 2022 | | 2021 |
|---|---|---|---|---|
| | Interest rate swaps | Cross-currency interest rate swaps | Interest rate swaps | Cross-currency interest rate swaps |
| Interest rate | **2.48 %** | **6.23 %** | 0.31 % | 1.91 % |
| Sterling/US dollar | | **1.36** | | 1.36 |
| Euro/US dollar | | **1.13** | | 1.13 |
| Canadian dollar/US dollar | | **0.78** | | 0.78 |

The tables below summarize the carrying amount, and the accumulated fair value adjustments included within the carrying amount, of the hedged items designated in fair value hedge relationships at 31 December.

| | | | | | $ million |
|---|---|---|---|---|---|
| | Carrying amount of hedged item | | Accumulated fair value adjustment included in the carrying amount of hedged items | | |
| At 31 December 2022 | Assets | Liabilities | Assets | Liabilities | Discontinued hedges |
| **Fair value hedges** | | | | | |
| Interest rate risk on finance debt | **—** | **(422)** | **4** | **—** | **(337)** |
| Interest rate and foreign currency risk on finance debt | **—** | **(17,003)** | **2,312** | **—** | **—** |
| At 31 December 2021 | | | | | |
| **Fair value hedges** | | | | | |
| Interest rate risk on finance debt | | (1,170) | | (22) | (524) |
| Interest rate and foreign currency risk on finance debt | — | (18,837) | — | (94) | — |

The hedged item for all fair value hedges is presented within finance debt on the group balance sheet.

## 30. Derivative financial instruments – continued

### Movement in reserves related to hedge accounting

The table below provides a reconciliation of the cash flow hedge and costs of hedging reserves on a pre-tax basis by risk category. The signage convention of this table is consistent with that presented in Note 32.

| | | | | | $ million |
|---|---|---|---|---|---|
| | Cash flow hedge reserve | | | Costs of hedging reserve | |
| | Highly probable forecast capital expenditure | Highly probable forecast sales | Purchase of equity[a] | Interest rate and foreign currency risk on finance debt | Total |
| At 1 January 2022 | **3** | **(134)** | **(651)** | **(190)** | **(972)** |
| Recognized in other comprehensive income | | | | | |
| Cash flow hedges marked to market | **(4)** | **(825)** | **—** | **—** | **(829)** |
| Cash flow hedges reclassified to the income statement - hedged item affected profit or loss | **—** | **851** | **651** | **—** | **1,502** |
| Costs of hedging marked to market | **—** | **—** | **—** | **61** | **61** |
| Costs of hedging reclassified to the income statement | **—** | **—** | **—** | **25** | **25** |
| | **(4)** | **26** | **651** | **86** | **759** |
| Cash flow hedges transferred to the balance sheet | **1** | **—** | **—** | **—** | **1** |
| **At 31 December 2022** | **—** | **(108)** | **—** | **(104)** | **(212)** |

| | | | | | $ million |
|---|---|---|---|---|---|
| | Cash flow hedge reserve | | | Costs of hedging reserve | |
| | Highly probable forecast capital expenditure | Highly probable forecast sales | Purchase of equity[a] | Interest rate and foreign currency risk on finance debt | Total |
| At 1 January 2021 | 12 | 41 | (651) | (106) | (704) |
| Recognized in other comprehensive income | | | | | |
| Cash flow hedges marked to market | 1 | (430) | — | — | (429) |
| Cash flow hedges reclassified to the income statement - hedged item affected profit or loss | — | 255 | — | — | 255 |
| Costs of hedging marked to market | — | — | — | (105) | (105) |
| Costs of hedging reclassified to the income statement | — | — | — | 21 | 21 |
| | 1 | (175) | — | (84) | (258) |
| Cash flow hedges transferred to the balance sheet | (10) | — | — | — | (10) |
| **At 31 December 2021** | 3 | (134) | (651) | (190) | (972) |

[a] See Note 32 for further information on the cash flow hedge reserve relating to the purchase of equity.

All of the cash flow hedge reserve related to the purchase of equity was reclassified to the income statement during the year following bp's decision to exit its shareholding in Rosneft. The amount reclassified is presented in net impairment and losses on sale of businesses and fixed assets in the income statement. The remaining cash flow hedge reserve balances and amounts reclassified from the cash flow hedge reserve into profit or loss during the year relate to continuing hedge relationships. Amounts deferred in these cash flow hedge reserves that have been reclassified to profit or loss are presented in sales and other operating revenues in the income statement.

Costs of hedging relates to the foreign currency basis spreads of hedging instruments used to hedge the group's interest rate and foreign currency risk on debt which is a time-period related item.

## 31. Called-up share capital

The allotted, called up and fully paid share capital at 31 December was as follows:

| | 2022 | | 2021 | | 2020 | |
|---|---|---|---|---|---|---|
| Issued | **Shares thousand** | **$ million** | Shares thousand | $ million | Shares thousand | $ million |
| 8% cumulative first preference shares of £1 each[a] | **7,233** | **12** | 7,233 | 12 | 7,233 | 12 |
| 9% cumulative second preference shares of £1 each[a] | **5,473** | **9** | 5,473 | 9 | 5,473 | 9 |
| | | **21** | | 21 | | 21 |
| Ordinary shares of 25 cents each | | | | | | |
| At 1 January | **20,778,082** | **5,194** | 21,449,782 | 5,362 | 21,535,840 | 5,383 |
| Issue of new shares for employee share-based payment plans | **55,000** | **14** | 35,001 | 9 | 34,000 | 9 |
| Issue of new shares – other | **165,105** | **41** | — | — | — | — |
| Repurchase of ordinary share capital | **(1,900,404)** | **(475)** | (706,701) | (177) | (120,058) | (30) |
| **At 31 December** | **19,097,783** | **4,774** | 20,778,082 | 5,194 | 21,449,782 | 5,362 |
| | | **4,795** | | 5,215 | | 5,383 |

[a] The nominal amount of 8% cumulative first preference shares and 9% cumulative second preference shares that can be in issue at any time shall not exceed £10,000,000 for each class of preference shares.

Voting on substantive resolutions tabled at a general meeting is on a poll. On a poll, shareholders present in person or by proxy have two votes for every £5 in nominal amount of the first and second preference shares held and one vote for every ordinary share held. On a show-of-hands vote on other resolutions (procedural matters) at a general meeting, shareholders present in person or by proxy have one vote each.

In the event of the winding up of the company, preference shareholders would be entitled to a sum equal to the capital paid up on the preference shares, plus an amount in respect of accrued and unpaid dividends and a premium equal to the higher of (i) 10% of the capital paid up on the preference shares and (ii) the excess of the average market price of such shares on the London Stock Exchange during the previous six months over par value.

During 2022 the company repurchased 1,900 million ordinary shares for a total consideration of $9,996 million, including transaction costs of $54 million. All shares purchased were for cancellation. The repurchased shares represented 10.0% of ordinary share capital. A further 107 million ordinary shares were repurchased between the end of the reporting period and 17 February 2023, the latest practicable date before the completion of these financial statements, for a total cost of $653 million of which $497 million has been accrued at 31 December 2022. The number of shares in issue is reduced when shares are repurchased.

165 million new ordinary shares were issued in April 2022 as non-cash consideration for the acquisition of the public units of BP Midstream Partners LP.

### Treasury shares[a]

| | 2022 | | 2021 | | 2020 | |
|---|---|---|---|---|---|---|
| | **Shares thousand** | **Nominal value $ million** | Shares thousand | Nominal value $ million | Shares thousand | Nominal value $ million |
| At 1 January | **1,137,457** | **283** | 1,187,650 | 296 | 1,296,856 | 323 |
| Purchases for settlement of employee share plans | **14,150** | **4** | 1,432 | — | — | — |
| Issue of new shares for employee share-based payment plans | **55,000** | **14** | 35,096 | 9 | 34,116 | 9 |
| Shares re-issued for employee share-based payment plans | **(81,680)** | **(20)** | (86,721) | (22) | (143,322) | (36) |
| **At 31 December** | **1,124,927** | **281** | 1,137,457 | 283 | 1,187,650 | 296 |
| Of which – shares held in treasury by bp | **940,571** | **235** | 1,037,201 | 259 | 1,105,157 | 275 |
| – shares held in ESOP trusts | **184,356** | **46** | 100,256 | 24 | 82,491 | 21 |
| – shares held by bp's US share plan administrator[b] | **—** | **—** | — | — | 2 | — |

[a] See Note 32 for definition of treasury shares.

[b] Held in the form of ADSs to meet the requirements of employee share-based payment plans in the US.

For each year presented, the balance of shares held in treasury by bp at 1 January represents 5.0% (2021 5.2% and 2020 5.4%) of the called-up ordinary share capital of the company.

During 2022, the movement in shares held in treasury by bp represented less than 0.5% (2021 less than 0.3% and 2020 less than 0.3%) of the ordinary share capital of the company.

## 32. Capital and reserves

| | Share capital | Share premium account | Capital redemption reserve | Merger reserve | Total share capital and capital reserves |
|---|---|---|---|---|---|
| **At 1 January 2022** | **5,215** | **12,745** | **1,705** | **27,206** | **46,871** |
| Profit (loss) for the year | – | – | – | – | – |
| **Items that may be reclassified subsequently to profit or loss** | | | | | |
| Currency translation differences (including reclassifications)[a] | – | – | – | – | – |
| Cash flow hedges and costs of hedging (including reclassifications) | – | – | – | – | – |
| Share of items relating to equity-accounted entities, net of tax | – | – | – | – | – |
| Other | – | – | – | – | – |
| **Items that will not be reclassified to profit or loss** | | | | | |
| Remeasurements of the net pension and other post-retirement benefit liability or asset | – | – | – | – | – |
| Cash flow hedges that will subsequently be transferred to the balance sheet | – | – | – | – | – |
| **Total comprehensive income** | – | – | – | – | – |
| Dividends | – | – | – | – | – |
| Cash flow hedges transferred to the balance sheet, net of tax | – | – | – | – | – |
| Issue of ordinary share capital | 41 | 779 | – | – | 820 |
| Repurchases of ordinary share capital | (475) | – | 475 | – | – |
| Share-based payments, net of tax[b] | 14 | 168 | – | – | 182 |
| Share of equity-accounted entities' changes in equity, net of tax | – | – | – | – | – |
| Issue of perpetual hybrid bonds | – | – | – | – | – |
| Payments on perpetual hybrid bonds | – | – | – | – | – |
| Tax on issue of perpetual hybrid bonds | – | – | – | – | – |
| Transactions involving non-controlling interests, net of tax | – | – | – | – | – |
| **At 31 December 2022** | **4,795** | **13,692** | **2,180** | **27,206** | **47,873** |
| **At 1 January 2021** | 5,383 | 12,584 | 1,528 | 27,206 | 46,701 |
| Profit (loss) for the year | – | – | – | – | – |
| **Items that may be reclassified subsequently to profit or loss** | | | | | |
| Currency translation differences (including reclassifications) | – | – | – | – | – |
| Cash flow hedges and costs of hedging (including reclassifications) | – | – | – | – | – |
| Share of items relating to equity-accounted entities, net of tax | – | – | – | – | – |
| Other | – | – | – | – | – |
| **Items that will not be reclassified to profit or loss** | | | | | |
| Remeasurements of the net pension and other post-retirement benefit liability or asset | – | – | – | – | – |
| Cash flow hedges that will subsequently be transferred to the balance sheet | – | – | – | – | – |
| **Total comprehensive income** | – | – | – | – | – |
| Dividends | – | – | – | – | – |
| Cash flow hedges transferred to the balance sheet, net of tax | – | – | – | – | – |
| Repurchases of ordinary share capital | (177) | – | 177 | – | – |
| Share-based payments, net of tax[b] | 9 | 161 | – | – | 170 |
| Share of equity-accounted entities' changes in equity, net of tax | – | – | – | – | – |
| Issue of perpetual hybrid bonds | – | – | – | – | – |
| Payments on perpetual hybrid bonds | – | – | – | – | – |
| Tax on issue of perpetual hybrid bonds | | | | | |
| Transactions involving non-controlling interests, net of tax[c] | – | – | – | – | – |
| **At 31 December 2021** | 5,215 | 12,745 | 1,705 | 27,206 | 46,871 |

a Following bp's decision to exit its shareholding in Rosneft on 27 February 2022 $10,372 million was reclassified to the income statement. See Note 1 - Investment in Rosneft.
b Movements in treasury shares relate to employee share-based payment plans.
c Principally relates to the sale of 49% interest in a controlled affiliate holding certain refined product and crude logistics assets onshore US and the buy-out of the non-controlling interest in the Thorntons fuels and convenience retail business.

## 32. Capital and reserves – continued

$ million

| Treasury shares | Foreign currency translation reserve | Cash flow hedges | Costs of hedging | Total fair value reserves | Profit and loss account | bp shareholders' equity | Non-controlling interests: Hybrid bonds | Non-controlling interests: Other interest | Total equity |
|---|---|---|---|---|---|---|---|---|---|
| (12,624) | (9,572) | (851) | (176) | (1,027) | 51,815 | 75,463 | 13,041 | 1,935 | 90,439 |
| — | — | — | — | — | (2,487) | (2,487) | 519 | 611 | (1,357) |
| — | 6,914 | — | — | — | — | 6,914 | — | (61) | 6,853 |
| — | — | 671 | 103 | 774 | — | 774 | — | — | 774 |
| — | — | — | — | — | 402 | 402 | — | — | 402 |
| — | — | — | — | — | (225) | (225) | — | — | (225) |
| — | — | — | — | — | 408 | 408 | — | — | 408 |
| — | — | (4) | — | (4) | — | (4) | — | — | (4) |
| — | 6,914 | 667 | 103 | 770 | (1,902) | 5,782 | 519 | 550 | 6,851 |
| — | — | — | — | — | (4,365) | (4,365) | — | (294) | (4,659) |
| — | — | 1 | — | 1 | — | 1 | — | — | 1 |
| — | — | — | — | — | — | 820 | — | — | 820 |
| — | — | — | — | — | (10,493) | (10,493) | — | — | (10,493) |
| 471 | — | — | — | — | 194 | 847 | — | — | 847 |
| — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | (4) | (4) | 374 | — | 370 |
| — | 15 | — | — | — | — | 15 | (544) | — | (529) |
| — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | (513) | (513) | — | (144) | (657) |
| (12,153) | (2,643) | (183) | (73) | (256) | 34,732 | 67,553 | 13,390 | 2,047 | 82,990 |
| | | | | | | | | | |
| (13,224) | (8,719) | (708) | (100) | (808) | 47,300 | 71,250 | 12,076 | 2,242 | 85,568 |
| — | — | — | — | — | 7,565 | 7,565 | 507 | 415 | 8,487 |
| — | (846) | — | — | — | — | (846) | — | (24) | (870) |
| — | — | (134) | (76) | (210) | — | (210) | — | — | (210) |
| — | — | — | — | — | 44 | 44 | — | — | 44 |
| — | — | — | — | — | 1 | 1 | — | — | 1 |
| — | — | — | — | — | 3,099 | 3,099 | — | — | 3,099 |
| — | — | 1 | — | 1 | — | 1 | — | — | 1 |
| — | (846) | (133) | (76) | (209) | 10,709 | 9,654 | 507 | 391 | 10,552 |
| — | — | — | — | — | (4,316) | (4,316) | — | (311) | (4,627) |
| — | — | (10) | — | (10) | — | (10) | — | — | (10) |
| — | — | — | — | — | (3,151) | (3,151) | — | — | (3,151) |
| 600 | — | — | — | — | (138) | 632 | — | — | 632 |
| — | — | — | — | — | 556 | 556 | — | — | 556 |
| — | — | — | — | — | (26) | (26) | 950 | — | 924 |
| — | (7) | — | — | — | — | (7) | (492) | — | (499) |
| — | — | — | — | — | 881 | 881 | — | (387) | 494 |
| (12,624) | (9,572) | (851) | (176) | (1,027) | 51,815 | 75,463 | 13,041 | 1,935 | 90,439 |

## 32. Capital and reserves – continued

| | Share capital | Share premium account | Capital redemption reserve | Merger reserve | Total share capital and capital reserves |
|---|---|---|---|---|---|
| **At 1 January 2020** | 5,404 | 12,417 | 1,498 | 27,206 | 46,525 |
| Profit (loss) for the year | — | — | — | — | — |
| **Items that may be reclassified subsequently to profit or loss** | | | | | |
| Currency translation differences (including reclassifications) | — | — | — | — | — |
| Cash flow hedges and costs of hedging (including reclassifications) | — | — | — | — | — |
| Share of items relating to equity-accounted entities, net of tax[a] | — | — | — | — | — |
| Other | — | — | — | — | — |
| **Items that will not be reclassified to profit or loss** | | | | | |
| Remeasurements of the net pension and other post-retirement benefit liability or asset | — | — | — | — | — |
| Cash flow hedges that will subsequently be transferred to the balance sheet | — | — | — | — | — |
| **Total comprehensive income** | — | — | — | — | — |
| Dividends | — | — | — | — | — |
| Cash flow hedges transferred to the balance sheet, net of tax | | | | | |
| Repurchases of ordinary share capital | (30) | — | 30 | — | — |
| Share-based payments, net of tax[b] | 9 | 167 | — | — | 176 |
| Share of equity-accounted entities' changes in equity, net of tax[c] | — | — | — | — | — |
| Issue of perpetual hybrid bonds | — | — | — | — | — |
| Payments on perpetual hybrid bonds | — | — | — | — | — |
| Tax on issue of perpetual hybrid bonds | — | — | — | — | — |
| Transactions involving non-controlling interests, net of tax[d] | — | — | — | — | — |
| **At 31 December 2020** | 5,383 | 12,584 | 1,528 | 27,206 | 46,701 |

a Principally foreign exchange effects relating to the Russian rouble.
b Movements in treasury shares relate to employee share-based payment plans.
c Principally relates to a non-controlling interest transaction entered into by Rosneft.
d Principally relates to the sale of interests in our UK and New Zealand retail property portfolio, for which proceeds of $0.5 billion and $0.2 billion were received respectively.

## 32. Capital and reserves – continued

$ million

| Treasury shares | Foreign currency translation reserve | Cash flow hedges | Costs of hedging | Total fair value reserves | Profit and loss account | bp shareholders' equity | Non-controlling interests: Hybrid bonds | Non-controlling interests: Other interest | Total equity |
|---|---|---|---|---|---|---|---|---|---|
| (14,412) | (6,495) | (752) | (160) | (912) | 73,706 | 98,412 | — | 2,296 | 100,708 |
| — | — | — | — | — | (20,305) | (20,305) | 256 | (680) | (20,729) |
| — | (2,224) | — | — | — | — | (2,224) | — | 37 | (2,187) |
| — | — | 31 | 60 | 91 | — | 91 | — | — | 91 |
| — | — | — | — | — | 312 | 312 | — | — | 312 |
| — | — | — | — | — | 71 | 71 | — | — | 71 |
| — | — | — | — | — | 65 | 65 | — | — | 65 |
| — | — | 7 | — | 7 | — | 7 | — | — | 7 |
| — | (2,224) | 38 | 60 | 98 | (19,857) | (21,983) | 256 | (643) | (22,370) |
| — | — | — | — | — | (6,367) | (6,367) | — | (238) | (6,605) |
| — | — | 6 | — | 6 | — | 6 | — | — | 6 |
| — | — | — | — | — | (776) | (776) | — | — | (776) |
| 1,188 | — | — | — | — | (638) | 726 | — | — | 726 |
| — | — | — | — | — | 1,341 | 1,341 | — | — | 1,341 |
| — | — | — | — | — | (48) | (48) | 11,909 | — | 11,861 |
| — | — | — | — | — | — | — | (89) | — | (89) |
| — | — | — | — | — | 3 | 3 | — | — | 3 |
| — | — | — | — | — | (64) | (64) | — | 827 | 763 |
| (13,224) | (8,719) | (708) | (100) | (808) | 47,300 | 71,250 | 12,076 | 2,242 | 85,568 |

## 32. Capital and reserves – continued

### Share capital

The balance on the share capital account represents the aggregate nominal value of all ordinary and preference shares in issue, including treasury shares.

### Share premium account

The balance on the share premium account represents the amounts received in excess of the nominal value of the ordinary and preference shares.

### Capital redemption reserve

The balance on the capital redemption reserve represents the aggregate nominal value of all the ordinary shares repurchased and cancelled.

### Merger reserve

The balance on the merger reserve represents the fair value of the consideration given in excess of the nominal value of the ordinary shares issued in an acquisition made by the issue of shares.

### Treasury shares

Treasury shares represent bp shares repurchased and available for specific and limited purposes. For accounting purposes shares held in Employee Share Ownership Plans (ESOPs) and bp's US share plan administrator to meet the future requirements of the employee share-based payment plans are treated in the same manner as treasury shares and are, therefore, included in the financial statements as treasury shares. The ESOPs are funded by the group and have waived their rights to dividends in respect of such shares held for future awards. Until such time as the shares held by the ESOPs vest unconditionally to employees, the amount paid for those shares is shown as a reduction in shareholders' equity. Assets and liabilities of the ESOPs are recognized as assets and liabilities of the group.

### Foreign currency translation reserve

The foreign currency translation reserve records exchange differences arising from the translation of the financial statements of foreign operations. Upon disposal of foreign operations, the related accumulated exchange differences are reclassified to the income statement. Following, bp's decision to exit its shareholding in Rosneft on 27 February 2022 $10,372 million was reclassified to the income statement. See Note 1 - Investment in Rosneft.

### Cash flow hedges

This reserve records the portion of the gain or loss on a hedging instrument in a cash flow hedge that is determined to be an effective hedge. At 31 December 2021 and 2020 it included $651 million relating to the acquisition of an 18.5% interest in Rosneft in 2013. Following bp's decision to exit its shareholding in Rosneft on 27 February 2022 the full amount was reclassified to the income statement. See Note 1 - Investment in Rosneft. For further information on the accounting for cash flow hedges see Note 1 - Derivative financial instruments and hedging activities.

### Costs of hedging

This reserve records the change in fair value of the foreign currency basis spread of financial instruments to which cost of hedge accounting has been applied. The accumulated amount relates to time-period related hedged items and is amortized to profit or loss over the term of the hedging relationship. For further information on the accounting for costs of hedging see Note 1 - Derivative financial instruments and hedging activities.

### Profit and loss account

The balance held on this reserve is the accumulated retained profits of the group.

### Non-controlling interests

Non-controlling interests represent the equity in subsidiaries that is not attributable, directly or indirectly, to bp shareholders. Included within non-controlling interests are perpetual subordinated hybrid bonds issued by BP Capital Markets PLC, a group subsidiary, on 17 June 2020 in euro, sterling and US dollars for a US dollar equivalent amount of $11.9 billion. The hybrid bonds include redemption options exercisable at the group's discretion from June 2025 to March 2030 (the first 'call date'), on specified dates thereafter, or in the event of specific circumstances (such as a change in IFRS or tax regime) as set out in the individual terms of each issue. Coupons are fixed for an initial period up to dates from September 2025 to June 2030 at rates of 3.25% to 4.875% and reset to rates determined by the contractual terms of each instrument on certain dates thereafter. The contractual terms of the hybrid bonds allow the group to defer coupon payments and the repayment of principal indefinitely, however their terms and conditions stipulate that any deferred payments must be made in the event of an announcement of an ordinary share or parity equity dividend distribution or certain share repurchases or redemptions. Payments made to and profit attributed to these hybrid bond holders in the year totalled $468 million (2021 $499 million and 2020 $89 million) and $468 million (2021 $497 million and 2020 $89 million) respectively. The accumulated non-controlling interest at the end of the year was $12,066 million (2021 $12,081 million).

Non-controlling interests also includes perpetual subordinated hybrid securities issued during 2022 and 2021 by a group subsidiary, of $1,324 million. The proceeds from these issuances were specifically earmarked to fund the forward purchase and leaseback of an under-construction floating, production, storage, and offloading vessel (FPSO) to be used on one of the group's major projects. The contractual terms of these instruments allow the group to defer interest payments and repayment of principal indefinitely however their terms and conditions stipulate that the group must purchase them on the occurrence of certain events, all within the group's control, including the declaration or payment of a BP p.l.c. distribution after mid-May 2026. Payments made to and profit attributed to these hybrid security holders in the year totalled $61 million (2021 $nil ) and $51 million (2021 $10 million) respectively. The accumulated non-controlling interest at the end of the year was $1,324 million (2021 $960 million).

As the group has the unconditional right to avoid transferring cash or another financial asset in relation to these hybrid bonds and securities, they are classified as equity instruments and reported within non-controlling interests in the consolidated financial statements.

## 32. Capital and reserves – continued

The pre-tax amounts of each component of other comprehensive income, and the related amounts of tax, are shown in the table below.

| | | | $ million |
|---|---|---|---|
| | | | 2022 |
| | Pre-tax | Tax | Net of tax |
| **Items that may be reclassified subsequently to profit or loss** | | | |
| Currency translation differences (including reclassifications) | **6,973** | **(120)** | **6,853** |
| Cash flow hedges (including reclassifications) | **677** | **(6)** | **671** |
| Costs of hedging (including reclassifications) | **86** | **17** | **103** |
| Share of items relating to equity-accounted entities, net of tax | **402** | **—** | **402** |
| Other | **—** | **(225)** | **(225)** |
| **Items that will not be reclassified to profit or loss** | | | |
| Remeasurements of the net pension and other post-retirement benefit liability or asset | **340** | **68** | **408** |
| Cash flow hedges that will subsequently be transferred to the balance sheet | **(4)** | **—** | **(4)** |
| **Other comprehensive income** | **8,474** | **(266)** | **8,208** |

| | | | $ million |
|---|---|---|---|
| | | | 2021 |
| | Pre-tax | Tax | Net of tax |
| **Items that may be reclassified subsequently to profit or loss** | | | |
| Currency translation differences (including reclassifications) | (885) | 15 | (870) |
| Cash flow hedges (including reclassifications) | (175) | 41 | (134) |
| Costs of hedging (including reclassifications) | (84) | 8 | (76) |
| Share of items relating to equity-accounted entities, net of tax | 44 | — | 44 |
| Other | — | 1 | 1 |
| **Items that will not be reclassified to profit or loss** | | | |
| Remeasurements of the net pension and other post-retirement benefit liability or asset | 4,416 | (1,317) | 3,099 |
| Cash flow hedges that will subsequently be transferred to the balance sheet | 1 | — | 1 |
| **Other comprehensive income** | 3,317 | (1,252) | 2,065 |

| | | | $ million |
|---|---|---|---|
| | | | 2020 |
| | Pre-tax | Tax | Net of tax |
| **Items that may be reclassified subsequently to profit or loss** | | | |
| Currency translation differences (including reclassifications) | (2,196) | 9 | (2,187) |
| Cash flow hedges (including reclassifications) | 41 | (10) | 31 |
| Costs of hedging (including reclassifications) | 64 | (4) | 60 |
| Share of items relating to equity-accounted entities, net of tax | 312 | — | 312 |
| Other | — | 71 | 71 |
| **Items that will not be reclassified to profit or loss** | | | |
| Remeasurements of the net pension and other post-retirement benefit liability or asset | 170 | (105) | 65 |
| Cash flow hedges that will subsequently be transferred to the balance sheet | 7 | — | 7 |
| **Other comprehensive income** | (1,602) | (39) | (1,641) |

## 33. Contingent liabilities and legal proceedings

### Contingent liabilities

There were contingent liabilities at 31 December 2022 in respect of guarantees and indemnities entered into as part of the ordinary course of the group's business. No material losses are likely to arise from such contingent liabilities. Further information on financial guarantees is included in Note 29.

In the normal course of the group's business, bp group entities are subject to legal and regulatory proceedings arising out of current and past operations, including matters related to commercial disputes, product liability, antitrust, commodities trading, premises-liability claims, consumer protection, general health, safety, climate change and environmental claims and allegations of exposures of third parties to toxic substances, such as lead pigment in paint, asbestos and other chemicals. The amounts claimed could be significant and could be material to the group's results of operations, financial position or liquidity. While it is difficult to predict the ultimate outcome in some cases, bp expects that the impact of current legal and regulatory proceedings on the group's results of operations, liquidity or financial position will not be material.

The group files tax returns in many jurisdictions across the world. Various tax authorities are currently examining these returns, which contain matters that could be subject to differing interpretations of applicable tax laws and regulations. The resolution of tax positions through negotiations with relevant tax authorities, or through litigation, can take several years to complete and the amounts could be significant and could, in aggregate, be material to the group's results of operations, financial position or liquidity. While it is difficult to predict the ultimate outcome in some cases, bp does not expect there to be any material impact upon the group's results of operations, financial position or liquidity.

## 33. Contingent liabilities and legal proceedings – continued

The group is subject to numerous national and local health, safety and environmental laws and regulations concerning its products, operations and other activities. These laws and regulations may require the group to take future action to remediate the effects on the environment of prior disposal or release of chemicals or petroleum substances by the group or other parties. Such contingencies may exist for various sites including refineries, chemical plants, oil fields, commodities extraction sites, service stations, terminals and waste disposal sites. In addition, the group may have obligations relating to prior asset sales or closed facilities. The ultimate requirement for remediation and its costs are inherently difficult to estimate. However, the estimated cost of environmental obligations has been provided in these accounts in accordance with the group's accounting policies. While the amounts of future possible costs that are not provided for could be significant and material to the group's results of operations in the period in which they are recognized, it is not possible to estimate the amounts involved. bp does not expect these costs to have a material impact on the group's results of operations, financial position or liquidity.

If production and manufacturing facilities and pipelines are sold to third parties and the subsequent owner is unable to meet their decommissioning obligations it is possible that, in certain circumstances, bp could be partially or wholly responsible for decommissioning. The group estimates that for production facilities, approximately $16 billion (2021 $13 billion) of associated decommissioning obligations were previously transferred to third parties. While the amounts associated with decommissioning provisions reverting to the group could be material, bp is not currently aware of any such material cases that have a greater than remote chance of reverting to the group. Furthermore, as described in Provisions and contingencies within Note 1, decommissioning provisions associated with customers & products facilities are not generally recognized as the potential obligations cannot be measured given their indeterminate settlement dates.

By their nature, it is not practicable to estimate the potential financial impact or possible timing of the above contingencies as there are significant uncertainties that are dependent on various factors that are not within the group's control.

### Contingent liabilities related to the Gulf of Mexico oil spill

For information on legal proceedings relating to the Deepwater Horizon oil spill, see Legal proceedings below. Any outstanding Deepwater Horizon related claims are not expected to have a material impact on the group's financial performance.

### Legal proceedings

#### Proceedings relating to the Deepwater Horizon oil spill

##### Introduction

BP Exploration & Production Inc. (BPXP) was lease operator of Mississippi Canyon, Block 252 in the Gulf of Mexico, where the semi-submersible rig Deepwater Horizon was deployed at the time of the 20 April 2010 explosion and fire and resulting oil spill (the Incident). Lawsuits and claims arising from the Incident were brought principally in US federal and state courts. The remaining proceedings arising from the Incident are discussed below.

##### Medical Benefits Class Action Settlement

In 2012 the Medical Benefits Class Action Settlement (Medical Settlement) was entered into with the plaintiffs steering committee. It involves payments to qualifying class members based on a matrix for certain Specified Physical Conditions (SPCs), as well as a 21-year Periodic Medical Consultation Program (PMCP) for qualifying class members. All SPC claims have been determined by the medical claims administrator. In total, 27,603 claims (comprising 22,833 SPC claims and 4,770 PMCP claims) have been approved for compensation totalling approximately $67 million and 9,624 claims have been denied.

The Medical Settlement also includes an exclusive remedy provision regarding class members pursuing exposure-based personal injury claims for later-manifested physical conditions (LMPCs). In order to seek compensation from bp for an LMPC, class members must file a notice with the medical claims administrator within four years after the date of first diagnosis of the LMPC. As of 31 December 2022, there were 105 pending lawsuits brought by class members claiming LMPCs.

##### Other civil complaints – economic loss

All of the remaining economic loss and property damage claims from individuals and businesses have been settled or dismissed.

##### Other civil complaints – personal injury

The vast majority of post-explosion clean-up, medical monitoring and personal injury claims from individuals that either opted out of the Medical Settlement and/or were excluded from that settlement have been dismissed (including more than 300 cases in which the courts granted BPXP's motions for summary judgment). As of 31 December 2022, 414 cases remained pending.

##### Non-US government lawsuits

On 18 October 2012, a group of Mexican fishermen filed a class action complaint in a Mexican Federal District Court located in Mexico City against BP America Production Company (BPAPC) and other bp subsidiaries, seeking to recover for alleged environmental and economic harm in Mexico as a result of the Incident. On 27 June 2018, bp answered the complaint by seeking dismissal on various grounds including that no oil reached Mexican waters or land and there was no economic or environmental harm in Mexico. There has been no subsequent material development in these proceedings.

On 3 December 2015 and 29 March 2016, Acciones Colectivas de Sinaloa (ACS) filed two class actions (which have since been consolidated) in a Mexican Federal District Court on behalf of any person or entity harmed by the Incident, including several coastal Mexican states and municipalities against BPXP, BPAPC, and other entities which they claim are bp subsidiaries. In these class actions, plaintiffs seek an order requiring the bp defendants to repair the damage to the Gulf of Mexico, to pay penalties, and to compensate plaintiffs for damage to property, to health and for economic loss. BPXP and BPAPC opposed class certification and sought dismissal, principally on the basis that no oil reached Mexican waters or land and there was no economic or environmental harm in Mexico. Following the district court's certification of the class of 25 September 2019, various challenges and appeals have been made by both bp and ACS in relation to that decision and the class notification procedures, including the validity of signatures and supporting papers of purported class members. Final decisions on outstanding motions in these matters are pending.

These legal actions remain at a relatively early stage and while it is not possible to predict the outcome, bp believes that it has valid defences, and it intends to defend such actions vigorously.

## 33. Contingent liabilities and legal proceedings – continued

### Other legal proceedings

#### FERC and CFTC matters

Following an investigation by the US Federal Energy Regulatory Commission (FERC) and the US Commodity Futures Trading Commission (CFTC) of several bp entities, the Administrative Law Judge of the FERC ruled on 13 August 2015 that bp manipulated the market by selling next-day, fixed price natural gas at Houston Ship Channel in 2008 in order to suppress the Gas Daily index and benefit its financial position. In 2016, the FERC issued an Order affirming the initial decision and directing bp to pay a civil penalty of $20.16 million and to disgorge $207,169 in unjust profits. bp complied with the Order under protest and appealed the FERC's decision to the US Court of Appeals. On 20 October 2022, the Fifth Circuit issued an opinion upholding the FERC's finding that bp had engaged in market manipulation. The Fifth Circuit also found that the FERC did not have jurisdiction over most of the transactions identified as being violations. The matter has been remanded back to the FERC for further proceedings and reassessment of the penalty.

#### Lead paint matters

Since 1987, Atlantic Richfield Company (Atlantic Richfield), a subsidiary of bp, has been named as a co-defendant in numerous lawsuits brought in the US alleging injury to persons and property caused by lead pigment in paint. The majority of the lawsuits have been abandoned or dismissed against Atlantic Richfield. Atlantic Richfield is named in these lawsuits as alleged successor to International Smelting and Refining and another company that manufactured lead pigment during the period 1920-1946. The plaintiffs include individuals and governmental entities. Several of the lawsuits purport to be class actions. The lawsuits seek various remedies including compensation to lead-poisoned children, cost to find and remove lead paint from buildings, medical monitoring and screening programmes, public warning and education of lead hazards, reimbursement of government healthcare costs and special education for lead-poisoned citizens and punitive damages. No lawsuit against Atlantic Richfield has been settled nor has Atlantic Richfield been subject to a final adverse judgment in any proceeding. The amounts claimed and, if such suits were successful, the costs of implementing the remedies sought in the various cases could be substantial. While it is not possible to predict the outcome of these legal actions, Atlantic Richfield believes that it has valid defences. It intends to defend such actions vigorously and believes that the incurrence of liability is remote. Consequently, bp believes that the impact of these lawsuits on the group's results, financial position or liquidity will not be material and in future reports will not report on lead paint litigation absent any material developments.

#### Climate change

BP p.l.c., BP America Inc. and BP Products North America Inc. are co-defendants with other oil and gas companies in multiple lawsuits brought in various state and federal courts on behalf of various governmental and private parties. The lawsuits generally assert claims under a variety of legal theories seeking to hold the defendant companies responsible for impacts allegedly caused by and/or relating to climate change. Underlying many of the legal theories are allegations regarding deceptive communication and disinformation to the public. The lawsuits seek remedies including payment of money and other forms of equitable relief. If such suits were successful, the cost of the remedies sought in the various cases could be substantial. All of these lawsuits remain at relatively early stages and while it is not possible to predict the outcome of these legal actions, bp believes that it has valid defences, and it intends to defend such actions vigorously.

#### Louisiana Coastal restoration

Six coastal parishes and the State of Louisiana have filed over 40 separate lawsuits in state courts in Louisiana against various oil and gas companies seeking damages for coastal erosion. bp entities are defendants in 17 of these cases. The lawsuits allege that the defendants' historical operations in oil fields within the Louisiana onshore coastal zone failed to comply with state permits and/or were conducted without the required coastal use permits. The plaintiffs seek unspecified statutory penalties and damages, including the costs of restoring coastal wetlands allegedly impacted by oil field operations.

Defendants removed all of these lawsuits to federal court and the removals were contested by plaintiffs, eventually resulting in a decision from the US Fifth Circuit Court of Appeals rejecting defendants' "federal officer" jurisdiction removal grounds in one of the two lead cases – Plaquemines Parish v. Riverwood, et al. Defendants' petition for writ of certiorari to the US Supreme Court seeking review of the US Fifth Circuit's Riverwood decision was denied in early 2022. On remand from the US District Court, the state court in the other lead case of Cameron Parish v. Auster et al. has preliminarily established a November, 2023 trial date. bp is the lead defendant in Auster but is not named in the Riverwood case.

In addition, four private landowners have filed separate claims in the state courts in Jefferson and Plaquemines Parishes of Louisiana for restoration damages related to alleged impacts to their marshlands associated with historic oil field operations. bp entities are defendants in two of these private landowner cases.

All of these lawsuits remain at relatively early stages and while it is not possible to predict the outcome of these legal actions, bp believes that it has valid defences, and it intends to defend such actions vigorously.

## 34. Remuneration of senior management and non-executive directors

### Remuneration of directors

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Total for all directors | | | |
| Emoluments | **8** | 9 | 6 |
| Amounts received under incentive schemes[a] | **13** | 4 | 14 |
| **Total** | **21** | 13 | 20 |

[a] Excludes amounts relating to past directors.

#### Emoluments

These amounts comprise fees paid to the non-executive chair and the non-executive directors and, for executive directors, salary and benefits earned during the relevant financial year, plus cash bonuses awarded for the year.

#### Further information

Full details of individual directors' remuneration are given in the Directors' remuneration report on page 112.

### Remuneration of directors and senior management

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Total for all senior management and non-executive directors | | | |
| Short-term employee benefits | **31** | 30 | 17 |
| Pensions and other post-retirement benefits | **—** | 1 | 2 |
| Share-based payments | **31** | 32 | 52 |
| Termination benefits | **—** | — | 8 |
| **Total** | **62** | 63 | 79 |

Senior management comprises members of the leadership team, see pages 84-85 for further information.

#### Short-term employee benefits

These amounts comprise fees and benefits paid to the non-executive chair and non-executive directors, as well as salary, benefits and cash bonuses for senior management. Deferred annual bonus awards, to be settled in shares, are included in share-based payments.

#### Pensions and other post-retirement benefits

The amounts represent the estimated cost to the group of providing pensions and other post-retirement benefits to senior management in respect of the current year of service measured in accordance with IAS 19 'Employee Benefits'.

#### Share-based payments

This is the cost to the group of senior management's participation in share-based payment plans, as measured by the fair value of options and shares granted, accounted for in accordance with IFRS 2 'Share-based Payments'.

#### Termination benefits

Termination benefits include compensation to senior management for loss of office.

#### Related party transactions

Transactions between the group and its significant joint ventures and associates are summarized in Financial statements – Note 16 and Note 17. In the ordinary course of its business, the group enters into transactions with various organizations with which some of its directors or executive officers are associated. Except as described in this report, the group did not have any material transactions or transactions of an unusual nature with, and did not make loans to, related parties in the period commencing 1 January 2022 to 17 February 2023.

## 35. Employee costs and numbers

| Employee costs | 2022 | 2021 | 2020 |
|---|---|---|---|
| | | | $ million |
| Wages and salaries[a] | **7,486** | 6,934 | 7,600 |
| Social security costs | **720** | 733 | 729 |
| Share-based payments[b] | **1,034** | 733 | 728 |
| Pension and other post-retirement benefit costs | **576** | 457 | 852 |
| | **9,816** | 8,857 | 9,909 |

| Average number of employees[c d] | US | Non-US | Total | US | Non-US | Total | US | Non-US | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | **2022** | | | 2021 | | | 2020 |
| gas & low carbon energy | **700** | **3,400** | **4,100** | 400 | 3,400 | 3,800 | | | |
| oil production & operations | **3,000** | **5,700** | **8,700** | 3,100 | 6,000 | 9,100 | | | |
| customers & products[e] | **8,000** | **35,700** | **43,700** | 6,200 | 35,800 | 42,000 | | | |
| other businesses and corporate | **1,300** | **8,500** | **9,800** | 1,400 | 7,700 | 9,100 | | | |
| | **13,000** | **53,300** | **66,300** | 11,100 | 52,900 | 64,000 | 12,400 | 55,700 | 68,100 |

a Includes termination costs of $27 million (2021 $74 million and 2020 $1,237 million).
b The group provides certain employees with shares and share options as part of their remuneration packages. The majority of these share-based payment arrangements are equity-settled.
c Reported to the nearest 100.
d Comparative data for the new reportable segments from 2021 onwards is not available for 2020.
e Includes 23,300 (2021 21,300 and 2020 19,100) service station staff.

## 36. Auditor's remuneration

| Fees | 2022 | 2021 | 2020 |
|---|---|---|---|
| | | | $ million |
| The audit of the company annual accounts[a] | **36** | 37 | 30 |
| The audit of accounts of subsidiaries of the company | **15** | 15 | 11 |
| Total audit | **51** | 52 | 41 |
| Audit-related assurance services[b] | **4** | 5 | 11 |
| Total audit and audit-related assurance services | **55** | 57 | 52 |
| Non-audit and other assurance services | **—** | — | 1 |
| Services relating to bp pension plans | **1** | 1 | 1 |
| | **56** | 58 | 54 |

a Fees in respect of the audit of the accounts of BP p.l.c. including the group's consolidated financial statements.
b Includes interim reviews and audit of internal control over financial reporting and non-statutory audit services. 2020 fees include audit fees relating to the Petrochemicals disposal.

2022 includes $0.3 million of additional fees for 2021. 2021 includes $1.0 million of additional fees for 2020. 2020 includes $0.5 million of additional fees for 2019. Auditor's remuneration is included in the income statement within distribution and administration expenses.

Tax services (in relation to income tax, indirect tax compliance, employee tax services and tax advisory services) were $nil in all periods presented.

The audit committee has established pre-approval policies and procedures for the engagement of Deloitte to render audit and certain assurance and other services. The audit fees payable to Deloitte were considered as part of the audit tender process in 2016 and challenged by the audit committee through comparison with the audit pricing proposals of the other bidding firms. Changes in audit fees subsequent to the audit tender, including matters relevant to the 2022 audit, have been reviewed and challenged by the Audit Committee, before being approved. Deloitte performed further assurance services that were not prohibited by regulatory or other professional requirements and were pre-approved by the Committee. Deloitte is engaged for these services when its expertise and experience of bp are important. Most of this work is of an audit-related or assurance nature.

Under SEC regulations, the remuneration of the auditor of $56 million (2021 $58 million and 2020 $54 million) is required to be presented as follows: audit $51 million (2021 $52 million and 2020 $41 million); other audit-related $4 million (2021 $5 million and 2020 $11 million); tax $nil (2021 $nil and 2020 $nil); and all other fees $1 million (2021 $1 million and 2020 $2 million).

## 37. Subsidiaries, joint arrangements and associates[a]

The more important subsidiaries, joint arrangements and associates of the group at 31 December 2022 and the group percentage of ordinary share capital (to nearest whole number) are set out below. The group's share of the assets and liabilities of the more important unincorporated joint arrangements are held by subsidiaries listed in the table below. Those subsidiaries held directly by the parent company are marked with an asterisk (*), the percentage owned being that of the group unless otherwise indicated. A complete list of undertakings of the group is included in Note 13 in the parent company financial statements of BP p.l.c. which are filed with the Registrar of Companies in the UK, along with the group's annual report.

| Subsidiaries | % | Country of incorporation | Principal activities |
|---|---|---|---|
| International | | | |
| BP Corporate Holdings Limited | 100 | England & Wales | Investment holding |
| BP Exploration Operating Company Limited | 100 | England & Wales | Exploration and production |
| *BP Global Investments Limited | 100 | England & Wales | Investment holding |
| *BP International Limited | 100 | England & Wales | Integrated oil operations |
| BP Oil International Limited | 100 | England & Wales | Integrated oil operations |
| *Burmah Castrol PLC | 100 | Scotland | Investment holding |
| Azerbaijan | | | |
| BP Exploration (Caspian Sea) Limited | 100 | England & Wales | Exploration and production |
| BP Exploration (Azerbaijan) Limited | 100 | England & Wales | Exploration and production |
| Egypt | | | |
| BP Exploration (Delta) Limited | 100 | England & Wales | Exploration and production |
| Germany | | | |
| BP Europa SE | 100 | Germany | Refining and marketing |
| India | | | |
| BP Exploration (Alpha) Limited | 100 | England & Wales | Exploration and production |
| Trinidad & Tobago | | | |
| BP Trinidad and Tobago LLC | 70 | US | Exploration and production |
| UK | | | |
| BP Capital Markets p.l.c. | 100 | England & Wales | Finance |
| US | | | |
| *BP Holdings North America Limited | 100 | England & Wales | Investment holding |
| Atlantic Richfield Company | 100 | US | Exploration and production, refining and marketing |
| BP America Inc. | 100 | US | Exploration and production, refining and marketing |
| BP America Production Company | 100 | US | Exploration and production, refining and marketing |
| BP Company North America Inc. | 100 | US | Exploration and production, refining and marketing |
| BP Corporation North America Inc. | 100 | US | Exploration and production, refining and marketing |
| BP Products North America Inc. | 100 | US | Exploration and production, refining and marketing |
| The Standard Oil Company | 100 | US | Exploration and production, refining and marketing |
| Archaea Energy Inc. | 100 | US | Bioenergy |
| BP Capital Markets America Inc. | 100 | US | Finance |

| Joint arrangements | % | Country of incorporation | Principal activities |
|---|---|---|---|
| Angola | | | |
| Azule Energy Holdings Limited | 50 | England & Wales | Exploration and production |
| Argentina | | | |
| Pan American Energy Group S.L. | 50 | Spain | Integrated oil operations |

[a] There were no important associates in the group at 31 December 2022..

# Supplementary information on oil and natural gas (unaudited)

The regional analysis presented below is on a continent basis, with separate disclosure for countries that contain 15% or more of the total proved reserves (for subsidiaries plus equity-accounted entities[a]), in accordance with SEC and FASB requirements.

## Oil and gas reserves – certain definitions

Unless the context indicates otherwise, the following terms have the meanings shown below:

### Proved oil and gas reserves

Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible – from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations – prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any; and

(B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons as seen in a well penetration unless geoscience, engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favourable than in the reservoir as a whole, the operation of an installed programme in the reservoir or an analogous reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or programme was based; and

(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

### Undeveloped oil and gas reserves

Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances, justify a longer time.

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, or by other evidence using reliable technology establishing reasonable certainty.

### Developed oil and gas reserves

Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

(i) Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and

(ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

For details on bp's proved reserves and production compliance and governance processes, see pages 361-366.

[a] See Note 1 - Investment in Rosneft.

## Oil and natural gas exploration and production activities

$ million

2022

| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia | | |
| **Subsidiaries** | | | | | | | | | | |
| **Capitalized costs at 31 December[a h]** | | | | | | | | | | |
| Gross capitalized costs | | | | | | | | | | |
| Proved properties | 30,010 | — | 65,126 | 6 | 16,720 | 20,257 | — | 39,899 | 6,324 | 178,342 |
| Unproved properties | 397 | — | 2,976 | 1,875 | 2,507 | 2,535 | — | 1,622 | 659 | 12,571 |
| | 30,407 | — | 68,102 | 1,881 | 19,227 | 22,792 | — | 41,521 | 6,983 | 190,913 |
| Accumulated depreciation | 21,757 | — | 37,461 | 1,586 | 13,849 | 18,207 | — | 21,642 | 4,588 | 119,090 |
| **Net capitalized costs** | 8,650 | — | 30,641 | 295 | 5,378 | 4,585 | — | 19,879 | 2,395 | 71,823 |
| **Costs incurred for the year ended 31 December[a h]** | | | | | | | | | | |
| Acquisition of properties | | | | | | | | | | |
| Proved | 12 | — | 183 | — | — | — | — | 245 | — | 440 |
| Unproved | — | — | 37 | 164 | 2 | 14 | — | — | — | 217 |
| | 12 | — | 220 | 164 | 2 | 14 | — | 245 | — | 657 |
| Exploration and appraisal costs[c] | 39 | — | 288 | 137 | 235 | 103 | — | 73 | 17 | 892 |
| Development | 318 | — | 3,825 | 15 | 483 | 1,378 | — | 1,555 | 176 | 7,750 |
| **Total costs** | 369 | — | 4,333 | 316 | 720 | 1,495 | — | 1,873 | 193 | 9,299 |
| **Results of operations for the year ended 31 December[a]** | | | | | | | | | | |
| Sales and other operating revenues[d] | | | | | | | | | | |
| Third parties | 549 | — | 2,101 | 420 | 2,977 | 3,836 | — | 6,551 | 1,588 | 18,022 |
| Sales between businesses | 5,747 | — | 12,746 | — | 538 | 2,146 | — | 9,932 | 1,472 | 32,581 |
| | 6,296 | — | 14,847 | 420 | 3,515 | 5,982 | — | 16,483 | 3,060 | 50,603 |
| Exploration expenditure | 11 | — | 144 | 109 | 172 | 57 | — | 94 | (2) | 585 |
| Production costs | 498 | — | 2,102 | 83 | 327 | 592 | — | 723 | 107 | 4,432 |
| Production taxes | 1 | — | 194 | — | 513 | — | — | 1,544 | 73 | 2,325 |
| Other costs (income)[e] | (210) | (47) | 2,926 | 63 | 96 | 206 | 32 | (44) | 300 | 3,322 |
| Depreciation, depletion and amortization | 1,242 | — | 3,122 | 18 | 680 | 2,075 | 1 | 2,495 | 384 | 10,017 |
| Net impairments and (gains) losses on sale of businesses and fixed assets[f] | (433) | (901) | 217 | (3) | 1,570 | (1,189) | 1,523 | (341) | (43) | 400 |
| | 1,109 | (948) | 8,705 | 270 | 3,358 | 1,741 | 1,556 | 4,471 | 819 | 21,081 |
| Profit (loss) before taxation[g] | 5,187 | 948 | 6,142 | 150 | 157 | 4,241 | (1,556) | 12,012 | 2,241 | 29,522 |
| Allocable taxes | 4,443 | — | 1,409 | 50 | 1,814 | 886 | (5) | 6,651 | 842 | 16,090 |
| **Results of operations** | 744 | 948 | 4,733 | 100 | (1,657) | 3,355 | (1,551) | 5,361 | 1,399 | 13,432 |

a These tables contain information relating to oil and natural gas exploration and production activities of subsidiaries, which includes bp's share of oil and natural gas exploration and production activities of joint operations. They do not include any costs relating to the Gulf of Mexico oil spill. Amounts relating to the management and ownership of crude oil and natural gas pipelines, LNG liquefaction and transportation operations are excluded. In addition, bp's midstream activities of marketing and trading of natural gas, power and NGLs in the US, Canada, UK, Asia and Europe are excluded. The most significant midstream pipeline interests include the South Caucasus Pipeline, the Baku-Tbilisi-Ceyhan pipeline, the Trans Adriatic Pipeline and the Trans Anatolian Pipeline. Major LNG activities are located in Trinidad, Indonesia and Australia.

b Costs of decommissioning are included in capitalized costs at 31 December but are excluded from costs incurred for the year.

c Includes exploration and appraisal drilling expenditures, which are capitalized within intangible assets, and geological and geophysical exploration costs, which are charged to income as incurred.

d Presented net of transportation costs, purchases and sales taxes.

e Includes property taxes and other government take. The UK region includes a $256-million gain which is offset by corresponding charges primarily in the US region, relating to the group self-insurance programme.

f Russia impairments include other businesses with Rosneft, which were reported in the oil production and operation segment. The Rosneft impairment is reported in the other businesses and corporate segment. See Note 1 - Investment in Rosneft and Note 17 Investments in Associates.

g Excludes the unwinding of the discount on provisions and payables amounting to $294 million which is included in finance costs in the group income statement.

## Oil and natural gas exploration and production activities – continued

| | | | | | | | | | | $ million |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 2022 |
| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
| | UK | Rest of Europe | US | Rest of North America | | | Russia[a] | Rest of Asia | | |
| **Equity-accounted entities (bp share)** | | | | | | | | | | |
| **Capitalized costs at 31 December[b c]** | | | | | | | | | | |
| Gross capitalized costs | | | | | | | | | | |
| Proved properties | – | 3,739 | – | – | 12,000 | 7,927 | – | 8,381 | – | 32,047 |
| Unproved properties | – | 611 | – | – | 120 | 371 | – | – | – | 1,102 |
| | – | 4,350 | – | – | 12,120 | 8,298 | – | 8,381 | – | 33,149 |
| Accumulated depreciation | – | 1,800 | – | – | 6,356 | 572 | – | 553 | – | 9,281 |
| **Net capitalized costs** | – | 2,550 | – | – | 5,764 | 7,726 | – | 7,828 | – | 23,868 |
| **Costs incurred for the year ended 31 December[b d e]** | | | | | | | | | | |
| Acquisition of properties[c] | | | | | | | | | | |
| Proved | – | 1,224 | – | – | – | – | – | – | – | 1,224 |
| Unproved | – | 204 | – | – | – | – | – | – | – | 204 |
| | – | 1,428 | – | – | – | – | – | – | – | 1,428 |
| Exploration and appraisal costs[d] | – | 46 | – | – | 22 | 60 | 28 | – | – | 156 |
| Development[f] | – | (24) | – | – | 673 | 292 | 428 | 625 | – | 1,994 |
| **Total costs** | – | 1,450 | – | – | 695 | 352 | 456 | 625 | – | 3,578 |
| **Results of operations for the year ended 31 December[b]** | | | | | | | | | | |
| Sales and other operating revenues[g] | | | | | | | | | | |
| Third parties | – | 2,050 | – | – | 2,171 | 1,137 | – | 829 | – | 6,187 |
| Sales between businesses | – | – | – | – | – | – | 6,052 | – | – | 6,052 |
| | – | 2,050 | – | – | 2,171 | 1,137 | 6,052 | 829 | – | 12,239 |
| Exploration expenditure | – | 39 | – | – | – | 7 | 13 | – | – | 59 |
| Production costs | – | 148 | – | – | 628 | 246 | 411 | 191 | – | 1,624 |
| Production taxes | – | – | – | – | 397 | 15 | 4,435 | – | – | 4,847 |
| Other costs (income) | – | (6) | – | – | 16 | 152 | 97 | 20 | – | 279 |
| Depreciation, depletion and amortization | – | 348 | – | – | 462 | 572 | 535 | 553 | – | 2,470 |
| Net impairments and losses on sale of businesses and fixed assets | – | 164 | – | – | – | – | – | – | – | 164 |
| | – | 693 | – | – | 1,503 | 992 | 5,491 | 764 | – | 9,443 |
| Profit (loss) before taxation | – | 1,357 | – | – | 668 | 145 | 561 | 65 | – | 2,796 |
| Allocable taxes | – | 1,098 | – | – | 77 | 81 | 109 | 66 | – | 1,431 |
| **Results of operations** | – | 259 | – | – | 591 | 64 | 452 | (1) | – | 1,365 |

[a] Amounts reported for Russia in this table are bp's estimated share of the equity-accounted entities, including Rosneft's worldwide activities (of which insignificant amounts relate to outside Russia). See Note 1 - Investment in Rosneft and Note 17 - Investments in Associates.
[b] These tables contain information relating to oil and natural gas exploration and production activities of equity-accounted entities. Amounts relating to the management and ownership of crude oil and natural gas pipelines, LNG liquefaction, transportation operations as well as downstream and other activities are excluded.
[c] Costs of decommissioning are included in capitalized costs at 31 December but are excluded from costs incurred for the year.
[d] Includes exploration and appraisal drilling expenditures, which are capitalized within intangible assets, and geological and geophysical exploration costs, which are charged to income as incurred.
[e] The amounts shown reflect bp's share of equity-accounted entities' costs incurred, and not the costs incurred by bp in acquiring an interest in equity-accounted entities.
[f] Rest of Europe development costs are negative due to a true-up of prior period spend.
[g] Presented net of sales tax.

## Oil and natural gas exploration and production activities – continued

| | | | | | | | | | | $ million |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 2021 |
| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia | | |
| **Subsidiaries** | | | | | | | | | | |
| **Capitalized costs at 31 December[a] [h]** | | | | | | | | | | |
| Gross capitalized costs | | | | | | | | | | |
| Proved properties | 30,285 | — | 62,157 | 3,385 | 16,351 | 51,157 | — | 45,767 | 6,641 | 215,743 |
| Unproved properties | 363 | — | 2,888 | 2,650 | 2,517 | 3,553 | — | 1,690 | 650 | 14,311 |
| | 30,648 | — | 65,045 | 6,035 | 18,868 | 54,710 | — | 47,457 | 7,291 | 230,054 |
| Accumulated depreciation | 21,293 | — | 34,151 | 5,008 | 14,393 | 46,187 | — | 26,607 | 4,617 | 152,256 |
| **Net capitalized costs** | 9,355 | — | 30,894 | 1,027 | 4,475 | 8,523 | — | 20,850 | 2,674 | 77,798 |
| **Costs incurred for the year ended 31 December[a] [h]** | | | | | | | | | | |
| Acquisition of properties | | | | | | | | | | |
| Proved | — | — | 81 | — | — | — | — | — | — | 81 |
| Unproved | — | — | 18 | — | — | — | — | — | — | 18 |
| | — | — | 99 | — | — | — | — | — | — | 99 |
| Exploration and appraisal costs[c] | 28 | — | 138 | 88 | 90 | 85 | — | 159 | 18 | 606 |
| Development[d] | 262 | — | 2,541 | (50) | 586 | 1,246 | — | 1,849 | 162 | 6,596 |
| **Total costs** | 290 | — | 2,778 | 38 | 676 | 1,331 | — | 2,008 | 180 | 7,301 |
| **Results of operations for the year ended 31 December[a]** | | | | | | | | | | |
| Sales and other operating revenues[e] | | | | | | | | | | |
| Third parties | 182 | — | 1,700 | 384 | 1,330 | 2,934 | 2 | 2,469 | 994 | 9,995 |
| Sales between businesses | 3,204 | — | 9,034 | 1 | 321 | 2,172 | — | 7,064 | 743 | 22,539 |
| | 3,386 | — | 10,734 | 385 | 1,651 | 5,106 | 2 | 9,533 | 1,737 | 32,534 |
| Exploration expenditure | 76 | — | 78 | 90 | 29 | 84 | — | 52 | 15 | 424 |
| Production costs | 653 | — | 1,953 | 121 | 371 | 781 | — | 967 | 121 | 4,967 |
| Production taxes | (35) | — | 108 | — | 266 | — | — | 918 | 51 | 1,308 |
| Other costs (income)[f] | 170 | (2) | 2,506 | 35 | 50 | 121 | 37 | (12) | 139 | 3,044 |
| Depreciation, depletion and amortization | 1,260 | | 3,153 | 83 | 524 | 2,897 | 2 | 2,190 | 332 | 10,441 |
| Net impairments and (gains) losses on sale of businesses and fixed assets | (755) | (124) | (1,599) | 1,075 | (693) | 750 | — | (2,762) | (1) | (4,109) |
| | 1,369 | (126) | 6,199 | 1,404 | 547 | 4,633 | 39 | 1,353 | 657 | 16,075 |
| Profit (loss) before taxation[g] | 2,017 | 126 | 4,535 | (1,019) | 1,104 | 473 | (37) | 8,180 | 1,080 | 16,459 |
| Allocable taxes | 302 | 1 | 1,127 | 171 | 696 | 363 | — | 3,055 | 404 | 6,119 |
| **Results of operations** | 1,715 | 125 | 3,408 | (1,190) | 408 | 110 | (37) | 5,125 | 676 | 10,340 |

[a] These tables contain information relating to oil and natural gas exploration and production activities of subsidiaries, which includes bp's share of oil and natural gas exploration and production activities of joint operations. They do not include any costs relating to the Gulf of Mexico oil spill. Amounts relating to the management and ownership of crude oil and natural gas pipelines, LNG liquefaction and transportation operations are excluded. In addition, bp's midstream activities of marketing and trading of natural gas, power and NGLs in the US, Canada, UK, Asia and Europe are excluded. The most significant midstream pipeline interests include the South Caucasus Pipeline, the Baku-Tbilisi-Ceyhan pipeline, the Trans Adriatic Pipeline and the Trans Anatolian Pipeline. Major LNG activities are located in Trinidad, Indonesia and Australia.

[b] Costs of decommissioning are included in capitalized costs at 31 December but are excluded from costs incurred for the year.

[c] Includes exploration and appraisal drilling expenditures, which are capitalized within intangible assets, and geological and geophysical exploration costs, which are charged to income as incurred.

[d] Development costs in Rest of North America are negative due to a true-up of prior period spend.

[e] Presented net of transportation costs, purchases and sales taxes.

[f] Includes property taxes and other government take. The UK region includes a $213-million gain which is offset by corresponding charges primarily in the US region, relating to the group self-insurance programme.

[g] Excludes the unwinding of the discount on provisions and payables amounting to $325-million which is included in finance costs in the group income statement.

## Oil and natural gas exploration and production activities – continued

| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | UK | Rest of Europe | US | Rest of North America | | | Russia[a] | Rest of Asia | | $ million 2021 |
| **Equity-accounted entities (bp share)** | | | | | | | | | | |
| **Capitalized costs at 31 December[b c]** | | | | | | | | | | |
| Gross capitalized costs | | | | | | | | | | |
| Proved properties | – | 2,507 | – | – | 11,287 | – | 24,172 | – | – | 37,966 |
| Unproved properties | – | 383 | – | – | 98 | – | 4,362 | – | – | 4,843 |
| | – | 2,890 | – | – | 11,385 | – | 28,534 | – | – | 42,809 |
| Accumulated depreciation | – | 1,267 | – | – | 5,894 | – | 7,389 | – | – | 14,550 |
| **Net capitalized costs** | – | 1,623 | – | – | 5,491 | – | 21,145 | – | – | 28,259 |
| **Costs incurred for the year ended 31 December[b d e]** | | | | | | | | | | |
| Acquisition of properties[c] | | | | | | | | | | |
| Proved | – | – | – | – | – | – | – | – | – | – |
| Unproved | – | – | – | – | – | – | 75 | – | – | 75 |
| | – | – | – | – | – | – | 75 | – | – | 75 |
| Exploration and appraisal costs[d] | – | 60 | – | – | 8 | – | 196 | – | – | 264 |
| Development | – | 430 | – | – | 539 | – | 2,677 | – | – | 3,646 |
| **Total costs** | – | 490 | – | – | 547 | – | 2,948 | – | – | 3,985 |
| **Results of operations for the year ended 31 December[b]** | | | | | | | | | | |
| Sales and other operating revenues[f] | | | | | | | | | | |
| Third parties | – | 1,677 | – | – | 1,637 | – | – | – | – | 3,314 |
| Sales between businesses | – | – | – | – | – | – | 17,120 | – | – | 17,120 |
| | – | 1,677 | – | – | 1,637 | – | 17,120 | – | – | 20,434 |
| Exploration expenditure | – | 105 | – | – | 3 | – | 50 | – | – | 158 |
| Production costs | – | 222 | – | – | 487 | – | 1,335 | – | – | 2,044 |
| Production taxes | – | – | – | – | 308 | – | 9,291 | – | – | 9,599 |
| Other costs (income) | – | 26 | – | – | 34 | – | 293 | – | – | 353 |
| Depreciation, depletion and amortization | | 347 | | | 404 | | 1,633 | | | 2,384 |
| Net impairments and losses on sale of businesses and fixed assets | – | 108 | – | – | (32) | – | 191 | – | – | 267 |
| | – | 808 | – | – | 1,204 | – | 12,793 | – | – | 14,805 |
| Profit (loss) before taxation | – | 869 | – | – | 433 | – | 4,327 | – | – | 5,629 |
| Allocable taxes | – | 599 | – | – | 684 | – | 852 | – | – | 2,135 |
| **Results of operations** | – | 270 | – | – | (251) | – | 3,475 | – | – | 3,494 |

[a] Amounts reported for Russia in this table include bp's share of Rosneft's worldwide activities, including insignificant amounts outside Russia.
[b] These tables contain information relating to oil and natural gas exploration and production activities of equity-accounted entities. Amounts relating to the management and ownership of crude oil and natural gas pipelines, LNG liquefaction, transportation operations as well as downstream and other activities are excluded.
[c] Costs of decommissioning are included in capitalized costs at 31 December but are excluded from costs incurred for the year.
[d] Includes exploration and appraisal drilling expenditures, which are capitalized within intangible assets, and geological and geophysical exploration costs, which are charged to income as incurred.
[e] The amounts shown reflect bp's share of equity-accounted entities' costs incurred, and not the costs incurred by bp in acquiring an interest in equity-accounted entities.
[f] Presented net of sales tax.

## Oil and natural gas exploration and production activities – continued

| | | | | | | | | | | $ million |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 2020 |
| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia | | |
| **Subsidiaries** | | | | | | | | | | |
| **Capitalized costs at 31 December[a b]** | | | | | | | | | | |
| Gross capitalized costs | | | | | | | | | | |
| Proved properties | 31,729 | — | 63,803 | 3,431 | 15,526 | 49,736 | — | 44,031 | 6,409 | 214,665 |
| Unproved properties | 410 | — | 3,102 | 2,644 | 2,477 | 3,560 | — | 1,584 | 640 | 14,417 |
| | 32,139 | — | 66,905 | 6,075 | 18,003 | 53,296 | — | 45,615 | 7,049 | 229,082 |
| Accumulated depreciation | 22,501 | — | 37,176 | 3,852 | 14,488 | 42,575 | — | 26,246 | 4,282 | 151,120 |
| **Net capitalized costs** | 9,638 | — | 29,729 | 2,223 | 3,515 | 10,721 | — | 19,369 | 2,767 | 77,962 |
| **Costs incurred for the year ended 31 December[a b]** | | | | | | | | | | |
| Acquisition of properties | | | | | | | | | | |
| Proved | — | — | 1 | — | — | — | — | — | — | 1 |
| Unproved | — | — | 25 | 2 | (1) | — | — | 16 | — | 42 |
| | — | — | 26 | 2 | (1) | — | — | 16 | — | 43 |
| Exploration and appraisal costs[c] | 86 | — | 233 | 127 | 69 | 168 | 1 | 265 | 43 | 992 |
| Development | 365 | — | 2,966 | 9 | 451 | 1,507 | — | 2,222 | 130 | 7,650 |
| **Total costs** | 451 | — | 3,225 | 138 | 519 | 1,675 | 1 | 2,503 | 173 | 8,685 |
| **Results of operations for the year ended 31 December[a]** | | | | | | | | | | |
| Sales and other operating revenues[d] | | | | | | | | | | |
| Third parties | 36 | — | 687 | 113 | 813 | 1,553 | 2 | 1,378 | 610 | 5,192 |
| Sales between businesses | 1,759 | — | 6,274 | — | 53 | 1,641 | — | 4,805 | 277 | 14,809 |
| | 1,795 | — | 6,961 | 113 | 866 | 3,194 | 2 | 6,183 | 887 | 20,001 |
| Exploration expenditure | 93 | — | 2,724 | 2,579 | 2,185 | 2,289 | 1 | 367 | 42 | 10,280 |
| Production costs | 636 | — | 2,058 | 102 | 421 | 817 | — | 875 | 114 | 5,023 |
| Production taxes | (22) | — | 57 | — | 140 | — | — | 508 | 12 | 695 |
| Other costs (income)[e] | (130) | 1 | 1,633 | 301 | 117 | 157 | 44 | 97 | 113 | 2,333 |
| Depreciation, depletion and amortization | 1,370 | — | 3,655 | 93 | 678 | 2,459 | 2 | 1,994 | 335 | 10,586 |
| Net impairments and (gains) losses on sale of businesses and fixed assets | 2,712 | 5 | 1,716 | 866 | 2,693 | 2,042 | — | 1,839 | — | 11,873 |
| | 4,659 | 6 | 11,843 | 3,941 | 6,234 | 7,764 | 47 | 5,680 | 616 | 40,790 |
| Profit (loss) before taxation[f] | (2,864) | (6) | (4,882) | (3,828) | (5,368) | (4,570) | (45) | 503 | 271 | (20,789) |
| Allocable taxes | (1,344) | — | (1,125) | (682) | (1,802) | (308) | 1 | 1,923 | 91 | (3,246) |
| **Results of operations** | (1,520) | (6) | (3,757) | (3,146) | (3,566) | (4,262) | (46) | (1,420) | 180 | (17,543) |

[a] These tables contain information relating to oil and natural gas exploration and production activities of subsidiaries, which includes bp's share of oil and natural gas exploration and production activities of joint operations. They do not include any costs relating to the Gulf of Mexico oil spill. Amounts relating to the management and ownership of crude oil and natural gas pipelines, LNG liquefaction and transportation operations are excluded. In addition, bp's midstream activities of marketing and trading of natural gas, power and NGLs in the US, Canada, UK, Asia and Europe are excluded. The most significant midstream pipeline interests include the South Caucasus Pipeline and the Baku-Tbilisi-Ceyhan pipeline, the Trans Adriatic Pipeline and the Trans Anatolian Pipeline. Major LNG activities are located in Trinidad, Indonesia and Australia.

[b] Costs of decommissioning are included in capitalized costs at 31 December but are excluded from costs incurred for the year.

[c] Includes exploration and appraisal drilling expenditures, which are capitalized within intangible assets, and geological and geophysical exploration costs, which are charged to income as incurred.

[d] Presented net of transportation costs, purchases and sales taxes.

[e] Includes property taxes and other government take. The UK region includes a $330-million gain which is offset by corresponding charges primarily in the US region, relating to the group self-insurance programme.

[f] Excludes the unwinding of the discount on provisions and payables amounting to $369 million which is included in finance costs in the group income statement.

## Oil and natural gas exploration and production activities – continued

$ million

2020

| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | UK | Rest of Europe | US | Rest of North America | | | Russia[a] | Rest of Asia | | |
| **Equity-accounted entities (bp share)** | | | | | | | | | | |
| **Capitalized costs at 31 December[b c]** | | | | | | | | | | |
| Gross capitalized costs | | | | | | | | | | |
| Proved properties | – | 4,457 | – | – | 10,690 | – | 24,963 | – | – | 40,110 |
| Unproved properties | – | 806 | – | – | 108 | – | 4,627 | – | – | 5,541 |
| | – | 5,263 | – | – | 10,798 | – | 29,590 | – | – | 45,651 |
| Accumulated depreciation | – | 1,592 | – | – | 5,490 | – | 7,693 | – | – | 14,775 |
| **Net capitalized costs** | – | 3,671 | – | – | 5,308 | – | 21,897 | – | – | 30,876 |
| **Costs incurred for the year ended 31 December[b d e]** | | | | | | | | | | |
| Acquisition of properties[c] | | | | | | | | | | |
| Proved | – | – | – | – | – | – | 82 | – | – | 82 |
| Unproved | – | – | – | – | – | – | 3,714 | – | – | 3,714 |
| | – | – | – | – | – | – | 3,796 | – | – | 3,796 |
| Exploration and appraisal costs[d] | – | 46 | – | – | 15 | – | 315 | – | – | 376 |
| Development | – | 404 | – | – | 393 | – | 2,594 | – | – | 3,391 |
| **Total costs** | – | 450 | – | – | 408 | – | 6,705 | – | – | 7,563 |
| **Results of operations for the year ended 31 December[b]** | | | | | | | | | | |
| Sales and other operating revenues[f] | | | | | | | | | | |
| Third parties | – | 860 | – | – | 1,110 | – | – | – | – | 1,970 |
| Sales between businesses | – | – | – | – | – | – | 9,344 | – | – | 9,344 |
| | – | 860 | – | – | 1,110 | – | 9,344 | – | – | 11,314 |
| Exploration expenditure | – | 50 | – | – | – | – | 109 | – | – | 159 |
| Production costs | – | 188 | – | – | 486 | – | 1,387 | – | – | 2,061 |
| Production taxes | – | – | – | – | 216 | – | 4,418 | – | – | 4,634 |
| Other costs (income) | – | 3 | – | – | 5 | – | 236 | – | – | 244 |
| Depreciation, depletion and amortization | – | 412 | – | – | 411 | – | 1,532 | – | – | 2,355 |
| Net impairments and losses on sale of businesses and fixed assets | – | 119 | – | – | 108 | – | 294 | – | – | 521 |
| | – | 772 | – | – | 1,226 | – | 7,976 | – | – | 9,974 |
| Profit (loss) before taxation | – | 88 | – | – | (116) | – | 1,368 | – | – | 1,340 |
| Allocable taxes | – | 15 | – | – | (41) | – | 226 | – | – | 200 |
| **Results of operations** | – | 73 | – | – | (75) | – | 1,142 | – | – | 1,140 |

a Amounts reported for Russia in this table include bp's share of Rosneft's worldwide activities, including insignificant amounts outside Russia.
b These tables contain information relating to oil and natural gas exploration and production activities of equity-accounted entities. Amounts relating to the management and ownership of crude oil and natural gas pipelines, LNG liquefaction, transportation operations as well as downstream and other activities are excluded.
c Costs of decommissioning are included in capitalized costs at 31 December but are excluded from costs incurred for the year.
d Includes exploration and appraisal drilling expenditures, which are capitalized within intangible assets, and geological and geophysical exploration costs, which are charged to income as incurred.
e The amounts shown reflect bp's share of equity-accounted entities' costs incurred, and not the costs incurred by bp in acquiring an interest in equity-accounted entities.
f Presented net of sales tax.

## Movements in estimated net proved reserves

million barrels

| Crude oil[a,b] | | | | | | | | | | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Europe | | North America | | South America | Africa[e] | Asia | | Australasia | Total |
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia | | |
| **Subsidiaries** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 178 | – | 705 | 24 | 5 | 117 | – | 930 | 28 | 1,987 |
| Undeveloped | 101 | – | 601 | 167 | 7 | 14 | – | 449 | 4 | 1,343 |
| | 279 | – | 1,306 | 191 | 12 | 131 | – | 1,379 | 33 | 3,330 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | 9 | – | (11) | – | (1) | 1 | – | (40) | (4) | (47) |
| Improved recovery | 2 | – | (2) | – | – | 4 | – | – | – | 5 |
| Purchases of reserves-in-place | – | – | – | – | – | – | – | 3 | – | 3 |
| Discoveries and extensions | – | – | 22 | – | – | 1 | – | – | – | 23 |
| Production | (29) | – | (108) | (5) | (2) | (31) | – | (112) | (5) | (292) |
| Sales of reserves-in-place | – | – | (1) | (185) | – | (80) | – | (157) | (3) | (426) |
| | (18) | – | (100) | (191) | (3) | (105) | – | (306) | (11) | (734) |
| **At 31 December[c]** | | | | | | | | | | |
| Developed | 153 | – | 679 | – | 4 | 24 | – | 717 | 20 | 1,596 |
| Undeveloped | 109 | – | 527 | – | 5 | 2 | – | 356 | 1 | 1,000 |
| | 261 | – | 1,206 | – | 9 | 26 | – | 1,073 | 21 | 2,596 |
| **Equity-accounted entities (bp share)[d]** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | – | 100 | – | 10 | 275 | 3 | 3,045 | 1 | – | 3,434 |
| Undeveloped | – | 21 | – | 12 | 253 | – | 2,540 | 1 | – | 2,826 |
| | – | 121 | – | 22 | 527 | 3 | 5,585 | 1 | – | 6,260 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | – | (17) | – | 1 | (1) | 23 | 4 | (46) | – | (37) |
| Improved recovery | – | 1 | – | – | 14 | 25 | – | – | – | 40 |
| Purchases of reserves-in-place | – | 42 | – | – | – | 165 | – | 152 | – | 359 |
| Discoveries and extensions | – | 2 | – | – | – | – | – | – | – | 2 |
| Production | – | (17) | – | (1) | (21) | (12) | (55) | (9) | – | (115) |
| Sales of reserves-in-place[f] | – | (25) | – | (10) | – | (3) | (5,535) | (1) | – | (5,574) |
| | – | (15) | – | (10) | (8) | 198 | (5,585) | 95 | – | (5,325) |
| **At 31 December** | | | | | | | | | | |
| Developed | – | 90 | – | 5 | 276 | 127 | – | 95 | – | 592 |
| Undeveloped | – | 16 | – | 7 | 244 | 74 | – | 1 | – | 342 |
| | – | 106 | – | 12 | 520 | 201 | – | 96 | – | 935 |
| **Total subsidiaries and equity-accounted entities (bp share)** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 178 | 100 | 705 | 34 | 280 | 119 | 3,045 | 931 | 28 | 5,421 |
| Undeveloped | 101 | 21 | 601 | 179 | 259 | 14 | 2,540 | 450 | 4 | 4,169 |
| | 279 | 121 | 1,306 | 213 | 539 | 134 | 5,585 | 1,381 | 33 | 9,590 |
| **At 31 December** | | | | | | | | | | |
| Developed | 153 | 90 | 679 | 5 | 279 | 151 | – | 812 | 20 | 2,188 |
| Undeveloped | 109 | 16 | 527 | 7 | 249 | 76 | – | 358 | 1 | 1,343 |
| | 261 | 106 | 1,206 | 12 | 529 | 227 | – | 1,169 | 21 | 3,531 |

[a] Crude oil includes condensate and bitumen. Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
[b] Because of rounding, some totals may not exactly agree with the sum of their component parts.
[c] Includes 3 million barrels of crude oil in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.
[d] Volumes of equity-accounted entities include volumes of equity-accounted investments of those entities.
[e] Includes assets held for sale in Algeria.
[f] bp's decision to exit its Russia business, including its shareholding in Rosneft, is treated as sales of reserves in place.

## Movements in estimated net proved reserves – continued

million barrels

| Natural gas liquids[a b] | | | | | | | | | | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Europe | | North America | | South America | Africa[f] | Asia | | Australasia | Total |
| | UK | Rest of Europe | US[c] | Rest of North America | | | Russia | Rest of Asia | | |
| **Subsidiaries** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 8 | – | 132 | – | 2 | 9 | – | – | 2 | 153 |
| Undeveloped | – | – | 195 | – | 19 | 1 | – | – | – | 215 |
| | 9 | – | 328 | – | 21 | 10 | – | – | 2 | 368 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | (1) | – | 101 | – | (18) | (1) | – | – | – | 81 |
| Improved recovery | – | – | 16 | – | – | 1 | – | – | – | 17 |
| Purchases of reserves-in-place | – | – | – | – | – | – | – | – | – | – |
| Discoveries and extensions | – | – | 1 | – | – | 1 | – | – | – | 2 |
| Production[c] | (2) | – | (28) | – | (2) | (2) | – | – | (1) | (34) |
| Sales of reserves-in-place | – | – | (1) | – | – | (1) | – | – | – | (1) |
| | (2) | – | 90 | – | (19) | (2) | – | – | (1) | 64 |
| **At 31 December[d]** | | | | | | | | | | |
| Developed | 6 | – | 181 | – | 1 | 6 | – | – | 1 | 196 |
| Undeveloped | – | – | 236 | – | – | 1 | – | – | – | 237 |
| | 6 | – | 417 | – | 1 | 7 | – | – | 1 | 432 |
| **Equity-accounted entities (bp share)[e]** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | – | 6 | – | – | 2 | 17 | 100 | – | – | 125 |
| Undeveloped | – | – | – | – | – | – | 41 | – | – | 41 |
| | – | 6 | – | – | 2 | 17 | 140 | – | – | 166 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | – | (1) | – | – | 2 | 7 | – | – | – | 8 |
| Improved recovery | – | – | – | – | – | – | – | – | – | – |
| Purchases of reserves-in-place | – | 2 | – | – | – | 20 | – | – | – | 21 |
| Discoveries and extensions | – | – | – | – | – | – | – | – | – | – |
| Production | – | (1) | – | – | – | (1) | – | – | – | (2) |
| Sales of reserves-in-place[g] | – | (2) | – | – | – | (17) | (140) | – | – | (159) |
| | – | (2) | – | – | 2 | 9 | (140) | – | – | (132) |
| **At 31 December** | | | | | | | | | | |
| Developed | – | 4 | – | – | 3 | 17 | – | – | – | 23 |
| Undeveloped | – | – | – | – | 1 | 9 | – | – | – | 10 |
| | – | 4 | – | – | 4 | 26 | – | – | – | 34 |
| **Total subsidiaries and equity-accounted entities (bp share)** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 8 | 6 | 132 | – | 4 | 26 | 100 | – | 2 | 278 |
| Undeveloped | – | – | 195 | – | 19 | 1 | 41 | – | – | 256 |
| | 9 | 6 | 328 | – | 22 | 27 | 140 | – | 2 | 534 |
| **At 31 December** | | | | | | | | | | |
| Developed | 6 | 4 | 181 | – | 4 | 23 | – | – | 1 | 219 |
| Undeveloped | – | – | 236 | – | 1 | 10 | – | – | – | 247 |
| | 6 | 4 | 417 | – | 5 | 33 | – | – | 1 | 466 |

[a] Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
[b] Because of rounding, some totals may not exactly agree with the sum of their component parts.
[c] Excludes NGLs from processing plants in which an interest is held of 2 thousand barrels per day for equity-accounted entities.
[d] Includes 0.4 million barrels of NGL in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.
[e] Volumes of equity-accounted entities include volumes of equity-accounted investments of those entities.
[f] Includes assets held for sale in Algeria
[g] bp's decision to exit its Russia business, including its shareholding in Rosneft, is treated as sales of reserves in place.

## Movements in estimated net proved reserves – continued

| | | | | | | | | | | million barrels |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total liquids**[a b] | | | | | | | | | | **2022** |
| | **Europe** | | **North America** | | **South America** | **Africa**[f] | **Asia** | | **Australasia** | **Total** |
| | **UK** | **Rest of Europe** | **US**[c] | **Rest of North America** | | | **Russia** | **Rest of Asia** | | |
| **Subsidiaries** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 187 | – | 837 | 24 | 7 | 125 | – | 930 | 30 | 2,141 |
| Undeveloped | 101 | – | 796 | 167 | 25 | 15 | – | 449 | 4 | 1,558 |
| | 288 | – | 1,634 | 191 | 32 | 140 | – | 1,379 | 34 | 3,699 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | 8 | – | 89 | – | (19) | – | – | (40) | (4) | 34 |
| Improved recovery | 2 | – | 14 | – | – | 5 | – | – | – | 22 |
| Purchases of reserves-in-place | 1 | – | – | – | – | – | – | 3 | – | 3 |
| Discoveries and extensions | – | – | 23 | – | – | 1 | – | – | – | 25 |
| Production[c] | (31) | – | (136) | (5) | (3) | (34) | – | (112) | (5) | (326) |
| Sales of reserves-in-place | – | – | (2) | (185) | | (80) | – | (157) | (4) | (428) |
| | (20) | – | (11) | (191) | (22) | (107) | – | (306) | (13) | (670) |
| **At 31 December**[d] | | | | | | | | | | |
| Developed | 159 | – | 860 | – | 5 | 30 | – | 717 | 20 | 1,791 |
| Undeveloped | 109 | – | 763 | – | 5 | 3 | – | 356 | 1 | 1,237 |
| | 267 | – | 1,623 | – | 11 | 33 | – | 1,073 | 22 | 3,029 |
| **Equity-accounted entities (bp share)**[e] | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | – | 106 | – | 10 | 276 | 20 | 3,145 | 1 | – | 3,558 |
| Undeveloped | – | 21 | – | 12 | 253 | – | 2,581 | 1 | – | 2,867 |
| | – | 127 | – | 22 | 529 | 20 | 5,726 | 1 | – | 6,425 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | – | (18) | – | 1 | 1 | 30 | 4 | (46) | – | (29) |
| Improved recovery | – | 1 | – | – | 14 | 25 | – | – | – | 40 |
| Purchases of reserves-in-place | – | 44 | – | – | – | 185 | – | 152 | – | 380 |
| Discoveries and extensions | – | 2 | – | – | – | – | – | – | – | 2 |
| Production | – | (18) | – | (1) | (21) | (13) | (55) | (9) | – | (117) |
| Sales of reserves-in-place[g] | – | (27) | – | (10) | – | (19) | (5,675) | (1) | – | (5,733) |
| | – | (17) | – | (10) | (6) | 207 | (5,726) | 95 | – | (5,457) |
| **At 31 December** | | | | | | | | | | |
| Developed | – | 94 | – | 5 | 278 | 144 | – | 95 | – | 616 |
| Undeveloped | – | 16 | – | 7 | 245 | 83 | – | 1 | – | 352 |
| | – | 110 | – | 12 | 523 | 227 | – | 96 | – | 968 |
| **Total subsidiaries and equity-accounted entities (bp share)** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 187 | 106 | 837 | 34 | 284 | 146 | 3,145 | 931 | 30 | 5,699 |
| Undeveloped | 101 | 21 | 796 | 179 | 278 | 15 | 2,581 | 450 | 4 | 4,425 |
| | 288 | 127 | 1,634 | 213 | 561 | 161 | 5,726 | 1,381 | 34 | 10,124 |
| **At 31 December** | | | | | | | | | | |
| Developed | 159 | 94 | 860 | 5 | 283 | 174 | – | 812 | 20 | 2,407 |
| Undeveloped | 109 | 16 | 763 | 7 | 250 | 86 | – | 358 | 1 | 1,590 |
| | 267 | 110 | 1,623 | 12 | 534 | 260 | – | 1,169 | 22 | 3,997 |

[a] Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
[b] Because of rounding, some totals may not exactly agree with the sum of their component parts.
[c] Excludes NGLs from processing plants in which an interest is held of 2 thousand barrels per day for equity-accounted entities.
[d] Also includes 3 million barrels in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.
[e] Volumes of equity-accounted entities include volumes of equity-accounted investments of those entities.
[f] Includes assets held for sale in Algeria.
[g] bp's decision to exit its Russia business, including its shareholding in Rosneft, is treated as sales of reserves in place.

## Movements in estimated net proved reserves – continued

| Natural gas[a,b] | | | | | | | | | | billion cubic feet 2022 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Europe | | North America | | South America | Africa[f] | Asia | | Australasia | Total |
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia | | |
| **Subsidiaries** | | | | | | | | | | |
| At 1 January | | | | | | | | | | |
| Developed | 455 | – | 2,401 | – | 1,152 | 1,433 | – | 3,266 | 1,584 | 10,291 |
| Undeveloped | 45 | – | 3,404 | – | 1,147 | 154 | – | 2,522 | 939 | 8,211 |
| | 501 | – | 5,805 | – | 2,299 | 1,587 | – | 5,788 | 2,523 | 18,502 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | 6 | – | 449 | – | 2 | 180 | – | (575) | (165) | (102) |
| Improved recovery | 1 | – | 46 | – | – | – | – | – | – | 47 |
| Purchases of reserves-in-place | 2 | – | – | – | – | – | – | 92 | – | 94 |
| Discoveries and extensions | – | – | 10 | – | – | 87 | – | 21 | 10 | 128 |
| Production[c] | (109) | – | (493) | – | (476) | (517) | – | (561) | (276) | (2,432) |
| Sales of reserves-in-place | – | – | (9) | – | – | (93) | – | (47) | – | (149) |
| | (100) | – | 4 | – | (474) | (344) | – | (1,069) | (431) | (2,414) |
| **At 31 December[d]** | | | | | | | | | | |
| Developed | 360 | – | 2,655 | – | 1,077 | 1,021 | – | 2,594 | 1,684 | 9,392 |
| Undeveloped | 41 | – | 3,154 | – | 748 | 221 | – | 2,125 | 407 | 6,696 |
| | 401 | – | 5,809 | – | 1,825 | 1,242 | – | 4,719 | 2,091 | 16,087 |
| **Equity-accounted entities (bp share)[e]** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | – | 130 | – | 4 | 929 | 689 | 11,399 | – | – | 13,149 |
| Undeveloped | – | 11 | – | 4 | 536 | 133 | 7,279 | – | – | 7,964 |
| | – | 140 | – | 8 | 1,465 | 822 | 18,678 | – | – | 21,113 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | – | (7) | – | 1 | 162 | 131 | 53 | – | – | 340 |
| Improved recovery | – | – | – | – | 82 | – | – | – | – | 82 |
| Purchases of reserves-in-place | – | 14 | – | – | – | 575 | – | 45 | – | 634 |
| Discoveries and extensions | – | 4 | – | – | – | – | – | – | – | 4 |
| Production[c] | – | (25) | – | – | (128) | (36) | (86) | (2) | – | (277) |
| Sales of reserves-in-place[g] | – | (49) | – | (4) | – | (803) | (18,645) | – | – | (19,501) |
| | – | (64) | – | (3) | 115 | (133) | (18,678) | 43 | – | (18,719) |
| **At 31 December** | | | | | | | | | | |
| Developed | – | 72 | – | 3 | 974 | 534 | – | 43 | – | 1,627 |
| Undeveloped | – | 5 | – | 2 | 606 | 154 | – | – | – | 767 |
| | – | 77 | – | 5 | 1,580 | 689 | – | 43 | – | 2,394 |
| **Total subsidiaries and equity-accounted entities (bp share)** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 455 | 130 | 2,401 | 4 | 2,081 | 2,121 | 11,399 | 3,266 | 1,584 | 23,440 |
| Undeveloped | 45 | 11 | 3,404 | 4 | 1,683 | 287 | 7,279 | 2,522 | 939 | 16,174 |
| | 501 | 140 | 5,805 | 8 | 3,764 | 2,408 | 18,678 | 5,788 | 2,523 | 39,615 |
| **At 31 December** | | | | | | | | | | |
| Developed | 360 | 72 | 2,655 | 3 | 2,051 | 1,556 | – | 2,637 | 1,684 | 11,018 |
| Undeveloped | 41 | 5 | 3,154 | 2 | 1,355 | 375 | – | 2,125 | 407 | 7,463 |
| | 401 | 77 | 5,809 | 5 | 3,405 | 1,931 | – | 4,762 | 2,091 | 18,481 |

[a] Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
[b] Because of rounding, some totals may not exactly agree with the sum of their component parts.
[c] Includes 122 billion cubic feet of natural gas consumed in operations, 86 billion cubic feet in subsidiaries, 36 billion cubic feet in equity-accounted entities.
[d] Includes 547 billion cubic feet of natural gas in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.
[e] Volumes of equity-accounted entities include volumes of equity-accounted investments of those entities.
[f] Includes assets held for sale in Algeria.
[g] bp's decision to exit our Russia business, including our shareholding in Rosneft, is treated as sales of reserves in place.

## Movements in estimated net proved reserves – continued

| Total hydrocarbons[a b] | | | | | | | | | | million barrels of oil equivalent[c] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 2022 |
| | Europe | | North America | | South America | Africa[h] | Asia | | Australasia | Total |
| | UK | Rest of Europe | US[f] | Rest of North America | | | Russia | Rest of Asia | | |
| **Subsidiaries** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 265 | – | 1,251 | 24 | 206 | 372 | – | 1,494 | 303 | 3,915 |
| Undeveloped | 109 | – | 1,383 | 167 | 223 | 41 | – | 884 | 166 | 2,973 |
| | 374 | – | 2,634 | 191 | 429 | 414 | – | 2,377 | 469 | 6,889 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | 9 | – | 167 | – | (18) | 31 | – | (139) | (33) | 17 |
| Improved recovery | 2 | – | 22 | – | – | 5 | – | – | – | 30 |
| Purchases of reserves-in-place | 1 | – | – | – | – | – | – | 18 | – | 19 |
| Discoveries and extensions | – | – | 25 | – | – | 16 | – | 4 | 2 | 47 |
| Production[d e] | (50) | – | (221) | (5) | (85) | (123) | – | (209) | (53) | (746) |
| Sales of reserves-in-place | – | – | (3) | (185) | – | (96) | – | (165) | (4) | (453) |
| | (37) | – | (10) | (191) | (103) | (167) | – | (491) | (87) | (1,086) |
| **At 31 December[f]** | | | | | | | | | | |
| Developed | 221 | – | 1,318 | – | 191 | 206 | – | 1,164 | 311 | 3,411 |
| Undeveloped | 116 | – | 1,306 | – | 134 | 41 | – | 723 | 72 | 2,392 |
| | 337 | – | 2,624 | – | 325 | 247 | – | 1,887 | 382 | 5,802 |
| **Equity-accounted entities (bp share)[g]** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | – | 128 | – | 11 | 437 | 139 | 5,110 | 1 | – | 5,825 |
| Undeveloped | – | 23 | – | 12 | 345 | 23 | 3,836 | 1 | – | 4,240 |
| | – | 151 | – | 23 | 782 | 162 | 8,946 | 1 | – | 10,065 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | – | (19) | – | 1 | 29 | 53 | 13 | (46) | – | 30 |
| Improved recovery | – | 1 | – | – | 28 | 25 | – | – | – | 54 |
| Purchases of reserves-in-place | – | 46 | – | – | – | 284 | – | 159 | – | 489 |
| Discoveries and extensions | – | 2 | – | – | – | – | – | – | – | 2 |
| Production[e] | – | (22) | – | (1) | (43) | (19) | (70) | (10) | – | (165) |
| Sales of reserves-in-place[i] | – | (36) | – | (10) | – | (158) | (8,890) | (1) | – | (9,095) |
| | – | (28) | – | (11) | 14 | 184 | (8,946) | 102 | – | (8,685) |
| **At 31 December** | | | | | | | | | | |
| Developed | – | 106 | – | 6 | 446 | 236 | – | 102 | – | 896 |
| Undeveloped | – | 17 | – | 7 | 349 | 110 | – | 1 | – | 485 |
| | – | 123 | – | 13 | 796 | 346 | – | 103 | – | 1,381 |
| **Total subsidiaries and equity-accounted entities (bp share)** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 265 | 128 | 1,251 | 35 | 642 | 511 | 5,110 | 1,494 | 303 | 9,740 |
| Undeveloped | 109 | 23 | 1,383 | 179 | 568 | 65 | 3,836 | 884 | 166 | 7,214 |
| | 374 | 151 | 2,634 | 214 | 1,210 | 576 | 8,946 | 2,379 | 469 | 16,954 |
| **At 31 December** | | | | | | | | | | |
| Developed | 221 | 106 | 1,318 | 6 | 637 | 442 | – | 1,266 | 311 | 4,307 |
| Undeveloped | 116 | 17 | 1,306 | 7 | 484 | 151 | – | 724 | 72 | 2,877 |
| | 337 | 123 | 2,624 | 13 | 1,121 | 593 | – | 1,990 | 382 | 7,183 |

a Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
b Because of rounding, some totals may not exactly agree with the sum of their component parts.
c 5.8 billion cubic feet of natural gas = 1 million barrels of oil equivalent.
d Excludes NGLs from processing plants in which an interest is held of 2 thousand barrels per day for equity-accounted entities.
e Includes 21 million barrels of oil equivalent of natural gas consumed in operations, 15 million barrels of oil equivalent in subsidiaries, 6 million barrels of oil equivalent in equity-accounted entities.
f Includes 98 million barrels of oil equivalent in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.
g Volumes of equity-accounted entities include volumes of equity-accounted investments of those entities.
h Includes assets held for sale in Algeria.
i bp's decision to exit our Russia business, including our shareholding in Rosneft, is treated as sales of reserves in place.

## Movements in estimated net proved reserves – continued

| | | | | | | | | | | million barrels |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crude oil**[a b] | | | | | | | | | | 2021 |
| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
| | UK | Rest of Europe | US[c] | Rest of North America | | | Russia | Rest of Asia | | |
| **Subsidiaries** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 162 | – | 697 | 37 | 8 | 116 | – | 1,100 | 34 | 2,154 |
| Undeveloped | 148 | – | 742 | 195 | 9 | 21 | – | 547 | 5 | 1,666 |
| | 309 | – | 1,438 | 232 | 16 | 137 | – | 1,647 | 38 | 3,819 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | – | – | (46) | (32) | (3) | 32 | – | (121) | (1) | (171) |
| Improved recovery | – | – | 29 | – | – | 2 | – | – | – | 32 |
| Purchases of reserves-in-place | – | – | – | – | – | – | – | – | – | – |
| Discoveries and extensions | – | – | 2 | – | – | – | – | 5 | – | 7 |
| Production | (30) | – | (113) | (9) | (2) | (41) | – | (116) | (5) | (315) |
| Sales of reserves-in-place | (1) | – | (5) | | | | – | (36) | – | (41) |
| | (30) | – | (132) | (41) | (5) | (7) | – | (268) | (6) | (489) |
| **At 31 December**[c] | | | | | | | | | | |
| Developed | 178 | – | 705 | 24 | 5 | 117 | – | 930 | 28 | 1,987 |
| Undeveloped | 101 | – | 601 | 167 | 7 | 14 | – | 449 | 4 | 1,343 |
| | 279 | – | 1,306 | 191 | 12 | 131 | – | 1,379 | 33 | 3,330 |
| **Equity-accounted entities (bp share)**[d] | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | – | 112 | – | 5 | 275 | 2 | 3,123 | – | – | 3,517 |
| Undeveloped | – | 24 | – | 21 | 237 | – | 2,493 | – | – | 2,776 |
| | – | 136 | – | 26 | 512 | 3 | 5,615 | 1 | – | 6,293 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | – | 9 | – | (5) | (4) | 1 | 166 | 1 | – | 168 |
| Improved recovery | – | 1 | – | – | – | – | – | – | – | 1 |
| Purchases of reserves-in-place | – | – | – | – | 13 | – | – | – | – | 13 |
| Discoveries and extensions | – | 1 | – | 2 | 25 | – | 238 | – | – | 266 |
| Production | – | (18) | – | (1) | (19) | – | (323) | – | – | (361) |
| Sales of reserves-in-place | – | (9) | – | – | – | – | (111) | – | – | (119) |
| | – | (15) | – | (4) | 15 | – | (30) | 1 | – | (33) |
| **At 31 December**[e f] | | | | | | | | | | |
| Developed | – | 100 | – | 10 | 275 | 3 | 3,045 | 1 | – | 3,434 |
| Undeveloped | – | 21 | – | 12 | 253 | – | 2,540 | 1 | – | 2,826 |
| | – | 121 | – | 22 | 527 | 3 | 5,585 | 1 | – | 6,260 |
| **Total subsidiaries and equity-accounted entities (bp share)** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 162 | 112 | 697 | 42 | 283 | 119 | 3,123 | 1,100 | 34 | 5,671 |
| Undeveloped | 148 | 24 | 742 | 215 | 246 | 22 | 2,493 | 548 | 5 | 4,441 |
| | 309 | 136 | 1,438 | 258 | 529 | 140 | 5,615 | 1,648 | 38 | 10,112 |
| **At 31 December** | | | | | | | | | | |
| Developed | 178 | 100 | 705 | 34 | 280 | 119 | 3,045 | 931 | 28 | 5,421 |
| Undeveloped | 101 | 21 | 601 | 179 | 259 | 14 | 2,540 | 450 | 4 | 4,169 |
| | 279 | 121 | 1,306 | 213 | 539 | 134 | 5,585 | 1,381 | 33 | 9,590 |

[a] Crude oil includes condensate and bitumen. Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
[b] Because of rounding, some totals may not exactly agree with the sum of their component parts.
[c] Includes 4 million barrels of crude oil in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.
[d] Volumes of equity-accounted entities include volumes of equity-accounted investments of those entities.
[e] Includes 393 million barrels of crude oil in respect of the 7.16% non-controlling interest in Rosneft, including 22 mmbbl held through bp's interests in Russia other than Rosneft.
[f] Total proved crude oil reserves held as part of our equity interest in Rosneft is 5,490 million barrels, comprising 1 million barrels in Iraq and less than 1 million barrels each in Egypt, Vietnam and Canada, and 5,487 million barrels in Russia.

## Movements in estimated net proved reserves – continued

| | | | | | | | | | | million barrels |
|---|---|---|---|---|---|---|---|---|---|---|
| **Natural gas liquids**[a] [b] | | | | | | | | | | 2021 |
| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
| | UK | Rest of Europe | USc | Rest of North America | | | Russia | Rest of Asia | | |
| **Subsidiaries** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 7 | — | 115 | — | 2 | 13 | — | — | 2 | 139 |
| Undeveloped | — | — | 218 | — | 19 | 1 | — | — | — | 237 |
| | 7 | | 333 | | 21 | 14 | | | 2 | 376 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | 5 | — | (1) | — | 1 | (1) | — | — | — | 4 |
| Improved recovery | | | 25 | | | | | | | 25 |
| Purchases of reserves-in-place | — | — | — | — | — | — | — | — | — | — |
| Discoveries and extensions | — | — | — | — | — | — | — | — | — | — |
| Production[c] | (2) | — | (25) | — | (1) | (3) | — | — | (1) | (32) |
| Sales of reserves-in-place | (1) | — | (4) | — | — | — | — | — | — | (5) |
| | 2 | — | (5) | — | — | (4) | — | — | — | (8) |
| **At 31 December**[d] | | | | | | | | | | |
| Developed | 8 | — | 132 | — | 2 | 9 | — | — | 2 | 153 |
| Undeveloped | — | — | 195 | — | 19 | 1 | — | — | — | 215 |
| | 9 | — | 328 | — | 21 | 10 | — | — | 2 | 368 |
| **Equity-accounted entities (bp share)**[e] | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | — | 6 | — | — | 2 | 12 | 108 | — | — | 129 |
| Undeveloped | — | 1 | — | — | — | — | 43 | — | — | 44 |
| | — | 7 | — | — | 2 | 12 | 151 | — | — | 172 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | — | — | — | — | — | 6 | (9) | — | — | (2) |
| Improved recovery | — | — | — | — | — | — | — | — | — | — |
| Purchases of reserves-in-place | — | — | — | — | — | — | — | — | — | — |
| Discoveries and extensions | — | — | — | — | — | — | — | — | — | — |
| Production | | (1) | | | | (1) | (1) | | | (4) |
| Sales of reserves-in-place | — | — | — | — | — | — | — | — | — | — |
| | — | (1) | — | — | — | 5 | (10) | — | — | (7) |
| **At 31 December**[f] [g] | | | | | | | | | | |
| Developed | — | 6 | — | — | 2 | 17 | 100 | — | — | 125 |
| Undeveloped | — | — | — | — | — | — | 41 | — | — | 41 |
| | | 6 | | | 2 | 17 | 140 | | | 166 |
| **Total subsidiaries and equity-accounted entities (bp share)** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 7 | 6 | 115 | — | 4 | 25 | 108 | — | 2 | 268 |
| Undeveloped | — | 1 | 218 | — | 19 | 1 | 43 | — | — | 281 |
| | 7 | 7 | 333 | — | 23 | 26 | 151 | — | 2 | 549 |
| **At 31 December** | | | | | | | | | | |
| Developed | 8 | 6 | 132 | — | 4 | 26 | 100 | — | 2 | 278 |
| Undeveloped | — | — | 195 | — | 19 | 1 | 41 | — | — | 256 |
| | 9 | 6 | 328 | — | 22 | 27 | 140 | — | 2 | 534 |

a Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
b Because of rounding, some totals may not exactly agree with the sum of their component parts.
c Excludes NGLs from processing plants in which an interest is held of 3 thousand barrels per day for equity-accounted entities.
d Includes 6 million barrels of NGL in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.
e Volumes of equity-accounted entities include volumes of equity-accounted investments of those entities.
f Includes 3 million barrels of NGLs in respect of the 2.3% non-controlling interest in Rosneft.
g Total proved NGL reserves held as part of our equity interest in Rosneft is 140 million barrels, comprising less than 1 million barrels in Canada, and 140 million barrels in Russia.

## Movements in estimated net proved reserves – continued

| Total liquids[a b] | | | | | | | | | | million barrels 2021 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
| | UK | Rest of Europe | US[c] | Rest of North America | | | Russia | Rest of Asia | | |
| **Subsidiaries** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 168 | – | 812 | 37 | 10 | 129 | – | 1,100 | 36 | 2,293 |
| Undeveloped | 148 | – | 959 | 195 | 27 | 22 | – | 547 | 5 | 1,903 |
| | 316 | – | 1,771 | 232 | 37 | 151 | – | 1,647 | 41 | 4,196 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | 5 | – | (47) | (32) | (2) | 31 | – | (121) | (1) | (167) |
| Improved recovery | – | – | 54 | – | – | 2 | – | – | – | 57 |
| Purchases of reserves-in-place | – | – | – | – | – | – | – | – | – | – |
| Discoveries and extensions | – | – | 2 | – | – | – | – | 5 | – | 7 |
| Production[c] | (32) | – | (138) | (9) | (3) | (44) | – | (116) | (5) | (348) |
| Sales of reserves-in-place | (1) | – | (9) | – | – | – | – | (36) | – | (46) |
| | (29) | – | (137) | (41) | (5) | (11) | – | (268) | (6) | (497) |
| **At 31 December[d]** | | | | | | | | | | |
| Developed | 187 | – | 837 | 24 | 7 | 125 | – | 930 | 30 | 2,141 |
| Undeveloped | 101 | – | 796 | 167 | 25 | 15 | – | 449 | 4 | 1,558 |
| | 288 | – | 1,634 | 191 | 32 | 140 | – | 1,379 | 34 | 3,699 |
| **Equity-accounted entities (bp share)[e]** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | – | 118 | – | 5 | 277 | 15 | 3,231 | – | – | 3,645 |
| Undeveloped | – | 25 | – | 21 | 237 | – | 2,535 | – | – | 2,819 |
| | | 143 | | 26 | 514 | 15 | 5,766 | 1 | | 6,465 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | – | 10 | – | (5) | (4) | 7 | 157 | 1 | – | 166 |
| Improved recovery | | 1 | | | | | | | | 1 |
| Purchases of reserves-in-place | – | – | – | – | 13 | – | – | – | – | 13 |
| Discoveries and extensions | – | 1 | – | 2 | 25 | – | 238 | – | – | 266 |
| Production | – | (19) | – | (1) | (19) | (1) | (325) | – | – | (365) |
| Sales of reserves-in-place | – | (9) | – | – | – | – | (111) | – | – | (120) |
| | – | (16) | – | (4) | 15 | 5 | (40) | 1 | – | (39) |
| **At 31 December[f g]** | | | | | | | | | | |
| Developed | – | 106 | – | 10 | 276 | 20 | 3,145 | 1 | – | 3,558 |
| Undeveloped | – | 21 | – | 12 | 253 | – | 2,581 | 1 | – | 2,867 |
| | – | 127 | – | 22 | 529 | 20 | 5,726 | 1 | – | 6,425 |
| **Total subsidiaries and equity-accounted entities (bp share)** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 168 | 118 | 812 | 42 | 287 | 144 | 3,231 | 1,100 | 36 | 5,938 |
| Undeveloped | 148 | 25 | 959 | 215 | 265 | 23 | 2,535 | 548 | 5 | 4,722 |
| | 316 | 143 | 1,771 | 258 | 552 | 166 | 5,766 | 1,648 | 41 | 10,661 |
| **At 31 December** | | | | | | | | | | |
| Developed | 187 | 106 | 837 | 34 | 284 | 146 | 3,145 | 931 | 30 | 5,699 |
| Undeveloped | 101 | 21 | 796 | 179 | 278 | 15 | 2,581 | 450 | 4 | 4,425 |
| | 288 | 127 | 1,634 | 213 | 561 | 161 | 5,726 | 1,381 | 34 | 10,124 |

[a] Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
[b] Because of rounding, some totals may not exactly agree with the sum of their component parts.
[c] Excludes NGLs from processing plants in which an interest is held of 3 thousand barrels per day for equity-accounted entities.
[d] Also includes 10 million barrels in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.
[e] Volumes of equity-accounted entities include volumes of equity-accounted investments of those entities.
[f] Includes 396 million barrels of liquids in respect of the non-controlling interest in Rosneft, including 22 mmboe held through bp's interests in Russia other than Rosneft.
[g] Total proved liquid reserves held as part of our equity interest in Rosneft is 5,630 million barrels, comprising 1 million barrels in Iraq, less than 1 million barrels each in Canada, Egypt and Vietnam and 5,628 million barrels in Russia.

## Movements in estimated net proved reserves – continued

| Natural gas[a h] | | | | | | | | | | billion cubic feet 2021 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia | | |
| **Subsidiaries** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 306 | — | 1,921 | — | 1,567 | 1,382 | — | 3,883 | 2,058 | 11,118 |
| Undeveloped | 51 | — | 3,423 | — | 1,964 | 158 | — | 3,641 | 1,029 | 10,267 |
| | 358 | — | 5,344 | — | 3,531 | 1,541 | — | 7,524 | 3,087 | 21,385 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | 254 | — | 717 | 1 | (767) | 537 | — | (66) | (285) | 390 |
| Improved recovery | — | — | 247 | — | — | — | — | — | — | 247 |
| Purchases of reserves-in-place | — | — | — | — | — | — | — | — | — | — |
| Discoveries and extensions | — | — | 1 | — | — | 25 | — | 116 | — | 142 |
| Production[c] | (103) | — | (445) | (1) | (465) | (516) | — | (489) | (279) | (2,297) |
| Sales of reserves-in-place | (7) | — | (60) | — | — | — | — | (1,298) | — | (1,365) |
| | 143 | — | 461 | — | (1,232) | 46 | — | (1,736) | (564) | (2,883) |
| **At 31 December[d]** | | | | | | | | | | |
| Developed | 455 | — | 2,401 | — | 1,152 | 1,433 | — | 3,266 | 1,584 | 10,291 |
| Undeveloped | 45 | — | 3,404 | — | 1,147 | 154 | — | 2,522 | 939 | 8,211 |
| | 501 | — | 5,805 | — | 2,299 | 1,587 | — | 5,788 | 2,523 | 18,502 |
| **Equity-accounted entities (bp share)[e]** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | — | 141 | — | 2 | 965 | 600 | 11,373 | 7 | — | 13,088 |
| Undeveloped | — | 21 | — | 6 | 513 | 142 | 7,312 | — | — | 7,994 |
| | — | 162 | — | 8 | 1,478 | 741 | 18,685 | 7 | — | 21,082 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | — | 8 | — | (2) | (115) | 152 | 422 | — | — | 467 |
| Improved recovery | — | 4 | — | — | — | — | — | — | — | 4 |
| Purchases of reserves-in-place | — | — | — | — | 3 | — | — | — | — | 3 |
| Discoveries and extensions | — | 1 | — | 1 | 222 | — | 151 | — | — | 375 |
| Production[c] | — | (25) | — | — | (124) | (72) | (478) | (3) | — | (702) |
| Sales of reserves-in-place | — | (9) | — | — | — | — | (102) | (4) | — | (115) |
| | — | (22) | — | (1) | (13) | 80 | (7) | (7) | — | 31 |
| **At 31 December[f g]** | | | | | | | | | | |
| Developed | — | 130 | — | 4 | 929 | 689 | 11,399 | — | — | 13,149 |
| Undeveloped | — | 11 | — | 4 | 536 | 133 | 7,279 | — | — | 7,964 |
| | — | 140 | — | 8 | 1,465 | 822 | 18,678 | — | — | 21,113 |
| **Total subsidiaries and equity-accounted entities (bp share)** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 306 | 141 | 1,921 | 2 | 2,532 | 1,982 | 11,373 | 3,890 | 2,058 | 24,206 |
| Undeveloped | 51 | 21 | 3,423 | 6 | 2,477 | 300 | 7,312 | 3,641 | 1,029 | 18,260 |
| | 358 | 162 | 5,344 | 8 | 5,009 | 2,282 | 18,685 | 7,531 | 3,087 | 42,467 |
| **At 31 December** | | | | | | | | | | |
| Developed | 455 | 130 | 2,401 | 4 | 2,081 | 2,121 | 11,399 | 3,266 | 1,584 | 23,440 |
| Undeveloped | 45 | 11 | 3,404 | 4 | 1,683 | 287 | 7,279 | 2,522 | 939 | 16,174 |
| | 501 | 140 | 5,805 | 8 | 3,764 | 2,408 | 18,678 | 5,788 | 2,523 | 39,615 |

[a] Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
[b] Because of rounding, some totals may not exactly agree with the sum of their component parts.
[c] Includes 135 billion cubic feet of natural gas consumed in operations, 83 billion cubic feet in subsidiaries, 52 billion cubic feet in equity-accounted entities.
[d] Includes 690 billion cubic feet of natural gas in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.
[e] Volumes of equity-accounted entities include volumes of equity-accounted investments of those entities.
[f] Includes 1,656 billion cubic feet of natural gas in respect of the 10.20% non-controlling interest in Rosneft including 621 billion cubic feet held through bp's interests in Russia other than Rosneft.
[g] Total proved gas reserves held as part of our equity interest in Rosneft is 16,233 billion cubic feet, comprising less than 1 billion cubic feet in Vietnam and Canada, 376 billion cubic feet in Egypt and 15,857 billion cubic feet in Russia.

## Movements in estimated net proved reserves – continued

| Total hydrocarbons[a b] | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | million barrels of oil equivalent[c] 2021 |
| | UK | Rest of Europe | US[f] | Rest of North America | | | Russia | Rest of Asia | | |
| **Subsidiaries** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 221 | – | 1,143 | 37 | 280 | 367 | – | 1,770 | 391 | 4,210 |
| Undeveloped | 157 | – | 1,549 | 195 | 366 | 50 | – | 1,175 | 182 | 3,673 |
| | 378 | – | 2,692 | 232 | 646 | 417 | – | 2,945 | 573 | 7,883 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | 49 | – | 77 | (32) | (134) | 123 | – | (132) | (50) | (100) |
| Improved recovery | – | – | 97 | – | – | 2 | – | – | – | 99 |
| Purchases of reserves-in-place | – | – | – | – | – | – | – | – | – | – |
| Discoveries and extensions | – | – | 2 | – | – | 4 | – | 25 | – | 31 |
| Production[d e] | (50) | – | (214) | (9) | (83) | (133) | – | (200) | (54) | (744) |
| Sales of reserves-in-place | (3) | – | (19) | – | – | – | – | (260) | – | (282) |
| | (4) | – | (58) | (41) | (217) | (3) | – | (567) | (104) | (994) |
| **At 31 December[f]** | | | | | | | | | | |
| Developed | 265 | – | 1,251 | 24 | 206 | 372 | – | 1,494 | 303 | 3,915 |
| Undeveloped | 109 | – | 1,383 | 167 | 223 | 41 | – | 884 | 166 | 2,973 |
| | 374 | – | 2,634 | 191 | 429 | 414 | – | 2,377 | 469 | 6,889 |
| **Equity-accounted entities (bp share)[g]** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | – | 142 | – | 5 | 443 | 118 | 5,192 | 1 | – | 5,902 |
| Undeveloped | – | 29 | – | 22 | 326 | 25 | 3,796 | – | – | 4,198 |
| | – | 171 | – | 27 | 769 | 143 | 8,988 | 2 | – | 10,100 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | – | 11 | – | (5) | (24) | 33 | 230 | 1 | – | 246 |
| Improved recovery | – | 1 | – | – | – | – | – | – | – | 1 |
| Purchases of reserves-in-place | – | – | – | – | 14 | – | – | – | – | 14 |
| Discoveries and extensions | – | 1 | – | 2 | 63 | – | 264 | – | – | 330 |
| Production[e] | – | (23) | – | (1) | (41) | (14) | (407) | – | – | (486) |
| Sales of reserves-in-place | – | (11) | – | – | – | – | (128) | (1) | – | (139) |
| | – | (20) | – | (4) | 12 | 19 | (42) | – | – | (34) |
| **At 31 December[h i]** | | | | | | | | | | |
| Developed | – | 128 | – | 11 | 437 | 139 | 5,110 | 1 | – | 5,825 |
| Undeveloped | – | 23 | – | 12 | 345 | 23 | 3,836 | 1 | – | 4,240 |
| | – | 151 | – | 23 | 782 | 162 | 8,946 | 1 | – | 10,065 |
| **Total subsidiaries and equity-accounted entities (bp share)** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 221 | 142 | 1,143 | 43 | 724 | 485 | 5,192 | 1,771 | 391 | 10,112 |
| Undeveloped | 157 | 29 | 1,549 | 217 | 692 | 74 | 3,796 | 1,175 | 182 | 7,871 |
| | 378 | 171 | 2,692 | 259 | 1,415 | 560 | 8,988 | 2,946 | 573 | 17,982 |
| **At 31 December** | | | | | | | | | | |
| Developed | 265 | 128 | 1,251 | 35 | 642 | 511 | 5,110 | 1,494 | 303 | 9,740 |
| Undeveloped | 109 | 23 | 1,383 | 179 | 568 | 65 | 3,836 | 884 | 166 | 7,214 |
| | 374 | 151 | 2,634 | 214 | 1,210 | 576 | 8,946 | 2,379 | 469 | 16,954 |

a Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
b Because of rounding, some totals may not exactly agree with the sum of their component parts.
c 5.8 billion cubic feet of natural gas = 1 million barrels of oil equivalent.
d Excludes NGLs from processing plants in which an interest is held of 3 thousand barrels per day for equity-accounted entities.
e Includes 23 million barrels of oil equivalent of natural gas consumed in operations, 14 million barrels of oil equivalent in subsidiaries, 9 million barrels of oil equivalent in equity-accounted entities.
f Includes 98 million barrels of oil equivalent in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.
g Volumes of equity-accounted entities include volumes of equity-accounted investments of those entities.
h Includes 682 million barrels of oil equivalent in respect of the 8.09% non-controlling interest in Rosneft, including 129mmboe held through bp's interests in Russia other than Rosneft.
i Total proved reserves held as part of our equity interest in Rosneft is 8,429 million barrels of oil equivalent, comprising less than 1 million barrels of oil equivalent in Canada and Vietnam, 1 million barrels of oil equivalent in Iraq, 65 million barrels of oil equivalent in Egypt and 3,362 million barrels of oil equivalent in Russia.

## Movements in estimated net proved reserves – continued

| Crude oil[a b] | | | | | | | | | | million barrels<br>2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia | | |
| **Subsidiaries** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 206 | – | 1,063 | 40 | 7 | 156 | – | 1,074 | 26 | 2,572 |
| Undeveloped | 200 | – | 842 | 179 | 5 | 40 | – | 525 | 4 | 1,794 |
| | 406 | – | 1,905 | 218 | 12 | 196 | – | 1,599 | 30 | 4,367 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | (62) | – | (17) | 22 | – | (17) | – | 175 | 14 | 114 |
| Improved recovery | – | – | 24 | – | – | 3 | – | – | – | 27 |
| Purchases of reserves-in-place | – | – | – | – | – | – | – | – | – | – |
| Discoveries and extensions | – | – | 2 | – | 5 | – | – | 11 | – | 18 |
| Production | (35) | – | (125) | (8) | – | (44) | – | (137) | (5) | (355) |
| Sales of reserves-in-place | – | – | (351) | – | – | – | – | – | – | (351) |
| | (97) | – | (467) | 14 | 5 | (58) | – | 48 | 8 | (547) |
| **At 31 December[d]** | | | | | | | | | | |
| Developed | 162 | – | 697 | 37 | 8 | 116 | – | 1,100 | 34 | 2,154 |
| Undeveloped | 148 | – | 742 | 195 | 9 | 21 | – | 547 | 5 | 1,666 |
| | 309 | – | 1,438 | 232 | 16 | 137 | – | 1,647 | 38 | 3,819 |
| **Equity-accounted entities (bp share)[e]** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | – | 115 | – | – | 291 | 2 | 3,159 | – | – | 3,567 |
| Undeveloped | – | 35 | – | 20 | 257 | – | 2,535 | – | – | 2,847 |
| | – | 150 | – | 20 | 548 | 2 | 5,695 | – | – | 6,414 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | – | (5) | – | 6 | 2 | 1 | 31 | – | – | 35 |
| Improved recovery | – | 10 | – | – | – | – | – | – | – | 10 |
| Purchases of reserves-in-place | – | – | – | – | 1 | – | 643 | – | – | 644 |
| Discoveries and extensions | – | – | – | – | 17 | | 238 | – | – | 255 |
| Production | – | (18) | – | – | (21) | – | (330) | – | – | (369) |
| Sales of reserves-in-place | – | – | – | – | (35) | | (662) | – | – | (697) |
| | – | (14) | – | 6 | (36) | 1 | (79) | – | – | (122) |
| **At 31 December[f g]** | | | | | | | | | | |
| Developed | – | 112 | – | 5 | 275 | 2 | 3,123 | – | – | 3,517 |
| Undeveloped | – | 24 | – | 21 | 237 | – | 2,493 | – | – | 2,776 |
| | – | 136 | – | 26 | 512 | 3 | 5,615 | 1 | – | 6,293 |
| **Total subsidiaries and equity-accounted entities (bp share)** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 206 | 115 | 1,063 | 40 | 298 | 158 | 3,159 | 1,074 | 26 | 6,140 |
| Undeveloped | 200 | 35 | 842 | 198 | 262 | 40 | 2,535 | 525 | 4 | 4,642 |
| | 406 | 150 | 1,905 | 238 | 560 | 198 | 5,695 | 1,599 | 30 | 10,781 |
| **At 31 December** | | | | | | | | | | |
| Developed | 162 | 112 | 697 | 42 | 283 | 119 | 3,123 | 1,100 | 34 | 5,671 |
| Undeveloped | 148 | 24 | 742 | 215 | 246 | 22 | 2,493 | 548 | 5 | 4,441 |
| | 309 | 136 | 1,438 | 258 | 529 | 140 | 5,615 | 1,648 | 38 | 10,112 |

a Crude oil includes condensate and bitumen. Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
b Because of rounding, some totals may not exactly agree with the sum of their component parts.
c Includes 37 million barrels of crude oil associated with Assets Held for Sale in Oman.
d Includes 5 million barrels of crude oil in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.
e Volumes of equity-accounted entities include volumes of equity-accounted investments of those entities.
f Includes 393 million barrels of crude oil in respect of the 7.09% non-controlling interest in Rosneft, including 18.53 mmbbl held through bp's interests in Russia other than Rosneft.
g Total proved crude oil reserves held as part of our equity interest in Rosneft is 5,533 million barrels, comprising less than 1 million barrels each in Egypt, Vietnam, Iraq and Canada, 0 million barrels in Venezuela and 5,531 million barrels in Russia.

## Movements in estimated net proved reserves – continued

| Natural gas liquids[a,b] | | | | | | | | | | million barrels 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia[c] | | |
| **Subsidiaries** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 8 | – | 229 | – | 2 | 12 | – | – | 4 | 255 |
| Undeveloped | 5 | – | 250 | – | 21 | 4 | – | – | – | 280 |
| | 13 | – | 479 | – | 23 | 16 | – | – | 4 | 535 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | (5) | – | (22) | – | – | 1 | – | – | (1) | (26) |
| Improved recovery | – | – | 1 | – | – | – | – | – | – | 1 |
| Purchases of reserves-in-place | – | – | – | – | – | – | – | – | – | – |
| Discoveries and extensions | – | – | – | – | – | – | – | – | – | – |
| Production[d] | (2) | – | (31) | – | (3) | (3) | – | – | (1) | (39) |
| Sales of reserves-in-place | – | – | (94) | – | – | – | – | – | – | (94) |
| | (7) | – | (146) | – | (2) | (2) | – | – | (2) | (159) |
| **At 31 December[e]** | | | | | | | | | | |
| Developed | 7 | – | 115 | – | 2 | 13 | – | – | 2 | 139 |
| Undeveloped | – | – | 218 | – | 19 | 1 | – | – | – | 237 |
| | 7 | – | 333 | – | 21 | 14 | – | – | 2 | 376 |
| **Equity-accounted entities (bp share)[f]** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | – | 5 | – | – | 2 | 11 | 89 | – | – | 107 |
| Undeveloped | – | 3 | – | – | – | – | 52 | – | – | 55 |
| | – | 7 | – | – | 2 | 11 | 141 | – | – | 162 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | – | 1 | – | – | – | 3 | 9 | – | – | 12 |
| Improved recovery | – | – | – | – | – | – | – | – | – | – |
| Purchases of reserves-in-place | – | – | – | – | – | – | 16 | – | – | 16 |
| Discoveries and extensions | – | – | – | – | – | – | – | – | – | – |
| Production[d] | – | (1) | – | – | – | (2) | (2) | – | – | (5) |
| Sales of reserves-in-place | – | – | – | – | – | – | (14) | – | – | (14) |
| | – | – | – | – | – | 1 | 10 | – | – | 10 |
| **At 31 December[g,h]** | | | | | | | | | | |
| Developed | – | 6 | – | – | 2 | 12 | 108 | – | – | 129 |
| Undeveloped | – | 1 | – | – | – | – | 43 | – | – | 44 |
| | – | 7 | – | – | 2 | 12 | 151 | – | – | 172 |
| **Total subsidiaries and equity-accounted entities (bp share)** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 8 | 5 | 229 | – | 4 | 23 | 89 | – | 4 | 363 |
| Undeveloped | 5 | 3 | 250 | – | 21 | 4 | 52 | – | – | 334 |
| | 13 | 7 | 479 | – | 25 | 27 | 141 | – | 4 | 697 |
| **At 31 December** | | | | | | | | | | |
| Developed | 7 | 6 | 115 | – | 4 | 25 | 108 | – | 2 | 268 |
| Undeveloped | – | 1 | 218 | – | 19 | 1 | 43 | – | – | 281 |
| | 7 | 7 | 333 | – | 23 | 26 | 151 | – | 2 | 549 |

a Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
b Because of rounding, some totals may not exactly agree with the sum of their component parts.
c Includes 0 million barrels of NGL associated with Assets Held for Sale in Oman.
d Excludes NGLs from processing plants in which an interest is held of less than 1 thousand barrels per day for subsidiaries and 3 thousand barrels per day for equity-accounted entities.
e Includes 6 million barrels of NGL in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.
f Volumes of equity-accounted entities include volumes of equity-accounted investments of those entities.
g Includes 12 million barrels of NGLs in respect of the 7.99% non-controlling interest in Rosneft.
h Total proved NGL reserves held as part of our equity interest in Rosneft is 151 million barrels, comprising less than 1 million barrels each in Egypt, Venezuela, Vietnam and Canada, and 151 million barrels in Russia.

## Movements in estimated net proved reserves – continued

| Total liquids[a b] | | | | | | | | | | million barrels 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia[c] | | |
| **Subsidiaries** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 214 | – | 1,292 | 40 | 9 | 168 | – | 1,074 | 30 | 2,828 |
| Undeveloped | 205 | – | 1,092 | 179 | 26 | 43 | – | 525 | 4 | 2,074 |
| | 420 | – | 2,384 | 218 | 35 | 211 | – | 1,599 | 34 | 4,902 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | (67) | – | (40) | 22 | 1 | (16) | – | 175 | 13 | 87 |
| Improved recovery | – | – | 25 | – | – | 3 | – | – | – | 28 |
| Purchases of reserves-in-place | – | – | – | – | – | – | – | – | – | – |
| Discoveries and extensions | – | – | 2 | – | 5 | – | – | 11 | – | 18 |
| Production[d] | (37) | – | (155) | (8) | (3) | (47) | – | (137) | (6) | (394) |
| Sales of reserves-in-place | – | – | (445) | – | – | – | – | – | – | (445) |
| | (104) | – | (613) | 14 | 2 | (60) | – | 48 | 6 | (706) |
| **At 31 December[e]** | | | | | | | | | | |
| Developed | 168 | – | 812 | 37 | 10 | 129 | – | 1,100 | 36 | 2,293 |
| Undeveloped | 148 | – | 959 | 195 | 27 | 22 | – | 547 | 5 | 1,903 |
| | 316 | – | 1,771 | 232 | 37 | 151 | – | 1,647 | 41 | 4,196 |
| **Equity-accounted entities (bp share)[f]** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | – | 120 | – | – | 293 | 13 | 3,248 | – | – | 3,675 |
| Undeveloped | – | 37 | – | 20 | 257 | – | 2,588 | – | – | 2,902 |
| | – | 157 | – | 20 | 550 | 13 | 5,836 | – | – | 6,576 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | – | (4) | – | 6 | 2 | 4 | 39 | – | – | 47 |
| Improved recovery | – | 10 | – | – | – | – | – | – | – | 10 |
| Purchases of reserves-in-place | – | – | – | – | 1 | – | 660 | – | – | 661 |
| Discoveries and extensions | – | – | – | | 17 | | 238 | – | – | 255 |
| Production[d] | – | (19) | – | – | (21) | (2) | (331) | – | – | (374) |
| Sales of reserves-in-place | – | (1) | – | – | (35) | | (675) | – | – | (711) |
| | – | (14) | – | 6 | (36) | 2 | (70) | – | – | (112) |
| **At 31 December[g h]** | | | | | | | | | | |
| Developed | – | 118 | – | 5 | 277 | 15 | 3,231 | – | – | 3,645 |
| Undeveloped | – | 25 | – | 21 | 237 | – | 2,535 | – | – | 2,819 |
| | – | 143 | – | 26 | 514 | 15 | 5,766 | 1 | – | 6,465 |
| **Total subsidiaries and equity-accounted entities (bp share)** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 214 | 120 | 1,292 | 40 | 302 | 181 | 3,248 | 1,074 | 30 | 6,502 |
| Undeveloped | 205 | 37 | 1,092 | 198 | 283 | 43 | 2,588 | 525 | 4 | 4,976 |
| | 420 | 157 | 2,384 | 238 | 585 | 224 | 5,836 | 1,599 | 34 | 11,478 |
| **At 31 December** | | | | | | | | | | |
| Developed | 168 | 118 | 812 | 42 | 287 | 144 | 3,231 | 1,100 | 36 | 5,938 |
| Undeveloped | 148 | 25 | 959 | 215 | 265 | 23 | 2,535 | 548 | 5 | 4,722 |
| | 316 | 143 | 1,771 | 258 | 552 | 166 | 5,766 | 1,648 | 41 | 10,661 |

[a] Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
[b] Because of rounding, some totals may not exactly agree with the sum of their component parts.
[c] Includes 37 million barrels associated with Assets Held for Sale in Oman.
[d] Excludes NGLs from processing plants in which an interest is held of less than 1 thousand barrels per day for subsidiaries and 3 thousand barrels per day for equity-accounted entities.
[e] Also includes 11 million barrels in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.
[f] Volumes of equity-accounted entities include volumes of equity-accounted investments of those entities.
[g] Includes 405 million barrels of liquids in respect of the non-controlling interest in Rosneft, including 19 mmboe held through bp's interests in Russia other than Rosneft.
[h] Total proved liquid reserves held as part of our equity interest in Rosneft is 5,683 million barrels, comprising 0 million barrels in Venezuela, less than 1 million barrels each in Iraq, Canada, Egypt and Vietnam and 5,682 million barrels in Russia.

## Movements in estimated net proved reserves – continued

| Natural gas[a h] | | | | | | | | | | billion cubic feet 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia[c] | | |
| **Subsidiaries** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 493 | — | 6,330 | — | 2,192 | 1,163 | — | 3,667 | 2,256 | 16,101 |
| Undeveloped | 207 | — | 2,127 | — | 2,235 | 742 | — | 3,401 | 1,132 | 9,844 |
| | 700 | — | 8,458 | — | 4,427 | 1,905 | — | 7,068 | 3,389 | 25,946 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | (252) | — | 580 | 1 | (362) | (26) | — | 570 | (9) | 503 |
| Improved recovery | 1 | — | 545 | — | — | — | — | — | — | 546 |
| Purchases of reserves-in-place | — | — | — | — | — | — | — | — | — | — |
| Discoveries and extensions | — | — | 1 | — | 93 | 28 | — | 263 | — | 386 |
| Production[d] | (92) | — | (603) | (1) | (627) | (367) | — | (376) | (293) | (2,358) |
| Sales of reserves-in-place | — | — | (3,636) | — | — | — | — | — | — | (3,636) |
| | (342) | — | (3,114) | — | (896) | (364) | — | 457 | (301) | (4,561) |
| **At 31 December[e]** | | | | | | | | | | |
| Developed | 306 | — | 1,921 | — | 1,567 | 1,382 | — | 3,883 | 2,058 | 11,118 |
| Undeveloped | 51 | — | 3,423 | — | 1,964 | 158 | — | 3,641 | 1,029 | 10,267 |
| | 358 | — | 5,344 | — | 3,531 | 1,541 | — | 7,524 | 3,087 | 21,385 |
| **Equity-accounted entities (bp share)[f]** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | — | 108 | — | — | 1,130 | 508 | 9,324 | 10 | — | 11,080 |
| Undeveloped | — | 56 | — | 6 | 447 | — | 8,067 | — | — | 8,576 |
| | — | 164 | — | 6 | 1,577 | 508 | 17,391 | 10 | — | 19,656 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | — | 29 | — | 2 | (86) | 285 | 1,022 | — | — | 1,251 |
| Improved recovery | — | 8 | — | — | — | — | — | — | — | 8 |
| Purchases of reserves-in-place | — | — | — | — | — | 18 | 1,681 | 1 | — | 1,701 |
| Discoveries and extensions | — | — | — | — | 139 | — | 422 | — | — | 561 |
| Production[d] | — | (35) | — | — | (124) | (69) | (470) | (5) | — | (703) |
| Sales of reserves-in-place | — | (3) | — | — | (28) | — | (1,361) | — | — | (1,393) |
| | — | (2) | — | 2 | (99) | 234 | 1,294 | (4) | — | 1,426 |
| **At 31 December[g h]** | | | | | | | | | | |
| Developed | — | 141 | — | 2 | 965 | 600 | 11,373 | 7 | — | 13,088 |
| Undeveloped | — | 21 | — | 6 | 513 | 142 | 7,312 | — | — | 7,994 |
| | — | 162 | — | 8 | 1,478 | 741 | 18,685 | 7 | — | 21,082 |
| **Total subsidiaries and equity-accounted entities (bp share)** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 493 | 108 | 6,330 | — | 3,323 | 1,670 | 9,324 | 3,677 | 2,256 | 27,181 |
| Undeveloped | 207 | 56 | 2,127 | 6 | 2,682 | 742 | 8,067 | 3,401 | 1,132 | 18,421 |
| | 700 | 164 | 8,458 | 6 | 6,004 | 2,413 | 17,391 | 7,078 | 3,389 | 45,601 |
| **At 31 December** | | | | | | | | | | |
| Developed | 306 | 141 | 1,921 | 2 | 2,532 | 1,982 | 11,373 | 3,890 | 2,058 | 24,206 |
| Undeveloped | 51 | 21 | 3,423 | 6 | 2,477 | 300 | 7,312 | 3,641 | 1,029 | 18,260 |
| | 358 | 162 | 5,344 | 8 | 5,009 | 2,282 | 18,685 | 7,531 | 3,087 | 42,467 |

[a] Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
[b] Because of rounding, some totals may not exactly agree with the sum of their component parts.
[c] Includes 1,316 billion cubic feet of natural gas associated with Assets Held for Sale in Oman.
[d] Includes 158 billion cubic feet of natural gas consumed in operations, 103 billion cubic feet in subsidiaries, 55 billion cubic feet in equity-accounted entities.
[e] Includes 1,059 billion cubic feet of natural gas in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.
[f] Volumes of equity-accounted entities include volumes of equity-accounted investments of those entities.
[g] Includes 1,640 billion cubic feet of natural gas in respect of the 10.01% non-controlling interest in Rosneft including 614 billion cubic feet held through bp's interests in Russia other than Rosneft.
[h] Total proved gas reserves held as part of our equity interest in Rosneft is 16,324 billion cubic feet, comprising 0 billion cubic feet in Venezuela, 7 billion cubic feet in Vietnam, 420 billion cubic feet in Egypt and 15,897 billion cubic feet in Russia.

## Movements in estimated net proved reserves – continued

| Total hydrocarbons[a h] | | | | | | | | | | million barrels of oil equivalent[c] 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
| | UK | Rest of Europe | US[c] | Rest of North America | | | Russia | Rest of Asia[c] | | |
| **Subsidiaries** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 300 | – | 2,384 | 40 | 387 | 369 | – | 1,707 | 419 | 5,604 |
| Undeveloped | 241 | – | 1,459 | 179 | 411 | 171 | – | 1,111 | 199 | 3,771 |
| | 540 | – | 3,842 | 218 | 798 | 540 | – | 2,818 | 618 | 9,375 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | (110) | – | 60 | 22 | (62) | (21) | – | 273 | 11 | 174 |
| Improved recovery | – | – | 118 | – | – | 3 | – | – | – | 122 |
| Purchases of reserves-in-place | – | – | – | – | – | – | – | – | – | – |
| Discoveries and extensions | – | – | 3 | – | 21 | 5 | – | 56 | – | 84 |
| Production[e f] | (53) | – | (259) | (8) | (111) | (110) | – | (202) | (57) | (800) |
| Sales of reserves-in-place | – | – | (1,072) | – | – | – | – | – | – | (1,072) |
| | (163) | – | (1,150) | 14 | (152) | (123) | – | 127 | (46) | (1,492) |
| **At 31 December[g]** | | | | | | | | | | |
| Developed | 221 | – | 1,143 | 37 | 280 | 367 | – | 1,770 | 391 | 4,210 |
| Undeveloped | 157 | – | 1,549 | 195 | 366 | 50 | – | 1,175 | 182 | 3,673 |
| | 378 | – | 2,692 | 232 | 646 | 417 | – | 2,945 | 573 | 7,883 |
| **Equity-accounted entities (bp share)[h]** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | – | 139 | – | – | 488 | 100 | 4,856 | 2 | – | 5,585 |
| Undeveloped | – | 47 | – | 21 | 334 | – | 3,978 | – | – | 4,381 |
| | – | 186 | – | 21 | 822 | 100 | 8,834 | 2 | – | 9,965 |
| **Changes attributable to** | | | | | | | | | | |
| Revisions of previous estimates | – | 1 | – | 7 | (13) | 53 | 216 | – | – | 263 |
| Improved recovery | – | 11 | – | – | – | – | – | – | – | 11 |
| Purchases of reserves-in-place | – | – | – | – | 1 | 3 | 949 | – | – | 954 |
| Discoveries and extensions | – | – | – | – | 41 | – | 311 | – | – | 352 |
| Production[e] | – | (25) | – | – | (42) | (14) | (412) | (1) | – | (495) |
| Sales of reserves-in-place | – | (1) | – | – | (40) | – | (910) | – | – | (951) |
| | – | (15) | – | 7 | (53) | 42 | 153 | – | – | 134 |
| **At 31 December[i j]** | | | | | | | | | | |
| Developed | – | 142 | – | 5 | 443 | 118 | 5,192 | 1 | – | 5,902 |
| Undeveloped | – | 29 | – | 22 | 326 | 25 | 3,796 | – | – | 4,198 |
| | – | 171 | – | 27 | 769 | 143 | 8,988 | 2 | – | 10,100 |
| **Total subsidiaries and equity-accounted entities (bp share)** | | | | | | | | | | |
| **At 1 January** | | | | | | | | | | |
| Developed | 300 | 139 | 2,384 | 40 | 875 | 469 | 4,856 | 1,708 | 419 | 11,189 |
| Undeveloped | 241 | 47 | 1,459 | 199 | 746 | 171 | 3,978 | 1,112 | 199 | 8,152 |
| | 540 | 186 | 3,842 | 239 | 1,621 | 640 | 8,834 | 2,820 | 618 | 19,341 |
| **At 31 December** | | | | | | | | | | |
| Developed | 221 | 142 | 1,143 | 43 | 724 | 485 | 5,192 | 1,771 | 391 | 10,112 |
| Undeveloped | 157 | 29 | 1,549 | 217 | 692 | 74 | 3,796 | 1,175 | 182 | 7,871 |
| | 378 | 171 | 2,692 | 259 | 1,415 | 560 | 8,988 | 2,946 | 573 | 17,982 |

a Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
b Because of rounding, some totals may not exactly agree with the sum of their component parts.
c 5.8 billion cubic feet of natural gas = 1 million barrels of oil equivalent.
d Includes 264 million barrels of oil equivalent associated with Assets Held for Sale in Oman.
e Excludes NGLs from processing plants in which an interest is held of less than 1 thousand barrels per day for subsidiaries and 3 thousand barrels per day for equity-accounted entities.
f Includes 27 million barrels of oil equivalent of natural gas consumed in operations, 18 million barrels of oil equivalent in subsidiaries, 10 million barrels of oil equivalent in equity-accounted entities.
g Includes 194 million barrels of oil equivalent in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.
h Volumes of equity-accounted entities include volumes of equity-accounted investments of those entities.
i Includes 687 million barrels of oil equivalent in respect of the non-controlling interest in Rosneft, including 124 mmboe held through bp's interests in Russia other than Rosneft.
j Total proved reserves held as part of our equity interest in Rosneft is 8,498 million barrels of oil equivalent, comprising less than 1 million barrels of oil equivalent in Iraq and Canada, 0 million barrels of oil equivalent in Venezuela, 1 million barrels of oil equivalent in Vietnam, 73 million barrels of oil equivalent in Egypt and 8,423 million barrels of oil equivalent in Russia.

## Standardized measure of discounted future net cash flows and changes therein relating to proved oil and gas reserves

The following tables set out the standardized measure of discounted future net cash flows, and changes therein, relating to crude oil and natural gas production from the group's estimated proved reserves. This information is prepared in compliance with FASB Oil and Gas Disclosures requirements.

Future net cash flows have been prepared on the basis of certain assumptions which may or may not be realized. These include the timing of future production, the estimation of crude oil and natural gas reserves and the application of average crude oil and natural gas prices and exchange rates from the previous 12 months. Furthermore, both proved reserves estimates and production forecasts are subject to revision as further technical information becomes available and economic conditions change. bp cautions against relying on the information presented because of the highly arbitrary nature of the assumptions on which it is based and its lack of comparability with the historical cost information presented in the financial statements.

| | | | | | | | | | | $ million |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 2022 |
| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia | | |
| At 31 December | | | | | | | | | | |
| **Subsidiaries** | | | | | | | | | | |
| Future cash inflows[a] | 34,900 | – | 154,500 | – | 16,400 | 9,400 | – | 151,500 | 23,600 | 390,300 |
| Future production cost[b] | 13,600 | – | 36,000 | – | 5,300 | 1,300 | – | 42,700 | 5,200 | 104,100 |
| Future development cost[b] | 1,100 | – | 12,200 | – | 1,400 | 700 | – | 8,800 | 1,900 | 26,100 |
| Future taxation[c] | 12,600 | – | 19,800 | – | 5,000 | 1,900 | – | 65,200 | 5,500 | 110,000 |
| Future net cash flows | 7,600 | – | 86,500 | – | 4,700 | 5,500 | – | 34,800 | 11,000 | 150,100 |
| 10% annual discount[d] | 3,400 | – | 38,200 | – | 700 | 1,000 | – | 11,800 | 4,000 | 59,100 |
| Standardized measure of discounted future net cash flows[e] | 4,200 | – | 48,300 | – | 4,000 | 4,500 | – | 23,000 | 7,000 | 91,000 |
| **Equity-accounted entities (bp share)[f]** | | | | | | | | | | |
| Future cash inflows[a] | – | 12,800 | – | – | 49,800 | 20,500 | – | 9,200 | – | 92,300 |
| Future production cost[b] | – | 2,100 | – | – | 22,000 | 6,300 | – | 4,900 | – | 35,300 |
| Future development cost[b] | – | 400 | – | – | 4,900 | 2,800 | – | 3,000 | – | 11,100 |
| Future taxation[c] | – | 8,100 | – | – | 7,100 | 4,300 | – | 400 | – | 19,900 |
| Future net cash flows | – | 2,200 | – | – | 15,800 | 7,100 | – | 900 | – | 26,000 |
| 10% annual discount[d] | – | 400 | – | – | 9,300 | 2,200 | – | 200 | – | 12,100 |
| Standardized measure of discounted future net cash flows[g] | – | 1,800 | – | – | 6,500 | 4,900 | – | 700 | – | 13,900 |
| **Total subsidiaries and equity-accounted entities** | | | | | | | | | | |
| Standardized measure of discounted future net cash flows[h] | 4,200 | 1,800 | 48,300 | – | 10,500 | 9,400 | – | 23,700 | 7,000 | 104,900 |

The following are the principal sources of change in the standardized measure of discounted future net cash flows:

| | | | $ million |
|---|---|---|---|
| | Subsidiaries | Equity-accounted entities (bp share) | Total subsidiaries and equity-accounted entities |
| Sales and transfers of oil and gas produced, net of production costs | (22,800) | (4,600) | (27,400) |
| Development costs for the current year as estimated in previous year | 5,500 | 1,800 | 7,300 |
| Extensions, discoveries and improved recovery, less related costs | 1,600 | 900 | 2,500 |
| Net changes in prices and production cost | 80,800 | 11,100 | 91,900 |
| Revisions of previous reserves estimates | (18,300) | (2,700) | (21,000) |
| Net change in taxation | (23,000) | 1,400 | (21,600) |
| Future development costs | (2,100) | (800) | (2,900) |
| Net change in purchase and sales of reserves-in-place | (4,300) | (34,800) | (39,100) |
| Addition of 10% annual discount | 6,700 | 3,800 | 10,500 |
| **Total change in the standardized measure during the year[i]** | **24,100** | **(23,900)** | **200** |

a The marker prices used were Brent $101.24/bbl, Henry Hub $6.19/mmBtu.
b Production costs, which include production taxes, and development costs relating to future production of proved reserves are based on the continuation of existing economic conditions. Future decommissioning costs are included.
c Taxation is computed with reference to appropriate year-end statutory corporate income tax rates.
d Future net cash flows from oil and natural gas production are discounted at 10% regardless of the group assessment of the risk associated with its producing activities.
e Non-controlling interests in BP Trinidad and Tobago LLC amounted to $1,216 million.
f The standardized measure of discounted future net cash flows of equity-accounted entities includes standardized measure of discounted future net cash flows of equity-accounted investments of those entities.
g No reserves are reported for Russia following bp's announcement that it will exit the country. The impact of this change is primarily included within sales of reserves-in-place. See Note 1 - Significant judgements and estimates: investment in Rosneft.
h Includes future net cash flows for assets held for sale at 31 December 2022.
i Total change in the standardized measure during the year includes the effect of exchange rate movements.

## Standardized measure of discounted future net cash flows and changes therein relating to proved oil and gas reserves – continued

| | | | | | | | | | | $ million |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 2021 |
| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia | | |
| At 31 December | | | | | | | | | | |
| **Subsidiaries** | | | | | | | | | | |
| Future cash inflows[a] | 25,600 | — | 108,600 | 8,400 | 10,300 | 17,100 | — | 126,800 | 20,400 | 317,200 |
| Future production cost[b] | 13,400 | — | 33,900 | 3,700 | 4,300 | 4,800 | — | 46,100 | 6,400 | 112,600 |
| Future development cost[b] | 1,100 | — | 12,600 | 1,100 | 1,300 | 1,100 | — | 12,400 | 2,100 | 31,700 |
| Future taxation[c] | 4,300 | — | 10,100 | 500 | 1,400 | 2,900 | — | 44,100 | 4,100 | 67,400 |
| Future net cash flows | 6,800 | — | 52,000 | 3,100 | 3,300 | 8,300 | — | 24,200 | 7,800 | 105,500 |
| 10% annual discount[d] | 2,100 | — | 21,600 | 1,700 | 600 | 1,400 | — | 8,300 | 2,900 | 38,600 |
| Standardized measure of discounted future net cash flows[e] | 4,700 | — | 30,400 | 1,400 | 2,700 | 6,900 | — | 15,900 | 4,900 | 66,900 |
| **Equity-accounted entities (bp share)[f]** | | | | | | | | | | |
| Future cash inflows[a] | — | 10,500 | — | — | 40,100 | — | 370,000 | — | — | 420,600 |
| Future production cost[b] | — | 3,400 | — | — | 16,600 | — | 254,000 | — | — | 274,000 |
| Future development cost[b] | — | 400 | — | — | 3,900 | — | 24,300 | — | — | 28,600 |
| Future taxation[c] | — | 5,100 | — | — | 6,100 | — | 15,600 | — | — | 26,800 |
| Future net cash flows | — | 1,600 | — | — | 13,500 | — | 76,100 | — | — | 91,200 |
| 10% annual discount[d] | — | 400 | — | — | 7,800 | — | 45,200 | — | — | 53,400 |
| Standardized measure of discounted future net cash flows[g h] | — | 1,200 | — | — | 5,700 | — | 30,900 | — | — | 37,800 |
| **Total subsidiaries and equity-accounted entities** | | | | | | | | | | |
| Standardized measure of discounted future net cash flows[i] | 4,700 | 1,200 | 30,400 | 1,400 | 8,400 | 6,900 | 30,900 | 15,900 | 4,900 | 104,700 |

The following are the principal sources of change in the standardized measure of discounted future net cash flows:

| | | | $ million |
|---|---|---|---|
| | Subsidiaries | Equity-accounted entities (bp share) | Total subsidiaries and equity-accounted entities |
| Sales and transfers of oil and gas produced, net of production costs | (12,200) | (7,700) | (19,900) |
| Development costs for the current year as estimated in previous year | 5,800 | 3,600 | 9,400 |
| Extensions, discoveries and improved recovery, less related costs | 1,700 | 2,400 | 4,100 |
| Net changes in prices and production cost | 71,900 | 29,700 | 101,600 |
| Revisions of previous reserves estimates | (8,800) | 1,000 | (7,800) |
| Net change in taxation | (17,900) | (7,200) | (25,100) |
| Future development costs | (3,200) | (5,300) | (8,500) |
| Net change in purchase and sales of reserves-in-place | (3,100) | (600) | (3,700) |
| Addition of 10% annual discount | 3,000 | 2,000 | 5,000 |
| **Total change in the standardized measure during the year[j]** | 37,200 | 17,900 | 55,100 |

a The marker prices used were Brent $69.23/bbl, Henry Hub $3.61/mmBtu.
b Production costs, which include production taxes, and development costs relating to future production of proved reserves are based on the continuation of existing economic conditions. Future decommissioning costs are included.
c Taxation is computed with reference to appropriate year-end statutory corporate income tax rates.
d Future net cash flows from oil and natural gas production are discounted at 10% regardless of the group assessment of the risk associated with its producing activities.
e Non-controlling interests in BP Trinidad and Tobago LLC amounted to $820 million.
f The standardized measure of discounted future net cash flows of equity-accounted entities includes standardized measure of discounted future net cash flows of equity-accounted investments of those entities.
g Non-controlling interests in Rosneft amounted to $2,422 million in Russia.
h No equity-accounted future cash flows in Africa because proved reserves are received as a result of contractual arrangements, with no associated costs.
i Includes future net cash flows for assets held for sale at 31 December 2021.
j Total change in the standardized measure during the year includes the effect of exchange rate movements. Exchange rate effects arising from the translation of our share of Rosneft changes to US dollars are included within 'Net changes in prices and production cost'.

## Standardized measure of discounted future net cash flows and changes therein relating to proved oil and gas reserves – continued

| | | | | | | | | | | $ million |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 2020 |
| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia | | |
| At 31 December | | | | | | | | | | |
| **Subsidiaries** | | | | | | | | | | |
| Future cash inflows[a] | 13,900 | — | 64,400 | 4,100 | 6,700 | 12,600 | — | 93,500 | 15,900 | 211,100 |
| Future production cost[b] | 10,000 | — | 28,200 | 3,400 | 3,600 | 4,200 | — | 45,300 | 5,400 | 100,100 |
| Future development cost[b] | 800 | — | 12,700 | 1,200 | 1,700 | 1,100 | — | 13,300 | 1,900 | 32,700 |
| Future taxation[c] | 1,200 | — | 1,100 | — | 500 | 1,800 | — | 26,100 | 2,600 | 33,300 |
| Future net cash flows | 1,900 | — | 22,400 | (500) | 900 | 5,500 | — | 8,800 | 6,000 | 45,000 |
| 10% annual discount[d] | 500 | — | 9,200 | (200) | 200 | 1,100 | — | 2,000 | 2,500 | 15,300 |
| Standardized measure of discounted future net cash flows[e f] | 1,400 | — | 13,200 | (300) | 700 | 4,400 | — | 6,800 | 3,500 | 29,700 |
| **Equity-accounted entities (bp share)[g]** | | | | | | | | | | |
| Future cash inflows[a] | — | 6,300 | — | — | 25,100 | — | 214,800 | — | — | 246,200 |
| Future production cost[b] | | 3,100 | | | 13,000 | | 145,700 | | | 161,800 |
| Future development cost[b] | | 500 | | | 3,300 | | 20,800 | | | 24,600 |
| Future taxation[c] | — | 2,200 | — | — | 1,700 | — | 8,000 | — | — | 11,900 |
| Future net cash flows | — | 500 | — | — | 7,100 | — | 40,300 | — | — | 47,900 |
| 10% annual discount[d] | | 100 | | | 4,400 | | 23,500 | | | 28,000 |
| Standardized measure of discounted future net cash flows[h i] | — | 400 | — | — | 2,700 | — | 16,800 | — | — | 19,900 |
| **Total subsidiaries and equity-accounted entities** | | | | | | | | | | |
| Standardized measure of discounted future net cash flows[j] | 1,400 | 400 | 13,200 | (300) | 3,400 | 4,400 | 16,800 | 6,800 | 3,500 | 49,600 |

The following are the principal sources of change in the standardized measure of discounted future net cash flows:

| | | | $ million |
|---|---|---|---|
| | Subsidiaries | Equity-accounted entities (bp share) | Total subsidiaries and equity-accounted entities |
| Sales and transfers of oil and gas produced, net of production costs | (21,200) | (6,000) | (27,200) |
| Development costs for the current year as estimated in previous year | 8,700 | 4,100 | 12,800 |
| Extensions, discoveries and improved recovery, less related costs | 1,100 | 1,400 | 2,500 |
| Net changes in prices and production cost | (51,600) | (19,200) | (70,800) |
| Revisions of previous reserves estimates | 6,900 | 400 | 7,300 |
| Net change in taxation | 22,900 | 4,600 | 27,500 |
| Future development costs | 100 | (2,700) | (2,600) |
| Net change in purchase and sales of reserves-in-place | (6,200) | | (6,200) |
| Addition of 10% annual discount | 6,300 | 3,400 | 9,700 |
| **Total change in the standardized measure during the year[k]** | (33,000) | (14,000) | (47,000) |

a The marker prices used were Brent $41.31/bbl, Henry Hub $1.94/mmBtu.
b Production costs, which include production taxes, and development costs relating to future production of proved reserves are based on the continuation of existing economic conditions. Future decommissioning costs are included.
c Taxation is computed with reference to appropriate year-end statutory corporate income tax rates.
d Future net cash flows from oil and natural gas production are discounted at 10% regardless of the group assessment of the risk associated with its producing activities.
e In certain situations, revenues and costs are included in the standardized measure of discounted future net cash flows valuation and excluded from the determination of proved reserves and vice versa. This can result in the standardized measure of discounted future net cash flows being negative.
f Non-controlling interests in BP Trinidad and Tobago LLC amounted to $200 million.
g The standardized measure of discounted future net cash flows of equity-accounted entities includes standardized measure of discounted future net cash flows of equity-accounted investments of those entities.
h Non-controlling interests in Rosneft amounted to $1,600 million in Russia.
i No equity-accounted future cash flows in Africa because proved reserves are received as a result of contractual arrangements, with no associated costs.
j Includes future net cash flows for assets held for sale at 31 December 2020.
k Total change in the standardized measure during the year includes the effect of exchange rate movements. Exchange rate effects arising from the translation of our share of Rosneft changes to US dollars are included within 'Net changes in prices and production cost'.

## Operational and statistical information

The following tables present operational and statistical information related to production, drilling, productive wells and acreage. Figures include amounts attributable to assets held for sale.

### Crude oil and natural gas production

The following table shows crude oil, natural gas liquids and natural gas production for the years ended 31 December 2022, 2021 and 2020.

Production for the year[a b]

| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | UK | Rest of Europe | US | Rest of North America | | | Russia[c] | Rest of Asia | | |
| Subsidiaries[d] | | | | | | | | | | |
| Crude oil[e] | | | | | | | | | | thousand barrels per day |
| **2022** | **80** | **—** | **296** | **15** | **5** | **83** | **—** | **307** | **12** | **797** |
| 2021 | 82 | — | 308 | 25 | 5 | 110 | — | 318 | 13 | 860 |
| 2020 | 96 | — | 345 | 22 | 7 | 123 | — | 375 | 15 | 983 |
| Natural gas liquids | | | | | | | | | | thousand barrels per day |
| **2022** | **5** | **—** | **76** | **—** | **4** | **6** | **—** | **—** | **2** | **93** |
| 2021 | 5 | — | 70 | — | 4 | 7 | — | — | 2 | 88 |
| 2020 | 5 | — | 79 | — | 7 | 8 | — | — | 2 | 101 |
| Natural gas[f] | | | | | | | | | | million cubic feet per day |
| **2022** | **271** | **—** | **1,291** | **—** | **1,276** | **1,353** | **—** | **1,485** | **752** | **6,428** |
| 2021 | 236 | — | 1,197 | 2 | 1,260 | 1,332 | — | 1,279 | 760 | 6,067 |
| 2020 | 221 | — | 1,561 | 2 | 1,695 | 923 | — | 966 | 795 | 6,163 |
| Equity-accounted entities (bp share) | | | | | | | | | | |
| Crude oil[e] | | | | | | | | | | thousand barrels per day |
| **2022** | **—** | **47** | **—** | **—** | **59** | **33** | **150** | **25** | **—** | **314** |
| 2021 | — | 48 | — | — | 55 | 1 | 887 | — | — | 991 |
| 2020 | — | 50 | — | — | 54 | 1 | 903 | — | — | 1,009 |
| Natural gas liquids | | | | | | | | | | thousand barrels per day |
| **2022** | **—** | **2** | **—** | **—** | **1** | **5** | **—** | **—** | **—** | **9** |
| 2021 | — | 3 | — | — | 1 | 6 | 3 | — | — | 12 |
| 2020 | — | 3 | — | — | 1 | 7 | 3 | — | — | 14 |
| Natural gas[f] | | | | | | | | | | million cubic feet per day |
| **2022** | **—** | **66** | **—** | **—** | **296** | **64** | **248** | **—** | **—** | **674** |
| 2021 | | 66 | | | 284 | 77 | 1,423 | | | 1,849 |
| 2020 | — | 61 | — | — | 286 | 92 | 1,327 | — | — | 1,765 |

a Production excludes royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
b Because of rounding, some totals may not exactly agree with the sum of their component parts.
c Amounts reported for Russia include bp's share of Rosneft worldwide activities, including insignificant amounts outside Russia.
d All of the oil and liquid production from Canada is bitumen.
e Crude oil includes condensate.
f Natural gas production excludes gas consumed in operations.

## Operational and statistical information – continued

### Productive oil and gas wells and acreage

The following tables show the number of gross and net productive oil and natural gas wells and total gross and net developed and undeveloped oil and natural gas acreage in which the group and its equity-accounted entities had interests as at 31 December 2022. A 'gross' well or acre is one in which a whole or fractional working interest is owned, while the number of 'net' wells or acres is the sum of the whole or fractional working interests in gross wells or acres. Productive wells are producing wells and wells capable of production. Developed acreage is the acreage within the boundary of a field, on which development wells have been drilled, which could produce the reserves; while undeveloped acres are those on which wells have not been drilled or completed to a point that would permit the production of commercial quantities, whether or not such acres contain proved reserves.

| | | Europe | | North America | | South America | Africa | Asia | Australasia | Total[a] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | UK | Rest of Europe | US | Rest of North America | | | | | |
| **Number of productive wells at 31 December 2022** | | | | | | | | | | |
| Oil wells[b] | – gross | 108 | 122 | 1,248 | 7 | 5,231 | 839 | 2,580 | – | 10,135 |
| | – net | 60 | 19 | 702 | 2 | 2,579 | 77 | 566 | – | 4,005 |
| Gas wells[c] | – gross | 35 | 9 | 4,559 | – | 1,163 | 206 | 153 | 89 | 6,214 |
| | – net | 6 | 1 | 2,507 | – | 417 | 88 | 58 | 18 | 3,096 |
| **Oil and natural gas acreage at 31 December 2022** | | | | | | | | | | thousands of acres |
| Developed | – gross | 69 | 98 | 1,811 | 8 | 1,298 | 1,374 | 1,315 | 840 | 6,813 |
| | – net | 40 | 16 | 1,039 | 1 | 367 | 389 | 271 | 148 | 2,270 |
| Undeveloped[d] | – gross | 666 | 172 | 3,876 | 9,339 | 12,302 | 22,107 | 5,925 | 10,260 | 64,647 |
| | – net | 492 | 27 | 3,260 | 5,971 | 5,595 | 9,189 | 1,863 | 7,121 | 33,518 |

[a] Because of rounding, some totals may not exactly agree with the sum of their component parts.
[b] Includes approximately 159 gross (28 net) multiple completion wells (more than one formation producing into the same well bore).
[c] Includes approximately 125 gross (93 net) multiple completion wells. If one of the multiple completions in a well is an oil completion, the well is classified as an oil well.
[d] Undeveloped acreage includes leases and concessions.

### Net oil and gas wells completed or abandoned

The following table shows the number of net productive and dry exploratory and development oil and natural gas wells completed or abandoned in the years indicated by the group and its equity-accounted entities. Productive wells include wells in which hydrocarbons were encountered and the drilling or completion of which, in the case of exploratory wells, has been suspended pending further drilling or evaluation. A dry well is one found to be incapable of producing hydrocarbons in sufficient quantities to justify completion.

| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total[a] |
|---|---|---|---|---|---|---|---|---|---|---|
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia | | |
| **2022** | | | | | | | | | | |
| **Exploratory** | | | | | | | | | | |
| Productive | – | – | 0.5 | 1.0 | 1.0 | 0.6 | – | 0.5 | 0.3 | 4.0 |
| Dry | – | – | – | 1.2 | 0.3 | 0.1 | – | 0.8 | – | 2.3 |
| **Development** | | | | | | | | | | |
| Productive | 0.9 | 1.5 | 137.2 | 0.3 | 71.4 | 2.8 | – | 39.0 | 1.4 | 254.5 |
| Dry | – | – | 1.1 | – | 0.5 | 0.1 | – | 1.1 | – | 2.8 |
| 2021 | | | | | | | | | | |
| Exploratory | | | | | | | | | | |
| Productive | – | – | 0.2 | – | 1.1 | 1.4 | 16.3 | 1.2 | – | 20.2 |
| Dry | – | – | 0.6 | – | – | 1.4 | – | 0.3 | 0.4 | 2.7 |
| Development | | | | | | | | | | |
| Productive | 2.4 | 0.6 | 107.2 | 0.8 | 69.4 | 2.5 | 285.2 | 27.3 | 1.3 | 496.6 |
| Dry | – | 0.1 | 7.3 | – | 0.7 | – | – | 0.1 | – | 8.2 |
| 2020 | | | | | | | | | | |
| Exploratory | | | | | | | | | | |
| Productive | – | – | 1.1 | 0.8 | – | 0.6 | 14.3 | 0.4 | – | 17.2 |
| Dry | – | – | 1.8 | – | – | – | – | 0.2 | – | 2.0 |
| Development | | | | | | | | | | |
| Productive | 5.3 | 3.1 | 114.6 | 0.4 | 61.7 | 4.4 | 199.1 | 40.3 | 2.0 | 430.9 |
| Dry | – | – | 3.0 | – | 1.0 | – | – | 0.6 | – | 4.6 |

[a] Because of rounding, some totals may not exactly agree with the sum of their component parts.

## Operational and statistical information – continued

### Drilling and production activities in progress

The following table shows the number of exploratory and development oil and natural gas wells in the process of being drilled by the group and its equity-accounted entities as of 31 December 2022. Suspended development wells and long-term suspended exploratory wells are also included in the table.

| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total[a] |
|---|---|---|---|---|---|---|---|---|---|---|
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia | | |
| **At 31 December 2022** | | | | | | | | | | |
| **Exploratory** | | | | | | | | | | |
| Gross | – | – | 4.0 | – | – | – | – | 6.0 | – | 10.0 |
| Net | – | – | 2.8 | – | – | – | – | 0.6 | – | 3.4 |
| **Development** | | | | | | | | | | |
| Gross | 3.0 | 2.6 | 185.0 | – | 22.0 | 15.0 | – | 122.0 | 11.0 | 360.6 |
| Net | 1.5 | 0.4 | 91.0 | – | 5.4 | 4.6 | – | 28.1 | 4.4 | 135.4 |

[a] Because of rounding, some totals may not exactly agree with the sum of their component parts.

# Parent company financial statements of BP p.l.c.
## Company income statement

| For the year ended 31 December | | | $ million |
|---|---|---|---|
| | Note | 2022 | 2021 |
| Dividend income | | **29,005** | 851 |
| Interest and other income | | **2,115** | 405 |
| **Total income** | | **31,120** | 1,256 |
| Administrative and other expenses | | **(563)** | 7 |
| Net impairment of fixed asset investments | 2 | **3,433** | (1,109) |
| **Profit (loss) before interest and taxation** | | **33,990** | 154 |
| Interest payable to subsidiaries | | **(3,567)** | (531) |
| Net finance income (expense) relating to pensions | 4 | **165** | 126 |
| **Profit (loss) before taxation** | | **30,588** | (251) |
| Taxation | 6 | **(48)** | (142) |
| **Profit (loss) for the year** | | **30,540** | (393) |

## Company statement of comprehensive income

| For the year ended 31 December | | | $ million |
|---|---|---|---|
| | Note | 2022 | 2021 |
| Profit (loss) for the year | | **30,540** | (393) |
| Other comprehensive income | | | |
| **Items that may be reclassified subsequently to profit or loss** | | | |
| Currency translation differences | | **(1,037)** | (111) |
| | | **(1,037)** | (111) |
| **Items that will not be reclassified to profit or loss** | | | |
| Remeasurements of the net pension liability or asset | 4 | **(1,530)** | 2,410 |
| Income tax relating to items that will not be reclassified | 6 | **931** | (802) |
| | | **(599)** | 1,608 |
| Other comprehensive income | | **(1,636)** | 1,497 |
| **Total comprehensive income** | | **28,904** | 1,104 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## Company balance sheet

| At 31 December | | | $ million |
|---|---|---|---|
| | Note | 2022 | 2021 |
| **Non-current assets** | | | |
| Investments | 2 | **165,483** | 159,662 |
| Receivables | 3 | **772** | 3,234 |
| Defined benefit pension plan surpluses | 4 | **7,716** | 10,281 |
| | | **173,971** | 173,177 |
| **Current assets** | | | |
| Receivables | 3 | **10,646** | 320 |
| Cash and cash equivalents | | **85** | 27 |
| | | **10,731** | 347 |
| **Total assets** | | **184,702** | 173,524 |
| **Current liabilities** | | | |
| Payables | 5 | **5,864** | 9,176 |
| **Net current assets** | | **4,867** | (8,829) |
| **Total assets less current liabilities** | | **178,838** | 164,348 |
| **Non-current liabilities** | | | |
| Payables | 5 | **53,489** | 53,658 |
| Deferred tax liabilities | 6 | **2,692** | 3,575 |
| Defined benefit pension plan deficits | 4 | **128** | 237 |
| | | **56,309** | 57,470 |
| **Total liabilities** | | **62,173** | 66,646 |
| **Net assets** | | **122,529** | 106,878 |
| **Capital and reserves**[a] | | | |
| Profit and loss account | | | |
| Brought forward | | **73,324** | 79,721 |
| Profit (loss) for the year | | **30,540** | (393) |
| Other movements | | **(15,323)** | (6,004) |
| | | **88,541** | 73,324 |
| Called-up share capital | 7 | **4,795** | 5,215 |
| Share premium account | | **13,692** | 12,745 |
| Other capital and reserves | | **15,501** | 15,594 |
| | | **122,529** | 106,878 |

[a] See Statement of changes in equity on page 293 for further information.

The financial statements on pages 291-349 were approved and signed by the chief executive officer on 10 March 2023 having been duly authorized to do so by the board of directors:

[redacted]

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## Company statement of changes in equity[a]

$ million

| | Share capital | Share premium account | Capital redemption reserve | Merger reserve | Treasury shares | Foreign currency translation reserve | Profit and loss account | Total equity |
|---|---|---|---|---|---|---|---|---|
| **At 1 January 2022** | **5,215** | **12,745** | **1,705** | **26,509** | **(12,623)** | **3** | **73,324** | **106,878** |
| Profit (loss) for the year | **–** | **–** | **–** | **–** | **–** | **–** | **30,540** | **30,540** |
| Other comprehensive income | **–** | **–** | **–** | **–** | **–** | **(1,037)** | **(599)** | **(1,636)** |
| Total comprehensive income | **–** | **–** | **–** | **–** | **–** | **(1,037)** | **29,941** | **28,904** |
| Dividends | **–** | **–** | **–** | **–** | **–** | **–** | **(4,365)** | **(4,365)** |
| Repurchases of ordinary share capital[a] | **(475)** | **–** | **475** | **–** | **–** | **–** | **(10,493)** | **(10,493)** |
| Share-based payments, net of tax | **14** | **168** | **–** | **–** | **469** | **–** | **134** | **785** |
| New issue of ordinary share capital | **41** | **779** | **–** | **–** | **–** | **–** | **–** | **820** |
| **At 31 December 2022** | **4,795** | **13,692** | **2,180** | **26,509** | **(12,154)** | **(1,034)** | **88,541** | **122,529** |
| | | | | | | | | |
| **At 1 January 2021** | 5,383 | 12,584 | 1,528 | 26,509 | (13,224) | 114 | 79,721 | 112,615 |
| Profit (loss) for the year | – | – | – | – | – | – | (393) | (393) |
| Other comprehensive income | – | – | – | – | – | (111) | 1,608 | 1,497 |
| Total comprehensive income | – | – | – | – | – | (111) | 1,215 | 1,104 |
| Dividends | – | – | – | – | – | – | (4,316) | (4,316) |
| Repurchases of ordinary share capital | (177) | – | 177 | – | – | – | (3,151) | (3,151) |
| Share-based payments, net of tax | 9 | 161 | – | – | 601 | – | (145) | 626 |
| **At 31 December 2021** | 5,215 | 12,745 | 1,705 | 26,509 | (12,623) | 3 | 73,324 | 106,878 |

a See Note 7 for further information

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## Notes on financial statements

### 1. Significant accounting policies, judgements, estimates and assumptions

#### Authorization of financial statements and statement of compliance with Financial Reporting Standard 101 'Reduced Disclosure Framework' (FRS 101)

The financial statements of BP p.l.c. for the year ended 31 December 2022 were approved and signed by the chief executive officer on 10 March 2023 having been duly authorized to do so by the board of directors. The company meets the definition of a qualifying entity under Financial Reporting Standard 100 'Application of Financial Reporting Requirements' (FRS 100) issued by the Financial Reporting Council. Accordingly, these financial statements have been prepared in accordance with FRS 101 and in accordance with the provisions of the UK Companies Act 2006.

#### Basis of preparation

The financial statements have been prepared on a going concern basis and in accordance with the Companies Act 2006 and applicable UK accounting standards.

The financial statements have been prepared under the historical cost convention. Historical cost is generally based on the fair value of the consideration given in exchange for the assets.

As permitted by FRS 101, the company has taken advantage of the disclosure exemptions available in relation to:

(a) the requirements of paragraphs 10(d), 10(f), 16, 38A, 38B, 38C, 38D, 40A, 40B, 40C, 40D, 111 and 134 to 136 of IAS 1 'Presentation of Financial Statements';

(b) the requirements in paragraph 38 of IAS 1 'Presentation of Financial Statements' to present comparative information in respect of paragraph 79(a)(iv) of IAS 1.

(c) the requirements of IAS 7 'Statement of Cash Flows';

(d) the requirements of paragraphs 30 and 31 of IAS 8 'Accounting Policies, Changes in Accounting Estimates and Errors' in relation to standards not yet effective;

(e) the requirements of paragraphs 17 and 18A of IAS 24 'Related Party Disclosures';

(f) the requirements of IAS 24 'Related Party Disclosures' to disclose related party transactions entered into between two or more members of a group, provided that any subsidiary which is a party to the transaction is wholly owned by such a member;

(g) the requirements of paragraphs 130(f)(ii), 130(f)(iii), 134(d) to 134(f) and 135(c)-135(e) of IAS 36, Impairment of Assets;

(h) the requirements of paragraphs 45(b) and 46 to 52 of IFRS 2 'Share-based Payment';

(i) the requirements of IFRS 7 'Financial Instruments: Disclosures'; and

(j) the requirement of the second sentence of paragraph 110 and paragraphs 113(a), 114,115, 118, 119(a) to (c), 120 to 127 and 129 of IFRS 15 'Revenue from Contracts with Customers'.

Where required, equivalent disclosures are given in the consolidated financial statements of BP p.l.c.

The financial statements are presented in US dollars and all values are rounded to the nearest million dollars ($ million), except where otherwise indicated.

#### Significant accounting policies: use of judgements, estimates and assumptions

Inherent in the application of many of the accounting policies used in preparing the financial statements is the need for bp management to make judgements, estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities, and the reported amounts of revenues and expenses. Actual outcomes could differ from the estimates and assumptions used. The accounting judgements and estimates that have a significant impact on the results of the group are set out in boxed text below, and should be read in conjunction with the information provided in the Notes on financial statements.

The areas requiring the most significant judgement and estimation in the preparation of the financial statements are the recoverability of investment carrying values and pensions. Judgements and estimates, not all of which are significant, made in assessing the impact of the current economic and geopolitical environment, and climate change and the transition to a lower carbon economy on the financial statements are also set out in boxed text below. Where an estimate has a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities within the next financial year this is specifically noted within the boxed text.

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

### Judgements and estimates made in assessing the impact of climate change and the transition to a lower carbon economy

Climate change and the transition to a lower carbon economy were considered in preparing the financial statements. These may have significant impacts on the currently reported amounts of the company's assets and liabilities discussed below .

#### Impairment of investments

The recoverable amounts of the company's investments in subsidiaries are closely linked to the carrying value of property, plant and equipment and goodwill in the individual subsidiaries. The energy transition is likely to impact the future prices of commodities such as oil and natural gas which in turn may affect the recoverable amount of property, plant and equipment and goodwill in the oil and gas industry. Management's best estimate of oil and natural gas price assumptions for value-in-use impairment testing for all subsidiaries were revised during 2022. Prices disclosed are in real 2021 terms. The Brent oil assumption from 2024 up to 2030 was increased to $70 per barrel to reflect near-term supply constraints before steadily declining to $45 per barrel by 2050 continuing to reflect the assumption that as the energy system decarbonizes, falling oil demand will cause oil prices to decline. The price assumptions for Henry Hub gas up to 2035 and up to 2050 were increased to $4.00 per mmBtu and $3.50 per mmBtu respectively, reflecting increased demand for US gas production to offset reduced Russian gas flows. The revised assumptions sit within the range of external scenarios considered by management and are in line with a range of transition paths consistent with the temperature goal of the Paris climate change agreement, of holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels.

### Judgements and estimates made in assessing the impact of the geopolitical and economic environment

In preparing the financial statements, the following areas involving judgement and estimates were identified as most relevant with regards to the impact of the current geopolitical and economic environment.

#### Going concern

Liquidity and financing is managed within bp under pooled group-wide arrangements which include the company. As part of assuring the going concern basis of preparation for the company, the ability and intent of the bp group to support the company has been taken into consideration. The most recent bp group financial statements (see pages 151 to 262) continue to be prepared on a going concern basis. Forecast liquidity has been assessed under a number of stressed scenarios, including a significant decline in oil prices over the 12-month period. Reverse stress tests performed indicated that the group will continue to operate as a going concern for at least 12 months from the date of approval of the consolidated financial statements even if the Brent price fell to zero. In addition, group management of bp have confirmed that the existing intra-group funding and liquidity arrangements as currently constituted are expected to continue for the foreseeable future, being no less than twelve months from the approval of these financial statements. No material uncertainties over going concern or significant judgements or estimates in the assessment were identified. Accordingly, the company will be able to draw on support from the bp group for the foreseeable future and these financial statements have therefore been prepared on the going concern basis.

#### Pensions

The volatility in the financial markets during 2022 impacted the assumptions used for determining the fair value of plan assets and the present value of defined benefit obligations in the company's defined benefit pension plans. See significant estimate: pensions and Note 4 for further information.

**Investments**

Investments in subsidiaries are recorded at cost. The company assesses investments for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. If any such indication of impairment exists, the company makes an estimate of its recoverable amount. Where the carrying amount of an investment exceeds its recoverable amount, the investment is considered impaired and is written down to its recoverable amount. Where these circumstances have reversed, the impairment previously made is reversed to the extent of the original cost of the investment.

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

### Significant judgements and estimates: recoverability of asset carrying values

Determination as to whether, and by how much, an investment holding company chain (defined as each direct subsidiary and its own investments), is impaired involves management estimates on highly uncertain matters such as the effects of inflation and deflation on operating expenses, discount rates, capital expenditure, carbon pricing (where applicable), production profiles, reserves and resources, and future commodity prices, including the outlook for global or regional market supply-and-demand conditions for crude oil, natural gas and refined products. Determination as to whether, and by how much, an asset or CGU is impaired involves similar estimates.

The recoverable amount of an asset is the higher of its value in use and its fair value less costs of disposal. Fair value less costs of disposal may be determined based on expected sales proceeds or similar recent market transaction data. Details of impairment charges recognized in the profit and loss account and the carrying amounts of investments are shown in Note 2. The estimates for assumptions made in impairment tests in 2022 relating to discount rates and oil and gas properties are discussed below. It is impracticable to reliably determine the extent of any impacts of changes in the assumptions used to determine the recoverable amounts of the company's investments given the diverse characteristics of the underlying assets and the interdependency of the various inputs. Changes in the economic environment including as a result of the energy transition or other facts and circumstances may necessitate revisions to these assumptions and could result in a material change to the carrying values of the group's assets within the next financial year.

#### Discount rates

For discounted cash flow calculations, future cash flows are adjusted for risks specific to the CGU. Value-in-use calculations are typically discounted using a pre-tax discount rate based upon the cost of funding the group derived from an established model, adjusted to a pre-tax basis and incorporating a market participant capital structure and country risk premiums. Fair value less costs of disposal discounted cash flow calculations use a post-tax discount rate. The discount rates applied in impairment tests are reassessed each year and in 2022 the pre-tax discount rate typically ranged from 7% to 18% (2021 7% to 15%) depending on the risk premium and applicable tax rate in the geographic location of the CGU.

#### Oil and natural gas properties

For upstream oil and natural gas properties in subsidiaries, expected future cash flows are estimated using management's best estimate of future oil and natural gas prices, and production and reserves and certain resources volumes. The estimated future level of production in all impairment tests is based on assumptions about future commodity prices, production and development costs, field decline rates, current fiscal regimes and other factors. A change in the discount rate, reserves, resources or the oil and gas price assumptions in the next financial year may result in a recoverable amount of one or more of these assets above or below the current carrying amount and therefore there is a risk of impairment reversals or charges in that period. Management consider that reasonably possible changes in the discount rate or forecast revenue, arising from a change in oil and natural gas prices and/or production could result in a material change in their carrying amounts within the next financial year.

#### Oil and natural gas prices

The price assumptions used for value in use impairment testing are based on those used for investment appraisal. bp's carbon emissions cost assumptions and their interrelationship with oil and gas prices are described in 'Judgements and estimates made in assessing the impact of climate change and the transition to a lower carbon economy' on page 185. The investment appraisal price assumptions are recommended by the senior vice president economic & energy insights after considering a range of external price sets and supply and demand profiles associated with various energy transition scenarios. They are reviewed and approved by management. As a result of the current uncertainty over the pace of transition to lower-carbon supply and demand and the social, political and environmental actions that will be taken to meet the goals of the Paris climate change agreement, the scenarios considered include those where those goals are met as well as those where they are not met.

During the year, bp's price assumptions applied in value-in-use impairment testing (in real 2021 terms) for Brent oil assumption from 2024 up to 2030 was increased to $70 per barrel to reflect near term supply constraints before steadily declining to $45 per barrel by 2050 continuing to reflect the assumption that as the energy system decarbonises, falling oil demand will cause oil prices to decline. The price assumptions for Henry Hub gas up to 2035 and up to 2050 were increased to $4 per mmBtu and $3.50 per mmBtu respectively to reflect the increased demand for US gas production to offset reduced Russian gas flows. These price assumptions are derived from the central case investment appraisal assumptions, adjusted where applicable to reflect short-term market conditions (see page 28). A summary of the group's revised price assumptions for Brent oil and Henry Hub gas, applied in 2022 and 2021, in real 2021 terms, is provided below. The assumptions represent management's best estimate of future prices at the balance sheet date, which sit within the range of external scenarios considered as appropriate for the purpose. They are considered by bp to be in line with a range of transition paths consistent with the temperature goal of the Paris climate change agreement, of holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels. However, they do not correspond to any specific Paris-consistent scenario. An inflation rate of 2% (2021 2%) is applied to determine the price assumptions in nominal terms.

| 2022 price assumptions | 2023 | 2025 | 2030 | 2040 | 2050 |
|---|---|---|---|---|---|
| Brent oil ($/bbl) | 77 | 70 | 70 | 58 | 45 |
| Henry Hub gas ($/mmBtu) | 4.00 | 4.00 | 4.00 | 3.50 | 3.50 |

| 2021 price assumptions | 2022 | 2025 | 2030 | 2040 | 2050 |
|---|---|---|---|---|---|
| Brent oil ($/bbl) | 71 | 61 | 61 | 56 | 46 |
| Henry Hub gas ($/mmBtu) | 4.08 | 3.06 | 3.06 | 3.06 | 2.80 |

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## 1. Significant accounting policies, judgements, estimates and assumptions – continued

The majority of bp's reserves and resources that support the carrying value of the company's subsidiaries holding upstream oil and gas properties are expected to be produced over the next 10 years.

### Oil and natural gas reserves

In addition to oil and natural gas prices, significant technical and commercial assessments are required to estimate oil and natural gas reserves held by the company's subsidiaries. Reserves estimates are regularly reviewed and updated. Factors such as the availability of geological and engineering data, reservoir performance data, acquisition and divestment activity and drilling of new wells all impact on the determination of estimates of oil and natural gas reserves. bp bases its reserves estimates on the requirement of reasonable certainty with rigorous technical and commercial assessments based on conventional industry practice and regulatory requirements.

Reserves assumptions used for value-in-use tests in the company's subsidiaries reflect the reserves and resources that management currently intend to develop. The recoverable amount of oil and gas properties is determined using a combination of inputs including reserves, resources and production volumes. Risk factors may be applied to reserves and resources which do not meet the criteria to be treated as proved or probable.

### Foreign currency translation

The functional and presentation currency of the financial statements is US dollars. Transactions in foreign currencies are initially recorded in the functional currency by applying the spot exchange rate on the date of the transaction. Monetary assets and liabilities denominated in foreign currencies are retranslated into the functional currency at the spot exchange rate on the balance sheet date. Any resulting exchange differences are included in the income statement. Non-monetary assets and liabilities, other than those measured at fair value, are not retranslated subsequent to initial recognition.

Exchange adjustments arising when the opening net assets and the profits for the year retained by a non-US dollar functional currency branch are translated into US dollars are recognized in a separate component of equity and reported in other comprehensive income. Income statement transactions are translated into US dollars using the average exchange rate for the reporting period.

### Financial guarantees

The company enters into financial guarantee contracts with its subsidiaries. At the inception of a financial guarantee contract, a liability is recognized initially at fair value and then subsequently measured at the higher of the contract's estimated expected credit loss and the amount initially recognized less, where appropriate, cumulative amortization.

### Share-based payments

#### Equity-settled transactions

The cost of equity-settled transactions with employees of the company and other members of the group is measured by reference to the fair value of the equity instruments on the date on which they are granted. The cost relating to employees of the company is recognized as an expense and the cost relating to other members of the group is recognized as a cost of investment in subsidiaries over the vesting period, which ends on the date on which the employees become fully entitled to the award. A corresponding credit is recognized within equity. Fair value is determined by using an appropriate, widely used valuation model. In valuing equity-settled transactions, no account is taken of any vesting conditions, other than conditions linked to the price of the shares of the company (market conditions). Non-vesting conditions, such as the condition that employees contribute to a savings-related plan, are taken into account in the grant-date fair value, and failure to meet a non-vesting condition, where this is within the control of the employee is treated as a cancellation and any remaining unrecognized cost is expensed.

For other equity-settled share-based payment transactions, the goods or services received and the corresponding increase in equity are measured at the fair value of the goods or services received unless their fair value cannot be reliably estimated. If the fair value of the goods and services received cannot be reliably estimated, the transaction is measured by reference to the fair value of the equity instruments granted.

#### Cash-settled transactions

The cost of cash-settled transactions is recognized as an expense over the vesting period, measured by reference to the fair value of the corresponding liability which is recognized on the balance sheet. The liability is remeasured at fair value at each balance sheet date until settlement, with changes in fair value recognized in the income statement.

### Pensions

The defined benefit pension plans are plans that share risks between entities under common control. In each instance BP p.l.c. is the principal employer and carries the whole plan surplus or deficit on its balance sheet. The cost of providing benefits under the group's defined benefit plans is determined separately for each plan using the projected unit credit method, which attributes entitlement to benefits to the current period to determine current service cost and to the current and prior periods to determine the present value of the defined benefit obligation. Past service costs, resulting from either a plan amendment or a curtailment (a reduction in future obligations as a result of a material reduction in the plan membership), are recognized immediately when the company becomes committed to a change.

Net interest expense relating to pensions and other post-retirement benefits, which is recognized in the income statement, represents the net change in present value of plan obligations and the value of plan assets resulting from the passage of time, and is determined by applying the discount rate to the present value of the benefit obligation at the start of the year, and to the fair value of plan assets at the start of the year, taking into account expected changes in the obligation or plan assets during the year.

Remeasurements of the defined benefit liability and asset, comprising actuarial gains and losses, and the return on plan assets (excluding amounts included in net interest described above) are recognized within other comprehensive income in the period in which they occur and are not subsequently reclassified to profit and loss.

The defined benefit pension plan surplus or deficit recognized on the balance sheet for each plan comprises the difference between the present value of the defined benefit obligation (using a discount rate based on high quality corporate bonds) and the fair value of plan assets out of which the obligations are to be settled directly. Fair value is based on market price information and, in the case of quoted securities, is the published bid price. Defined benefit pension plan surpluses are only recognized to the extent they are recoverable, either by way of a refund from the plan or reductions in future contributions to the plan.

Contributions to defined contribution plans are recognized in the income statement in the period in which they become payable.

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 1. Significant accounting policies, judgements, estimates and assumptions – continued

### Significant estimate: pensions

Accounting for defined benefit pensions involves making significant estimates when measuring the company's pension plan surpluses and deficits. These estimates require assumptions to be made about many uncertainties.

Pension assumptions are reviewed by management at the end of each year. These assumptions are used to determine the projected benefit obligation at the year end and hence the surpluses and deficits recorded on the company's balance sheet, and pension expense for the following year. The assumptions used are provided in Note 4.

The assumptions that are the most significant to the amounts reported are the discount rate, inflation rate and mortality levels. Assumptions about these variables are based on the environment in each country. The assumptions used vary from year to year, with resultant effects on future net income and net assets. Changes to some of these assumptions, in particular the discount rate and inflation rate, could result in material changes to the carrying amounts of the company's pension obligations within the next financial year for the UK plan. Any differences between these assumptions and the actual outcome will also affect future net income and net assets.

The values ascribed to these assumptions and a sensitivity analysis of the impact of changes in the assumptions on the benefit expense and obligation used are provided in Note 4.

### Income taxes

Income tax expense represents the sum of current tax and deferred tax.

Income tax is recognized in the income statement, except to the extent that it relates to items recognized in other comprehensive income or directly in equity, in which case the related tax is recognized in other comprehensive income or directly in equity.

Current tax is based on the taxable profit for the period. Taxable profit differs from net profit as reported in the income statement because it is determined in accordance with the rules established by the applicable taxation authorities. It therefore excludes items of income or expense that are taxable or deductible in other periods as well as items that are never taxable or deductible. The company's liability for current tax is calculated using tax rates and laws that have been enacted or substantively enacted by the balance sheet date.

Deferred tax is provided, using the liability method, on temporary differences at the balance sheet date between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes. Deferred tax liabilities are recognized for taxable temporary differences.

Deferred tax assets are only recognized to the extent that it is probable that they will be realized in the future.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the period when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the balance sheet date. Deferred tax assets and liabilities are not discounted. See Note 6 for further details.

### Financial assets

Financial assets are recognized initially at fair value, normally being the transaction price. In the case of financial assets not at fair value through profit or loss, directly attributable transaction costs are also included. The subsequent measurement of financial assets depends on their classification, as set out below. The company derecognizes financial assets when the contractual rights to the cash flows expire or the rights to receive cash flows have been transferred to a third party along with substantially all of the risks and rewards or control of the asset. This includes the derecognition of receivables for which discounting arrangements are entered into.

#### Financial assets measured at amortized cost

Financial assets are classified as measured at amortized cost when they are held in a business model the objective of which is to collect contractual cash flows and the contractual cash flows represent solely payments of principal and interest. Such assets are carried at amortized cost using the effective interest method if the time value of money is significant. Gains and losses are recognized in profit or loss when the assets are derecognized or impaired and when interest income is recognized using the effective interest method. This category of financial assets includes trade and other receivables.

#### Cash equivalents

Cash equivalents are short-term highly liquid investments that are readily convertible to known amounts of cash, are subject to insignificant risk of changes in value and generally have a maturity of three months or less from the date of acquisition. Cash equivalents are classified as financial assets measured at amortized cost.

### Financial liabilities

All financial liabilities held by the company are classified as financial liabilities measured at amortized cost. Financial liabilities include other payables, accruals, and finance debt. The company determines the classification of its financial liabilities at initial recognition.

#### Financial liabilities measured at amortized cost

All financial liabilities are initially recognized at fair value, net of directly attributable transaction costs. For interest-bearing loans and borrowings this is typically equivalent to the fair value of the proceeds received, net of issue costs associated with the borrowing.

After initial recognition, financial liabilities are subsequently measured at amortized cost using the effective interest method. Amortized cost is calculated by taking into account any issue costs and any discount or premium on settlement. Gains and losses arising on the repurchase, settlement or cancellation of liabilities are recognized in interest and other income and finance costs respectively.

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## 2. Investments

| | | | $ million |
|---|---|---|---|
| | Subsidiaries[a] | Associates | |
| | Shares | Shares | Total |
| **Cost** | | | |
| At 1 January 2022 | **166,760** | **9** | **166,769** |
| Additions | **2,388** | **—** | **2,388** |
| **At 31 December 2022** | **169,148** | **9** | **169,157** |
| **Amounts provided** | | | |
| At 1 January 2022 | **7,107** | **—** | **7,107** |
| Additions | **—** | **—** | **—** |
| Reversals | **(3,433)** | **—** | **(3,433)** |
| **At 31 December 2022** | **3,674** | **—** | **3,674** |
| **Cost** | | | |
| At 1 January 2021 | 166,540 | 2 | 166,542 |
| Additions | 220 | 7 | 227 |
| **At 31 December 2021** | 166,760 | 9 | 166,769 |
| **Amounts provided** | | | |
| At 1 January 2021 | 5,998 | — | 5,998 |
| Additions | 1,109 | — | 1,109 |
| **At 31 December 2021** | 7,107 | — | 7,107 |
| **At 31 December 2022** | **165,474** | **9** | **165,483** |
| At 31 December 2021 | 159,653 | 9 | 159,662 |

At 31 December 2022, the carrying amount of the company's net assets of $122.5 billion (2021 $106.9 billion) exceeded the group's market capitalisation of $105.8 billion (2021 $88.1 billion). As a result, management performed an impairment test of the company's major investments in line with the requirements of IAS 36 Impairment of Assets. Taking into account improvements in performance of the investments and the increase in headroom in impairment tests performed by the company's subsidiaries, which is largely attributable to the upward revision of short-term oil and natural gas prices, management concluded that there were no impairments in terms of a deterioration of value in use or fair value less costs to sell. It was also deemed appropriate based on the analysis to reverse previously recognized impairment provisions in respect of the company's investments in subsidiaries.

On 27 February 2022, bp announced it will exit its shareholding in Rosneft Oil Company (Rosneft) and bp's two nominated Rosneft directors both stepped down from Rosneft's board. While the decision to exit the shareholding in Rosneft and its other businesses with Rosneft within Russia, combined with the market impact on Russian assets that has arisen following the military action in Ukraine has led to an impairment in the group consolidated financial statements (for additional information see page 188), the impairment tests outlined above do not indicate any impairment is required in respect of the BP International Limited holding chain (which owns the investment BP Russian Investments Limited which is the company that holds the investment in Rosneft) in the BP p.l.c. company financial statements.

The more important subsidiaries of the company at 31 December 2022 and the percentage holding of ordinary share capital (to the nearest whole number) are set out below. For a full list of related undertakings see Note 13.

| Subsidiaries | % | Country of incorporation | Principal activities |
|---|---|---|---|
| International | | | |
| BP Global Investments Limited | 100 | England & Wales | Investment holding |
| BP International Limited | 100 | England & Wales | Integrated oil operations |
| Burmah Castrol PLC | 100 | Scotland | Investment holding |
| Canada | | | |
| BP Holdings Canada Limited | 100 | England & Wales | Investment holding |
| US | | | |
| BP Holdings North America Limited | 100 | England & Wales | Investment holding |

The carrying value of the investment in BP International Limited at 31 December 2022 was $76,281 million (2021 $75,633 million).

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## 3. Receivables

| | | | | $ million |
|---|---|---|---|---|
| | | 2022 | | 2021 |
| | Current | Non-current | Current | Non-current |
| Amounts receivable from subsidiaries[a] | 10,641 | 772 | 311 | 3,234 |
| Amounts receivable from associates | 3 | — | 6 | — |
| Other receivables | 2 | — | 3 | — |
| | 10,646 | 772 | 320 | 3,234 |

a The promissory note issued by BP (Abu Dhabi) Limited in 2016 in consideration for the issue of BP p.l.c. ordinary shares to the government of Abu Dhabi and disclosed in 2021 as non-current receivables was paid out to the company in 2022.

The company has current receivables of $10,218 million on Internal Funding Accounts (IFAs) receivable from BP International Limited (2021 $nil), following the receipt of dividends of $29,005 million from various subsidiaries within the group. These balances form a key part of the bp group's liquidity and funding arrangements under its centralised treasury funding model. Whilst IFA credit balances are legally repayable on demand, in practice they have no termination date. IFA debit balances can also be accessed by BP International Limited at short notice.

## 4. Pensions

The pension obligation consists primarily of a funded final salary pension plan in the UK under which retired employees draw the majority of their benefit as an annuity. This pension plan is governed by a corporate trustee whose board is composed of four member-nominated directors, four company-nominated directors, an independent director, and an independent chair nominated by the company. The trustee board is required by law to act in the best interests of the plan participants and is responsible for setting certain policies, such as investment policies of the plan. The plan was closed to new joiners in 2010 and was closed to future accrual on 30 June 2021. Employees in the UK are eligible for membership of a defined contribution plan.

The level of contributions to funded defined benefit plans is the amount needed to provide adequate funds to meet pension obligations as they fall due.

For the primary UK plan there is a funding agreement between the company and the trustee. On a three year cycle a schedule of contributions is agreed covering the next five years. The schedule of contributions is next scheduled to be updated after the 31 December 2023 formal actuarial valuation. No contractually committed funding was due at 31 December 2022. The closure of the defined benefit plan to future accrual eliminated the need for funding in 2022, and reduces the plan's expected future funding volatility.

The surplus relating to the primary UK pension plan is recognized on the balance sheet on the basis that the company is entitled to a refund of any remaining assets once all members have left the plan.

The obligation and cost of providing the pension benefits is assessed annually using the projected unit credit method. The date of the most recent actuarial review was 31 December 2022. The principal plans are subject to a formal actuarial valuation every 3 years in the UK. The most recent formal actuarial valuation of the main pension plan was as at 31 December 2020.

The material financial assumptions used for estimating the benefit obligations of the plans are set out below. The assumptions are reviewed by management at the end of each year and are used to evaluate the accrued benefit obligation at 31 December and pension expense for the following year.

| Financial assumptions used to determine benefit obligation[a] | | % |
|---|---|---|
| | 2022 | 2021 |
| Discount rate for plan liabilities | 5.0 | 1.8 |
| Rate of increase for pensions in payment | 2.9 | 3.2 |
| Rate of increase in deferred pensions | 2.9 | 3.2 |
| Inflation for plan liabilities | 3.1 | 3.3 |

| Financial assumptions used to determine benefit expense | | % |
|---|---|---|
| | 2022 | 2021 |
| Discount rate for plan service cost[b] | N/A | 1.5 |
| Discount rate for plan other finance expense[c] | 1.8 | 1.7 |
| Inflation for plan service cost[b] | N/A | 2.8 |

a Salary growth has not been a material financial assumption for the UK following the closure of the primary pension plan to future accrual in 2021. The rate of increase in salaries for the UK was 3.6% in 2020.

b UK discount rate and inflation rate assumptions are not significant in determining the benefit expense following closure of the primary UK plan to future accrual in 2021. Rates for the remaining small worldwide plan administered and reported through the UK are 2.5% and 2.2% respectively.

c The discount rate for plan other finance expense in 2021 was 1.4% for the primary UK plan for the period before the plan closed to future accrual on 30th June 2021 and 1.9% thereafter.

The discount rate assumption is based on third-party AA corporate bond indices and we use yields that reflect the maturity profile of the expected benefit payments. The inflation rate assumption is based on the difference between the yields on index-linked and fixed-interest long-term government bonds. The inflation assumption is used to determine the rate of increase for pensions in payment and the rate of increase in deferred pensions where there is such an increase.

In addition to the financial assumptions, we regularly review the demographic and mortality assumptions. The mortality assumptions reflect best practice in the UK and have been chosen with regard to the latest available published tables adjusted to reflect the experience of the plans and an extrapolation of past longevity improvements into the future. For the main pension plan the mortality assumptions are as follows:

## 4. Pensions – continued

| Mortality assumptions | | Years |
|---|---|---|
| | **2022** | 2021 |
| Life expectancy at age 60 for a male currently aged 60 | **26.9** | 26.9 |
| Life expectancy at age 60 for a male currently aged 40 | **28.5** | 28.4 |
| Life expectancy at age 60 for a female currently aged 60 | **28.8** | 28.9 |
| Life expectancy at age 60 for a female currently aged 40 | **30.6** | 30.5 |

The assets of the primary plan are held in a trust, the primary objective of which is to accumulate assets sufficient to meet the obligations of the plan. The assets of the trusts are invested in a manner consistent with fiduciary obligations and principles that reflect current practices in portfolio management.

A significant proportion of the assets are held in equities, which are expected to generate a higher level of return over the long term with an acceptable level of risk. In order to provide reasonable assurance that no single security or type of security has an unwarranted impact on the total portfolio, the investment portfolios are highly diversified.

The trustee's long-term investment objective for the primary UK plan as it matures is to invest in assets whose value changes in the same way as the plan liabilities, in order to reduce the level of funding risk. To move towards this objective, the UK plan uses a liability driven investment (LDI) approach for part of the portfolio, investing primarily in government bonds to achieve this matching effect for the most significant plan liability assumptions of interest rate and inflation rate. This is partly funded by short-term sale and repurchase agreements, whereby the plan borrows money using existing bonds as security and which will be bought back at a specified price at an agreed future date. The funds raised are used to invest in further bonds to increase the proportion of assets which match the plan liabilities. The borrowings are shown separately in the analysis of pension plan assets in the table below.

For the primary UK pension plan there is an agreement with the trustee to increase the proportion of assets with liability matching characteristics over time primarily by reducing the proportion of plan assets held as equities and increasing the proportion held as bonds. This agreement is not impacted by the closure of the plan to future accrual. During 2022, the asset allocation policy switched 2% of plan assets from equities to bonds (2021 5%).

The company's asset allocation policy for the primary plan is as follows:

| Asset category | % |
|---|---|
| Total equity (including private equity) | **10** |
| Bonds/cash (including LDI) | **83** |
| Property/real estate | **7** |

The amounts invested under the LDI programme by the primary UK pension plan as at 31 December 2022 were $3,981 million (2021 $7,399 million) of government-issued nominal bonds and $11,945 million (2021 $24,516 million) of index-linked bonds.

The primary plan does not invest directly in either securities or property/real estate of the company or of any subsidiary.

The fair values of the various categories of assets held by the defined benefit plans at 31 December are presented in the table below, including the effects of derivative financial instruments. Movements in the fair value of plan assets during the year are shown in detail in the table on page 303.

| | | | $ million |
|---|---|---|---|
| | | **2022** | 2021 |
| Fair value of pension plan assets | | | |
| Listed equities | – developed markets | **1,252** | 2,964 |
| | – emerging markets | **117** | 252 |
| Private equity[a] | | **2,715** | 3,233 |
| Government issued nominal bonds[b] | | **4,039** | 7,491 |
| Government issued index-linked bonds[b] | | **11,945** | 24,516 |
| Corporate bonds[b] | | **6,317** | 10,128 |
| Property[c] | | **2,297** | 2,714 |
| Cash | | **567** | 1,136 |
| Other | | **1,088** | 1,133 |
| Debt (repurchase agreements) used to fund liability driven investments | | **(5,290)** | (10,723) |
| | | **25,047** | 42,844 |

[a] Private equity is valued at fair value based on the most recent third-party net asset, revenue or earnings based valuations that generally result in the use of significant unobservable inputs.
[b] Bonds held are denominated in sterling or hedged back to sterling to minimize foreign currency exposure, and are predominantly valued using observable market data based inputs other than quoted market prices in active markets.
[c] Property held is all located in the United Kingdom and is valued based on an analysis of recent market transactions supported by market knowledge derived from third-party professional valuers that generally result in the use of significant unobservable inputs.

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 4. Pensions – continued

| | | $ million |
|---|---|---|
| | 2022 | 2021 |
| **Analysis of the amount charged to profit or loss** | | |
| Current service cost[a] | **41** | 154 |
| Past service cost[b] | **23** | (302) |
| Settlement | **(8)** | — |
| **Operating charge / (credit) relating to defined benefit plans** | **56** | (148) |
| Payments to defined contribution plan | **110** | 76 |
| **Total operating charge / (credit)** | **166** | (72) |
| Interest income on plan assets[c] | **(694)** | (684) |
| Interest on plan liabilities | **529** | 558 |
| **Other finance (income)** | **(165)** | (126) |
| **Analysis of the amount recognized in other comprehensive income** | | |
| Actual asset return less interest income on pension plan assets | **(12,955)** | 2,440 |
| Change in financial assumptions underlying the present value of the plan liabilities | **11,528** | (103) |
| Change in demographic assumptions underlying the present value of plan liabilities | **46** | 66 |
| Experience gains and losses arising on the plan liabilities | **(149)** | 7 |
| **Remeasurements recognized in other comprehensive income** | **(1,530)** | 2,410 |

[a] The costs of managing plan investments are offset against the investment return. Following the closure of the main UK pension plan to future accrual, current service cost consists of $30 million of the costs of administering the pension plan and $11 million of current service cost from the remaining small worldwide schemes administered and reported through the UK.
[b] Past service costs predominantly represent historical benefits reinstated as part of a creation of a new plan in the UK for former Turkish pension plan members.
[c] The actual return on plan assets is made up of the sum of the interest income on plan assets and the remeasurement of plan assets as disclosed above.

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 4. Pensions – continued

| | | $ million |
|---|---|---|
| | **2022** | 2021 |
| Movements in benefit obligation during the year | | |
| Benefit obligation at 1 January | **32,800** | 34,132 |
| Exchange adjustments | **(3,220)** | (254) |
| Operating charge relating to defined benefit plans | **56** | (148) |
| Interest cost | **529** | 558 |
| Contributions by plan participants | **9** | 18 |
| Benefit payments (funded plans)[a] | **(1,211)** | (1,530) |
| Benefit payments (unfunded plans)[a] | **(5)** | (6) |
| Disposals | **(74)** | — |
| Remeasurements | **(11,425)** | 30 |
| **Benefit obligation at 31 December** | **17,459** | 32,800 |
| Movements in fair value of plan assets during the year | | |
| Fair value of plan assets at 1 January | **42,844** | 41,463 |
| Exchange adjustments | **(4,258)** | (365) |
| Interest income on plan assets[b] | **694** | 684 |
| Contributions by plan participants | **9** | 18 |
| Contributions by employers (funded plans) | **10** | 134 |
| Benefit payments (funded plans)[a] | **(1,211)** | (1,530) |
| Disposals | **(86)** | — |
| Remeasurements[b] | **(12,955)** | 2,440 |
| Fair value of plan assets at 31 December[c d] | **25,047** | 42,844 |
| **Surplus at 31 December** | **7,588** | 10,044 |
| Represented by | | |
| Asset recognized | **7,716** | 10,281 |
| Liability recognized | **(128)** | (237) |
| | **7,588** | 10,044 |
| The surplus may be analysed between funded and unfunded plans as follows | | |
| Funded | **7,716** | 10,281 |
| Unfunded | **(128)** | (237) |
| | **7,588** | 10,044 |
| The defined benefit obligation may be analysed between funded and unfunded plans as follows | | |
| Funded | **(17,331)** | (32,563) |
| Unfunded | **(128)** | (237) |
| | **(17,459)** | (32,800) |

a The benefit payments amount shown above comprises $1,185 million benefits (2021 $1,507 million) plus $31 million (2021 $29 million) of plan expenses incurred in the administration of the benefit.
b The actual return on plan assets is made up of the sum of the interest income on plan assets and the remeasurement of plan assets as disclosed above.
c Reflects $24,788 million of assets held in the BP Pension Fund (2021 $42,459 million) and $202 million held in the BP Global Pension Trust (2021 $319 million), as well as $44 million representing the company's share of Merchant Navy Officers Pension Fund (2021 $51 million) and $13 million of Merchant Navy Ratings Pension Fund (2021 $15 million).
d The fair value of plan assets includes borrowings related to the LDI programme as described on page 301.

### Sensitivity analysis

The discount rate, inflation and the mortality assumptions all have a significant effect on the amounts reported. A one-percentage point change, in isolation, in certain assumptions as at 31 December 2022 for the company's plans would have had the effects shown in the table below. The effects shown for the expense in 2023 primarily comprise the impact on net finance income or expense, but include the impact on current service cost where relevant.

| | | $ million |
|---|---|---|
| | **One percentage point** | |
| | **Increase** | **Decrease** |
| **Discount rate**[a] | | |
| Effect on pension expense in 2023 | **(200)** | **180** |
| Effect on pension obligation at 31 December 2022 | **(2,041)** | **2,550** |
| **Inflation rate**[b] | | |
| Effect on pension expense in 2023 | **82** | **(77)** |
| Effect on pension obligation at 31 December 2022 | **1,646** | **(1,531)** |

a The amounts presented reflect that the discount rate is used to determine the asset interest income as well as the interest cost on the obligation.
b The amounts presented reflect the total impact of an inflation rate change on the assumptions for rate of increase in pensions in payment and deferred pensions.

One additional year of longevity in the mortality assumptions would increase the 2023 pension expense by $25 million and the pension obligation at 31 December 2022 by $503 million.

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 4. Pensions – continued

### Estimated future benefit payments and the weighted average duration of defined benefit obligations

The expected benefit payments, which reflect expected future service, as appropriate, but exclude plan expenses, and the weighted average duration of the defined benefit obligations at 31 December 2022 are as follows:

| | $ million |
|---|---|
| Estimated future benefit payments | |
| 2023 | **983** |
| 2024 | **1,014** |
| 2025 | **1,021** |
| 2026 | **1,033** |
| 2027 | **1,046** |
| 2028-2032 | **5,363** |
| | Years |
| Weighted average duration | **13.0** |

## 5. Payables

| | | | | $ million |
|---|---|---|---|---|
| | **2022** | | 2021 | |
| | **Current** | **Non-current** | Current | Non-current |
| Amounts payable to subsidiaries | **5,230** | **53,358** | 9,084 | 53,606 |
| Accruals | **498** | **8** | 2 | — |
| Other payables | **136** | **123** | 90 | 52 |
| | **5,864** | **53,489** | 9,176 | 53,658 |

Included in current amounts payable to subsidiaries is an interest-bearing payable of $5,069 million (2021 $5,032 million) with BP Finance p.l.c., with interest being charged based on a 3-month USD LIBOR rate minus 0.14%. Though due in 2030, the loan is repayable to BP Finance p.l.c. at one business day's notice. It is disclosed as a non-current receivable in the financial statements of BP Finance p.l.c., given the counterparty has no intent to call the loan at short notice.

The company also has current payables of $83 million on IFAs payable to BP International Limited (2021 $4,023 million) (see also Note 3 - Receivables).

Non-current amounts payable to subsidiaries includes an interest-bearing payable of $52,585 million with BP International Limited issued in December 2021 (2021 $52,585 million), with interest being charged based on a 3-month USD LIBOR rate plus 75 basis points and a maturity date of December 2028. This $60,000 million long-term loan facility replaces term loans with BP International Limited of $4,236 million that matured in December 2021 and $27,100 million with a maturity date of May 2023, providing additional long-term funding to the company. The loan includes a prepayment clause for BP p.l.c. to repay part or all of the loan before maturity whilst the lender has no right to call the loan other than in the event of the company being in default. As such it is disclosed as non-current in both the company and BP International Limited's financial statements.

The maturity profile of the non-current financial liabilities included in the balance sheet at 31 December is shown in the table below. These amounts are included within payables.

| | | $ million |
|---|---|---|
| | **2022** | 2021 |
| Due within | | |
| 1 to 2 years | **60** | 40 |
| 2 to 5 years | **224** | 179 |
| More than 5 years | **53,205** | 53,439 |
| | **53,489** | 53,658 |

## 6. Taxation

| | | $ million |
|---|---|---|
| Tax charge included in total comprehensive income | 2022 | 2021 |
| **Deferred tax** | | |
| Origination and reversal of temporary differences in the current year | **(883)** | 944 |
| This comprises: | | |
| Taxable temporary differences relating to pensions | **(883)** | 944 |
| **Deferred tax** | | |
| Deferred tax liability | | |
| Pensions | **2,692** | 3,575 |
| **Net deferred tax liability** | **2,692** | 3,575 |
| Analysis of movements during the year | | |
| At 1 January | **3,575** | 2,631 |
| Charge (credit) for the year in the income statement | **48** | 142 |
| Charge (credit) for the year in other comprehensive income | **(931)** | 802 |
| **At 31 December** | **2,692** | 3,575 |

At 31 December 2022 deferred tax assets of $909 million on other temporary differences; $8 million relating to pensions, $119 million relating to income losses and $782 million relating to other deductible temporary differences (2021 $709 million on other temporary differences, comprising $16 million relating to pensions; $99 million relating to income losses and $594 million relating to other deductible temporary differences) were not recognised as it is not considered probable that suitable taxable profits will be available in the company from which the future reversal of the underlying temporary differences can be deducted. There is no fixed expiry date for the unrecognised temporary differences.

## 7. Called-up share capital

The allotted, called-up and fully paid share capital at 31 December was as follows:

| | 2022 | | 2021 | |
|---|---|---|---|---|
| Issued | Shares thousand | $ million | Shares thousand | $ million |
| 8% cumulative first preference shares of £1 each[a] | **7,233** | **12** | 7,233 | 12 |
| 9% cumulative second preference shares of £1 each[a] | **5,473** | **9** | 5,473 | 9 |
| | | **21** | | 21 |
| Ordinary shares of 25 cents each | | | | |
| At 1 January | **20,778,082** | **5,194** | 21,449,782 | 5,362 |
| Issue of new shares for employee share-based payment plans | **55,000** | **14** | 35,001 | 9 |
| Issue of new shares - other | **165,105** | **41** | — | — |
| Repurchase of ordinary share capital | **(1,900,404)** | **(475)** | (706,701) | (177) |
| **At 31 December** | **19,097,783** | **4,774** | 20,778,082 | 5,194 |
| | | **4,795** | | 5,215 |

[a] The nominal amount of 8% cumulative first preference shares and 9% cumulative second preference shares that can be in issue at any time shall not exceed £10,000,000 for each class of preference shares.

Voting on substantive resolutions tabled at a general meeting is on a poll. On a poll, shareholders present in person or by proxy have two votes for every £5 in nominal amount of the first and second preference shares held and one vote for every ordinary share held. On a show-of-hands vote on other resolutions (procedural matters) at a general meeting, shareholders present in person or by proxy have one vote each.

In the event of the winding up of the company, preference shareholders would be entitled to a sum equal to the capital paid up on the preference shares, plus an amount in respect of accrued and unpaid dividends and a premium equal to the higher of (i) 10% of the capital paid up on the preference shares and (ii) the excess of the average market price of such shares on the London Stock Exchange during the previous six months over par value.

During 2022 the company repurchased 1,900 million ordinary shares for a total consideration of $9,996 million, including transaction costs of $54 million, as part of the share repurchase programme announced on 27 April 2021. All shares purchased were for cancellation. The repurchased shares represented 10.0% of ordinary share capital. A further 107 million ordinary shares were repurchased between the end of the reporting period and 17 February 2023, the latest practicable date before the completion of these financial statements, for a total cost of $653 million of which $497 million has been accrued at 31 December 2022. The number of shares in issue is reduced when shares are repurchased.

165 million new ordinary shares were issued in April 2022 as non-cash consideration for the acquisition of the public units of BP Midstream Partners LP.

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 7. Called-up share capital – continued

### Treasury shares[a]

| | 2022 | | 2021 | |
|---|---|---|---|---|
| | **Shares thousand** | **Nominal value $ million** | Shares thousand | Nominal value $ million |
| At 1 January | **1,137,457** | **283** | 1,187,650 | 296 |
| Purchases for settlement of employee share plans | **14,150** | **4** | 1,432 | — |
| Issue of new shares for employee share-based payment plans | **55,000** | **14** | 35,096 | 9 |
| Shares re-issued for employee share-based payment plans | **(81,680)** | **(20)** | (86,721) | (22) |
| **At 31 December** | **1,124,927** | **281** | 1,137,457 | 283 |
| Of which - shares held in treasury by bp | **940,571** | **235** | 1,037,201 | 259 |
| - shares held in ESOP trusts | **184,356** | **46** | 100,256 | 24 |

[a] See Note 8 for definition of treasury shares

[b] Held by the company in the form of ADSs to meet the requirements of employee share-based payment plans in the US.

For each year presented, the balance of shares held in treasury by bp at 1 January represents 5.0% (2021 5.2%) of the called-up ordinary share capital of the company.

During 2022, the movement in shares held in treasury by bp represented less than 0.5% (2021 less than 0.3%) of the ordinary share capital of the company.

## 8. Capital and reserves

See statement of changes in equity for details of all reserves balances.

### Share capital

The balance on the share capital account represents the aggregate nominal value of all ordinary and preference shares in issue, including treasury shares.

### Share premium account

The balance on the share premium account represents the amounts received in excess of the nominal value of the ordinary and preference shares.

### Capital redemption reserve

The balance on the capital redemption reserve represents the aggregate nominal value of all the ordinary shares repurchased and cancelled.

### Merger reserve

The balance on the merger reserve represents the fair value of the consideration given in excess of the nominal value of the ordinary shares issued in an acquisition made by the issue of shares.

### Treasury shares

Treasury shares represent bp shares repurchased and available for specific and limited purposes. For accounting purposes, shares held in Employee Share Ownership Plans (ESOPs) and by bp's US share plan administrator to meet the future requirements of the employee share-based payment plans are treated in the same manner as treasury shares and are, therefore, included in the financial statements as treasury shares. The ESOPs are funded by the company and have waived their rights to dividends in respect of such shares held for future awards. Until such time as the shares held by the ESOPs vest unconditionally to employees, the amount paid for those shares is shown as a reduction in shareholders' equity. Assets and liabilities of the ESOPs are recognized as assets and liabilities of the company.

### Foreign currency translation reserve

The foreign currency translation reserve records exchange differences arising from the translation of the financial information of the foreign currency branch. Upon disposal of foreign operations, the related accumulated exchange differences are recycled to the income statement.

### Profit and loss account

The balance held on this reserve is the accumulated retained profits of the company.

The profit and loss account reserve includes $23,610 million (2021 $24,107 million), the distribution of which is limited by statutory or other restrictions.

The financial statements for the year ended 31 December 2022 do not reflect the dividend announced on 7 February 2023 which will be paid in March 2023; this will be treated as an appropriation of profit in the year ended 31 December 2023.

## 9. Financial guarantees and other contingencies

The company has issued guarantees to third parties and other bp subsidiaries in case of the failure, on the part of certain bp subsidiaries, to pay current liabilities and obligations pertaining to business operations. The amounts guaranteed by the company, at 31 December 2022, for these arrangements is $107 million (2021[a] $32 million). The company guarantees finance debt and lease obligations of certain bp group subsidiaries. Maturity dates vary and guarantees will terminate on full payment and/or cancellation of the obligation. As of 31 December 2022, maximum guaranteed amounts pertaining to debt and lease arrangements were $57,265 million (2021[a] $58,322 million). These maximum amounts are more than the actual guaranteed exposure due at the balance sheet date as well as more than remaining obligations under the guaranteed contracts.

Performance under all the above guarantees would be triggered by a financial default of the guaranteed entity and, as such, are currently not expected to have any material effect.

As part of normal ongoing business operations and consistent with generally accepted industry practices, the company also executes contracts involving standard indemnities and guarantees for the respective businesses in which bp operates as well as indemnities specific to transactions, including the sale of businesses. This includes a guarantee of subsidiaries' liabilities under the Consent Decree between the United States, the Gulf states and bp and under the settlement agreement with the Gulf states in relation to the Gulf of Mexico oil spill. The company has also issued uncapped guarantees for certain subsidiaries' liabilities under the Plaintiffs' Steering Committee agreement relating to the Gulf of Mexico oil spill. See Note 33 in the consolidated group financial statements of BP p.l.c. for further information. The company regularly evaluates the probability of having to incur costs associated with these indemnities and does not believe such matters will have a material adverse effect on its results of operations and cash flow.

In addition, BP plc guarantees $11.9 billion of perpetual subordinated hybrid bonds issued by a subsidiary.

The company believes that guarantees and other off-balance sheet commitments do not currently, nor could reasonably have in the future, a material effect on its financial position, income and expenses, liquidity, investments or financial resources.

[a] The prior years comparatives have been amended.

## 10. Auditor's remuneration

Note 36 to the consolidated financial statements provides details of the remuneration of the company's auditor on a group basis.

## 11. Directors' remuneration

| | | $ million |
|---|---|---|
| Remuneration of directors | 2022 | 2021 |
| **Total for all directors** | | |
| Emoluments | 8 | 9 |
| Amounts awarded under incentive schemes[a] | 13 | 4 |
| **Total** | **21** | 13 |

[a] Excludes amounts relating to past directors.

### Emoluments

These amounts comprise fees paid to the non-executive chair and the non-executive directors and, for executive directors, salary and benefits earned during the relevant financial year, plus cash bonuses awarded for the year. Further information is provided in the Directors' remuneration report on page 112.

Directors' remuneration costs are borne by other undertakings within the group.

## 12. Employee costs and numbers

| | | $ million |
|---|---|---|
| Employee costs | 2022 | 2021 |
| Wages and salaries | 924 | 696 |
| Social security costs | 131 | 91 |
| Pension costs | – | 50 |
| | 1,055 | 837 |

| Average number of employees | 2022 | 2021 |
|---|---|---|
| gas & low carbon energy | 329 | 276 |
| oil production & operations | 187 | 161 |
| customers & products | 1,182 | 1,039 |
| other businesses and corporate | 1,893 | 1,772 |
| | 3,591 | 3,248 |

The employee costs noted above relate to those employees with contracts of employment in the name of BP p.l.c.. These costs are borne by other undertakings within the group.

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group

In accordance with Section 409 of the Companies Act 2006, a full list of related undertakings, showing the registered office address and the effective equity owned by the bp group as at 31 December 2022 is disclosed below.

Unless otherwise stated, all interests are indirectly held by BP p.l.c.

All subsidiary undertakings are controlled by the group and their results are fully consolidated in the group's financial statements.

### Subsidiaries

| Company by country of incorporation and registered office address | Ownership interest | % |
|---|---|---|
| **Albania** | | |
| **Rruga Ibrahim Rugova, Sky Tower, Tirana, Kati 9/1, Albania** | | |
| BP Albania SHPK | Ordinary | 100.00 |
| **Argentina** | | |
| **Av. Cordoba 315 Piso 8, Buenos Aires, 1054, Argentina** | | |
| Latin Energy Argentina S.A. | Ordinary | 100.00 |
| **Australia** | | |
| **Level 11, 307 Queen Street, Brisbane, QLD, 4000, Australia** | | |
| Onyx Insight Australia Pty Ltd | Ordinary | 100.00 |
| **Level 15, 240 St Georges Terrace, Perth, WA, 6000, Australia** | | |
| BP Developments Australia Pty. Ltd. | Ordinary | 100.00 |
| **Level 17, 717 Bourke Street, Docklands VIC 3008, Australia** | | |
| Advance Petroleum Holdings Pty Ltd | Ordinary | 100.00 |
| Advance Petroleum Pty Ltd | Ordinary | 100.00 |
| Air Refuel Pty Ltd | Ordinary A; Ordinary B | 100.00 |
| Allgreen Pty Ltd | Ordinary | 100.00 |
| ARCO Resources Limited[a] | Ordinary | 100.00 |
| BASS Holdings Trust | Membership Interest | 51.00 |
| BASS Management Pty Ltd | Ordinary | 51.00 |
| BASS NZ Head Trust | Membership Interest | 51.00 |
| BASS NZ Management Pty Ltd | Ordinary | 100.00 |
| BASS NZ Sub Management Pty Ltd | Ordinary | 100.00 |
| BASS NZ Sub Trust | Membership Interest | 51.00 |
| BP Alternative Energy Australia Pty Ltd | Ordinary | 100.00 |
| BP Australia Employee Share Plan Proprietary Limited | Ordinary | 100.00 |
| BP Australia Group Pty Ltd | Ordinary; Preference | 100.00 |
| BP Australia Investments Pty Ltd | Ordinary | 100.00 |
| BP Australia Pty Ltd | Ordinary | 100.00 |
| BP Australia Shipping Pty Ltd[c] | Ordinary | 100.00 |
| BP Australia Supply Pty Ltd | Ordinary | 100.00 |
| BP Bulwer Island Pty Ltd | Ordinary; Ordinary A; Ordinary B | 100.00 |
| BP Energy Australia Pty Ltd | Ordinary | 100.00 |
| BP Finance Australia Pty Ltd | Ordinary | 100.00 |
| BP Low Carbon Australia (CCS) Pty Ltd | Ordinary | 100.00 |
| BP Low Carbon Australia Pty Ltd | Ordinary | 100.00 |
| BP Oil Australia Pty Ltd | Ordinary | 100.00 |
| BP Refinery (Kwinana) Proprietary Limited | Ordinary | 100.00 |
| BP Regional Australasia Holdings Pty Ltd | Ordinary | 100.00 |
| BP Solar Pty Ltd | Ordinary | 100.00 |
| Brian Jasper Nominees Pty Ltd | Ordinary | 100.00 |
| Burmah Castrol Australia Pty Ltd | Ordinary; Redeemable preference | 100.00 |
| Castrol Australia Pty. Limited | Ordinary | 100.00 |
| Castrol Holdings Australia Pty Ltd | Ordinary | 100.00 |
| Centrel Pty Ltd | Ordinary | 100.00 |
| Clarisse Holdings Pty Ltd | Ordinary | 100.00 |
| Dermody Petroleum Pty. Ltd. | Ordinary | 100.00 |
| Elite Customer Solutions Pty Ltd | Ordinary | 100.00 |
| International Bunker Supplies Pty Ltd | Ordinary | 100.00 |
| No. 1 Riverside Quay Proprietary Limited | Ordinary | 100.00 |
| Open Energi Australia Pty Ltd | Ordinary; Ordinary A | 100.00 |
| Taradadis Pty. Ltd. | Ordinary | 100.00 |

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| West Kimberley Fuels Pty Ltd | Ordinary | 100.00 |
| **Austria** | | |
| **Am Belvedere 10, 1100 Wien, Austria** | | |
| CASTROL Austria GmbH | Ordinary | 100.00 |
| Castrol Österreich Lubricants GmbH | Ordinary | 100.00 |
| **Azerbaijan** | | |
| **153 Neftchilar Avenue, Baku, AZ1010, Azerbaijan** | | |
| BP-AIOC Exploration (TISA) LLC | Membership Interest | 65.88 |
| TISA Education Complex LLC | Membership Interest | 65.88 |
| **Bahamas** | | |
| **2 Bayside Executive Park, West Bay, Nassau, Bahamas** | | |
| ARCO Trinidad Exploration and Production Company Limited | Ordinary | 100.00 |
| BP Exploration (El Djazair) Limited | Ordinary | 100.00 |
| **Barbados** | | |
| **The Financial Services Centre, Bishop's Court Hill, St. Michael, Barbados** | | |
| BP (Barbados) Holding SRL | Ordinary | 100.00 |
| BP Train 2/3 Holding SRL | Ordinary | 100.00 |
| **Belgium** | | |
| **Langerbruggekaai 18, Gent, 9000, Belgium** | | |
| BP Iraq N.V. | Ordinary | 100.00 |
| Castrol Belgium B.V. | Ordinary | 100.00 |
| **Brazil** | | |
| **Avenida das Américas 3434, Bloco 7, Sala 301 a 308 (parte), Barra da Tijuca, Rio de Janeiro, 22640-102, Brazil** | | |
| BP Brasil Ltda. | Ordinary | 100.00 |
| BP Energy do Brasil Ltda. | Ordinary | 100.00 |
| Castrol Brasil Ltda. | Ordinary | 100.00 |
| **Avenida das Nações Unidas, 12399, rooms 62,63 and 64 size B, 6th floor, Landmark Building, São Paulo, 04578-000, Brazil** | | |
| BP Comercializadora de Energia Ltda. | Ordinary | 100.00 |
| **Avenida das Nações Unidas, No. 12.399, 4th floor, rooms 43A and 44A , Tower C, Building Landmark, Brooklin Paulista, São Paulo, 04578-000, Brazil** | | |
| Air BP Brasil Ltda. | Ordinary | 100.00 |
| BP Biocombustíveis S.A. | Ordinary | 100.00 |
| **Avenida Tamboré, 448, Sao Paulo, Barueri, 06460-000, Brazil** | | |
| Castrol Servicos Ltda. | Ordinary | 100.00 |
| **British Virgin Islands** | | |
| **Craigmuir Chambers, P.O. Box 71, Road Town, Tortola, British Virgin Islands** | | |
| BP Egypt East Delta Marine Corporation | Ordinary; Preference | 100.00 |
| BP Middle East Enterprises Corporation | Ordinary | 100.00 |
| **Jayla Place, Wickhams Cay 1, PO Box 3190,Tortola, Road Town, VG1110, British Virgin Islands** | | |
| Wiriagar Overseas Ltd | Ordinary | 100.00 |
| **Canada** | | |
| **1100, 635 - 8th Avenue SW, Calgary AB T2P 3M3, Canada** | | |
| Terre de Grace Partnership | Partnership interest | 75.00 |
| **1700, 421 – 7th Avenue SW Calgary, AB T2P 4K9, Canada** | | |
| Finite Carbon Canada LTD | Ordinary | 80.50 |
| **240 - 4th Avenue SW, Calgary AB T2P 4H4, Canada** | | |
| 563916 Alberta Ltd. | Preference | 99.90 |
| Dome Beaufort Petroleum Limited | Ordinary | 100.00 |
| Dome Wallis (1980) Limited Partnership | Partnership interest | 92.50 |
| Fotech Solutions (Canada) Ltd. | Membership Interest | 100.00 |
| **Stewart McKelvey, Attention: Lawrence J. Stordy, 900, 1959 Upper Water Street, Halifax, NS, B3J 3N2, Canada** | | |
| BP Canada Energy Development Company | Ordinary | 100.00 |
| BP Canada Energy Group ULC | Ordinary | 100.00 |
| **Chile** | | |
| **Av. Américo Vespucio Sur No. 100, of. 1101, Las Condes, Santiago, Chile** | | |
| Burmah Chile SpA | Ordinary | 100.00 |
| **China** | | |
| **1-3 / F, Unit D2,1958 Double Innovation Park, No. 220, Huashan Road, Zhongyuan District, Zhengzhou City, China** | | |
| Zhenzhou BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| **808-02, Building 2, No.16, Xingao Road, Niutang Town, Wujin District, Changzhou City, Jiangsu Province, China** | | |
| Changzhou BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **D69, Floor 3, Block 1, Phase 6,Tianan Nanhai Digital New Town, No.12, Jianping Road, Guicheng Street, Nanhai District, Foshan city, China** | | |
| Foshan BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **F3-DC8098, Red Star Macalline Forehead Bay Shopping Mall, Jin Street Independent Store, No. 3 Yuanboyuan Road, Qiaokou District, Wuhan City, China** | | |
| Wuhan BP Xiaoju New Energy Technology Co., Ltd. | Membership Interest | 70.00 |
| **Fenglin West Road, Dongpu Street,Yuecheng District, Shaoxing City, Zhejiang Province, China** | | |
| Shaoxing BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Floor 3, Building 5, 255 Guiqiao Road, Shanghai Pilot Free Trade Zone, China** | | |
| Castrol (Shanghai) Management Co., Ltd | Membership Interest | 100.00 |
| **Floor 3, No. 7, Building 2, Zhucun Village, Sanjiang Street, Wucheng District, Jinhua, Zhejiang Province, China** | | |
| Jinhua BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **No 833, South Guang Zhou Avenue, Guangzhou Province, Haizhu District, China** | | |
| BP Guangdong Limited | Membership Interest | 90.00 |
| **No. 399 Dongfeng highway, Dongping Town, Chongming District, (Dongping Economic Development, Shanghai City, China** | | |
| Shanghai Quanzhi New Energy Co., Ltd. | Membership Interest | 70.00 |
| **No.17-5, Second Floor 04, Sumitomo Homeland, Binhu District, Wuxi City, China** | | |
| Wuxi BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **No.25 (unit 111A), Beiqiao Road, Shiqiao Street,Guangzhou City, Panyu District, PRC, China** | | |
| Guangzhou BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **No.9 Bin Jiang South Road, Petrochemical Industrial Park, Taicang Gangkou Development Zone, Jiangsu Province, China** | | |
| BP (China) Industrial Lubricants Limited | Membership Interest | 100.00 |
| **Office 6, Room 708, No. 33 Jinmeng Lane, Xiangzhou District, Zhuhai City, Guangdong Province, China** | | |
| Zhuhai BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Room 1001, 10th Floor, Building A2, Xiangjiang Times Business Square, No.179 Xiandao Road, Yuelu District,Hunan, Changsha, China** | | |
| BP (Hunan) Petroleum Company Limited | Membership Interest | 100.00 |
| **Room 1001, 2nd Floor, Building 1,Qinqiao Agricultural Innovation Headquarters Building, Xiash, Shiyang Town, Taishun County, Wenzhou City, Zhejiang Province, China** | | |
| Wenzhou BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Room 102, No. 1, Qiao Jie Shi Xin Road, Guangzhou, China** | | |
| Guangzhou Jintian New Energy Technology Co., Ltd. | Ordinary | 100.00 |
| **Room 1-2201, Sijian Meilin Mansion, No. 48-15 Wuyingshan Middle Road, Tianqiao District, Shandong, Ji'nan, China** | | |
| BP (Shandong) Petroleum Co., Ltd | Membership Interest | 100.00 |
| **Room 1908, YOUYOU International Plaza, Pudong District, Shanghai, China** | | |
| BP (Shanghai) Technology Company Limited | Membership Interest | 100.00 |
| **Room 201, 2nd floor, Building 3, Industrial Research and Development, Xingong Standard Factory Building, No. 31, Songbai Road, Santang Town, Xingning District, Nanning City, Guangxi Province, China** | | |
| Nanning BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Room 201, Complex A, Qianwan Road 1, Qianhai Shenzhen-Hong Kong Cooperation Zone, Shenzhen City, China** | | |
| BP Xiaoju New Energy (Shenzhen) Co., Ltd. | Membership Interest | 70.00 |
| **Room 2101, 21F Youyou International Plaza, 76 Pujian Road, Pudong, Shanghai Pilot Free Trade Zone, China** | | |
| BP (China) Holdings Limited | Membership Interest | 100.00 |
| **Room 2103, 10 Hua Xia Road, Tianhe District, Guangzhou, PR, China** | | |
| BP (Guangzhou) Advanced Mobility Limited | Membership Interest | 100.00 |
| **Room 215, Building 5, No. 72, Nanxiang 2nd Road, Sciecheng, Huangpu District, Guangzhou, China** | | |
| Guangzhou Jintian Linkage New Energy Technology Co., Ltd. | Ordinary | 100.00 |
| **Room 2-1-7, 1st Floor,Building 7, No.130 Xiazhong Dukou, Shapingba District, Chongqing, China** | | |
| Chongqing BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Room 222-1, Building 1, Wanya Famous City, Qiantang New District, Hangzhou City, Zhejiang Province, China** | | |
| Hangzhou BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Room 2305, Floor 20, Building 29,Yard 8, West Cultural Park Road, Beijing Economic and Technological Development Zone, Beijing, China** | | |
| Beijing BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Room 2-521, Building A,No.6 Huafeng Road, Huaming Hi-tech Industrial Zone, Dongli District, Tianjin city, China** | | |
| Tianjin BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Room 309, 3rd Floor, 2nd Floor, Southwest International Business Port, West Square, Taiyuan South Station, Taiyuan City, Xiandian District, China** | | |
| Taiyuan BP Xiaoju New Energy Technology Co., Ltd. | Membership Interest | 70.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| **Room 3173, Building 1,No.39 Hongtu Road, Nancheng Street, Dongguan City, Guangdong Province, China** | | |
| Dongguan BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Room 3726, Building 3, No. 89 Shuanggao Road, Gaochun Economic Development Zone, Nanjing, Gaochun District, China** | | |
| Nanjing BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Room 402, 4F, Block C, Complex Building, No.30 Jiefang Road, Lixia District, Jinan City, Shandong Province, China** | | |
| Jinan BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Room 421, Floor 4,Building 8, No. 388, North Section of Yizhou Avenue, High-tech Zone, Chengdu city, China** | | |
| Chengdu BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Room 431, No. 30, East Qilong Road, Guangzhou, China** | | |
| Guangdong Jintian Technology Co., Ltd. | Ordinary | 100.00 |
| **Room 6, Ground floor, Building A, No.2 Taohong West Street, Shima Village, Junhe Street, Baiyun District, Guangzhou, China** | | |
| Guangdong Jintian New Energy Automobile Co., Ltd. | Ordinary | 100.00 |
| **Room 703, Building 32, No.258 Shengpu Road, Suzhou Industrial Park, China** | | |
| Suzhou BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Room 708-168, 7th Floor, Building C,Hangchuang Plaza, Shenzhou 4th Road, National Civil Aerospace Industry Base, Xi'an, Shaanxi, China** | | |
| Xi'an BP Xiaoju New Energy Technology Co., Ltd. | Membership Interest | 70.00 |
| **Room 7088-594, 7th Floor, 1558 Jiangnan Road, Ningbo High-tech Zone, Zhejiang Province, China** | | |
| Ningbo BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Room 716, Block C, Future Science and Technology Plaza, No.136, Xiuzhou Avenue, Xincheng Street, Zhejiang Province, Jiaxing City, China** | | |
| Jiaxing BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Room -829, 1st Floor, D2 District, Fuxing City, No. 32 Binhai Avenue, Binhai Street, Longhua District, Haikou City, Hainan Province, China** | | |
| Hainan BP Xiaoju New Energy Co., Ltd | Membership Interest | 70.00 |
| **Room D416, No.183, Hongming Road, Lilian Street, Huangpu District, Guangzhou City, China** | | |
| Guangzhou Huangpu BP Xiaoju New Energy Technology Co., Ltd. | Membership Interest | 70.00 |
| **South of NanGang Industrial Area, and East of Hai Gang Road, Tianjin Economic Development Area, Tianjin, China** | | |
| Castrol (Tianjin) Lubricants Co., Ltd | Membership Interest | 100.00 |
| **Unit 03A, 33rd Floor, T1 Building, IFC, No.188, Jiefang West Road, Dingwangtai Street, Changsha City, Furong District, China** | | |
| Changsha BP Xiaoju New Energy Co., Ltd. | Membership Interest | 70.00 |
| **Unit 1901, Nominal Floor 19 (Actual Floor 17), No. 76 Pujian Road, Shangai, Pilot Free Trade Zone, China** | | |
| Onyx Insight Analytics Shanghai Limited | Membership Interest | 100.00 |
| **Colombia** | | |
| **Calle 80 No.11-42 Oficina 901, Bogota, 110111, Colombia** | | |
| GOAM 1 C.I S.A.S | Ordinary | 100.00 |
| **Calle 81, No 11 - 42, Oficina 901, Torre Sur, Bogota, Colombia** | | |
| Castrol Colombia Ltda. | Ordinary | 100.00 |
| **Croatia** | | |
| **Savska cesta 32, Zagreb, Croatia** | | |
| Air BP Croatia d.o.o. | Ordinary | 100.00 |
| **Denmark** | | |
| **c/o Danish Refuelling Services I/S, Hydrantvej 16, 2770 Kastrup, Denmark** | | |
| BP Aviation A/S | Ordinary | 100.00 |
| **Orestads Boulevard 73, Kobenhavn S, 2300, Denmark** | | |
| BP Danmark A/S | Ordinary | 100.00 |
| Nordic Lubricants A/S | Ordinary | 100.00 |
| **Egypt** | | |
| **Plot No 14d03, The Southern Business district of Cairo, Festival City - New Cairo, Cairo, Egypt** | | |
| BP Marketing Egypt LLC | Ordinary | 100.00 |
| Castrol Egypt Lubricants S.A.E. | Ordinary | 51.00 |
| Castrol Egypt Marketing SSC | Ordinary | 100.00 |
| **Finland** | | |
| **Öljytie 4, 01530 Vantaa, Finland** | | |
| Air BP Finland Oy | Ordinary | 100.00 |
| **France** | | |
| **Campus Saint Christophe, Bâtiment Galilée 3, 10 Avenue de l'Entreprise, Cergy Cedex, 95863, France** | | |
| BP France | Ordinary | 100.00 |
| Castrol France Sas | Ordinary | 100.00 |
| PRODUITS METALLURGIE DOITTAU | Ordinary | 100.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Société de Gestion de Dépots d'Hydrocarbures - GDH | Ordinary | 100.00 |
| SRHP | Ordinary | 100.00 |
| **Gambia** | | |
| **3 Kairaba Avenue, 3rd Floor Centenary, Kanifing Municipality, Serekunda West, Gambia** | | |
| BP Exploration (Gambia) Limited | Ordinary | 100.00 |
| **Germany** | | |
| **Alexander-von-Humboldt-Straße 1, Gelsenkirchen, 45896, Germany** | | |
| Gelsenkirchen Raffinerie Netz GmbH | Ordinary | 100.00 |
| Ruhr Oel GmbH (ROG) | Ordinary | 100.00 |
| **Sportallee 6, 22335 Hamburg, Germany** | | |
| TGH Tankdienst-Gesellschaft Hamburg GbR | Partnership interest | 66.67 |
| **Timmerhellstsr. 28, Mülheim/Ruhr, 45478, Germany** | | |
| DHC Solvent Chemie GmbH | Ordinary | 100.00 |
| **Überseeallee 1, 20457, Hamburg, Germany** | | |
| BP Europa SE[d] | Ordinary | 100.00 |
| BP Lingen Green Hydrogen Verwaltung GmbH | Ordinary | 100.00 |
| BP Olex Fanal Mineralöl GmbH | Ordinary | 100.00 |
| Castrol Deutschland Verwaltungsgesellschaft mbH | Ordinary | 100.00 |
| Castrol Germany GmbH | Ordinary | 100.00 |
| **Wittener Straße 45, 44789 Bochum, Germany** | | |
| Aral Aktiengesellschaft | Ordinary | 100.00 |
| Aral Pulse GmbH | Ordinary | 100.00 |
| B2Mobility GmbH | Ordinary | 100.00 |
| BP Fuels Deutschland GmbH | Ordinary | 100.00 |
| BP Green Hydrogen Management GmbH | Ordinary | 100.00 |
| Trafineo Service GmbH | Ordinary | 75.00 |
| **Wittener Straße 56, Bochum, Germany** | | |
| TRaBP GbR | Partnership interest | 75.00 |
| Trafineo GmbH & Co. KG | Partnership interest | 75.00 |
| Trafineo Verwaltungs-GmbH | Ordinary | 75.00 |
| **Zum Ölhafen 207, 26384 Wilhelmshaven, Germany** | | |
| Nord-West Oelleitung GmbH | Ordinary | 59.33 |
| **Ghana** | | |
| **Atlantic Tower, 4th Floor, Liberation Road, Airport City, Accra, Ghana** | | |
| BP Ghana Ltd | Ordinary | 100.00 |
| **Greece** | | |
| **1, Proteos & 51, Anapafseos str, 15235 Vrilissia, Attica, Greece** | | |
| RAPI SA | Ordinary | 62.51 |
| **26A Ioannou Apostolopoulou, Halandri, Attica, Athens, 152 31, Greece** | | |
| BP Oil Hellenic S.A. | Ordinary | 100.00 |
| Castrol Hellas Single Member Societe Anonyme | Ordinary | 100.00 |
| **Guernsey** | | |
| **Albert House, South Esplanade, St. Peter Port, GY1 1AW, Guernsey** | | |
| BP Pensions (Overseas) Limited[e] | Ordinary | 100.00 |
| Jupiter Insurance Limited | Ordinary | 100.00 |
| **Hong Kong** | | |
| **21/F Edinburgh Tower, 15 Queen's Road Central, Hong Kong** | | |
| BP Hong Kong Limited | Ordinary | 100.00 |
| **Unit 25-150, 25/F, Two Harbour Square, 180 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong** | | |
| Castrol (China) Limited | Ordinary | 100.00 |
| **Hungary** | | |
| **1133 Budapest, Árbóc utca 1-3, Hungary** | | |
| BP Business Service Centre KFT | Membership Interest | 100.00 |
| **Iceland** | | |
| **Skogarhlid 12, 105, Reykjavik, Iceland** | | |
| Air BP Iceland | Ordinary | 100.00 |
| **India** | | |
| **2nd,3rd & 4th Floor, 201,301,401, Bldg. No. 6, R4, KRC Infrastructure & Projects Pvt. Ltd. SEZ, Kharadi, Pune, India, 411014** | | |
| BP Business Solutions India Private Limited | Ordinary | 100.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| **Office No. 306, Regus Business Center ,3rd Floor, Abbusali St, Saligramam, Chennai, Tamil Nadu, 600093, India** | | |
| OnSight Analytics Solutions India Private Ltd. | Ordinary | 100.00 |
| **Technopolis Knowledge Park, Mahakali Caves Road, Andheri (East), Mumbai 400093, India** | | |
| BP India Private Limited | Ordinary | 88.51 |
| Castrol India Limited | Ordinary | 51.00 |
| **Indonesia** | | |
| **Arkadia Green Park Tower G, 2nd Floor, Jl. Letjend TB Simatupang Kav. 88,Jakarta Selatan, Pasar Minggu, 12520, Indonesia** | | |
| PT Jasatama Petroindo | Ordinary A; Ordinary B | 100.00 |
| **Arkadia Green Park, Tower G, 3rd floor, Jl. Let. Jen. TB Simatupang Kav. 88, Jakarta Selatan, DKI Jakarta, Jakarta 12520, Indonesia** | | |
| PT Castrol Indonesia | Ordinary | 68.30 |
| **JL. Raya Merak KM 117,DS Gerem, Gerem Grogol, Banten, Cilegon, Indonesia** | | |
| PT Castrol Manufacturing Indonesia | Ordinary | 68.30 |
| **Iraq** | | |
| **Khur Al-Zubair, pear No 1, Basra, Iraq** | | |
| Water Way Trading and Petroleum Services LLC | Ordinary | 100.00 |
| **Royal Tulip Al Rasheed Hotel, Baghdad Tower, PO Box 8070, Baghdad, Iraq** | | |
| Phoenix Petroleum Services, Limited Liability Company | Ordinary | 100.00 |
| **Ireland** | | |
| **One Spencer Dock, North Wall Quay, Dublin 1, Ireland** | | |
| Castrol (Ireland) Limited | Ordinary | 100.00 |
| **Italy** | | |
| **Piazza Borromeo, 12, Milano, 20123, Italy** | | |
| BP Italia Holdings SpA | Ordinary | 100.00 |
| **Via Verona 12, Cornaredo, Milan, 20010, Italy** | | |
| BP Italia SpA | Ordinary | 100.00 |
| **Japan** | | |
| **15th Fl. Roppongi Hills Mori Tower, 10-1 Roppongi 6-chome, Minato-ku, Tokyo106-6115, Japan** | | |
| BP Japan K.K. | Ordinary | 100.00 |
| TJKK | Ordinary | 100.00 |
| **East Tower 20F, Gate City Ohsaki, 1-11-2 Osaki, Shinagawa-ku, Tokyo, Japan** | | |
| BP Castrol KK | Ordinary | 64.84 |
| BP Lubricants KK | Ordinary | 64.84 |
| Castrol KK | Ordinary | 64.84 |
| **Korea (the Republic of)** | | |
| **19th Floor, 302, Teheran-ro, Gangnam-gu, Seoul, Korea (the Republic of)** | | |
| BP Korea Limited | Ordinary | 100.00 |
| **3rd Floor, 10, Baumoe-ro 21-gil, Seocho-gu, Seoul, Korea (the Republic of)** | | |
| Onyx Insight Korea Co., Ltd. | Ordinary | 100.00 |
| **Luxembourg** | | |
| **Bâtiment B, 36 route de Longwy, L-8080 Bertrange, Luxembourg** | | |
| Aral Luxembourg S.A. | Ordinary | 100.00 |
| Aral Tankstellen Services Sarl | Ordinary | 100.00 |
| **Malaysia** | | |
| **Level 9, Tower 5, Avenue 7, The Horizon Bangsar South City, No. 8, Jalan Kerinchi, Kuala Lumpur, 59200, Malaysia** | | |
| Aspac Lubricants (Malaysia) Sdn. Bhd. | Ordinary | 63.03 |
| BP Business Service Centre Asia Sdn Bhd | Ordinary | 100.00 |
| BP Castrol Lubricants (Malaysia) Sdn. Bhd. | Ordinary | 63.03 |
| BP Malaysia Holdings Sdn. Bhd. | Ordinary | 70.00 |
| **Mexico** | | |
| **Avenida Santa Fe 505, Col. Cruz Manca Santa Fe, Delegacion Cuajimalpa, Mexico** | | |
| BP Energía México, S. de R.L. de C.V. | Ordinary; Ordinary B | 100.00 |
| BP Estaciones y Servicios Energéticos, Sociedad Anónima de Capital Variable | Ordinary A; Ordinary B | 100.00 |
| BP Exploration Mexico, S.A. De C.V. | Ordinary A; Ordinary B | 100.00 |
| BP Servicios de Combustibles S.A. de C.V. | Ordinary | 100.00 |
| BP Servicios territoriales, S.A. de C.V. | Ordinary | 100.00 |
| Castrol Mexico, S.A. de C.V. | Ordinary A; Ordinary B | 100.00 |
| Mes Tecnologia En Servicios Y Energia, S.A. De C.V. | Ordinary A; Ordinary B | 100.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| **Mozambique** | | |
| **Torres Rani, Avenida Marginal, Talhão 141, 6º andar, Maputo, Mozambique** | | |
| BP Mocambique Limitada | Ordinary | 100.00 |
| **Netherlands** | | |
| **Chertsey Road, Sunbury on Thames, Middlesex, TW16 7BP, England, United Kingdom** | | |
| BP Capital Markets B.V. | Ordinary | 100.00 |
| **d'Arcyweg 76, 3198 NA Europoort Rotterdam, Netherlands** | | |
| Actomat B.V. | Ordinary | 100.00 |
| Amoco Canada International Holdings B.V. | Ordinary | 100.00 |
| Amoco Chemicals (FSC) B.V. | Ordinary | 100.00 |
| Amoco Exploration Holdings B.V. | Ordinary | 100.00 |
| Amoco Trinidad Gas B.V. | Ordinary | 100.00 |
| BP Canada International Holdings B.V. | Ordinary | 100.00 |
| BP Commodity Supply B.V. | Ordinary | 100.00 |
| BP Egypt East Tanka B.V. | Ordinary | 100.00 |
| BP Egypt Production B.V. | Ordinary | 100.00 |
| BP Egypt Ras El Barr B.V. | Ordinary | 100.00 |
| BP Egypt West Mediterranean (Block B) B.V. | Ordinary | 100.00 |
| BP Holdings B.V. | Ordinary | 100.00 |
| BP Holdings International B.V. | Ordinary | 100.00 |
| BP Management International B.V. | Ordinary | 100.00 |
| BP Management Netherlands B.V. | Ordinary | 100.00 |
| BP Muturi Holdings B.V. | Ordinary | 100.00 |
| BP Nederland Holdings B.V. | Ordinary | 100.00 |
| BP Netherlands Upstream B.V. | Ordinary | 100.00 |
| BP Raffinaderij Rotterdam B.V. | Ordinary | 100.00 |
| BPNE International B.V. | Ordinary | 100.00 |
| Castrol B.V. | Ordinary | 100.00 |
| Castrol Holdings Europe B.V. | Ordinary | 100.00 |
| Castrol Nederland B.V. | Ordinary | 100.00 |
| Foseco Holding International B.V. | Ordinary | 100.00 |
| FreeBees B.V. | Ordinary | 100.00 |
| Vaals B.V. | Ordinary | 100.00 |
| Vaals HoldCo B.V. | Ordinary | 100.00 |
| Vaals TopCo B.V | Ordinary | 100.00 |
| **Überseeallee 1, 20457, Hamburg, Germany** | | |
| BP Holdings Central Europe B.V. | Ordinary | 100.00 |
| **New Zealand** | | |
| **Watercare House, 73 Remuera Road, Rumuera, Auckland, 1050, New Zealand** | | |
| BP New Zealand Holdings Limited | Ordinary | 100.00 |
| BP New Zealand Share Scheme Limited | Ordinary | 100.00 |
| BP Oil New Zealand Limited | Ordinary | 100.00 |
| BP Pacific Investments Ltd | Ordinary | 100.00 |
| Castrol New Zealand Limited | Ordinary | 100.00 |
| Coro Trading NZ Limited | Ordinary | 100.00 |
| Europa Oil NZ Limited | Ordinary | 100.00 |
| **Nigeria** | | |
| **1, Oyinka Abayomi Drive, Ikoyi, Lagos, Nigeria** | | |
| BP Exploration (Nigeria) Limited | Ordinary | 100.00 |
| **188, Awolowo Road, S. W. Ikoyi, Lagos, Nigeria** | | |
| Amoco Nigeria Exploration Company Limited | Ordinary; Preference | 100.00 |
| Amoco Nigeria Oil Company Limited | Membership Interest | 100.00 |
| Amoco Nigeria Petroleum Company Limitec | Membership Interest | 100.00 |
| **8/10, Broad Street, Lagos, Nigeria** | | |
| ARCO Oil Company Nigeria Unlimited | Membership Interest | 100.00 |
| **Heritage Place, 13th Floor, 21 Lugard Avenue,Lagos, Ikoyi, Nigeria** | | |
| BP Global West Africa Limited | Ordinary | 100.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| **Norway** | | |
| **Tjuvholmen allé 3, 0252 Oslo, Norway** | | |
| Air BP Norway AS | Membership Interest | 100.00 |
| BP Fuels & Lubricants AS | Ordinary | 100.00 |
| **Oman** | | |
| **PO Box 2309, Salalah, 211, Oman** | | |
| BP Global Investments Salalah & Co LLC | Ordinary | 100.00 |
| **Pakistan** | | |
| **D-67/1, Block # 4, Scheme # 5, Clifton, Karachi, Pakistan** | | |
| Castrol Pakistan (Private) Limited | Ordinary | 100.00 |
| **Peru** | | |
| **Av. Camino Real, 111 Torre B Oficina, 603 San Isidro, Lima, Peru** | | |
| Castrol Del Peru S.A. | Ordinary | 100.00 |
| **Philippines** | | |
| **37th Floor, LKG Tower 6801, Ayala Avenue, Makati City, Philippines** | | |
| Castrol Philippines, Inc. | Ordinary | 100.00 |
| **Poland** | | |
| **ul. Grzybowska 62, Warszawa, 00-844, Poland** | | |
| Castrol CEE spółka z ograniczoną odpowedzialnością | Ordinary | 100.00 |
| **ul. Pawia 9, Małopolskie, Kraków, 31-154, Poland** | | |
| BP Polska Services Sp. z o.o. | Membership Interest | 100.00 |
| **Portugal** | | |
| **Lagoas Park, Edificio 3, Porto Salvo, Oeiras, Portugal** | | |
| BP Portugal -Comercio de Combustiveis e Lubrificantes SA | Ordinary | 100.00 |
| Castrol Portugal, S.A. | Ordinary | 100.00 |
| Fuelplane- Sociedade Abastecedora De Aeronaves, Unipessoal, Lda | Ordinary | 100.00 |
| Sociedade de Promocao Imobiliaria Quinta do Loureiro, SA | Ordinary | 100.00 |
| **Romania** | | |
| **Bucharest, District 3, Boulevard Comeliu Coposu, no 6-8, Unirii View Building, Office 101, floor 1, Romania** | | |
| Castrol Lubricants RO S.R.L. | Ordinary | 100.00 |
| **Otopeni, 224E Calea Bucurestilor, within International Airport - Băneasa, Aurel Vlaicu - platform 2,Ilfov county, Romania** | | |
| Air BP Sales Romania S.R.L. | Ordinary | 100.00 |
| **Russian Federation** | | |
| **121099, Moscow, Arbat Municipal District, Smolenskaya square 3, floor 7, office 717 Russian Federation** | | |
| Limited liability company Setra Lubricants | Membership Interest | 100.00 |
| **121099, Moscow, Arbat Municipal District, Smolenskaya square 3, floor 7, office 767, working place 3, Russian Federation** | | |
| OOO BP STL - in liquidation | Membership Interest | 100.00 |
| **Smolenskaya Square 3, Floor 7, Office 767, Moscow, 121099, Russian Federation** | | |
| Limited Liability Company BP Toplivnaya Kompania - in liquidation | Membership Interest | 100.00 |
| **Senegal** | | |
| **Route de Ouakam x Corniche Ouest, Immeuble Alphadio Barry, Dakar, Senegal** | | |
| BP Oil Senegal S.A. | Ordinary | 100.00 |
| **Singapore** | | |
| **7 Straits View #26-01, Marina One East Tower, 018936, Singapore** | | |
| BP Asia Pacific Pte Ltd[d] | Ordinary | 100.00 |
| BP Energy Asia Pte. Limited | Ordinary | 100.00 |
| BP Exploration (Xazar) Pte. Ltd. | Ordinary | 100.00 |
| BP Maritime Services (Singapore) Pte. Limited | Ordinary | 100.00 |
| BP Singapore Pte. Limited | Ordinary | 100.00 |
| Castrol Singapore PTE. Limited | Ordinary | 100.00 |
| **Slovakia** | | |
| **Karadžičova 2, Bratislava, 815 32, Slovakia** | | |
| Blueprint Power Slovakia s.r.o. | Membership Interest | 100.00 |
| **South Africa** | | |
| **199 Oxford Road, Oxford Parks, Dunkeld, Johannesburg, GP, 2196, South Africa** | | |
| BP Southern Africa Proprietary Limited | Ordinary | 74.89 |
| Burmah Castrol South Africa (Pty) Limited | Ordinary; Ordinary A | 100.00 |
| ECM Markets SA (Pty) Ltd | Ordinary | 74.89 |

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| **Spain** | | |
| **Atraque Punta Lucero, Explanada Punta Ceballos s/n, Ziérbena (Vizcaya), Spain** | | |
| Bahia de Bizkaia Electridad, S.L. | Ordinary | 75.00 |
| **Calle Quintanadueñas, 6, (Edificio Arqborea), Madrid, 28050, Spain** | | |
| BP Energy Solutions Sociedad de Valores, S.A | Ordinary | 100.00 |
| BP Espana, S.A. Unipersonal | Ordinary A; Ordinary B; Ordinary C | 100.00 |
| BP Gas & Power Iberia, S.A | Ordinary | 100.00 |
| BP Solar Espana, S.A. Unipersonal | Ordinary A; Ordinary B | 100.00 |
| Castrol España, S.L. Sociedad Unipersonal | Ordinary | 100.00 |
| Markoil, S.A. Unipersonal | Ordinary | 100.00 |
| Onyx Insight Spain Sociedad Limitada | Ordinary | 100.00 |
| **Polígono Industrial "El Serrallo", s/n 12100 Grao de Castellón, Castellón de la Plana, Spain** | | |
| BP Energía España, S.A. Unipersonal | Ordinary | 100.00 |
| **Sweden** | | |
| **Box 8107, Stockholm, 10420, Sweden** | | |
| Air BP Sweden AB | Ordinary | 100.00 |
| **Hemvärnsgatan, 171 54, Solna, Sweden** | | |
| Castrol Sweden AB | Ordinary | 100.00 |
| **Switzerland** | | |
| **Baarerschtrasse 139, Zug, 6300, Switzerland** | | |
| Castrol Switzerland GmbH | Ordinary | 100.00 |
| **Taiwan (Province of China)** | | |
| **57F.-1, No. 7, Sec. 5, Xinyi Rd., Xinyi Dist., Taipei City, 11049, Taiwan (Province of China)** | | |
| BP Taiwan Marketing Limited | Ordinary | 100.00 |
| **Thailand** | | |
| **23rd Fl. Rajanakarn Bldg, 3 South Sathon Road, Yannawa South Sathon, Bangkok 10120, Thailand** | | |
| BP - Castrol (Thailand) Limited | Ordinary A | 57.59 |
| SOFAST Limited | Ordinary (100.00%); Preference (58.99%) | 63.09 |
| **39/77-78 Moo 2 Rama II Road, Tambon Bangkrachao, Amphur Muang, Samutsakorn 74000, Thailand** | | |
| BP Holdings (Thailand) Limited | Ordinary (80.10%); Preference (99.07%) | 81.18 |
| BP Oil (Thailand) Limited | Ordinary (93.64%); Preference (81.18%) | 90.40 |
| **Trinidad and Tobago** | | |
| **5-5A Queen's Park West, Port-of-Spain, Trinidad and Tobago** | | |
| BP Alternative Energy Trinidad and Tobago Limited | Ordinary | 100.00 |
| BP Trinidad Processing Limited | Ordinary | 100.00 |
| Mayaro Initiative for Private Enterprise Development | Ordinary | 70.00 |
| **Türkiye** | | |
| **Degirmen yolu cad. No:28, Asia OfisPark K:3 Icerenkoy-Atasehir, Istanbul, 34752, Türkiye** | | |
| BP Akaryakit Ortakligi | Partnership interest | 70.00 |
| BP Dogal Gaz Ticaret Anonim Sirketi | Ordinary | 100.00 |
| BP Petrolleri Anonim Sirketi | Ordinary | 100.00 |
| **Içerenköy Mah, Degirmen Yolu Cad, Mer[illegible] Bl[illegible] 28/1 Iç Ka[illegible] Atasehir/Istanbul, Türkiye** | | |
| Castrol Madeni Yağlar Ticaret Anonim Şirketi | Ordinary | 100.00 |
| **United Arab Emirates** | | |
| **2474ResCo-work07 & 2474ResCo-work08, 24, Al Sila Tower, Abu Dhabi Global Market Square, Al Maryah Island, Abu Dhabi, United Arab Emirates** | | |
| LYTT ME LIMITED | Ordinary | 100.00 |
| **8th Floor, Standard Chartered Tower, Downtown, Dubai, United Arab Emirates** | | |
| BP Middle East LLC | Ordinary | 100.00 |
| **Cloud Suite 214, 15th Floor, Al Sarab Tower, ADGM Square, Al Maryah Island, Abu Dhabi, United Arab Emirates** | | |
| FOTECH ME LIMITED | Ordinary | 100.00 |
| **Jebel Ali Free Zone, Dubai, United Arab Emirates** | | |
| Stryde Middle East FZE | Ordinary | 100.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| United Kingdom | | |
|---|---|---|
| **1 Wellheads Avenue, Dyce, Aberdeen, AB21 7PB, United Kingdom** | | |
| BP Amoco Exploration (In Amenas) Limited | Ordinary | 100.00 |
| BP Energy Europe Limited | Ordinary | 100.00 |
| BP Exploration Company Limited | Ordinary | 100.00 |
| Britannic Strategies Limited | Ordinary | 100.00 |
| Britoil Limited | Ordinary | 100.00 |
| Burmah Castrol PLC[c] | Ordinary | 100.00 |
| **10 Upper Berkeley Street, London, W1H 7PE, United Kingdom** | | |
| Horizon 38 Management Company Limited | Membership Interest | 53.50 |
| **11 Black Horse Lane, Ipswich, Suffolk, IP1 2EF, United Kingdom** | | |
| Manormaker (Nominee No. 1) Limited | Ordinary | 99.90 |
| Manormaker (Nominee No. 2) Limited | Ordinary | 99.90 |
| Manormaker GP Limited | Membership Interest | 99.90 |
| The Manormaker Limited Partnership | Membership Interest | 99.90 |
| **33 Cavendish Square, London, W1G 0PW, United Kingdom** | | |
| Ropemaker Exempt Unit Trust | Membership Interest | 100.00 |
| **55 Baker Street, London, W1U 7EU, United Kingdom** | | |
| BP Containment Response Limited | Ordinary | 100.00 |
| **Bdo LLP, 4 Atlantic Quay, 70 York Street, Glasgow, G2 8JX, United Kingdom** | | |
| The Burmah Oil Company (Pakistan Trading) Limited | Ordinary | 100.00 |
| **Breckland, Linford Wood, Milton Keynes, MK14 6GY, United Kingdom** | | |
| Charge Your Car Limited | Ordinary A; Ordinary B | 100.00 |
| Chargemaster Limited | Ordinary | 100.00 |
| Elektromotive Limited | Ordinary | 100.00 |
| **C/O Bdo Llp, 5 Temple Square, Temple Street, Liverpool, L2 5RH, United Kingdom** | | |
| BP Chemicals East China Investments Limited | Ordinary | 100.00 |
| BP Exploration (Canada) Limited | Ordinary | 100.00 |
| BP Exploration (Greenland) Limited | Ordinary | 100.00 |
| BP Exploration (Madagascar) Limited | Ordinary | 100.00 |
| BP Exploration (Namibia) Limited | Ordinary | 100.00 |
| BP Exploration Peru Limited | Ordinary | 100.00 |
| BP Petrochemicals India Investments Limited | Ordinary | 100.00 |
| BP Subsea Well Response (Brazil) Limited | Ordinary | 100.00 |
| Expandite Contract Services Limited | Ordinary | 100.00 |
| Exploration (Luderitz Basin) Limited | Ordinary | 100.00 |
| **Chertsey Road, Sunbury on Thames, Middlesex, TW16 7BP, England, United Kingdom** | | |
| Air BP Limited | Ordinary | 100.00 |
| Amoco (Fiddich) Limited | Ordinary | 100.00 |
| Amoco U.K. Petroleum Limited | Ordinary | 100.00 |
| Atlantic 2/3 UK Holdings Limited | Ordinary | 100.00 |
| Autino Holdings Limited | Ordinary | 100.00 |
| Autino Limited | Ordinary | 100.00 |
| BP (Abu Dhabi) Limited | Ordinary | 100.00 |
| BP (Barbican) Limited[a] | Ordinary | 100.00 |
| BP (Gibraltar) Limited | Ordinary | 100.00 |
| BP (GTA Mauritania) Finance Limited | Ordinary | 100.00 |
| BP (GTA Senegal) Finance Limited | Ordinary | 100.00 |
| BP (Indian Agencies) Limited[a] | Ordinary | 100.00 |
| BP Absheron Limited | Ordinary | 100.00 |
| BP Advanced Mobility Limited | Ordinary | 100.00 |
| BP Africa Limited[d] | Ordinary | 100.00 |
| BP Africa Oil Limited | Ordinary | 100.00 |
| BP Agung I Limited | Ordinary | 100.00 |
| BP Agung II Limited | Ordinary | 100.00 |
| BP Alternative Energy Investments Limited | Ordinary | 100.00 |
| BP America Limited | Ordinary | 100.00 |
| BP Amoco Exploration (Faroes) Limited | Ordinary | 100.00 |
| BP Andaman II Ltd | Ordinary | 100.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| BP Asia Pacific Holdings Limited | Ordinary | 100.00 |
| BP Australia Swaps Management Limited | Ordinary | 100.00 |
| BP Benevolent Fund Trustees Limited[a] | Ordinary | 100.00 |
| BP Biofuels Brazil Investments Limited | Ordinary | 100.00 |
| BP Capital Markets p.l.c. | Ordinary | 100.00 |
| BP Car Fleet Limited[a] | Ordinary | 100.00 |
| BP Carbon Trading Limited | Ordinary | 100.00 |
| BP CCUS UK LTD | Ordinary | 100.00 |
| BP Chemicals Limited | Ordinary | 100.00 |
| BP Continental Holdings Limited | Ordinary | 100.00 |
| BP Corporate Holdings Limited | Ordinary | 100.00 |
| BP D230 Limited | Ordinary | 100.00 |
| BP East Kalimantan CBM Limited | Ordinary | 100.00 |
| BP Eastern Mediterranean Limited | Ordinary | 100.00 |
| BP Energy Colombia Limited | Ordinary | 100.00 |
| BP Exploration (Absheron) Limited | Ordinary | 100.00 |
| BP Exploration (Algeria) Limited | Ordinary | 100.00 |
| BP Exploration (Alpha) Limited | Ordinary | 100.00 |
| BP Exploration (Azerbaijan) Limited | Ordinary | 100.00 |
| BP Exploration (Caspian Sea) Limited | Ordinary | 100.00 |
| BP Exploration (D230) Limited | Ordinary | 100.00 |
| BP Exploration (Delta) Limited | Ordinary | 100.00 |
| BP Exploration (Epsilon) Limited | Ordinary | 100.00 |
| BP Exploration (Morocco) Limited | Ordinary | 100.00 |
| BP Exploration (Psi) Limited | Ordinary | 100.00 |
| BP Exploration (Shafag-Asiman) Limited | Ordinary | 100.00 |
| BP Exploration (Shah Deniz) Limited | Ordinary | 100.00 |
| BP Exploration (South Atlantic) Limited | Ordinary | 100.00 |
| BP Exploration (STP) Limited | Ordinary | 100.00 |
| BP Exploration Argentina Limited | Ordinary | 100.00 |
| BP Exploration Beta Limited | Ordinary | 100.00 |
| BP Exploration China Limited | Ordinary | 100.00 |
| BP Exploration Company (Middle East) Limited | Ordinary | 100.00 |
| BP Exploration Indonesia Limited | Ordinary | 100.00 |
| BP Exploration Libya Limited | Ordinary | 100.00 |
| BP Exploration North Africa Limited | Ordinary | 100.00 |
| BP Exploration Operating Company Limited | Ordinary | 100.00 |
| BP Exploration Orinoco Limited | Ordinary | 100.00 |
| BP Exploration Personnel Company Limited | Ordinary | 100.00 |
| BP Express Shopping Limited | Ordinary | 100.00 |
| BP Finance p.l.c. | Ordinary | 100.00 |
| BP Gas & Power Investments Limited | Ordinary | 100.00 |
| BP Gas Marketing Limited | Ordinary | 100.00 |
| BP Global Investments Limited[a] | Ordinary | 100.00 |
| BP Global Solutions Limited | Ordinary | 100.00 |
| BP Greece Limited | Ordinary | 100.00 |
| BP Holdings Canada Limited[a] | Ordinary | 100.00 |
| BP Holdings Iraq Ltd | Ordinary | 100.00 |
| BP Holdings North America Limited[a] | Ordinary; Cumulative redeemable preference | 100.00 |
| BP Indonesia Investment Limited | Ordinary | 100.00 |
| BP Integrated Solutions Limited | Ordinary | 100.00 |
| BP International Limited[a] | Ordinary | 100.00 |
| BP Investment Management Limited | Ordinary | 100.00 |
| BP Investments Asia Limited | Ordinary | 100.00 |
| BP Iran Limited | Ordinary | 100.00 |
| BP Kuwait Limited | Ordinary | 100.00 |
| BP Low Carbon Development Company Limited | Ordinary | 100.00 |
| BP Marine Limited | Ordinary | 100.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| BP Mauritania Investments Limited | Ordinary | 100.00 |
| BP Middle East Limited[a] | Ordinary | 100.00 |
| BP Mocambique Limited | Ordinary | 100.00 |
| BP New Ventures Middle East Limited | Ordinary | 100.00 |
| BP Oil International Limited | Ordinary | 100.00 |
| BP Oil Kent Refinery Limited (in liquidation) | Ordinary | 100.00 |
| BP Oil Llandarcy Refinery Limited | Ordinary | 100.00 |
| BP Oil Logistics UK Limited | Ordinary | 100.00 |
| BP Oil UK Limited | Ordinary; Debentures | 100.00 |
| BP Oil Venezuela Limited | Ordinary | 100.00 |
| BP Oil Vietnam Limited | Ordinary | 100.00 |
| BP Oil Yemen Limited | Ordinary | 100.00 |
| BP Pension Escrow Limited | Ordinary | 100.00 |
| BP Pension Trustees Limited[a] | Ordinary | 100.00 |
| BP Pensions Limited[a] | Ordinary | 100.00 |
| BP Pipelines (BTC) Limited | Ordinary | 100.00 |
| BP Pipelines (SCP) Limited | Ordinary | 100.00 |
| BP Pipelines (TANAP) Limited | Ordinary | 100.00 |
| BP Pipelines TAP Limited | Ordinary | 100.00 |
| BP Poseidon Limited | Ordinary | 100.00 |
| BP Properties Limited[a] | Ordinary | 100.00 |
| BP Retail Properties Limited | Ordinary | 100.00 |
| BP Russian Investments Limited | Ordinary | 100.00 |
| BP Russian Ventures Limited | Ordinary | 100.00 |
| BP Scale Up Factory Limited | Ordinary | 100.00 |
| BP Senegal Investments Limited | Ordinary | 100.00 |
| BP Services International Limited | Ordinary | 100.00 |
| BP Shafag-Asiman Limited | Ordinary | 100.00 |
| BP Shipping Limited | Ordinary | 100.00 |
| BP South America Holdings Ltd | Ordinary | 100.00 |
| BP Subsea Well Response Limited | Ordinary | 100.00 |
| BP Technology Ventures Limited | Ordinary | 100.00 |
| BP Turkey Refining Limited[a] | Ordinary | 100.00 |
| BP UK Fatima Limited | Ordinary | 100.00 |
| BP UK Retained Holdings Limited | Ordinary | 100.00 |
| BP West Aru I Limited | Ordinary | 100.00 |
| BP West Aru II Limited | Ordinary | 100.00 |
| BP West Papua I Limited | Ordinary | 100.00 |
| BP+Amoco International Limited[a] | Ordinary | 100.00 |
| Britannic Energy Trading Limited | Ordinary | 100.00 |
| Britannic Investments Iraq Limited | Ordinary | 100.00 |
| Britannic Marketing Limited | Ordinary | 100.00 |
| Britannic Trading Limited | Ordinary | 100.00 |
| BTC Pipeline Holding Company Limited | Ordinary | 100.00 |
| BXL Plastics Limited | Ordinary; Deferred | 100.00 |
| Cadman DBP Limited | Ordinary | 100.00 |
| Castrol (U.K.) Limited | Ordinary | 100.00 |
| Castrol Holdings Americas Limited | Ordinary | 100.00 |
| Castrol Holdings International Limited | Ordinary | 100.00 |
| Castrol Offshore Limited | Ordinary | 100.00 |
| Exmoor Nominee Limited | Ordinary | 51.00 |
| Exmoor Properties GP Limited | Ordinary | 51.00 |
| Exmoor Properties PF LP | Membership Interest | 51.00 |
| Fosroc Expandite Limited | Ordinary | 100.00 |
| Fotech Group Limited | Ordinary | 100.00 |
| GTA FPSO Company Ltd | Ordinary | 100.00 |
| Guangdong Investments Limited | Ordinary | 100.00 |
| H2 Teesside Limited | Ordinary | 100.00 |
| Insight Analytics Solutions Holdings Limited | Ordinary | 100.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Insight Analytics Solutions Limited | Ordinary | 100.00 |
| Iraq Petroleum Company Limited | Ordinary | 100.00 |
| Kenilworth Oil Company Limited[a] | Ordinary | 100.00 |
| Low Carbon Friends Limited | Ordinary | 100.00 |
| Lubricants UK Limited | Ordinary | 100.00 |
| Lytt Limited | Ordinary | 100.00 |
| Net Zero North Sea Storage Limited | Ordinary | 100.00 |
| Net Zero Teesside Power Limited | Ordinary | 100.00 |
| Open Energi Limited | Ordinary | 100.00 |
| Open Energy Limited | Ordinary | 100.00 |
| Pearl River Delta Investments Limited | Ordinary | 100.00 |
| Ropemaker Deansgate Limited | Ordinary | 100.00 |
| Ropemaker Properties Limited | Ordinary | 100.00 |
| Stryde International Limited | Ordinary | 100.00 |
| Stryde Limited | Ordinary | 100.00 |
| The BP Share Plans Trustees Limited[a] | Ordinary | 100.00 |
| Viceroy Investments Limited | Ordinary | 100.00 |
| **Hutwood Court Bournemouth Road, Chandler's Ford, Eastleigh, Hampshire, SO53 3QB, United Kingdom** | | |
| Utilita Group Limited | Currently exercisable options | 63.00 |
| **Technology Centre, Whitchurch Hill, Pangbourne, Reading, RG8 7QR, United Kingdom** | | |
| Castrol Limited | Ordinary | 100.00 |
| **United States** | | |
| **100 Shockoe Slip, 2nd Floor, Richmond, VA, 23219, United States** | | |
| Collegiate Clean Energy, LLC | Membership Interest | 100.00 |
| INGENCO Wholesale Power, L.L.C. | Membership Interest | 100.00 |
| **112 SW 7th Street, Suite 3C, Topeka, Kansas, 66603, United States** | | |
| Flat Ridge Wind Energy, LLC | Membership Interest | 100.00 |
| **1201 Hays Street Tallahassee, FL, 32301** | | |
| Landfill Energy Systems Florida LLC | Membership Interest | 100.00 |
| **1209 Orange Street, Wilmington DE 19801, United States** | | |
| 200 PS Overseas Holdings Inc. | Ordinary | 100.00 |
| AE Cedar Creek Holdings LLC | Membership Interest | 100.00 |
| AE Goshen II Holdings LLC | Membership Interest | 100.00 |
| AE Goshen II Wind Farm LLC | Membership Interest | 100.00 |
| AE Power Services LLC | Membership Interest | 100.00 |
| AE Wind PartsCo LLC | Membership Interest | 100.00 |
| Air BP Canada LLC | Membership Interest | 100.00 |
| AM/PM International Inc. | Ordinary | 100.00 |
| American Oil Company | Ordinary | 100.00 |
| Amoco (U.K.) Exploration Company, LLC | Membership Interest | 100.00 |
| Amoco Chemical (Europe) S.A. | Ordinary | 100.00 |
| Amoco Cypress Pipeline Company | Ordinary | 100.00 |
| Amoco Destin Pipeline Company | Ordinary | 100.00 |
| Amoco Guatemala Petroleum Company | Ordinary | 100.00 |
| Amoco International Petroleum Company | Ordinary | 100.00 |
| Amoco Louisiana Fractionator Company | Ordinary | 100.00 |
| Amoco Main Pass Gathering Company | Ordinary | 100.00 |
| Amoco MB Fractionation Company | Ordinary | 100.00 |
| Amoco MBF Company | Ordinary | 100.00 |
| Amoco Netherlands Petroleum Company | Ordinary | 100.00 |
| Amoco Nigeria Petroleum Company | Ordinary | 100.00 |
| Amoco Norway Oil Company | Ordinary | 100.00 |
| Amoco Olefins Corporation | Ordinary | 100.00 |
| Amoco Overseas Exploration Company | Ordinary | 100.00 |
| Amoco Pipeline Asset Company | Ordinary | 100.00 |
| Amoco Properties Incorporated | Ordinary | 100.00 |
| Amoco Remediation Management Services Corporation | Ordinary | 100.00 |
| Amoco Research Operating Company | Ordinary | 100.00 |

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Amoco Rio Grande Pipeline Company | Ordinary | 100.00 |
| Amoco Somalia Petroleum Company | Ordinary | 100.00 |
| Amoco Sulfur Recovery Company | Ordinary | 100.00 |
| Amoco Tri-States NGL Pipeline Company | Ordinary | 100.00 |
| Amprop, Inc. | Ordinary | 100.00 |
| Anaconda Arizona, Inc. | Ordinary | 100.00 |
| Archaea Energy Inc. | Ordinary | 100.00 |
| ARCO British International, Inc. | Ordinary | 100.00 |
| ARCO British Limited, LLC | Membership Interest | 100.00 |
| ARCO El-Djazair Holdings Inc. | Ordinary | 100.00 |
| ARCO Environmental Remediation, L.L.C. | Membership Interest | 100.00 |
| ARCO Gaviota Company | Ordinary | 100.00 |
| ARCO International Investments Inc. | Ordinary | 100.00 |
| ARCO Midcon LLC | Membership Interest | 100.00 |
| ARCO Unimar Holdings LLC | Membership Interest | 100.00 |
| Atlantic Richfield Company | Ordinary; Preference | 100.00 |
| Australia Resource Holdings Inc. | Ordinary | 100.00 |
| Auwahi Wind Energy Holdings LLC | Membership Interest | 100.00 |
| Black Lake Pipe Line Company | Ordinary | 100.00 |
| Blueprint Power Technologies Inc. | Ordinary | 100.00 |
| BP Alternative Energy North America Inc. | Ordinary | 100.00 |
| BP America Chemicals Company | Ordinary | 100.00 |
| BP America Foreign Investments Inc. | Ordinary | 100.00 |
| BP America Inc. | Ordinary; Ordinary B | 100.00 |
| BP America Production Company | Ordinary | 100.00 |
| BP AMI Leasing, Inc. | Ordinary | 100.00 |
| BP Argentina Exploration Company | Ordinary | 100.00 |
| BP Argentina Holdings LLC | Membership Interest | 100.00 |
| BP Berau Ltd. | Ordinary | 100.00 |
| BP Biofuels Advanced Technology Inc. | Ordinary | 100.00 |
| BP Biofuels North America LLC | Membership Interest | 100.00 |
| BP Bomberai Ltd. | Ordinary | 100.00 |
| BP Brazil Tracking L.L.C. | Membership Interest | 100.00 |
| BP Canada Energy Marketing Corp. | Membership Interest | 100.00 |
| BP Canada Investments Inc. | Ordinary | 100.00 |
| BP Capital Markets America Inc. | Ordinary | 100.00 |
| BP Carbon Solutions LLC | Membership Interest | 100.00 |
| BP Caribbean Company | Ordinary | 100.00 |
| BP Central Pipelines LLC | Membership Interest | 51.00 |
| BP Chemical Remediation Holdings LLC | Membership Interest | 100.00 |
| BP China Exploration and Production Company | Ordinary | 100.00 |
| BP Company North America Inc. | Ordinary; Redeemable preference | 100.00 |
| BP Containment Response System Holdings LLC | Membership Interest | 100.00 |
| BP D-B Pipeline Company LLC | Partnership interest | 100.00 |
| BP Egypt Company | Ordinary | 100.00 |
| BP Energy Company | Ordinary | 100.00 |
| BP Energy Holding Company LLC | Membership Interest | 100.00 |
| BP Energy Retail Company California LLC | Membership Interest | 100.00 |
| BP Energy Retail Company LLC | Membership Interest | 100.00 |
| BP Exploration & Production Inc. | Ordinary; Preference | 100.00 |
| BP GOM Logistics LLC | Membership Interest | 100.00 |
| BP Latin America LLC | Membership Interest | 100.00 |
| BP Latin America Upstream Services Inc. | Ordinary | 100.00 |
| BP Louisiana Energy Park LLC | Membership Interest | 100.00 |
| BP Lubricants USA Inc. | Ordinary | 100.00 |
| BP Mariner Holding Company LLC | Membership Interest | 100.00 |
| BP Midstream Partners GP LLC | Membership Interest | 100.00 |
| BP Midstream Partners Holdings LLC | Membership Interest | 100.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| BP Midstream Partners LP | Ordinary | 100.00 |
| BP Midwest Product Pipelines Holdings LLC | Membership Interest | 51.00 |
| BP Nutrition Inc. | Ordinary | 100.00 |
| BP Offshore Gathering Systems Inc. | Ordinary | 100.00 |
| BP Offshore Pipelines Company LLC | Membership Interest | 100.00 |
| BP Offshore Response Company LLC | Membership Interest | 100.00 |
| BP Oil Pipeline Company | Ordinary | 100.00 |
| BP Oil Shipping Company, USA | Ordinary | 100.00 |
| BP One Pipeline Company LLC | Membership Interest | 51.00 |
| BP Pakistan (Badin) Inc. | Ordinary | 100.00 |
| BP Pakistan Exploration and Production, Inc. | Ordinary | 100.00 |
| BP Pipelines (Alaska) Inc. | Ordinary | 100.00 |
| BP Pulse Fleet North America Inc. | Ordinary | 100.00 |
| BP River Rouge Pipeline Company LLC | Partnership interest | 100.00 |
| BP SC Holdings LLC | Membership Interest | 100.00 |
| BP Scale Up Factory North America Inc. | Ordinary | 100.00 |
| BP Solar Holding LLC | Membership Interest | 100.00 |
| BP Solar International Inc. | Ordinary | 100.00 |
| BP Southern Cone Company | Ordinary | 100.00 |
| BP Technology Ventures Inc. | Ordinary | 100.00 |
| BP Trinidad and Tobago LLC | Membership Interest | 70.00 |
| BP Two Pipeline Company LLC | Partnership interest | 100.00 |
| BP US Offshore Wind Energy LLC | Membership Interest | 100.00 |
| BP Wind Energy Beacon Holding LLC | Membership Interest | 100.00 |
| BP Wind Energy Empire Holding LLC | Membership Interest | 100.00 |
| BP Wind Energy North America Inc. | Ordinary | 100.00 |
| BP Wiriagar Ltd. | Ordinary | 100.00 |
| BPX (Eagle Ford) Gathering LLC | Membership Interest | 75.00 |
| BPX (Karnes) Gathering LLC | Membership Interest | 100.00 |
| BPX (Permian) Gathering LLC | Membership Interest | 100.00 |
| BPX Energy Inc. | Ordinary | 100.00 |
| BPX Gathering Holdings LLC | Membership Interest | 100.00 |
| BPX Production Company | Ordinary | 100.00 |
| Burmah Castrol Holdings Inc. | Ordinary | 100.00 |
| Casitas Pipeline Company | Ordinary | 100.00 |
| Castrol Caribbean & Central America Inc. | Ordinary | 100.00 |
| CH-Twenty, Inc. | Ordinary | 100.00 |
| Clean Eagle RNG, LLC | Membership Interest | 100.00 |
| Cuyama Pipeline Company | Ordinary | 100.00 |
| Elm Holdings Inc. | Ordinary | 100.00 |
| Energy Global Investments (USA) Inc. | Ordinary | 100.00 |
| Enstar LLC | Membership Interest | 100.00 |
| Flat Ridge 2 Holdings LLC | Membership Interest | 100.00 |
| Flat Ridge 2 Wind Energy LLC | Membership Interest | 100.00 |
| Flat Ridge 2 Wind Holdings LLC | Membership Interest | 100.00 |
| Flat Ridge Interconnection LLC | Membership Interest | 100.00 |
| Foseco Holding, Inc. | Membership Interest | 100.00 |
| Foseco, Inc. | Ordinary | 100.00 |
| Fowler I Holdings LLC | Membership Interest | 100.00 |
| Fowler Ridge Holdings LLC | Membership Interest | 100.00 |
| Fowler Ridge I Land Investments LLC | Membership Interest | 100.00 |
| Fowler Ridge II Holdings LLC | Membership Interest | 100.00 |
| Fowler Ridge III Wind Farm LLC | Membership Interest | 100.00 |
| Fowler Ridge Wind Farm LLC | Membership Interest | 100.00 |
| Gardena Holdings Inc. | Ordinary | 100.00 |
| Highlands Ethanol, LLC | Membership Interest | 100.00 |
| Ken-Chas Reserve Company | Ordinary | 100.00 |
| LFG Acquisition Holdings LLC | Membership Interest | 100.00 |
| Lightning Renewables, LLC | Membership Interest | 60.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Mardi Gras Transportation System Company LLC | Membership Interest | 100.00 |
| Mavrix, LLC | Membership Interest | 100.00 |
| Mehoopany Holdings LLC | Membership Interest | 100.00 |
| Mountain City Remediation, LLC | Membership Interest | 100.00 |
| North America Funding Company | Ordinary | 100.00 |
| Orion Delaware Mountain Wind Farm LP | Membership Interest | 100.00 |
| Orion Energy Holdings, LLC | Membership Interest | 100.00 |
| Orion Energy L.L.C. | Membership Interest | 100.00 |
| Pan American Energy US LLC | Membership Interest | 51.00 |
| Remediation Management Services Company | Ordinary | 100.00 |
| Richfield Oil Corporation | Ordinary | 100.00 |
| Rolling Thunder I Power Partners, LLC | Membership Interest | 100.00 |
| Sherbino I Holdings LLC | Membership Interest | 100.00 |
| Sherbino Mesa I Land Investments LLC | Membership Interest | 100.00 |
| Southern Ridge Pipeline Holding Company | Ordinary | 100.00 |
| Southern Ridge Pipeline LP LLC | Membership Interest | 100.00 |
| Stryde Inc. | Ordinary | 100.00 |
| Thorntons LLC | Membership Interest | 100.00 |
| TLK Holding Company LLC | Membership Interest | 100.00 |
| TLK Intermediate Holding Company LLC | Membership Interest | 100.00 |
| TLK Operating Company LLC | Membership Interest | 100.00 |
| Toledo Refinery Holding Company LLC | Membership Interest | 100.00 |
| Union Texas International Corporation | Ordinary | 100.00 |
| Vastar Pipeline, LLC | Membership Interest | 100.00 |
| Westlake Houston Development, LLC | Membership Interest | 100.00 |
| Whiting Clean Energy, Inc. | Membership Interest | 100.00 |
| **1833 South Morgan Road, Oklahoma City OK 73128, United States** | | |
| BPX Midstream LLC | Membership Interest | 100.00 |
| **1999 Bryan St., STE 900, Dallas, TX, 75201, United States** | | |
| Acamar Energy Project, LLC | Membership Interest | 100.00 |
| Andromedae Energy Project, LLC | Membership Interest | 100.00 |
| Arche Energy Project, LLC | Membership Interest | 100.00 |
| Atria Energy Project, LLC | Membership Interest | 100.00 |
| Bellatrix Energy Project, LLC | Membership Interest | 100.00 |
| BP Solar SHH, LLC | Membership Interest | 100.00 |
| BP Solar SHP, LLC | Membership Interest | 100.00 |
| BPX Operating Company | Ordinary | 100.00 |
| Buzz Energy Project, LLC | Membership Interest | 100.00 |
| Cassiopeia Energy Project, LLC | Membership Interest | 100.00 |
| Cepheus Energy Project, LLC | Membership Interest | 100.00 |
| Cressida Energy Project, LLC | Membership Interest | 100.00 |
| Delphinus Energy Project, LLC | Membership Interest | 100.00 |
| Despina Energy Project, LLC | Membership Interest | 100.00 |
| Draconis Energy Project, LLC | Membership Interest | 100.00 |
| Elanor Energy Project, LLC | Membership Interest | 100.00 |
| Electra Energy Project, LLC | Membership Interest | 100.00 |
| Fotech USA, LLC | Membership Interest | 100.00 |
| Juliet Energy Project, LLC | Membership Interest | 100.00 |
| Maia Energy Project, LLC | Membership Interest | 100.00 |
| Minkar Energy Project, LLC | Membership Interest | 100.00 |
| Mira Energy Project, LLC | Membership Interest | 100.00 |
| Nashira Energy Project, LLC | Membership Interest | 100.00 |
| Nunki Energy Project LLC | Membership Interest | 100.00 |
| Peacock Energy Project, LLC | Membership Interest | 100.00 |
| Perdita Energy Project, LLC | Membership Interest | 100.00 |
| Persei Energy Project, LLC | Membership Interest | 100.00 |
| Rigel Energy Project, LLC | Membership Interest | 100.00 |
| Shaula Energy Project II, LLC | Membership Interest | 100.00 |
| Shaula Energy Project III, LLC | Membership Interest | 100.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Shaula Energy Project, LLC | Membership Interest | 100.00 |
| Spica Energy Project, LLC | Membership Interest | 100.00 |
| Subra Energy Project, LLC | Membership Interest | 100.00 |
| Taika Energy Project, LLC | Membership Interest | 100.00 |
| Tania Energy Project, LLC | Membership Interest | 100.00 |
| Telesto Energy Project, LLC | Membership Interest | 100.00 |
| Tesni Energy Project, LLC | Membership Interest | 100.00 |
| Thalassa Energy Project, LLC | Membership Interest | 100.00 |
| Venatici Energy Project, LLC | Membership Interest | 100.00 |
| Zibal Energy Project, LLC | Membership Interest | 100.00 |
| **208 South LaSalle Street, Suite 814, Chicago, IL, 60604-1101, United States** | | |
| Amprop Illinois I Limited Partnership | Partnership interest | 100.00 |
| Dradnats, Inc. | Ordinary | 100.00 |
| **211 E. 7th Street, Suite 620, Austin, TX, 78701, United States** | | |
| Gulf Coast Environmental Systems, LLC (dba Conifer Systems LLC) | Membership Interest | 100.00 |
| Toro Energy of Indiana, LLC | Membership Interest | 60.00 |
| **2108 55th Street, Suite 105, Boulder CO 80301, United States** | | |
| Insight Analytics Solutions USA, Inc | Ordinary | 100.00 |
| **2405 York Road, Ste 201, Lutherville Timonium, MD, 21093-2264, United States** | | |
| BP Products North America Inc. | Ordinary | 100.00 |
| **251 East Ohio Street, Suite 500, Indianapolis IN 46204, United States** | | |
| AmProp Finance Company | Ordinary | 100.00 |
| BP Foundation Incorporated | Membership Interest | 100.00 |
| Standard Oil Company, Inc. | Ordinary | 100.00 |
| **251 Little Falls Drive, Wilmington, DE 19808, United States** | | |
| AH Medora LFG, LLC | Membership Interest | 100.00 |
| AHJRLLFG, LLC | Membership Interest | 100.00 |
| AHMLFG, LLC | Membership Interest | 100.00 |
| Archaea AD, LLC | Membership Interest | 100.00 |
| Archaea CCS LLC | Membership Interest | 100.00 |
| Archaea Energy II LLC | Membership Interest | 100.00 |
| Archaea Energy Marketing LLC | Membership Interest | 100.00 |
| Archaea Energy Operating LLC | Membership Interest | 100.00 |
| Archaea Energy Services LLC | Membership Interest | 100.00 |
| Archaea Holdings, LLC | Membership Interest | 100.00 |
| Archaea Infrastructure, LLC | Membership Interest | 100.00 |
| Archaea Lutum, LLC | Membership Interest | 100.00 |
| Archaea Operating LLC | Membership Interest | 100.00 |
| Archaea Real Estate Holdings LLC | Membership Interest | 100.00 |
| Archaea Ventures LLC | Membership Interest | 100.00 |
| Aria Energy East LLC | Membership Interest | 100.00 |
| Aria Energy LLC | Membership Interest | 100.00 |
| Aria Energy Operating LLC | Membership Interest | 100.00 |
| Assai Energy, LLC | Membership Interest | 100.00 |
| Aurum Renewables LLC | Membership Interest | 100.00 |
| Biofuels Coyote Canyon Biogas, LLC | Membership Interest | 100.00 |
| BioFuels San Bernardino Biogas, LLC | Membership Interest | 100.00 |
| CES Biogas LLC | Membership Interest | 100.00 |
| Cefari RNG OKC, LLC | Membership Interest | 100.00 |
| CII Methane Holdings III, LLC | Membership Interest | 100.00 |
| CII Methane Holdings, LLC | Membership Interest | 100.00 |
| CII Methane Management III, LLC | Membership Interest | 100.00 |
| CII Methane Management IV, LLC | Membership Interest | 100.00 |
| Eagle Point RNG LLC | Membership Interest | 100.00 |
| EIF Innovative Holdings, LLC | Membership Interest | 100.00 |
| EIF KC Landfill Gas Holdings, LLC | Membership Interest | 100.00 |
| EIF KC Landfill Gas, LLC | Membership Interest | 100.00 |
| Element Markets Renewable Natural Gas, LLC | Membership Interest | 100.00 |
| Emerald City Renewables LLC | Membership Interest | 100.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Green Meadows Operations LLC | Membership Interest | 100.00 |
| Industrial Power Generating Company, LLC | Membership Interest | 100.00 |
| INGENCO Renewable Development LLC | Membership Interest | 100.00 |
| Innovative Energy Systems, LLC | Membership Interest | 100.00 |
| Innovative/Colonie, LLC | Membership Interest | 100.00 |
| Innovative/DANC, LLC | Membership Interest | 100.00 |
| Innovative/Fulton, LLC | Membership Interest | 100.00 |
| IPGC Holdings LLC | Membership Interest | 100.00 |
| JL-E Financial Holdings LLC | Membership Interest | 100.00 |
| LES Development LLC | Membership Interest | 100.00 |
| LES Manager LLC | Membership Interest | 100.00 |
| LES Operations Services LLC | Membership Interest | 100.00 |
| LES Renewable NG LLC | Membership Interest | 100.00 |
| LFG Holdings LLC | Membership Interest | 100.00 |
| NextGen Power Holdings LLC | Membership Interest | 100.00 |
| RNG Moovers LLC | Class B Membership Interest | 95.00 |
| Rochelle Energy LLC | Membership Interest | 100.00 |
| South Shelby RNG, LLC | Membership Interest | 100.00 |
| Southeast OKC RNG LLC | Membership Interest | 100.00 |
| Timberline Energy, LLC | Class A Membership Interest | 100.00 |
| Zeus Renewables LLC | Membership Interest | 100.00 |
| Zimmerman Energy LLC | Membership Interest | 100.00 |
| **2595 Interstate Drive, Suite 103, Harrisburg, PA 17110** | | |
| PEI Power II, LLC | Membership Interest | 100.00 |
| PEI Power LLC | Membership Interest | 100.00 |
| **2626 Glenwood Avenue, Suite 550, Raleigh, NC, 27608, United States** | | |
| Big Run Power Producers, LLC | Membership Interest | 100.00 |
| **2711 Centerville Road, Suite 400, Wilmington DE 19808, United States** | | |
| Amoco Oil Holding Company | Ordinary | 100.00 |
| Amoco Pipeline Holding Company | Ordinary | 100.00 |
| BP International Services Company | Ordinary | 100.00 |
| Finite Resources, Inc. | Ordinary | 80.50 |
| Orion Post Land Investments, LLC | Membership Interest | 100.00 |
| Welchem, Inc. | Ordinary | 100.00 |
| **2900 West Road STE 500, East Lansing, MI, 48823** | | |
| Canton Renewables, LLC | Membership Interest | 100.00 |
| **2908 Poston Avenue, Nashville, TN 37203** | | |
| CERF Shelby, LLC | Membership Interest | 100.00 |
| Tennessee Renewable Group LLC | Membership Interest | 100.00 |
| **306 W. Main Street, Suite 512, Frankfort, KY, 40601, United States** | | |
| Fresh-Serve Bakeries LLC | Membership Interest | 100.00 |
| Thornton Transportation LLC | Membership Interest | 100.00 |
| **33 North LaSalle Street, Chicago, Illinois 60602, United States** | | |
| Warrenville Development Limited Partnership | Membership Interest | 100.00 |
| **334, North Senate Avenue, Indianapolis, IN, 46204-1708, United States** | | |
| BP Corporation North America Inc. | Ordinary | 100.00 |
| **3800 North Central Avenue, Suite 460, Phoenix, AZ, 85012, United States** | | |
| Sargas Energy Project, LLC | Membership Interest | 100.00 |
| **400 Cornerstone Drive, Suite 240, Williston VT 05495, United States** | | |
| Saturn Insurance Inc. | Ordinary | 100.00 |
| **435 Devon Park Drive, Suite 700, Wayne, Pennsylvania, 19087, United States** | | |
| Finite Carbon Corporation | Ordinary | 80.50 |
| **4400 Easton Commons Way , Suite 125, Columbus OH 43219, United States** | | |
| Baltimore Ennis Land Company, Inc. | Ordinary | 100.00 |
| Exomet, Inc. | Ordinary | 100.00 |
| The Standard Oil Company | Ordinary | 100.00 |
| **45 Memorial Circle, Augusta ME 04330, United States** | | |
| BP Pipelines (North America) Inc. | Ordinary | 100.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| **701 South Carson Street Suite 200, Carson City, NV, 89701, United States** | | |
| Amoco Marketing Environmental Services Company | Ordinary | 100.00 |
| **80 State Street, Albany, NY** | | |
| Model City Energy, LLC | Membership Interest | 100.00 |
| Modern Innovative Energy, LLC | Membership Interest | 100.00 |
| Seneca Energy II, LLC | Membership Interest | 100.00 |
| **814 Thayer Avenue, Bismarck, ND, 58501-4018, United States** | | |
| The Anaconda Company | Ordinary | 100.00 |
| **8585 Old Dairy Rd STE 208, Juneau, AK, 99801, AK, 99801** | | |
| Frontier Operation Services, LLC | Membership Interest | 100.00 |
| **920 North King Street, 2nd Floor, Wilmington DE 19801, United States** | | |
| BPRY Caribbean Ventures LLC | Membership Interest | 70.00 |
| **921 S. Orchard St. Ste G, Boise ID 83705, United States** | | |
| IGI Resources, Inc. | Ordinary | 100.00 |
| **Bank of America Center, 16th Floor, 1111 East Main Street, Richmond, VA, 23219, United States** | | |
| Amoco Environmental Services Company | Ordinary; Preference | 100.00 |
| **Venezuela** | | |
| **Avenida Eugenio Mendoza / San Felipe Edificio Centro Letonia, Torre Ing-Bank, Piso 12, Oficina 124-B, La Castellana, Caracas, 540** | | |
| Consolidada de Energia y Lubricantes, (CENERLUB) C.A. - in liquidation | Ordinary | 100.00 |
| **Av. Francisco de Miranda, con primera avenida de Los Palos, Grandes, Edif Cavendes, piso 9, ofi 903, Los Palos Grandes, Caracas / Miranda, Chacao / Caracas, 1060, Venezuela** | | |
| BP Petroleo y Gas, S.A. | Ordinary | 100.00 |
| **Vietnam** | | |
| **9th Floor, 22-36 Nguyen Hue Street, 57-69F Dong Khoi Street, District 1, Ho Chi Minh City, Vietnam** | | |
| Castrol BP Petco Limited Liability Company | Membership Interest | 65.00 |
| **Zimbabwe** | | |
| **Barking Road, Willowvale, Harare, Zimbabwe** | | |
| Castrol Zimbabwe (Private) Limited | Membership Interest | 100.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

### Related undertakings other than subsidiaries

| Company by country of incorporation and registered office address | Ownership interest | % |
|---|---|---|
| **Albania** | | |
| **Air BP Albania Sh.A., Aeroporti Nderkombetar i Tiranes, "Nene Tereza", Post Box 2933 in Tirana, Albania** | | |
| Air BP Albania SHA | Ordinary | 50.00 |
| **Argentina** | | |
| **Av. Leandro N. Alem 1180, piso 11°, Buenos Aires, Argentina** | | |
| Field Services Enterprise S.A. | Ordinary | 50.00 |
| Pan American E&P S.A. | Ordinary | 50.00 |
| Parque Eolico Del Sur S.A. | Ordinary | 27.50 |
| Terminal CP S.A.U. | Ordinary | 50.00 |
| Vientos Ombu III S.A. | Ordinary | 25.00 |
| **Avda. Leandro N. Alem 1180, Buenos Aires 1001, Argentina** | | |
| Lithos Desarollos Energeticos S.A. | Ordinary | 50.00 |
| **Calle 14, No 781, Piso 2, Oficina 3, Ciudad de La Plata, Provincia de Buenos Aires, Argentina** | | |
| Barranca Sur Minera S.A. | Ordinary | 50.00 |
| **Carlos María Della Paolera 265, Piso 22, Ciudad Autónoma de Buenos Aires, Argentina** | | |
| Axion Energy Argentina S.A. | Ordinary | 50.00 |
| RSE & RCE S.A.U. | Ordinary | 50.00 |
| **Florida 1, Piso 10, Buenos Aires, Argentina** | | |
| Oleoductos del Valle (Oldelval) S.A. | Ordinary | 50.00 |
| **Francisco Behr 20, Barrio Pueyrredon, Comodoro Rivadavia, Provincia del Chubut, Argentina** | | |
| Manpetrol S.A. | Ordinary | 50.00 |
| **Lavalle 190, piso 6 Depto L, Buenos Aires, Argentina** | | |
| Vientos Sudamericanos Chubut Norte IV S.A. | Ordinary | 24.50 |
| **O´Higgins N° 194, Rio Grande, Argentina** | | |
| Pan American Fueguina S.A. | Ordinary | 50.00 |
| Pan American Sur S.A. | Ordinary | 50.00 |
| **San Martin 140, Piso 2, Buenos Aires, Argentina** | | |
| Central Dock Sud S.A. | Ordinary | 50.00 |
| **Australia** | | |
| **11 Lagoon Court, Samford Valley, QLD 4520, Australia** | | |
| Australasian Lubricants Manufacturing Company Pty Ltd | Ordinary A | 50.00 |
| **34 Kent Road, Mascot, NSW 2020, Australia** | | |
| 5B Holdings Pty Limited | Preference Series B (27.47%) | 9.80 |
| **CBW Level 19, 181 William Street, Melbourne VIC 3000, Australia** | | |
| 3725 Sharp Development Pty Ltd | Ordinary | 49.97 |
| 433 Link Development Company Pty Ltd | Ordinary | 49.97 |
| 892 Yarrawonga Development Pty Ltd | Ordinary | 49.97 |
| Lightsource Asset Management Australia Pty Ltd | Ordinary | 49.97 |
| Lightsource Australia SPV 2 Pty Ltd | Ordinary | 49.97 |
| Lightsource Australia SPV 3 Pty Ltd | Ordinary | 49.97 |
| Lightsource Australia SPV 4 Pty Ltd | Ordinary | 49.97 |
| Lightsource Development Services Australia Pty Ltd | Ordinary | 49.97 |
| Lightsource Energy Markets Pty Ltd | Ordinary | 49.97 |
| Lightsource Labs Australia Pty Limited | Ordinary | 49.97 |
| Lightsource LS Labs Australia Operations Pty Ltd | Ordinary | 49.97 |
| Lightsource Renewable Energy (Australia) Pty Ltd | Ordinary | 49.97 |
| Lower Wonga Solar Farm Pty Ltd | Ordinary | 49.97 |
| LS Australia Equity HoldCo1 Pty Ltd | Ordinary | 49.97 |
| LS Australia FinCo 1 Pty Ltd | Ordinary | 49.97 |
| LS Australia FinCo 2 Pty Ltd | Ordinary | 49.97 |
| LS Australia FinCo 3 Pty Ltd | Ordinary | 49.97 |
| LS Australia HoldCo 1 Pty Ltd | Ordinary | 49.97 |
| Sun Spot 3 Pty Ltd | Ordinary | 49.97 |
| Wellington LandCo Pty Ltd | Ordinary | 49.97 |
| Wellington North Solar Farm Pty Ltd | Ordinary | 49.97 |
| West Mokoan Solar Farm Pty Ltd | Ordinary | 49.97 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| West Wyalong FinCo Pty Ltd | Ordinary | 49.97 |
| West Wyalong Fund Pty Ltd | Ordinary | 49.97 |
| West Wyalong HoldCo 2 Pty Ltd | Ordinary | 49.97 |
| West Wyalong Trust | Membership Interest | 49.97 |
| Woolooga FinCo Pty Ltd | Ordinary | 49.97 |
| Woolooga Fund Pty Ltd | Ordinary | 49.97 |
| Woolooga HoldCo 2 Pty Ltd | Ordinary | 49.97 |
| Woolooga Trust | Membership Interest | 49.97 |
| Wunghnu Solar Farm FinCo Pty Ltd | Ordinary | 49.97 |
| **Company Matters Pty Ltd, Level 12, 680 George Street, Sydney NSW 2000, Australia** | | |
| Airport Fuel Services Pty. Limited | Ordinary | 20.00 |
| Cairns Airport Refuelling Service Pty Ltd | Ordinary | 33.33 |
| **Level 10, 12 Creek Street, Brisbane, QLD 4000, Australia** | | |
| Ocwen Energy Pty Ltd | Ordinary | 49.50 |
| **Level 16, Alluvion Building, 58 Mounts Bay Road, Perth, WA, Australia** | | |
| North West Shelf Lifting Coordinator Pty Ltd | Ordinary B (100.00%) | 16.67 |
| **Level 3, Unit 3, 22 Albert Road, South Melbourne VIC 3205, Australia** | | |
| Australian Terminal Operations Management Pty Ltd | Ordinary | 50.00 |
| **Suite 8.02, 28 O'Connell Street, Sydney, NSW 2000, Australia** | | |
| XPANSIV Limited | Preference Series A (26.16%) | 19.34 |
| **Austria** | | |
| **Am Tankhafen 4, 4020 Linz, Austria** | | |
| TLM Tanklager Management GmbH | Membership Interest | 49.00 |
| **Brucknerstraße 4, 1041 Wien, Austria** | | |
| ABG Autobahn-Betriebe GmbH | Membership Interest | 32.58 |
| **Innsbrucker Bundesstraße 95, 5020 Salzburg, Austria** | | |
| Salzburg Fuelling GmbH | Membership Interest | 33.00 |
| **Radlpaßstraße 6, 8502 Lannach, Austria** | | |
| Erdol-Lagergesellschaft m.b.H. | Membership Interest | 23.00 |
| **Trabrennstraße 6-8 3, Wien, A-1020, Austria** | | |
| Aircraft Refuelling Company GmbH | Membership Interest | 33.33 |
| **Bahamas** | | |
| **Trinity Place Annex, Corner of Frederick & Shirley Streets, P.O. Box N-4805, Nassau, Bahamas** | | |
| PAE E & P Bolivia Limited | Ordinary | 50.00 |
| Pan American Energy Investments Ltd. | Ordinary | 50.00 |
| **Bolivia (Plurinational State of)** | | |
| **Av San Martin 1700, Cuarto Anillo, Edificio Centro Empresarial Equipetrol, Piso 6, Zona Oeste, Equipetrol Norte, Santa Cruz de la Sierra, Bolivia** | | |
| YPFB Chaco S.A. | Ordinary | 50.00 |
| **Cuarto anillo, Avda. Ovidio Barbery N° 4200, Edificio Torre, e/ Jaime Román y Victor Pinto, Equipetrol Norte, Santa Cruz de la Sierra, Bolivia** | | |
| PAE Oil & Gas Bolivia Ltda. | Ordinary | 50.00 |
| **Brazil** | | |
| **1675 South State Street, Suite B, Dover, Kent Country, DE, 19901 US, Brazil** | | |
| Pan American Energy Energias Renovaveis Ltda. | Ordinary | 50.00 |
| **Al Santos, 74, Andar 7 Conj 72 Sala 53, Cerqueira Cesar, Sao Paulo, 01.418-000, Brazil** | | |
| Lightsource Milagres Holding 1 S.A. | Ordinary | 49.97 |
| **Alameda Santos, N° 74, 7° Andar –, Conj. 72 – Sala 43 - Cerqueira Cesar –, São Paulo – SP –, C.E.P.: 01418-0** | | |
| Lightsource Bom Lugar Holding 2 S.A. | Ordinary | 49.97 |
| Lightsource Brasil Energia Renovável Ltda | Ordinary | 49.97 |
| **Av. Bernardino de Campos, n. 98., Conj. A, 12 Andar, Sala 37, Paraiso, São Paulo, 04.004-040, Brazil** | | |
| Lightsource Brasil Energia Renovável Particições S.A. | Ordinary | 49.97 |
| **Avenida Atlântica, no. 1.130, 2nd floor (part), Copacabana,RJ, Rio de Janeiro, 22021-000, Brazil** | | |
| NFX Combustíveis Marítimos Ltda. | Ordinary | 50.00 |
| **Avenida das Nações Unidas, No. 12.399, 4th floor, complexo 41B, room 01, Building Landmark, Brooklin Paulista, São Paulo/ SP, 04578-000, Brazil** | | |
| BP Biofuels Trading Comércio, Importação e Exportação Ltda. | Ordinary | 50.00 |
| **Avenida das Nações Unidas, nº 12.399, 4° andar, Brooklin Paulista, São Paulo, CEP 04578-000, Brazil** | | |
| BP Bunge Bioenergia S.A. | Ordinary | 50.00 |

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## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| **Avenida Paris, 4077, Suite 3, Cascata,São Paulo State, Paulínia, 13046-061, Brazil** | | |
| Terminal de Combustiveis Paulinia S.A. | Ordinary | 50.00 |
| **Estrada Caraúbas sentido ao distrito de Mirandas, S/N, Km 15, lado esquerdo, Zona Rural, Sitio Retiro, Município de Caraúbas/ RN, CEP 59780-000, Brazil** | | |
| Lightsource Caraúbas Geração de Energia Ltda | Ordinary | 49.97 |
| **Estrada de São Romão, KM23, S/N, Zona Rural, Fazenda São Francisco, Buritizeiro/MG, CEP 39280-000, Brazil** | | |
| Lightsource Andorinhas Geração de Energia Ltda. | Ordinary | 49.97 |
| **Estrada Mossoró sentido Jaguaruana, S/N, Km 48, lado esquerdo, Zona Rural, Sitio Aroeira Grande, Município de Baraúna/RN, CEP 59695-000, Brazil** | | |
| Lightsource Jaguar Geração de Energia Ltda | Ordinary | 49.97 |
| **Estrada Municipal Itumbiara / Chacoeira Dourada, Fazenda Jandaia, Gleba B, Goiás, Itumbiara, 75516-126, Brazil** | | |
| BP Bioenergia Itumbiara S.A. | Ordinary | 50.00 |
| **Estrada que liga Brejo Santo a Vila Conceição, porteira da Caatinga Grande, S/N, Zona Rural, Sitio Ludovico, Município de Brejo Santo/CE, CEP 63260-000, Brazil** | | |
| Lightsource Milagres Expansão Geração de Energia Ltda | Ordinary | 49.97 |
| **Fazenda Água Amarela, S/N, Itapegipe, Minas Gerais, 38240-000, Brazil** | | |
| Itapagipe Bioenergia Ltda. | Ordinary | 50.00 |
| **Fazenda Guariroba, SN, Zona Rural, Pontes Gestal, São Paulo, 15500-000, Brazil** | | |
| Usina Guariroba Ltda. | Ordinary | 50.00 |
| **Fazenda Moema, s/n, Rural, Orindiuva, São Paulo, 15480-000, Brazil** | | |
| Bunge Açúcar e Bioenergia S.A. | Ordinary | 50.00 |
| **Fazenda Recanto, Zona Rural, CEP 38.300-898, Minas Gerais, Ituiutaba, Brazil** | | |
| BP Bioenergia Ituiutaba Ltda. | Ordinary | 50.00 |
| **Fazenda Santa Bárbara, S/N, Distrito de Zelândia, Santa Juliana, Minas Gerais, 38175-000, Brazil** | | |
| Santa Juliana Bioenergia Ltda. | Ordinary | 50.00 |
| **Fazenda São Bento da Ressaca, S/N, Zona Rural, Frutal, Minas Gerais, 38200-000, Brazil** | | |
| Frutal Bioenergia Ltda. | Ordinary | 50.00 |
| **Fazenda Terra Nova, located at Rod. Padre Cicero (CE 153), S/N, KM 58, Lima Campos, Ceara, Ico, 63.435-000, Brazil** | | |
| Lightsource Bom Lugar IV Geração de Energia Ltda | Ordinary | 49.97 |
| Lightsource Bom Lugar IX Geração de Energia Ltda. | Ordinary | 49.97 |
| Lightsource Bom Lugar V Geração de Energia Ltda. | Ordinary | 49.97 |
| Lightsource Bom Lugar VI Geração de Energia Ltda. | Ordinary | 49.97 |
| Lightsource Bom Lugar VII Geração de Energia Ltda. | Ordinary | 49.97 |
| Lightsource Bom Lugar VIII Geração de Energia Ltda. | Ordinary | 49.97 |
| **Fazenda Vista Alegre I, KM 25, S/N, Zona Rural, Jaíba/ MG, CEP 39508-000, Brazil** | | |
| Lightsource Pomar do Sertão Geração de Energia Ltda. | Ordinary | 49.97 |
| **Praça Gago Coutinho, 540 – Ed. Aeroporto Internacional de Salvador – Box Air BP, city of Salvador, State of Bahia, 41.602-065, Brazil** | | |
| Air BP Petrobahia Ltda. | Ordinary | 50.00 |
| **Praia do Flamengo 66, 13th and 14th floors, Block A, Flamengo, Rio de Janeiro, Brazil** | | |
| Gas Natural Acu S.A. | Ordinary | 30.00 |
| **Rod. BA 827, S/N, KM 05 Estrada do Cantinho dos Aflitos, Fazenda Divino Espirito Santo, City of Barreiras, State of Bahia, 47.819-899, Brazil** | | |
| Lightsource Rio Branco Geração de Energia Ltda | Ordinary | 49.97 |
| **Rodovia Doutor Mendel Steinbruch 10.800, Distrito Industrial, Maracanau, Ceara, 61.939-906, Brazil** | | |
| Ventos De Santa Virginia Energias Renovaveis S.A. | Ordinary | 50.00 |
| Ventos De Santo Ubaldo Energias Renovaveis S.A. | Ordinary | 50.00 |
| Ventos De Santo Urbano I Energias Renovaveis S.A. | Ordinary | 50.00 |
| Ventos De Sao Romualdo Energias Renovaveis S.A. | Ordinary | 50.00 |
| Ventos De Sao Teofano Energias Renovaveis S.A. | Ordinary | 50.00 |
| Ventos De Sao Teonas Energias Renovaveis S.A. | Ordinary | 50.00 |
| Ventos De Sao Thomas Energias Renovaveis S.A. | Ordinary | 50.00 |
| Ventos De Sao Tilao Energias Renovaveis S.A. | Ordinary | 50.00 |
| Ventos De Sao Vigilio Energias Renovaveis S.A. | Ordinary | 50.00 |
| Rodovia GO 410, km 51 à esquerda, Fazenda Canadá, s/n, Zona Rural, Goiás, Edéia, 75940-000, Brazil | | |
| BP Bioenergia Tropical S.A. | Ordinary | 50.00 |
| **Rodovia Iaciara sentido Alvorada, Margem Direita, S/N, Zona Rural, Fazenda Ferradura e Campo Aberto, Município de Posse/ GO, CEP 73900-000, Brazil** | | |
| Lightsource Guara Geracao de Energia Ltda | Ordinary | 49.97 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| **Rodovia SP - 463 Elyeser Montenegro Magalhãe, KM 186, S/N, Zona Rural,São Paulo, Ouroeste, 15685-000, Brazil** | | |
| Usina Ouroeste - Açúcar e Álcool Ltda. | Ordinary | 50.00 |
| **Rodovia TO 010 KM 20, S/N, Zona Rural, Cidade de Pedro Afonso, Tocantins, 77710-000, Brazil** | | |
| Pedro Afonso Bioenergia Ltda. | Ordinary | 50.00 |
| **Rua do Russel 804, 5th floor, Gloria, Rio de Janeiro, Brazil** | | |
| Gas Natural Acu Comercializadora de Energia Ltda. | Ordinary | 50.00 |
| Gas Natural Açu Infraestrutura S.A. | Ordinary | 27.91 |
| **Rua Manoel da Nóbrega n°1280, 10° andar, Sao Paulo, Sao Paulo, 04001-902, Brazil** | | |
| Pan American Energy do Brasil Ltda. | Membership Interest | 50.00 |
| **Rua Principal, Fazenda Recanto, Zona Rural, Caixa Postal 01, Minas Gerais, Ituiutaba, 38.300-898, Brazil** | | |
| BP Bioenergia Campina Verde Ltda. | Ordinary | 50.00 |
| **Sítio Cajueiro - Abaiara - left of BR 116, KM491, Caatinga Grande, Zona Rural, Abaiara, 63.240-000, Brazil** | | |
| Lightsource Milagres I Geração de Energia S.A | Ordinary | 49.97 |
| Lightsource Milagres II Geração de Energia S.A | Ordinary | 49.97 |
| Lightsource Milagres III Geração de Energia S.A | Ordinary | 49.97 |
| Lightsource Milagres IV Geração de Energia S.A | Ordinary | 49.97 |
| Lightsource Milagres V Geração de Energia S.A | Ordinary | 49.97 |
| **Sítio Paus Pretos, S/N, BR 316, Rood Floresta/Petrolandia, Km 314, Floresta/PE, Zip Code 56400-000, Brazil** | | |
| Lightsource Flor Geração de Energia Ltda. | Ordinary | 49.97 |
| **Cayman Islands** | | |
| **190 Elgin Avenue, George Town, KY1-9005, Cayman Islands** | | |
| Georgian Pipeline Company | Ordinary | 30.37 |
| **P.O. Box 309, Ugland House, 113 South Church Street, George Town, Cayman Islands** | | |
| Azerbaijan Gas Supply Company Limited | Ordinary | 23.99 |
| Azerbaijan International Operating Company | Ordinary | 30.37 |
| BTC International Investment Co. | Membership Interest | 30.10 |
| South Caucasus Pipeline Company Limited | Membership Interest | 28.83 |
| South Caucasus Pipeline Holding Company Limited | Membership Interest | 28.83 |
| South Caucasus Pipeline Option Gas Company Limited | Ordinary | 28.83 |
| The Baku-Tbilisi-Ceyhan Pipeline Company | Membership Interest | 30.10 |
| **Chile** | | |
| **Nueva de Lyon N° 145, piso 12, oficina 1203, Edificio Costa, Santiago de Chile, Chile** | | |
| Pan American Energy Chile Limitada | Ordinary | 50.00 |
| **China** | | |
| **10-11/FTime Finance Center, No.4001 Shennan Dadao, Futian Street, Futian District, Guangdong Province, Shenzhen, China** | | |
| Guangdong Dapeng LNG Company Limited | Membership Interest | 30.00 |
| **11/F, Building No.2, No. 32 Lingang Road Section One, Xihang Port Street, Shuangliu District,Sichuan Province, Chengdu, China** | | |
| CNAF Air BP General Aviation Fuel Company Limited | Membership Interest | 49.00 |
| **5th Floor, Guangsha Ruiming Building, No. 231 Moganshan Road, Xihu District, Hangzhou, Zhejiang Province, China** | | |
| BP Sinopec (ZheJiang) Petroleum Co., Ltd | Membership Interest | 40.00 |
| **Fu Yong Town, Bao An county, Guangdong Province, ShenZhen Airport, China** | | |
| Shenzhen Cheng Yuan Aviation Oil Company Limited | Membership Interest | 25.00 |
| **Guangdong Dapeng Liquefied Natural Gas Filling Station, Cheng Tou Corner, Xia Sha Village, Dapeng Street, Dapeng New District, Shenzhen, China** | | |
| Shenzhen Dapeng LNG Marketing Company Limited | Membership Interest | 30.00 |
| **No. B933, 9-14/F Office, Building A, Baoye Center, NO.31 JIA, China** | | |
| Castrol DongFeng Lubricant Co., Ltd | Membership Interest | 50.00 |
| **Room 3501, Room 3502, Room 3503, No.62, Jinsui Road, Tianhe District, Guangzhou, China** | | |
| Guangzhou Aulton New Energy Technology Co., Ltd. | Membership Interest | 20.00 |
| **Room 526, No.13,Longxue Avenue middle, Nansha District, Guangzhou, China** | | |
| BP Guangzhou Development Oil Product Co., Ltd | Membership Interest | 40.00 |
| **Room 8309, Floor 3, Yufanghailian Office Building, No. 1 Indian Ocean Road, West Coast Comprehensive Bonded Area, Qingdao, China** | | |
| BP SPG Energy Trading Co., Ltd. | Membership Interest | 49.00 |
| **Room A, building B, 5th floor, no. 22 Gangkou road, Jiangmen, China** | | |
| BP Petro China Jiangmen Fuels Co., Ltd. | Membership Interest | 49.00 |
| **Room B1, 11th Floor, No.22 Gang Kou Yi Road, Peng Jiang District,Guangdong Province, Jiangmen, China** | | |
| BP PetroChina Petroleum Co., Ltd | Membership Interest | 49.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| **Cuba** | | |
| **Calle 6 No 319, esq 5ta. Ave., Miramar, Playa, La Habana, Cuba** | | |
| Castrol Cuba S.A. | Ordinary | 50.00 |
| **Cyprus** | | |
| **90 Archiepiskopou str, Dromolaxia – Meneou, 7020 Larnaca, Cyprus** | | |
| LCA Aviation Fuelling Systems Limited | Ordinary | 35.00 |
| **Denmark** | | |
| **GA Centervej 1, Billund, DK-7190, Denmark** | | |
| Billund Refuelling I/S | Membership Interest | 50.00 |
| **Kastrup Lufthavn, 2770 Kastrup, Denmark** | | |
| Danish Refuelling Services I/S | Partnership interest | 50.00 |
| Danish Tankage Services I/S | Partnership interest | 50.00 |
| **Københavns, Lufthavn, 2770 Kastrup, Denmark** | | |
| Braendstoflageret Kobenhavns Lufthavn I/S | Partnership interest | 20.83 |
| **Egypt** | | |
| **14 Kamal El Tawil ST, Zamalek, Cairo, Egypt** | | |
| Lightsource BP Hassan Allam Developments for Renewable Energy S.A.E | Ordinary | 24.99 |
| **5 El Mokhayam El Daiem St, 6th Sector, Nasr City, Egypt** | | |
| El Temsah Petroleum Company "PETROTEMSAH" | Ordinary | 25.00 |
| Mediteranean Gas Co. "MEDGAS" | Ordinary | 25.00 |
| **70/72 Road 200, Maadi, Cairo, Egypt** | | |
| Pharaonic Petroleum Company "PhPC" | Ordinary | 25.00 |
| Rahamat Petroleum Company (PETRORAHAMAT) | Ordinary | 50.00 |
| **85 El Nasr Road, Cairo, Egypt** | | |
| Natural Gas Vehicles Company "NGVC" | Ordinary | 40.00 |
| **Building No. 349 & 351, Third Sector of City Centre, Fifth Settlement, New Cairo, Egypt** | | |
| United Gas Derivatives Company "UGDC" | Ordinary | 33.33 |
| **Street 200, Building 70-72, Maadi, Cairo, Egypt** | | |
| Damietta Petroleum Company "PETRODAMIETTA" | Ordinary | 50.00 |
| North El Burg Petroleum Company "PETRONEB" | Ordinary | 25.00 |
| **Estonia** | | |
| **Harju maakond, Lasnamäe linnaosa, Väike-Sõjamäe tn 12a,11415, Tallinn, Estonia** | | |
| Eesti Aviokütuse Teenuste AS | Ordinary | 50.00 |
| **France** | | |
| **1 Place Gustave Eiffel, Rungis, 94150, France** | | |
| Société d'Avitaillement et de Stockage de Carburants Aviation "SASCA" | Membership Interest | 40.00 |
| **150 Avenue Yves Farge, Saint Pierre des Corps, 37700, France** | | |
| Depot Petrolier De Saint-Pierre Des Corps D.P.S.P.C. | Membership Interest | 20.00 |
| **27 Route du Bassin Numéro 6, Gennevilliers, 92230, France** | | |
| Société de Gestion de Produits Pétroliers - SOGEPP | Ordinary | 37.00 |
| **3 Rue des Vignes, Aéroport Roissy Charles de Gaulle, Tremblay en France, 93290, France** | | |
| Fuelling Aviation Service - FAS | Membership Interest | 50.00 |
| **9 Rue Boissy d'Anglas, 75008 Paris, France** | | |
| Lightsource France Development SAS | Ordinary | 49.97 |
| **Germany** | | |
| **Am Borsigturm 68, Berlin, 13507, Germany** | | |
| Service4Charger Holding GmbH | Preference Series A (100.00%) | 13.97 |
| **Am Stadthafen 60, 45881 Gelsenkirchen, Germany** | | |
| TransTank GmbH | Ordinary | 50.00 |
| **An der Braker Bahn 22, 26122 Oldenburg, Germany** | | |
| Klaus Köhn GmbH | Ordinary | 50.00 |
| Köhn & Plambeck GmbH & Co. KG | Partnership interest | 50.00 |
| **Berghausener Straße 96, 40764 Langenfeld, Germany** | | |
| AGES International GmbH & Co. KG, Langenfeld | Partnership interest | 24.70 |
| AGES Maut System GmbH & Co. KG, Langenfeld | Partnership interest | 24.70 |
| **Brunnenstraße 19-21, Berlin, 10119, Germany** | | |
| Digital Charging Solutions GmbH | Membership Interest | 33.33 |

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## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| **Godorfer Hauptstraße 186, 50997 Köln, Germany** | | |
| Rhein-Main-Rohrleitungstransportgesellschaft mbH | Ordinary | 35.00 |
| **Jenfelder Allee 80, Hamburg, 22039, Germany** | | |
| STDG Strassentransport Dispositions Gesellschaft mbH | Ordinary | 50.00 |
| **Konsul-Smidt-Strasse 14, 28217 Bremen, Germany** | | |
| Etzel-Kavernenbetriebsgesellschaft mbH & Co. KG | Partnership interest | 33.33 |
| Etzel-Kavernenbetriebs-Verwaltungsgesellschaft mbH | Ordinary | 33.33 |
| **Luisenstraße 5 a, 26382 Wilhelmshaven, Germany** | | |
| Ammenn GmbH | Ordinary | 75.00 |
| Kurt Ammenn GmbH & Co. KG | Partnership interest | 50.00 |
| **Maximiliansplatz 22, c/o Bird & Bird LLP, 80333, München, Germany** | | |
| Lightsource Development Germany GmbH | Ordinary | 49.97 |
| **Raffineriestraße 1, Lingen, 49808, Germany** | | |
| Lingen Green Hydrogen Management GmbH | Ordinary | 50.00 |
| **Rheinstraße 36, 49090 Osnabrück, Germany** | | |
| Fip Verwaltungs GmbH | Ordinary | 50.00 |
| Heinrich Fip GmbH & Co. KG | Partnership interest | 50.00 |
| **Saganer Straße 31, 90475 Nürnberg, Germany** | | |
| Beer Energien GmbH & Co. KG | Partnership interest | 50.00 |
| Beer GmbH | Ordinary | 50.00 |
| **Spaldingstraße 64, 20097 Hamburg, Germany** | | |
| Mobene Beteiligungs GmbH & Co. KG | Partnership interest | 50.00 |
| Mobene Beteiligungs Verwaltungs GmbH | Ordinary | 50.00 |
| Mobene GmbH & Co. KG | Partnership interest | 50.00 |
| Mobene Verwaltungs-GmbH | Ordinary | 50.00 |
| **Sportallee 6, 22335 Hamburg, Germany** | | |
| Dusseldorf Fuelling Services GbR | Partnership interest | 33.00 |
| Hamburg Tank Service (HTS) GbR | Partnership interest | 33.00 |
| HFS Hamburg Fuelling Services GbR | Partnership interest | 50.00 |
| LFS Langenhagen Fuelling Services GbR | Partnership interest | 50.00 |
| TFSS Turbo Fuel Services Sachsen GbR | Partnership interest | 20.00 |
| **TGFH Tanklager-Gesellschaft Frankfurt-Hahn GbR** | | 50.00 |
| TGHL Tanklager-Gesellschaft Hannover-Langenhagen GbR | Partnership interest | 50.00 |
| TGK Tanklagergesellschaft Koln-Bonn | Partnership interest | 25.00 |
| **Steindamm 55, 20099 Hamburg, Germany** | | |
| GVÖ Gebinde-Verwertungsgesellschaft der Mineralölwirtschaft mbH | Ordinary | 21.00 |
| **Überseeallee 1, 20457, Hamburg, Germany** | | |
| Flughafen Hannover Pipeline Verwaltungsgesellschaft mbH | Ordinary | 50.00 |
| Flughafen Hannover Pipelinegesellschaft mbH & Co. KG | Partnership interest | 50.00 |
| Lingen Green Hydrogen GmbH & Co. KG | Ordinary | 50.00 |
| **Wesermünder Straße 1, 27729 Hambergen, Germany** | | |
| Tecklenburg GmbH | Ordinary | 50.00 |
| Tecklenburg GmbH & Co. Energiebedarf KG | Partnership interest | 50.00 |
| **Westfalendamm 166, 44141 Dortmund, Germany** | | |
| DOPARK GmbH | Ordinary | 25.00 |
| **Wittener Straße 45, 44789 Bochum, Germany** | | |
| CSG Convenience Service GmbH | Ordinary | 24.80 |
| **Zum Ölhafen 49, 70327 Stuttgart, Germany** | | |
| TLS Tanklager Stuttgart GmbH | Ordinary | 45.00 |
| **Ghana** | | |
| **Number 1, Rehoboth Place, Dade Street, North Labone Estates, Accra, Greater Accra, Accra Metropolitan, P. O. BOX CT327, Ghana** | | |
| BP West Africa Supply Limited | Ordinary | 50.00 |
| **Greece** | | |
| **2,Vouliagmenis Ave & Papaflessa, 16777 Elliniko, Attika, Athens, Greece** | | |
| GISSCO S.A. | Ordinary | 50.00 |
| **280 Kifisias Avenue, 15232 Chalandri, Greece** | | |
| Sun Power 1 S.M.P.C. | Other | 49.97 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| **68, Vasilisis Sofias Ave., Athens, 115 28, Greece** | | |
| Akarnanika Photovoltaic Systems Single-Member Private Company | Ordinary | 49.97 |
| Clean Energy 1 S.M.S.A. | Ordinary | 49.97 |
| Clean Energy 2 S.M.S.A. | Ordinary | 49.97 |
| Clean Energy 3 S.M.S.A. | Ordinary | 49.97 |
| Clean Energy 4 S.M.S.A. | Ordinary | 49.97 |
| Clean Energy 5 S.M.S.A. | Ordinary | 49.97 |
| Clean Energy 6 S.M.S.A. | Ordinary | 49.97 |
| Green Energy Plus 1 S.M.S.A. | Ordinary | 49.97 |
| Green Energy Plus 2 S.M.S.A. | Ordinary | 49.97 |
| Green Energy Plus 3 S.M.S.A. | Ordinary | 49.97 |
| Green Energy Plus 4 S.M.S.A. | Ordinary | 49.97 |
| Green Energy Plus 5 S.M.S.A. | Ordinary | 49.97 |
| Green Energy Plus 6 S.M.S.A. | Ordinary | 49.97 |
| Green Energy Plus 7 S.M.S.A | Ordinary | 49.97 |
| Green Energy Plus 8 S.M.S.A. | Ordinary | 49.97 |
| Lightsource Renewable Energy Greece Development Single Member S.A. | Ordinary | 49.97 |
| Lightsource Renewable Energy Greece Projects Single Member S.A. | Ordinary | 49.97 |
| **International airport "El. Venizelos", Athens, Greece** | | |
| SAFCO SA | Ordinary | 33.33 |
| **India** | | |
| **3rd Floor, Maker Chambers IV, 222, Nariman Point, Mumbai, 400 021, India** | | |
| Reliance BP Mobility Limited | Ordinary | 49.00 |
| **One Indiabulls Center, 16th Floor, Tower 2A, Senapati Bapat Marg, Mumbai City, Maharashtra, Mumbai, 400013, India** | | |
| Eversource Capital Private Limited | Ordinary | 24.99 |
| **Unit Nos.71 & 737th Floor, Maker Maxity, 2nd North Avenue, Bandra - Kurla Complex, Bandra (East), Mumbai 400 051, Maharashtra, India** | | |
| India Gas Solutions Private Limited | Ordinary | 50.00 |
| **Indonesia** | | |
| **AKR Tower 25th floor, Jalan Panjang No.5, Kebon Jeruk, Jakarta Barat, 11530, Indonesia** | | |
| PT. Dirgantara Petroindo Raya | Ordinary | 49.90 |
| **AKR Tower 25th floor, Jalan Panjang No.5, Kebon Jeruk, Jakarta, 11530, Indonesia** | | |
| PT. Aneka Petroindo Raya | Ordinary | 49.90 |
| **Bakrie Tower 17th Floor, Rasuna Epicentrum Complex Jl. H.R Rasuna Said, Jakarta, 12940, Indonesia** | | |
| PT Petro Storindo Energi | Ordinary | 30.00 |
| **Iraq** | | |
| **Naz City, Building J, Suite 10 Erbil, Iraq** | | |
| Mach Monument Aviation Fuelling Co. Ltd. | Ordinary | 70.00 |
| **Ireland** | | |
| **Trinity House, Charleston Road Ranelagh, Ranelagh, Ireland** | | |
| Lightsource Ireland Development Holdings Limited | Ordinary | 49.97 |
| Lightsource Ireland SPV 6 Limited | Ordinary | 49.97 |
| Lightsource Labs Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Ireland Limited | Ordinary | 49.97 |
| Ubiworx Systems Designated Activity Company | Ordinary | 49.97 |
| **Israel** | | |
| **3 Shenkar Street, Herzelia, Israel** | | |
| StoreDot Ltd. | Preference Series C (21.47%) | 4.49 |
| **Italy** | | |
| **Via Emilia 1, 20097 San Donato Milanese, Italy** | | |
| Azule Energy Angola S.p.A | Membership Interest | 50.00 |
| **Via Giacomo Leopardi 7, 20123 Milano, Italy** | | |
| Belenos s.r.l. | Quotas | 32.48 |
| Lightsource Renewable Energy Italy Development, S.r.l. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy Finco s.r.l. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy Holdings, S.r.l. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy SPV 1 s.r.l. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy SPV 10 s.r.l. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy SPV 11 S.r.l | Quotas | 49.97 |

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## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Lightsource Renewable Energy Italy SPV 12 S.R.L. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy SPV 13 S.R.L. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy SPV 14 S.R.L. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy SPV 15 S.R.L. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy SPV 16 S.R.L. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy SPV 2 s.r.l. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy SPV 3 s.r.l. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy SPV 4 s.r.l. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy SPV 6 s.r.l. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy SPV 7 s.r.l. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy SPV 8 s.r.l. | Quotas | 49.97 |
| Lightsource Renewable Energy Italy SPV 9 s.r.l. | Quotas | 49.97 |
| Pollon s.r.l. | Quotas | 32.48 |
| **Via Sardegna, Rome, 38 00187, Italy** | | |
| Air BP Italia Spa | Ordinary | 50.00 |
| **Via Venti Settembre, 69, Palermo, 90141, Italy** | | |
| EM Sicilia Green S.r.l. | Quotas | 49.97 |
| HF Solar 10 S.r.l. | Quotas | 49.97 |
| Marsala Energie S.r.l. | Quotas | 49.97 |
| Melilli Energie S.r.l. | Quotas | 49.97 |
| ML Energie Rinnovabili S.r.l. | Quotas | 49.97 |
| **Viale Francesco Scaduto, 2d, Palermo, 90144, Italy** | | |
| HF Solar 1 S.r.l. | Quotas | 49.97 |
| HF Solar 2 S.r.l. | Quotas | 49.97 |
| HF Solar 3 S.r.l. | Quotas | 49.97 |
| HF Solar 4 S.r.l | Quotas | 49.97 |
| HF Solar 5 S.r.l | Quotas | 49.97 |
| **Japan** | | |
| **4-2 Otemachi 1-chome, Chiyoda-ku, Tokyo, Japan** | | |
| Ishikari Offshore Wind LLC | Ordinary | 49.00 |
| **Jersey** | | |
| **IFC 5, St Helier, Jersey, JE1 1ST, Jersey** | | |
| In Salah Gas Limited | Ordinary B (51.00%) | 25.50 |
| In Salah Gas Services Limited | Ordinary B (51.00%) | 25.50 |
| **Korea (the Republic of)** | | |
| **109 Sideung-ro, Hwangsan-myeon, Jeonlanam-do, Korea** | | |
| Haenam Solar Power Plant Co., Ltd. | Ordinary | 49.97 |
| **3089, 30F, ASEM Tower, 517, Yeongdong-daero, Gangnam-gu, South Korea, 06170, Korea (the Republic of)** | | |
| Lightsource Renewable Energy Development South Korea Co., Ltd | Ordinary | 49.97 |
| **37-23, 517, Yeongdong-daero (Samsung dong, ASEM Tower), Gangnam-gu, Seoul, Republic of Korea, Seoul, Korea (the Republic of)** | | |
| LS Renewable Energy Co., Ltd. | Ordinary | 49.97 |
| SK Devco Solar Power Plant Co., Ltd. | Ordinary | 49.97 |
| **3730-23, 37th fl, 517 Yeongdeung-daero, Gangnam-gu, Seoul** | | |
| Gangjin Solar Power Plant Co., Ltd. | Ordinary | 49.97 |
| **Mauritius** | | |
| **3rd Floor, Standard Chartered Tower, Bank Street, 19 Cybercity, Ebene, 72201, Mauritius** | | |
| EverSource Management Holdings | Ordinary | 24.99 |
| **Mexico** | | |
| **Av. Paseo de la Reforma 505 piso 32, Colonia Cuauhtémoc, Delegación Cuauhtémoc (06500), CDMX, Mexico** | | |
| EMSEP S.A. de C.V. | Ordinary | 50.00 |
| **Torre A, piso 4, oficina 402, Calzada Legaria 549, Colonia 10 de Abril, Delegación Miguel Hidalgo, Ciudad de Mexico, C. P. 11250, Mexico** | | |
| Hokchi Energy S.A. de C.V. | Ordinary | 50.00 |
| **Mozambique** | | |
| **Praca Dos Trabalhadores, Nr 09, Distrito Urbano 1, Maputo, Mozambique** | | |
| Maputo International Airport Fuelling Services (MIAFS) Limitada | Membership Interest | 50.00 |
| **Netherlands** | | |
| **Anchoragelaan 6, 1118LD Luchthaven Schiphol, Netherlands** | | |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Gezamenlijke Tankdienst Schiphol B.V. | Ordinary | 50.00 |
| **Basisweg 10, 1043AP Amsterdam, Netherlands** | | |
| Lightsource BP Hassan Allam Holdings B.V. | Ordinary | 24.99 |
| **Butaanweg 215, NL-3196 KC Vondelingenplaat, Rotterdam, Havennummer, 3045, Netherlands** | | |
| N.V. Rotterdam-Rijn-Pijpleiding Maatschappij (RRP) | Ordinary | 44.40 |
| **d'Arcyweg 76, 3198 NA Europoort Rotterdam, Netherlands** | | |
| BP Angola (Block 18) B.V. | Ordinary | 50.00 |
| **Gustav Mahlerplein 28, 1082MA, Amsterdam, Netherlands** | | |
| Lightsource Renewable Energy Netherlands Development B.V. | Ordinary | 49.97 |
| Lightsource Renewable Energy Netherlands Holdings B.V. | Ordinary | 49.97 |
| Zonneweide Liesvelden B.V. | Ordinary | 49.97 |
| Zonneweide LS 4 B.V. | Ordinary | 49.97 |
| Zonneweide LS 5 B.V. | Ordinary | 49.97 |
| **Moezelweg 101, 3198LS Europoort, Rotterdam, Netherlands** | | |
| Maatschap Europoort Terminal | Partnership interest | 50.00 |
| **Oude Vijfhuizerweg 6, 1118LV Luchthaven, Schiphol, Netherlands** | | |
| Aircraft Fuel Supply B.V. | Ordinary | 28.57 |
| **Rijndwarsweg 3, 3198 LK Europoort, Rotterdam, Netherlands** | | |
| BP AOC Pumpstation Maatschap | Membership Interest | 50.00 |
| BP Esso AOC Maatschap | Partnership interest | 22.80 |
| BP Esso Pipeline Maatschap | Partnership interest | 50.00 |
| Maasvlakte Europoort Pipeline Maatschap | Partnership interest | 50.00 |
| Team Terminal B.V. | Ordinary | 22.80 |
| **Strawinskylaan 1725, 1077XX Amsterdam, Netherlands** | | |
| Eni Angola Exploration B.V. | Membership Interest | 50.00 |
| Eni Angola Production B.V. | Membership Interest | 50.00 |
| Routex B.V. | Ordinary | 25.00 |
| **New Zealand** | | |
| **10th Floor, The Bayleys Building, Cnr Brandon St and Lambton Quay, Wellington, 6011, New Zealand** | | |
| Coastal Oil Logistics Limited | Ordinary | 25.00 |
| **399 Moray Place, Dunedin, 9016, New Zealand** | | |
| RD Petroleum Limited | Ordinary | 49.00 |
| **Corporate Services New Zealand Limited, Level 5, 79 Queen Street, Auckland, 1010, New Zealand** | | |
| Lightsource Development Services New Zealand Limited | Ordinary | 49.97 |
| **KPMG, 247 Cameron Road, Tauranga, 3110, New Zealand** | | |
| McFall Fuel Limited | Ordinary | 49.00 |
| RMF Holdings Limited | Ordinary | 49.00 |
| **Level 3, 139 The Terrace, Wellington, 6011, New Zealand** | | |
| New Zealand Oil Services Limited | Ordinary | 50.00 |
| **Ross Pauling & Partners Limited, 106b Bush Road, Auckland, Albany, 0632, New Zealand** | | |
| Wiri Oil Services Limited | Ordinary | 27.78 |
| **Norway** | | |
| **Oksenoyveien 10,1366 Lysaker, Norway** | | |
| Aker BP ASA | Ordinary | 15.87 |
| **Postboks 133, Gardermoen, NO-2061, Norway** | | |
| Gardermoen Fuelling Services AS | Ordinary | 33.33 |
| **Postboks 134, Gardermoen, NO-2061, Norway** | | |
| Oslo Lufthavns Tankanlegg AS | Ordinary | 33.33 |
| **Postboks 36, Stjordal, NO-7501, Norway** | | |
| Flytanking AS | Ordinary | 50.00 |
| **Oman** | | |
| **P.O.Box 20302/211, 20302, Oman** | | |
| BP Dhofar LLC | Ordinary | 49.00 |
| **Paraguay** | | |
| **Av. España 1369 esquina San Rafael, Asunción, Paraguay** | | |
| Axion Energy Paraguay S.R.L. | Membership Interest | 50.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| **Peru** | | |
| **Avenida Ricardo Rivera Navarrete n.501 / room 1602, Lima, Peru** | | |
| Air BP PBF del Peru S.A.C. | Ordinary | 50.00 |
| **Poland** | | |
| **Grunwaldzka 472B, Gdansk, 80-309, Poland** | | |
| Air BP Aramco Poland sp. z o. o. | Ordinary | 50.00 |
| **ul. Grzybowska 2/29, 00-131, Warszawa, Poland** | | |
| Lightsource Development Polska sp. z o.o. | Ordinary | 49.97 |
| LS 1 sp. z.o.o. | Ordinary | 49.97 |
| LS 2 sp. z.o.o. | Ordinary | 49.97 |
| LS 3 sp. z.o.o. | Ordinary | 49.97 |
| LS 4 sp. z.o.o. | Ordinary | 49.97 |
| LS 5 sp. z.o.o. | Ordinary | 49.97 |
| LS 6 sp. z.o.o. | Ordinary | 49.97 |
| LS 7 sp. z.o.o. | Ordinary | 49.97 |
| LS 8 sp. z.o.o. | Ordinary | 49.97 |
| LS 9 sp. z.o.o. | Ordinary | 49.97 |
| RD PV Produkcja 5 Spółka Z Ograniczona Odpowiedzialnoscia | Ordinary | 49.97 |
| Wena Projekt 2 sp. z o.o. | Ordinary | 49.97 |
| **Portugal** | | |
| **Grupo Operacional de Combustiveis do Aeroporto de Lisboa, Edificio 19, 1.º Sala Saba, Lisboa, Portugal** | | |
| SABA- Sociedade Abastecedora de Aeronaves, Lda | Ordinary | 25.00 |
| **Rua 31 de Agosto, nº 12, 5000 - 305 Vila Real, Portugal** | | |
| LSBPDG - Sociedade de Produção De Energia, Limitada | Ordinary | 24.99 |
| PTSunHydrogen II, LDA | Ordinary | 24.99 |
| PTSunHydrogen III, LDA | Ordinary | 24.99 |
| PTSunHydrogen IV, LDA | Ordinary | 24.99 |
| PTSUNHYDROGEN V, LDA | Ordinary | 24.99 |
| **Rua Castilho, No 50, 1250-071, Lisboa, Portugal** | | |
| Coherent Modernity Lda | Ordinary | 49.97 |
| Coloursflow - Unipessoal Lda | Ordinary | 49.97 |
| Forest Constellation - Unipessoal Lda | Ordinary | 49.97 |
| Freshpanoply - Lda | Ordinary | 49.97 |
| Ignichoice Renewable Energy V, Unipessoal LDA | Ordinary | 49.97 |
| Ignidap – Energias Renováveis, Unipessoal Lda | Ordinary | 49.97 |
| Lightsource Development Portugal, Unipessoal Lda | Ordinary | 49.97 |
| PTSunHydrogen VI, LDA | Ordinary | 24.99 |
| PTSunHydrogen VII, LDA | Ordinary | 24.99 |
| PTSunHydrogen, LDA | Quotas | 24.99 |
| Ramisun – Consultoria e Energias Renováveis, Unipessoal Lda. | Ordinary | 49.97 |
| Solid Tomorrow - Energia Unipessoal Lda | Ordinary | 49.97 |
| Suninger - Consultoria e Energias Renováveis, Unipessoal Lda | Ordinary | 49.97 |
| Tolerantdiagonal - Lda | Ordinary | 49.97 |
| **Rua Júlio Dinis, n.º 247, 6.º, E-1, Edifício Mota Galiza, Parish of Lordelo do Ouro and Massarelos, Porto, 4050-324, Portugal** | | |
| Dapsun - Investimentos e Consultoria, LDA. | Ordinary | 25.23 |
| **Rua Sousa Martins, no 10, Lisboa, 1050 218, Portugal** | | |
| Lightsource Renewable Energy Portugal (HoldCo), Lda. | Ordinary | 49.97 |
| **Romania** | | |
| **Bucureşti Sectorul 1, Bulevardul DACIA, Nr. 20, BIROUL NR. HDR20, Etaj 5, Romania** | | |
| LIGHTSOURCE DEVELOPMENT ROMANIA S.R.L. | Ordinary | 49.97 |
| **Otopeni, 59 Aurel Vlaicu Street, Otopeni, Ilfov County, Romania** | | |
| Romanian Fuelling Services S.R.L. | Ordinary | 50.00 |
| **Russian Federation** | | |
| **629830 Yamalo-Nenetskiy Anatomy Region, city of Gubkinskiy, Russian Federation** | | |
| LLC "Kharampurneftegaz" | Membership Interest | 49.00 |
| **Kosmodamianskaya nab, 52/3, Moscow, 115035, Russian Federation** | | |
| Limited Liability Company Yermak Neftegaz | Membership Interest | 49.00 |
| **Pervomayskaya street, 32A, Sakha (Yakutiya) Republic, Lensk, 678144, Russian Federation** | | |
| Lensky Nefteprovod Limited Liability Company | Membership Interest | 20.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Limited Liability Company TYNGD | Membership Interest | 20.00 |
| **Shabolovka street 10 building 2, 7th Floor, Room 13, Municipal District Yakimanka, Moscow, 119049, Russian Federation** | | |
| Srednelenskoye Limited Liability Company | Membership Interest | 49.00 |
| **Saudi Arabia** | | |
| **Industrial Area Unit No 1, Yanbu Alsenayea, 46481 - 4659, Saudi Arabia** | | |
| Arabian Production And Marketing Lubricants Company | Ordinary | 50.00 |
| **P O Box 6369, Jeddah 21442, Saudi Arabia** | | |
| Peninsular Aviation Services Company Limited* | Membership Interest | 50.00 |
| **Singapore** | | |
| **12 Marina Boulevard, #35-01 MBFC Tower 3, Singapore, 018982, Singapore** | | |
| BP Sinopec Marine Fuels Pte. Ltd. | Ordinary | 50.00 |
| **163 Penang Road, #08-01, Winsland House II, 238463, Singapore** | | |
| Green Growth Feeder Fund Pte. Ltd | Ordinary | 24.99 |
| **8 Marina Boulevard, #05-02, Marina Bay Financial Centre, 018981, Singapore** | | |
| Lightsource Singapore Renewables Holdings Private Limited | Ordinary | 49.97 |
| Lightsource Singapore Renewables Private Limited | Ordinary | 49.97 |
| **8 Temasek Boulevard #31-02, Suntec City Tower 3, Singapore 038988, Singapore** | | |
| China Aviation Oil (Singapore) Corporation Ltd | Ordinary | 20.17 |
| **South Africa** | | |
| **1 Refinery Road, Prospecton, 4110, South Africa** | | |
| Shell and BP South African Petroleum Refineries (Pty) Ltd | Ordinary A | 37.45 |
| **135 Honshu Road, Islandview, Durban, 4052, South Africa** | | |
| Blendcor (Pty) Limited | Ordinary B | 37.45 |
| **199 Oxford Road, Oxford Parks, Dunkeld, Johannesburg, GP, 2196, South Africa** | | |
| Masana Petroleum Solutions (Pty) Ltd | Ordinary | 37.82 |
| **Spain** | | |
| **Avenida Academia General Militar, 52, Aragón, Zaragoza, 50015, Spain** | | |
| Gestión Rueda Promotores, S.L. | Ordinary | 23.95 |
| Jorge Energy I, S.L.U. | Ordinary | 49.97 |
| Jorge Energy IV, S.L.U. | Ordinary | 49.97 |
| Sinergia Aragonesa, S.L.U. | Ordinary | 49.97 |
| **C/ Velazquez 64-66, Spain** | | |
| Expansion Habit, S.L.U. | Ordinary | 24.49 |
| **Calle Alcala numero 63, Madrid, 28014, Spain** | | |
| Energía Inagotable de Eolo, S.L.U. | Ordinary | 49.97 |
| ISC Greenfield 12, S.L. | Ordinary | 49.97 |
| ISC Greenfield 7, S.L. | Ordinary | 49.97 |
| Lightsource Renewable Energy Garnacha, S.L. | Ordinary | 49.97 |
| Lightsource Renewable Energy Spain Development, SL | Ordinary | 49.97 |
| Lightsource Renewable Energy Spain Holdings, SL | Ordinary | 49.97 |
| Lightsource Renewable Energy Spain SPV 1, SL | Ordinary | 49.97 |
| Lightsource Renewable Energy Trading, SL | Ordinary | 49.97 |
| Modelos Energéticos Sostenibles, S.L. | Ordinary | 49.97 |
| Parque FV Borealis, S.L. | Ordinary | 49.97 |
| Parque FV Polaris, S.L. | Ordinary | 49.97 |
| **Calle de la Ribera del Loira, numero 60, 28042, Madrid, Spain** | | |
| Ateca Renovables, S.L. | Ordinary | 24.99 |
| **Calle Jose Ortega y Gasset 22-24, 2nd Floor, 28006 Madrid, Spain** | | |
| Performan Lark, S.L.U | Ordinary | 49.97 |
| **Calle Lituania nº 10, Castellón de la Plana, Spain** | | |
| Fundación para la Eficiencia Energética de la Comunidad Valenciana | Membership Interest | 33.33 |
| **Calle Paseo de la Castellana 43, 28046, Madrid, Spain** | | |
| Almendra Renovables 400KV, S.L. | Ordinary | 26.87 |
| Colectora Hiberus-Libienergy, S.L. | Ordinary | 24.99 |
| Global Aljarafe, S.L.U | Ordinary | 49.97 |
| Global Aroche, S.L.U | Ordinary | 49.97 |
| Global Atarazana, S.L.U | Ordinary | 49.97 |
| Global Baterno, S.L.U | Ordinary | 49.97 |
| Global Baza, S.L.U | Ordinary | 49.97 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Global Brenes, S.L.U | Ordinary | 49.97 |
| Global Cotolengo, S.L.U | Ordinary | 49.97 |
| Global Tarquinia, S.L.U | Ordinary | 49.97 |
| Global Treviso, S.L.U | Ordinary | 49.97 |
| Global Valdenoches, S.L.U | Ordinary | 49.97 |
| **Calle Suero de Quinones, Numero 34-36, Madrid, 28002, Spain** | | |
| Lightsource Europe Asset Management, SL | Ordinary | 49.97 |
| Lightsource Spain O&M, SL | Ordinary | 49.97 |
| **Campus Empresarial Arbea - Edificio No 1, Carretera Fuencarral a Alcobendas (M-603), km 3.8, Alcobendas, Madrid, Spain** | | |
| Axion Energy Holding, S.L. | Membership Interest | 50.00 |
| Hokchi Iberica, S.L. | Ordinary | 50.00 |
| Pan American Energy Group, S.L. | Ordinary B | 50.00 |
| Pan American Energy Iberica, S.L. | Ordinary | 50.00 |
| Pan American Energy Renovables, S.L. | Ordinary | 50.00 |
| Pan American Energy, S.L. | Membership Interest | 50.00 |
| **Carretera de San Andréss/n, La Jurada-María Jiménez, Santa Cruz de Tenerife, Spain** | | |
| Terminales Canarios, S.L. | Ordinary | 50.00 |
| **Paseo de la Castellana 140, 7C, 28046 Madrid, Spain** | | |
| Alejandria Power, S.L.U. | Ordinary | 49.97 |
| Caletona Servicios y Gestiones, S.L.U. | Ordinary | 49.97 |
| Castellana Power, S.L.U. | Ordinary | 49.97 |
| Inversiones Energy Madrid, S.L.U. | Ordinary | 49.97 |
| Khons Sun Power, S.L.U. | Ordinary | 49.97 |
| Rin Power, S.L.U. | Ordinary | 49.97 |
| Sinfonia Solar Energy Power, S.L.U. | Ordinary | 49.97 |
| **Paseo de la Castellana 278, Madrid, Spain** | | |
| Servicios Logísticos de Combustibles de Aviación, S.L | Ordinary | 50.00 |
| **Paseo De La Castellana 91 4º 4 Madrid, Spain** | | |
| Gómez Narro Renovables 132 kV, A.I.E | Membership Interest | 22.72 |
| **Sweden** | | |
| **Box 135, 190 46 Arlanda, Sweden** | | |
| A Flygbranslehantering AB (AFAB) | Ordinary | 25.00 |
| **Box 2154, Landvetter, 438 14, Sweden** | | |
| Gothenburgh Fuelling Company AB (GFC) | Ordinary | 33.33 |
| **Box 22, SE 230 32 Malmö-Sturup, Sweden** | | |
| Malmo Fuelling Services AB | Ordinary | 33.33 |
| **Box 7, 190 45 Arlanda, Sweden** | | |
| Stockholm Fuelling Services Aktiebolag | Ordinary | 25.00 |
| **Switzerland** | | |
| **Birmenstorferstrasse 2, Mellingen, 5507, Switzerland** | | |
| Tankanlage AG Mellingen | Ordinary | 33.33 |
| **Lindenstrasse 2, 6340 Baar, Switzerland** | | |
| Trans Adriatic Pipeline AG | Ordinary | 20.00 |
| **Route de Pré-Bois 17, Cointrin, 1216, Switzerland** | | |
| Saraco SA | Ordinary | 20.00 |
| **Zwüscheteich, Rümlang, 8153, Switzerland** | | |
| TAR - Tankanlage Ruemlang AG | Ordinary | 27.32 |
| **Taiwan (Province of China)** | | |
| **No. 97, 18F, Songren Rd., Xinyi Dist, Taipei City, Taiwan (Province of China)** | | |
| Hui-Meng Energy Co., Ltd. | Ordinary | 49.97 |
| Lightsource Renewable Energy Development Taiwan Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy SPV 1 Taiwan Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy SPV 2 Taiwan Limited | Ordinary | 49.97 |
| **Thailand** | | |
| **23rd Fl. Rajanakarn Bldg, 3 South Sathon Road, Yannawa South Sathon, Bangkok 10120, Thailand** | | |
| Pacroy (Thailand) Co., Ltd. | Ordinary (100.00%); Preference (0.82%) | 39.50 |
| **Trinidad and Tobago** | | |
| **Princes Court, Cor. Pembroke & Keate Street, Port-of-Spain, Trinidad and Tobago** | | |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Atlantic LNG 2/3 Company of Trinidad and Tobago Unlimited | Ordinary | 42.50 |
| Atlantic LNG 4 Company of Trinidad and Tobago Unlimited | Ordinary | 37.78 |
| Atlantic LNG Company of Trinidad and Tobago | Ordinary | 34.00 |
| **Türkiye** | | |
| **Degirmen yolu cad. No:28, Asia OfisPark K:3 Icerenkoy-Atasehir, Istanbul, 34752, Türkiye** | | |
| ATAS Anadolu Tasfiyehanesi Anonim Sirketi[b] | Ordinary | 68.00 |
| **Kizilirmak Mahallesi, Ufuk Üniversitesi Caddesi, Farilya Business Center, No. 8, Çukurambar, Çankaya, Ankara, Türkiye** | | |
| TANAP Dogalgaz Iletim Anonim Sirketi | Ordinary C (100.00%) | 12.00 |
| **Liman Mah. 60 Sk., Çekisan-Idari Bina sit. No:25 A/1, Konyaalti, Antalya, Türkiye** | | |
| Cekisan Depolama Hizmetleri Limited Sirketi | Ordinary | 35.00 |
| **Yakuplu Mahallesi Genc, Osman Caddesi, No.7 Beylikdüzü, Istanbul, Türkiye** | | |
| Ambarli Depolama Hizmetleri Limited Sirketi | Ordinary | 50.00 |
| **United Arab Emirates** | | |
| **8th Floor, Standard Chartered Tower, Downtown, Dubai, United Arab Emirates** | | |
| Middle East Lubricants Company LLC | Ordinary | 29.33 |
| **P O Box- 97, Sharjah, United Arab Emirates** | | |
| Sharjah Aviation Services Co. LLC | Ordinary B | 49.00 |
| **P.O.Box 261781, Dubai, United Arab Emirates** | | |
| EMDAD Aviation Fuel Storage FZCO | Ordinary | 33.33 |
| **Plot No. B003R04, Box No. 9400, Dubai, United Arab Emirates, Dubai, United Arab Emirates** | | |
| Emoil Storage Company FZCO | Ordinary | 20.00 |
| **Sharjah 42244, Sharjah, United Arab Emirates** | | |
| Sharjah Pipeline Company LLC | Ordinary | 49.00 |
| **Unit GD-GB-00-15-BC-26, Level 15, Gate District Gate Building, Dubai International Financial Center, 74777, United Arab Emirates** | | |
| Basra Energy Company Limited | Ordinary | 49.00 |
| **United Kingdom** | | |
| **1 Wellheads Avenue, Dyce, Aberdeen, AB21 7PB, United Kingdom** | | |
| bp Aberdeen Hydrogen Energy Limited | Ordinary B | 50.00 |
| S&JD Robertson North Air Limited | Ordinary | 49.00 |
| **12-14 Carlton Place, Southampton, SO15 2EA, United Kingdom** | | |
| [illegible] Services Limited | Preference Series A (52.50%); Preference Series A 2 (50.00%) | 26.58 |
| **2 Chester Row, London, SW1W 9JH, United Kingdom** | | |
| Green Biofuels Limited | Ordinary | 30.00 |
| **29th Floor 40 Bank Street, London, E14 5NR** | | |
| Alyssum Group Limited | Membership Interest | 26.23 |
| **33 Cavendish Square, London, W1G 0PW, United Kingdom** | | |
| Great Ropemaker Partnership (G.P.) Limited | Ordinary B | 50.00 |
| Great Ropemaker Property (Nominee 1) Limited | Ordinary | 50.00 |
| Great Ropemaker Property (Nominee 2) Limited | Ordinary | 50.00 |
| Great Ropemaker Property Limited | Ordinary | 50.00 |
| The Great Ropemaker Partnership | Membership Interest | 50.00 |
| **5-7 Alexandra Road, Hemel Hempstead, Hertfordshire, HP2 5BS, United Kingdom** | | |
| British Pipeline Agency Limited | Ordinary | 50.00 |
| United Kingdom Oil Pipelines Limited | Ordinary | 22.15 |
| Walton-Gatwick Pipeline Company Limited | Ordinary | 42.33 |
| West London Pipeline and Storage Limited | Ordinary | 30.50 |
| **60 Sloane Avenue, London, SW3 3XB, United Kingdom** | | |
| Fly Victor Ltd | Membership Interest | 26.23 |
| **6th Floor, 60 Gracechurch Street, London, EC3V 0HR, United Kingdom** | | |
| Gasrec Ltd | Ordinary A (39.50%) | 36.67 |
| **713, Cavendish Avenue, Birchwood, Warrington, WA3 6DE, England, United Kingdom** | | |
| BiSN Holdings Limited | Preference Series B2 (26.00%) | 5.88 |
| **7th Floor, 33 Holborn, London, EC1N 2HU, England, United Kingdom** | | |
| Aashman Power Limited | Ordinary | 49.97 |
| Bodmin Solar Limited | Ordinary | 49.97 |
| Burnthouse Solar Limited | Ordinary | 49.97 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Chittering Solar Limited | Ordinary | 49.97 |
| Donoma Power Limited | Ordinary | 49.97 |
| Ffos Las Solar Developments Limited | Ordinary | 49.97 |
| Free Power for Schools 13 Limited | Ordinary | 49.97 |
| Free Power for Schools 14 Limited | Ordinary | 49.97 |
| Free Power for Schools 15 Limited | Ordinary | 49.97 |
| Free Power for Schools 17 Limited | Ordinary | 49.97 |
| Free Power for Schools 4 Limited | Ordinary | 49.97 |
| Free Power for Schools 5 Limited | Ordinary | 49.97 |
| Free Power for Schools 6 Limited | Ordinary | 49.97 |
| Free Power for Schools 7 Limited | Ordinary | 49.97 |
| Freetricity Central June Limited | Ordinary | 49.97 |
| Gnowee Power Limited | Ordinary | 49.97 |
| H7 Energy Limited | Ordinary | 49.97 |
| Howbery Solar Park Limited | Ordinary | 49.97 |
| Kala Power Limited | Ordinary | 49.97 |
| Lightsource Asset Holdings (Australia) Limited | Ordinary | 49.97 |
| Lightsource Asset Holdings (Europe) Limited | Ordinary | 49.97 |
| Lightsource Asset Holdings (Spain) Limited | Ordinary | 49.97 |
| Lightsource Asset Holdings (UK) Limited | Ordinary | 49.97 |
| Lightsource Asset Holdings (USA) Limited | Ordinary | 49.97 |
| Lightsource Asset Holdings (Vendimia I) Limited | Ordinary | 49.97 |
| Lightsource Asset Holdings (Vendimia II) Limited | Ordinary | 49.97 |
| Lightsource Asset Holdings 1 Limited | Ordinary | 49.97 |
| Lightsource Asset Holdings 2 Limited | Ordinary | 49.97 |
| Lightsource Asset Holdings 3 Limited | Ordinary | 49.97 |
| Lightsource Asset Management Limited | Ordinary | 49.97 |
| Lightsource Australia FinCo Holdings Limited | Ordinary | 49.97 |
| Lightsource Bodegas 2 Limited | Ordinary | 49.97 |
| Lightsource Bodegas 3 Limited | Ordinary | 49.97 |
| Lightsource Bodegas 4 Limited | Ordinary | 49.97 |
| Lightsource Bodegas Limited | Ordinary | 49.97 |
| Lightsource BP Renewable Energy Investments Limited | Ordinary A (49.97%); Ordinary C (49.96%); Ordinary D (50.00%); Ordinary E (50.00%); Ordinary F (49.95%); Ordinary G (50.00%) | 49.97 |
| Lightsource Brazil Holdings 1 Limited | Ordinary | 49.97 |
| Lightsource Brazil Holdings 2 Limited | Ordinary | 49.97 |
| Lightsource Commercial Rooftops Limited | Ordinary | 49.97 |
| Lightsource Construction Management Limited | Ordinary | 49.97 |
| Lightsource Corinthian Limited | Ordinary | 49.97 |
| Lightsource Development Services Limited | Ordinary | 49.97 |
| Lightsource Egypt Holdings Limited | Ordinary | 49.97 |
| Lightsource Elk Hill 2 Solar Limited | Ordinary | 49.97 |
| Lightsource Elk Hill Solar 2 Holdings Limited | Ordinary | 49.97 |
| Lightsource Finance 55 Limited | Ordinary | 49.97 |
| Lightsource Finca 2 Limited | Ordinary | 49.97 |
| Lightsource Finca 3 Limited | Ordinary | 49.97 |
| Lightsource Finca Limited | Ordinary | 49.97 |
| Lightsource France Holdings UK Limited | Ordinary | 49.97 |
| Lightsource Grace 1 Limited | Ordinary | 49.97 |
| Lightsource Grace 2 Limited | Ordinary | 49.97 |
| Lightsource Grace 3 Limited | Ordinary | 49.97 |
| Lightsource Holdings 1 Limited | Ordinary | 49.97 |
| Lightsource Holdings 2 Limited | Ordinary | 49.97 |
| Lightsource Holdings 3 Limited | Ordinary | 49.97 |
| Lightsource Iberia Greenfield Holdings Limited | Ordinary | 49.97 |
| Lightsource Iberia Project Holdings Limited | Ordinary | 49.97 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Lightsource Impact 1 Limited | Ordinary | 49.97 |
| Lightsource Impact 2 Limited | Ordinary | 49.97 |
| Lightsource India Holdings (Mauritius) Limited | Ordinary | 49.97 |
| Lightsource India Holdings Limited | Ordinary | 49.97 |
| Lightsource India Investments (UK) Limited | Ordinary | 49.97 |
| Lightsource India Limited | Ordinary A | 25.49 |
| Lightsource India Maharashtra 1 Holdings Limited | Ordinary | 49.97 |
| Lightsource India Maharashtra 1 Limited | Ordinary | 49.97 |
| Lightsource Kingfisher Holdings Limited | Ordinary | 49.97 |
| Lightsource Kingpin 1 Limited | Ordinary | 49.97 |
| Lightsource Kingpin 2 Limited | Ordinary | 49.97 |
| Lightsource Kingpin 3 Limited | Ordinary | 49.97 |
| Lightsource Labs 1 Limited | Ordinary | 49.97 |
| Lightsource Labs Holdings Limited | Ordinary | 49.97 |
| Lightsource Largescale Limited | Ordinary | 49.97 |
| Lightsource Manzanilla Limited | Ordinary | 49.97 |
| Lightsource Nala Limited | Ordinary | 49.97 |
| Lightsource Operations 1 Limited | Ordinary | 49.97 |
| Lightsource Operations 2 Limited | Ordinary | 49.97 |
| Lightsource Operations 3 Limited | Ordinary | 49.97 |
| Lightsource Operations Services Limited | Ordinary | 49.97 |
| Lightsource Poland Holdings (UK) Limited | Ordinary | 49.97 |
| Lightsource Property 1 Limited | Ordinary | 49.97 |
| Lightsource Property 2 Limited | Ordinary | 49.97 |
| Lightsource Property Investment Holdings Ltd | Ordinary | 49.97 |
| Lightsource Property Investment Management (LPIM) LLP | Membership Interest | 49.97 |
| Lightsource Property Investments 1 Ltd | Ordinary | 49.97 |
| Lightsource Pumbaa Limited | Ordinary | 49.97 |
| Lightsource Radiate 1 Limited | Ordinary | 49.97 |
| Lightsource Radiate 2 Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy (India) Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Asia Pacific Holdings Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Australia Holdings Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Greece Holdings (UK) Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Greece Holdings 2 (UK) Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Greece Projects 2 Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Holdings Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Iberia Holdings Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy India Assets Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy India Holdings Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy India Projects Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Italy Holdings Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Moristel Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Netherlands Holdings Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy New Zealand Holdings Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Poland Projects 1 Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Poland Projects 2 Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Portugal Holdings Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Portugal Projects 1 Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Portugal Projects 2 Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Tempranillo Limited | Ordinary | 49.97 |
| Lightsource Renewable Energy Verdejo Limited | Ordinary | 49.97 |
| Lightsource Renewable Global Development Limited | Ordinary | 49.97 |
| Lightsource Renewable Services Limited | Ordinary | 49.97 |
| Lightsource Renewable Taiwan UK Holdings Limited | Ordinary | 49.97 |
| Lightsource Renewable UK Development Limited | Ordinary | 49.97 |
| Lightsource Residential Rooftops (PPA) Limited | Ordinary | 49.97 |
| Lightsource Residential Rooftops Limited | Ordinary | 49.97 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Lightsource Simba Limited | Ordinary | 49.97 |
| Lightsource SPV 10 Limited | Ordinary | 49.97 |
| Lightsource SPV 101 Limited | Ordinary | 49.97 |
| Lightsource SPV 105 Limited | Ordinary | 49.97 |
| Lightsource SPV 106 Limited | Ordinary | 49.97 |
| Lightsource SPV 108 Limited | Ordinary | 49.97 |
| Lightsource SPV 109 Limited | Ordinary | 49.97 |
| Lightsource SPV 112 Limited | Ordinary | 49.97 |
| Lightsource SPV 114 Limited | Ordinary | 49.97 |
| Lightsource SPV 115 Limited | Ordinary | 49.97 |
| Lightsource SPV 116 Limited | Ordinary | 49.97 |
| Lightsource SPV 118 Limited | Ordinary | 49.97 |
| Lightsource SPV 123 Limited | Ordinary | 49.97 |
| Lightsource SPV 126 Limited | Ordinary | 49.97 |
| Lightsource SPV 127 Limited | Ordinary | 49.97 |
| Lightsource SPV 128 Limited | Ordinary | 49.97 |
| Lightsource SPV 130 Limited | Ordinary | 49.97 |
| Lightsource SPV 135 Limited | Ordinary | 49.97 |
| Lightsource SPV 138 Limited | Ordinary | 49.97 |
| Lightsource SPV 140 Limited | Ordinary | 49.97 |
| Lightsource SPV 142 Limited | Ordinary | 49.97 |
| Lightsource SPV 143 Limited | Ordinary | 49.97 |
| Lightsource SPV 145 Limited | Ordinary | 49.97 |
| Lightsource SPV 149 Limited | Ordinary | 49.97 |
| Lightsource SPV 151 Limited | Ordinary | 49.97 |
| Lightsource SPV 154 Limited | Ordinary | 49.97 |
| Lightsource SPV 160 Limited | Ordinary | 49.97 |
| Lightsource SPV 162 Limited | Ordinary | 49.97 |
| Lightsource SPV 166 Limited | Ordinary | 49.97 |
| Lightsource SPV 167 Limited | Ordinary | 49.97 |
| Lightsource SPV 169 Limited | Ordinary | 49.97 |
| Lightsource SPV 170 Limited | Ordinary | 49.97 |
| Lightsource SPV 171 Limited | Ordinary | 49.97 |
| Lightsource SPV 176 Limited | Ordinary | 49.97 |
| Lightsource SPV 179 Limited | Ordinary | 49.97 |
| Lightsource SPV 18 Limited | Ordinary | 49.97 |
| Lightsource SPV 180 Limited | Ordinary | 49.97 |
| Lightsource SPV 182 Limited | Ordinary | 49.97 |
| Lightsource SPV 183 Limited | Ordinary | 49.97 |
| Lightsource SPV 184 Limited | Ordinary | 49.97 |
| Lightsource SPV 185 Limited | Ordinary | 49.97 |
| Lightsource SPV 189 Limited | Ordinary | 49.97 |
| Lightsource SPV 19 Limited | Ordinary | 49.97 |
| Lightsource SPV 191 Limited | Ordinary | 49.97 |
| Lightsource SPV 192 Limited | Ordinary | 49.97 |
| Lightsource SPV 199 Limited | Ordinary | 49.97 |
| Lightsource SPV 20 Limited | Ordinary | 49.97 |
| Lightsource SPV 200 Limited | Ordinary | 49.97 |
| Lightsource SPV 201 Limited | Ordinary | 49.97 |
| Lightsource SPV 202 Limited | Ordinary | 49.97 |
| Lightsource SPV 203 Limited | Ordinary | 49.97 |
| Lightsource SPV 204 Limited | Ordinary | 49.97 |
| Lightsource SPV 206 Limited | Ordinary | 49.97 |
| Lightsource SPV 212 Limited | Ordinary | 49.97 |
| Lightsource SPV 213 Limited | Ordinary | 49.97 |
| Lightsource SPV 214 Limited | Ordinary | 49.97 |
| Lightsource SPV 215 Limited | Ordinary | 49.97 |
| Lightsource SPV 216 Limited | Ordinary | 49.97 |
| Lightsource SPV 217 Limited | Ordinary | 49.97 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Lightsource SPV 222 Limited | Ordinary | 49.97 |
| Lightsource SPV 223 Limited | Ordinary | 49.97 |
| Lightsource SPV 224 Limited | Ordinary | 49.97 |
| Lightsource SPV 232 Limited | Ordinary | 49.97 |
| Lightsource SPV 233 Limited | Ordinary | 49.97 |
| Lightsource SPV 236 Limited | Ordinary | 49.97 |
| Lightsource SPV 247 Limited | Ordinary | 49.97 |
| Lightsource SPV 25 Limited | Ordinary | 49.97 |
| Lightsource SPV 258 Limited | Ordinary | 49.97 |
| Lightsource SPV 259 Limited | Ordinary | 49.97 |
| Lightsource SPV 26 Limited | Ordinary | 49.97 |
| Lightsource SPV 261 Limited | Ordinary | 49.97 |
| Lightsource SPV 263 Limited | Ordinary | 49.97 |
| Lightsource SPV 264 Limited | Ordinary | 49.97 |
| Lightsource SPV 286 Limited | Ordinary | 49.97 |
| Lightsource SPV 287 Limited | Ordinary | 49.97 |
| Lightsource SPV 288 Limited | Ordinary | 49.97 |
| Lightsource SPV 29 Limited | Ordinary | 49.97 |
| Lightsource SPV 32 Limited | Ordinary | 49.97 |
| Lightsource SPV 35 Limited | Ordinary | 49.97 |
| Lightsource SPV 39 Limited | Ordinary | 49.97 |
| Lightsource SPV 40 Limited | Ordinary | 49.97 |
| Lightsource SPV 41 Limited | Ordinary | 49.97 |
| Lightsource SPV 42 Limited | Ordinary | 49.97 |
| Lightsource SPV 44 Limited | Ordinary | 49.97 |
| Lightsource SPV 47 Limited | Ordinary | 49.97 |
| Lightsource SPV 49 Limited | Ordinary | 49.97 |
| Lightsource SPV 5 Limited | Ordinary | 49.97 |
| Lightsource SPV 50 Limited | Ordinary | 49.97 |
| Lightsource SPV 54 Limited | Ordinary | 49.97 |
| Lightsource SPV 56 Limited | Ordinary | 49.97 |
| Lightsource SPV 60 Limited | Ordinary | 49.97 |
| Lightsource SPV 69 Limited | Ordinary | 49.97 |
| Lightsource SPV 73 Limited | Ordinary | 49.97 |
| Lightsource SPV 74 Limited | Ordinary | 49.97 |
| Lightsource SPV 76 Limited | Ordinary | 49.97 |
| Lightsource SPV 78 Limited | Ordinary | 49.97 |
| Lightsource SPV 79 Limited | Ordinary | 49.97 |
| Lightsource SPV 8 Limited | Ordinary | 49.97 |
| Lightsource SPV 88 Limited | Ordinary | 49.97 |
| Lightsource SPV 91 Limited | Ordinary | 49.97 |
| Lightsource SPV 98 Limited | Ordinary | 49.97 |
| Lightsource Timon Limited | Ordinary | 49.97 |
| Lightsource Titan Borrower AUD Limited | Ordinary | 49.97 |
| Lightsource Titan Borrower EUR Limited | Ordinary | 49.97 |
| Lightsource Titan Borrower GBP Limited | Ordinary | 49.97 |
| Lightsource Titan Borrower USD Limited | Ordinary | 49.97 |
| Lightsource Titan Limited | Ordinary | 49.97 |
| Lightsource Trading Limited | Ordinary | 49.97 |
| Lightsource Trinidad Holdings (UK) Limited | Ordinary | 49.97 |
| Lightsource UK Property Investments 1 LP | Membership interest | 49.97 |
| Lightsource Viking 1 Limited | Ordinary | 49.97 |
| Lightsource Viking 2 Limited | Ordinary | 49.97 |
| Lightsource Xenium 1 Limited | Ordinary | 49.97 |
| Lightsource Xenium 2 Limited | Ordinary | 49.97 |
| LL Property Services 2 Limited | Ordinary | 49.97 |
| LL Property Services Limited | Ordinary | 49.97 |
| Lora Solar Limited | Ordinary | 49.97 |
| Manor Farm (Solar Power) Limited | Ordinary | 49.97 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Meri Power Limited | Ordinary | 49.97 |
| MTS Francis Court Solar Limited | Ordinary | 49.97 |
| MTS Trefinnick Solar Limited | Ordinary | 49.97 |
| Nextpower Trevemper Limited | Ordinary | 49.97 |
| Nima Power Limited | Ordinary | 49.97 |
| Palk Power Limited | Ordinary | 49.97 |
| Pont Andrew Limited | Ordinary | 49.97 |
| Sel PV 09 Limited | Ordinary | 49.97 |
| Shakti Power Limited | Ordinary | 49.97 |
| Solar Photovoltaic (SPV2) Limited | Ordinary | 49.97 |
| Solar Photovoltaic (SPV3) Limited | Ordinary | 49.97 |
| Sula Power Limited | Ordinary | 49.97 |
| Sun and Soil Renewable 12 Limited | Ordinary | 49.97 |
| TGC Solar 106 Limited | Ordinary | 49.97 |
| TGC Solar 91 Limited | Ordinary | 49.97 |
| Thames Electricity Limited | Ordinary | 49.97 |
| Tiln Connections Ltd | Ordinary | 49.97 |
| Tonatiuh Trading 1 Limited | Ordinary | 49.97 |
| Tuwale Power Limited | Ordinary | 49.97 |
| TWQE2 Limited | Ordinary | 49.97 |
| West Wyalong HoldCo 1 Limited | Ordinary | 49.97 |
| Woolooga HoldCo 1 Limited | Ordinary | 49.97 |
| Your Power No. 1 Limited | Ordinary | 49.97 |
| Your Power No. 10 Limited | Ordinary | 49.97 |
| Your Power No. 19 Limited | Ordinary | 49.97 |
| Your Power No. 2 Limited | Ordinary | 49.97 |
| Your Power No. 3 Limited | Ordinary | 49.97 |
| Your Power No. 8 Limited | Ordinary | 49.97 |
| **Calshot Way Central Area, Heathrow Airport, Hounslow, Middlesex, TW6 1PY, United Kingdom** | | |
| Aviation Fuel Services Limited | Ordinary | 25.00 |
| **Chertsey Road, Sunbury on Thames, Middlesex, TW16 7BP, England, United Kingdom** | | |
| Angola JVCO Limited | Ordinary | 50.00 |
| BP Exploration (Angola) Limited | Ordinary | 50.00 |
| BP Exploration Angola (Kwanza Benguela) Limited | Ordinary | 50.00 |
| Mona Offshore Wind Holdings Limited | Ordinary | 50.00 |
| Mona Offshore Wind Limited | Ordinary | 50.00 |
| Morgan Offshore Wind Holdings Limited | Ordinary | 50.00 |
| Morgan Offshore Wind Limited | Ordinary | 50.00 |
| Morven Offshore Wind Holdings Limited | Ordinary | 50.00 |
| Morven Offshore Wind Limited | Ordinary | 50.00 |
| **Eni House, 10 Ebury Bridge Road, London, SW1W 8PZ, United Kingdom** | | |
| Azule Energy Holdings Limited | Ordinary | 50.00 |
| Solenova Limited | Ordinary | 25.00 |
| VIC CBM Limited | Ordinary | 50.00 |
| Virginia Indonesia Co. CBM Limited | Ordinary | 50.00 |
| **Kelvin Building , Bramah Avenue , East Kilbride, Glasgow , Scotland, G75 0RD, United Kingdom** | | |
| Heliex Power Limited | Membership Interest | 32.40 |
| **Mclaren Building Suite, 14a Mclaren Building, 46 Priory Queensway, Birmingham, B4 7LR, United Kingdom** | | |
| Grid Edge Limited | Preferred Series A (60.00%); Preferred Series A 2 (58.68%) | 22.15 |
| **Mw1 Building 557 Shoreham Road, Heathrow Airport, London, TW6 3RT, United Kingdom** | | |
| Aviation Service (Iraq) Limited | Ordinary B | 40.00 |
| **Northgate House, 2nd Floor, Upper Borough Walls, Bath, BA1 1RG, United Kingdom** | | |
| Blue Marble Holdings Limited | Ordinary C (96.53%) | 23.58 |
| **One Bartholomew Close, London, EC1A 7BL, United Kingdom** | | |
| Manchester Airport Storage and Hydrant Company Limited | Ordinary | 25.00 |
| **Redruth House, Cornwall Business Park, West Scorrier, Cornwall, TR16 5EZ** | | |
| Wick Farm Grid Limited | Ordinary | 24.99 |
| **Regus Business Centre, Cromac Square, Belfast, Northern Ireland, BT2 8LA, United Kingdom** | | |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Lightsource Renewable Energy (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 266 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 267 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 268 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 269 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 270 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 271 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 272 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 273 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 274 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 275 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 276 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 277 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 278 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 279 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 280 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 281 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 282 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 283 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 284 (NI) Limited | Ordinary | 49.97 |
| Lightsource SPV 285 (NI) Limited | Ordinary | 49.97 |
| **Shell Centre, London, SE1 7NA, United Kingdom** | | |
| Shell Mex and B.P. Limited | Ordinary B | 40.00 |
| SM Realisations Limited (Liquidated) | Membership Interest | 40.00 |
| The Consolidated Petroleum Company Limited | Ordinary B | 50.00 |
| The Consolidated Petroleum Supply Company Limited[g] | Ordinary | 50.00 |
| **Suite 44 (C/O Best4Business Accountants), Beaufort Court, Admirals Way, London, E14 9XL, United Kingdom** | | |
| Pentland Aviation Fuelling Services Limited | Ordinary A; Ordinary B | 66.67 |
| **Windsor House, Cornwall Road, Harrogate, England, HG1 2PW, United Kingdom** | | |
| C-Capture Limited | Preference Series A (25.31%) | 17.51 |
| **United States** | | |
| **1209 Orange Street, Wilmington DE 19801, United States** | | |
| Ash Grove Renewable Energy, LLC | Membership Interest | 47.50 |
| Auwahi Holdings, LLC | Membership Interest | 50.00 |
| Auwahi Wind Energy LLC | Membership Interest | 50.00 |
| Belmont Technology Inc. | Membership Interest | 37.50 |
| BP-Husky Refining LLC | Membership Interest | 50.00 |
| Caesar Oil Pipeline Company, LLC | Membership Interest | 56.00 |
| CE BP Renew Co, LLC | Membership Interest | 50.00 |
| CE bp Renew Dynamic Co I, LLC | Membership Interest | 40.00 |
| CE bp Renew Dynamic Co II, LLC | Membership Interest | 47.50 |
| CE bp Renew Dynamic Co III, LLC | Membership Interest | 40.00 |
| Cedar Creek II Holdings LLC | Membership Interest | 50.00 |
| Chicap Pipe Line Company | Ordinary | 28.65 |
| Cleopatra Gas Gathering Company, LLC | Membership Interest | 53.00 |
| Drumgoon Digester Renewable Energy, LLC | Membership Interest | 40.00 |
| East Valley Development, LLC | Membership Interest | 50.00 |
| Endymion Oil Pipeline Company, LLC | Membership Interest | 65.00 |
| Fowler II Holdings LLC | Membership Interest | 50.00 |
| Fowler Ridge II Wind Farm LLC | Membership Interest | 50.00 |
| Goshen Phase II LLC | Membership Interest | 50.00 |
| KM Phoenix Holdings LLC | Membership Interest | 25.00 |
| Mars Oil Pipeline Company LLC | Partnership interest | 28.50 |
| Marshall Ridge Renewable Energy, LLC | Membership Interest | 40.00 |
| Mehoopany Wind Energy LLC | Membership Interest | 50.00 |
| Mehoopany Wind Holdings LLC | Membership Interest | 50.00 |
| Olympic Pipe Line Company LLC | Membership Interest | 35.70 |
| Proteus Oil Pipeline Company, LLC | Membership Interest | 65.00 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Tri-Cross Renewable Energy, LLC | Membership Interest | 47.50 |
| Ursa Oil Pipeline Company LLC | Membership Interest | 22.69 |
| Van Winkle Digester Renewable Energy, LLC | Membership Interest | 47.50 |
| VF Renewable Energy, LLC | Membership Interest | 40.00 |
| WMR Renewable Energy, LLC | Membership Interest | 50.00 |
| **1560 Broadway, Suite 2090, Denver, Colorado, 80202, United States** | | |
| Cedar Creek II, LLC | Membership Interest | 50.00 |
| **160 Greentree Drive, Suite 101, Dover, County of Kent DE 19904, United States** | | |
| Zubie, Inc. | Membership Interest | 20.30 |
| **16192 Coastal Highway, Sussex County, Lewes, DE, 19958, United States** | | |
| Aparecida I Power Holding LLC | Membership Interest | 25.00 |
| **1675 South State Street, Suite B, Dover, Kent Country, Delaware 19901 US, United States** | | |
| Syzygy Plasmonic Inc. | Preference | 50.00 |
| **251 Little Falls Drive, Wilmington, DE 19808, United States** | | |
| Apis Innovation Inc. | Ordinary | 35.00 |
| Atlas RNG LLC | Membership Interest | 50.00 |
| Bass Solar Class B, LLC | Membership Interest | 49.97 |
| Bass Solar Construction, LLC | Membership Interest | 49.97 |
| Bass Solar Holdings 1, LLC | Membership Interest | 49.97 |
| Bass Solar Holdings 2, LLC | Membership Interest | 49.97 |
| Bass Solar Holdings, LLC | Class B Membership Interest | 49.97 |
| Beacon Wind Holdings LLC | Membership Interest | 50.00 |
| Beacon Wind LLC | Membership Interest | 50.00 |
| Bellflower Solar 1, LLC | Membership Interest | 49.97 |
| Big Elk Solar, LLC | Membership Interest | 49.97 |
| Bighorn Solar 1, LLC | Membership Interest | 49.97 |
| Bighorn Solar Class B, LLC | Membership Interest | 49.97 |
| Bighorn Solar Construction, LLC | Membership Interest | 49.97 |
| Bighorn Solar Holdings 1, LLC | Membership Interest | 49.97 |
| Bighorn Solar Holdings 2, LLC | Membership Interest | 49.97 |
| Bighorn Solar Holdings, LLC | Class B Membership Interest | 49.97 |
| Birch Solar 1, LLC | Membership Interest | 49.97 |
| Black Bear Alabama Solar 1, LLC | Membership Interest | 25.73 |
| Black Bear Alabama Solar Holdings 1, LLC | Membership Interest | 49.97 |
| Black Bear Alabama Solar Holdings 2, LLC | Membership Interest | 49.97 |
| Black Bear Alabama Solar Holdings, LLC | Membership Interest | 25.73 |
| Black Bear Alabama Solar Land Holdings, LLC | Membership Interest | 49.97 |
| Black Bear Alabama Solar Manager, LLC | Membership Interest | 49.97 |
| Briar Creek Solar 1, LLC | Membership Interest | 49.97 |
| Cardinal Solar Class B, LLC | Membership Interest | 49.97 |
| Cardinal Solar Construction Holdings, LLC | Membership Interest | 49.97 |
| Cardinal Solar Construction, LLC | Membership Interest | 49.97 |
| Cardinal Solar Holdings 1, LLC | Membership Interest | 49.97 |
| Cardinal Solar Holdings 2, LLC | Membership Interest | 49.97 |
| Cardinal Solar Holdings, LLC | Membership Interest | 49.97 |
| Champion Solar 1, LLC | Membership Interest | 49.97 |
| Chester Solar Energy, LLC | Membership Interest | 49.97 |
| Continental Divide Solar I, LLC | Membership Interest | 49.97 |
| Continental Divide Solar II, LLC | Membership Interest | 49.97 |
| Continental Divide Solar Land Holdings, LLC | Membership Interest | 49.97 |
| Cottontail Solar 1, LLC | Membership Interest | 49.97 |
| Cottontail Solar 2, LLC | Membership Interest | 49.97 |
| Cottontail Solar 3, LLC | Membership Interest | 49.97 |
| Cottontail Solar 4, LLC | Membership Interest | 49.97 |
| Cottontail Solar 5, LLC | Membership Interest | 49.97 |
| Cottontail Solar 6, LLC | Membership Interest | 49.97 |
| Cottontail Solar 7, LLC | Membership Interest | 49.97 |
| Cottontail Solar 8, LLC | Membership Interest | 49.97 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Cottontail Solar 9, LLC | Membership Interest | 49.97 |
| Cottontail Solar Class B, LLC | Membership Interest | 49.97 |
| Cottontail Solar Construction Holdings, LLC | Membership Interest | 49.97 |
| Cottontail Solar Construction, LLC | Membership Interest | 49.97 |
| Cottontail Solar Holdings 1, LLC | Membership Interest | 49.97 |
| Cottontail Solar Holdings 2, LLC | Membership Interest | 49.97 |
| Cottontail Solar Holdings, LLC | Membership Interest | 49.97 |
| Crawfish Solar Class B, LLC | Membership Interest | 49.97 |
| Crawfish Solar Construction Holdings, LLC | Membership Interest | 49.97 |
| Crawfish Solar Construction, LLC | Membership Interest | 49.97 |
| Crawfish Solar Holdings 1, LLC | Membership Interest | 49.97 |
| Crawfish Solar Holdings 2, LLC | Membership Interest | 49.97 |
| Crawfish Solar Holdings, LLC | Membership Interest | 49.97 |
| Crawford Solar, LLC | Membership Interest | 49.97 |
| Crossvine Solar 1, LLC | Membership Interest | 49.97 |
| Driver Solar Holdings, LLC | Membership Interest | 49.97 |
| Driver Solar, LLC | Membership Interest | 49.97 |
| Eden RNG LLC | Membership Interest | 50.00 |
| Elk Hill Solar 1 Holdings, LLC | Membership Interest | 49.97 |
| Elk Hill Solar 1 Storage, LLC | Membership Interest | 49.97 |
| Elk Hill Solar 1, LLC | Membership Interest | 49.97 |
| Elk Hill Solar 2 Holdings, LLC | Membership Interest | 49.97 |
| Elk Hill Solar 2, LLC | Membership Interest | 49.97 |
| Elm Branch Solar 1, LLC | Membership Interest | 49.97 |
| Empire Offshore Wind Holdings LLC | Membership Interest | 50.00 |
| Empire Offshore Wind LLC | Membership Interest | 50.00 |
| FreeWire Technologies, Inc. | Membership Interest | 22.90 |
| Glade CD Solar Holdings, LLC | Membership Interest | 49.97 |
| Glade Solar Class B, LLC | Membership Interest | 49.97 |
| Glade Solar Construction Holdings, LLC | Membership Interest | 49.97 |
| Glade Solar Construction, LLC | Membership Interest | 49.97 |
| Glade Solar Holdings 1, LLC | Membership Interest | 49.97 |
| Glade Solar Holdings 2, LLC | Membership Interest | 49.97 |
| Glade Solar Holdings, LLC | Class B Membership Interest | 49.97 |
| Glade Solar Land Holdings, LLC | Membership Interest | 49.97 |
| Granite Hill Solar Land Holdings, LLC | Membership Interest | 49.97 |
| Granite Hill Solar, LLC | Membership Interest | 49.97 |
| Green Meadows RNG LLC | Membership Interest | 50.00 |
| Happy Solar 1, LLC | Membership Interest | 49.97 |
| Honeysuckle Solar, LLC | Membership Interest | 49.97 |
| Impact Solar 1, LLC | Membership Interest | 49.97 |
| Impact Solar Class B, LLC | Membership Interest | 49.97 |
| Impact Solar Construction, LLC | Membership Interest | 49.97 |
| Impact Solar Holdings 1, LLC | Membership Interest | 49.97 |
| Impact Solar Holdings 2, LLC | Membership Interest | 49.97 |
| Impact Solar Holdings, LLC | Class B Membership Interest | 49.97 |
| Inverness Solar, LLC | Membership Interest | 49.97 |
| Janus RNG LLC | Membership Interest | 50.00 |
| Johnson Corner Solar I, LLC | Membership Interest | 49.97 |
| Jones City Solar II, LLC | Membership Interest | 49.97 |
| Jones City Solar, LLC | Membership Interest | 49.97 |
| Kirkham Solar Farms I, LLC | Membership Interest | 49.97 |
| Kirkham Solar Farms II, LLC | Membership Interest | 49.97 |
| Lightsource Beacon 2, LLC | Membership Interest | 49.97 |
| Lightsource Beacon 3, LLC | Membership Interest | 49.97 |
| Lightsource Beacon Holdings, LLC | Membership Interest | 49.97 |
| Lightsource Beacon, LLC | Membership Interest | 49.97 |
| Lightsource Renewable Energy Asset Holdings 1, LLC | Membership Interest | 49.97 |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Lightsource Renewable Energy Asset Management Holdings, LLC | Membership Interest | 49.97 |
| Lightsource Renewable Energy Asset Management, LLC | Membership Interest | 49.97 |
| Lightsource Renewable Energy Assets Holdings, LLC | Membership Interest | 49.97 |
| Lightsource Renewable Energy Austin Holdings, LLC | Membership Interest | 49.97 |
| Lightsource Renewable Energy Development, LLC | Membership Interest | 49.97 |
| Lightsource Renewable Energy Management, LLC | Membership Interest | 49.97 |
| Lightsource Renewable Energy Operations, LLC | Membership Interest | 49.97 |
| Lightsource Renewable Energy Services Holdings, LLC | Membership Interest | 49.97 |
| Lightsource Renewable Energy Services, Inc. | Ordinary | 49.97 |
| Lightsource Renewable Energy Trading, LLC | Membership Interest | 49.97 |
| Lightsource Renewable Energy US, LLC | Membership Interest | 49.97 |
| LSBP NE Development, LLC | Membership Interest | 49.97 |
| Maverick Solar Class B, LLC | Membership Interest | 49.97 |
| Maverick Solar Construction, LLC | Membership Interest | 49.97 |
| Maverick Solar Holdings 1, LLC | Membership Interest | 49.97 |
| Maverick Solar Holdings 2, LLC | Membership Interest | 49.97 |
| Maverick Solar Holdings, LLC | Class B Membership Interest | 49.97 |
| Mayapple Solar Holdings 1, LLC | Membership Interest | 49.97 |
| Mayapple Solar Holdings, LLC | Membership Interest | 49.97 |
| Mayapple Solar, LLC | Membership Interest | 49.97 |
| Oxbow Solar Farm 1, LLC | Membership Interest | 49.97 |
| Oxbow Solar Land Holdings, LLC | Membership Interest | 49.97 |
| Pacific Offshore Wind Holdings LLC | Membership Interest | 50.00 |
| Pacific Offshore Wind LLC | Membership Interest | 50.00 |
| Pan RNG LLC | Membership Interest | 50.00 |
| Paper Shell Solar 1, LLC | Membership Interest | 49.97 |
| Peony Solar 1, LLC | Membership Interest | 49.97 |
| Pine Burr Solar 1, LLC | Membership Interest | 49.97 |
| Pine Cone Solar 2, LLC | Membership Interest | 49.97 |
| Pine Cone Solar 3, LLC | Membership Interest | 49.97 |
| Pine Cone Solar, LLC | Membership Interest | 49.97 |
| Poplar Solar 1, LLC | Membership Interest | 49.97 |
| Prairie Ronde Solar Farm, LLC | Membership Interest | 49.97 |
| Red Dusk Solar 1, LLC | Membership Interest | 49.97 |
| Renewable Energy Shared Assets LLC | Membership Interest | 50.00 |
| Saturn Renewables LLC | Membership Interest | 50.00 |
| Shorebird Solar, LLC | Membership Interest | 49.97 |
| Snowdrop Solar, LLC | Membership Interest | 49.97 |
| Starr Solar Ranch 1, LLC | Membership Interest | 49.97 |
| Starr Solar Ranch LLC | Membership Interest | 49.97 |
| Sun Mountain Solar 1, LLC | Membership Interest | 49.97 |
| Sycamore Trail Solar, LLC | Membership Interest | 49.97 |
| Titan Partners LLC | Membership Interest | 25.00 |
| Trinity River Solar 1, LLC | Membership Interest | 49.97 |
| TX Gulf Solar 1, LLC | Membership Interest | 49.97 |
| White Trillium Solar, LLC | Membership Interest | 49.97 |
| Whitetail Solar 1, LLC | Membership Interest | 49.97 |
| Whitetail Solar 2, LLC | Membership Interest | 49.97 |
| Whitetail Solar 3, LLC | Membership Interest | 49.97 |
| Whitetail Solar 6, LLC | Membership Interest | 49.97 |
| Whitetail Solar Land Holdings, LLC | Membership Interest | 49.97 |
| Wildflower Solar I, LLC | Membership Interest | 49.97 |
| Wildflower Solar Land Holdings, LLC | Membership Interest | 49.97 |
| **2711 Centerville Road, Suite 400, Wilmington DE 19808, United States** | | |
| Energy Emerging Investments, LLC | Membership Interest | 50.00 |
| **4001 Kennet Pike, Suite 302, Wilmington, DE, 19807, United States** | | |
| AEP I HoldCo LLC | Membership Interest | 24.30 |
| **6400 Shafer Ct., Suite 400, IL 60018-4927, Rosemont, United States** | | |

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

## 13. Related undertakings of the group – continued

| | | |
|---|---|---|
| Cantera K-3 Limited Partnership | Partnership interest | 39.00 |
| **8 the Green, Ste A, Dover, Kent, DE, 19901** | | |
| Lutum Technology LLC | Membership Interest | 20.00 |
| **815, 14th Street SW, Suite A100, Loveland, CO 80537, United States** | | |
| Lightning eMotors, Inc. | Ordinary | 25.51 |
| **850 New Burton Road, Suite 201, Dover, Delaware, 19902, United States** | | |
| SeaPort Midstream Partners, LLC | Membership Interest | 49.00 |
| Zippity, Inc. | Membership Interest | 22.60 |
| **920 North King Street, 2nd Floor, Wilmington DE 19801, United States** | | |
| Atlantic 1 Holdings LLC | Membership Interest | 34.00 |
| Atlantic 2/3 Holdings LLC | Membership Interest | 42.50 |
| Atlantic 4 Holdings LLC | Membership Interest | 37.78 |
| **9900 Spectrum Drive, Austin, TX 78717** | | |
| Austin Elements Inc. | Ordinary | 30.00 |
| **Uruguay** | | |
| **Avenida Luis Alberto de Herrera 1248, Oficina 1901, Montevideo, Uruguay** | | |
| Axuy Energy Holdings S.R.L. | Membership Interest | 50.00 |
| Axuy Energy Investments S.R.L. | Membership Interest | 50.00 |
| **Colonia 810, Oficina 403, Montevideo, Uruguay** | | |
| Baplor S.A. | Ordinary | 50.00 |
| FERMULY S.A | Ordinary | 50.00 |
| Gemalsur S.A. | Ordinary | 50.00 |
| Pan American Energy Holdings S.A. | Ordinary | 50.00 |
| Pan American Energy Uruguay S.A. | Ordinary | 50.00 |
| **Luis A de Herrera 1248, Torre II, Piso 22 (Edificio World Trade Center), Montevideo, Uruguay** | | |
| Axion Comercializacion De Combustibles Y Lubricantes S.A. | Ordinary | 50.00 |
| **Zimbabwe** | | |
| **Block 1 Tendeseka Office Park, Samora Machel Av/Renfrew Road, Harare, Zimbabwe** | | |
| Central African Petroleum Refineries (Pvt) Ltd | Membership Interest | 20.75 |

[a] 100% interest held directly by BP p.l.c.
[b] 15% interest held directly by BP p.l.c.
[c] 1% interest held directly by BP p.l.c.
[d] 0.01% interest held directly by BP p.l.c.
[e] 99% interest held directly by BP p.l.c.
[f] 50% interest held directly by BP p.l.c.
[g] 5% interest held directly by BP p.l.c.

The parent company financial statements of BP p.l.c. on pages 291-349 do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

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## Additional disclosures

## Additional information

### Capital expenditure★

| | 2022 | 2021 | 2020 |
|---|---|---|---|
| | | | $ million |
| **Capital expenditure** | | | |
| Organic capital expenditure★ | **12,470** | 11,779 | 12,034 |
| Inorganic capital expenditure[ab]★ | **3,860** | 1,069 | 2,021 |
| | **16,330** | 12,848 | 14,055 |
| **Capital expenditure by segment** | | | |
| gas & low carbon energy[a] | **4,251** | 4,741 | 4,608 |
| oil production & operations | **5,278** | 4,838 | 5,829 |
| customers & products[b] | **6,252** | 2,872 | 3,315 |
| other businesses & corporate | **549** | 397 | 303 |
| | **16,330** | 12,848 | 14,055 |
| **Capital expenditure by geographical area** | | | |
| US | **8,656** | 4,858 | 4,482 |
| Non-US | **7,674** | 7,990 | 9,573 |
| | **16,330** | 12,848 | 14,055 |

[a] 2021 includes the final payment of $712 million in respect of the strategic partnership with Equinor. 2020 includes a $500 million deposit in respect of the strategic partnership with Equinor and $1 billion relating to an investment in a 49% interest in the group's Indian fuels and mobility venture with Reliance Industries. 2020 includes amounts relating to the 25-year extension to our ACG production-sharing agreement★ in Azerbaijan.

[b] 2022 includes $3,030 million in respect of the Archaea Energy acquisition.

## Adjusting items

Adjusting items are items that bp discloses separately because it considers such disclosures to be meaningful and relevant to investors. They are items that management considers to be important to period-on-period analysis of the group's results and are disclosed in order to enable investors to better understand and evaluate the group's reported financial performance. An analysis of adjusting items is shown in the table below.

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| gas & low carbon energy | | | |
| Gain on sale of businesses and fixed assets[a] | **45** | 1,034 | — |
| Net impairment and losses on sale of businesses and fixed assets[a] | **588** | 1,503 | (6,220) |
| Environmental and other provisions | **—** | — | — |
| Restructuring, integration and rationalization costs[b] | **8** | (33) | (127) |
| Fair value accounting effects[cd]★ | **(1,811)** | (7,662) | (738) |
| Other[e] | **(197)** | (237) | (672) |
| | **(1,367)** | (5,395) | (7,757) |
| oil production & operations | | | |
| Gain on sale of businesses and fixed assets[a] | **3,446** | 869 | 360 |
| Net impairment and losses on sale of businesses and fixed assets[a] | **(4,508)** | 776 | (7,012) |
| Environmental and other provisions[f] | **518** | (1,144) | (2) |
| Restructuring, integration and rationalization costs[b] | **(11)** | (92) | (278) |
| Fair value accounting effects[d] | **—** | — | — |
| Other[eg] | **52** | (200) | (1,763) |
| | **(503)** | 209 | (8,695) |
| customers & products | | | |
| Gain on sale of businesses and fixed assets[a] | **374** | (52) | 2,320 |
| Net impairment and losses on sale of businesses and fixed assets[a] | **(1,983)** | (1,097) | (1,136) |
| Environmental and other provisions | **(101)** | (111) | (33) |
| Restructuring, integration and rationalization costs[b] | **18** | (11) | (633) |
| Fair value accounting effects[d] | **(309)** | 436 | (149) |
| Other[h] | **81** | (209) | (39) |
| | **(1,920)** | (1,044) | 330 |
| other businesses & corporate[i] | | | |
| Gain on sale of businesses and fixed assets[a] | **1** | | 194 |
| Net impairment and losses on sale of businesses and fixed assets[a] | **(17)** | (59) | (1) |
| Environmental and other provisions[j] | **(92)** | (281) | (177) |
| Restructuring, integration and rationalization costs[b] | **19** | (113) | (258) |
| Fair value accounting effects[d] | **(1,381)** | (849) | 675 |
| Rosneft[i] | **(24,033)** | (291) | (205) |
| Gulf of Mexico oil spill | **(84)** | (70) | (255) |
| Other[k] | **21** | (22) | 125 |
| | **(25,566)** | (1,685) | 98 |
| Total before interest and taxation | **(29,356)** | (7,915) | (16,024) |
| Finance costs[kl] | **(425)** | (782) | (625) |
| Total before taxation | **(29,781)** | (8,697) | (16,649) |
| Taxation on adusting items[m] | **456** | 621 | 4,235 |
| Taxation - tax rate change effect of UK energy profits levy[n] | **(1,834)** | — | — |
| Total after taxation[c] | **(31,159)** | (8,076) | (12,414) |

[a] See Financial statements – Note 4 for further information.

[b] Restructuring charges are classified as adjusting items where they relate to an announced major group restructuring. A major group restructuring is a restructuring programme affecting more than one of the group's operating segments that is expected to result in charges of more than $1 billion over a defined period. 2021 and 2020 include recognized provisions for the reinvent bp restructuring costs that were formalized in 2020. The process is largely complete with the significant majority of restructuring charges booked by 30 June 2021. 2022 includes release of provisions for the reinvent bp restructuring costs.

[c] Under IFRS bp marks-to-market the value of the hedges used to risk-manage LNG contracts, but not the contracts themselves, resulting in a mismatch in accounting treatment. The fair value accounting effect includes the change in value of LNG contracts that are being risk managed, and the underlying result reflects how bp risk-manages its LNG contracts.

[d] For further information, including the nature of fair value accounting effects reported in each segment, see page 393.

[e] 2020 includes exploration write-offs of $673 million in gas & low carbon energy relating to fair value ascribed to certain licences as part of the accounting at the time of acquisition of gas and low carbon energy assets in India and the impairment of certain intangible assets in Mauritania and Senegal and $1,301 million in oil production & operations relating to fair value ascribed to certain licences as part of the accounting at the time of acquisition of oil production & operations assets in Brazil and the Gulf of Mexico.

[f] 2021 includes adjustments relating to the change in discount rate on retained decommissioning provisions and the recognition of a decommissioning provision in relation to certain assets previously sold to a third party where the decommissioning obligation transferred may revert to bp due to the financial condition of the current owner. 2022 includes a provision reversal relating to the change indiscount rate on retained decommissioning provisions.

[g] 2021 includes a $415 million charge relating to a remeasurement of deferred tax balances in our equity-accounted entity in Argentina following income tax rate changes partially offset by impairment reversals in equity-accounted entities.

[h] 2021 includes amounts arising in relation to the amendment of the timing of recognition of certan customer incentives in our customers business.

[i] From first quarter 2022 the results of Rosneft, previously reported as a separate segment, are also included in other businesses & corporate. Comparative information for 2021 and 2020 has been restated to reflect the changes in reportable segments. For more information see Financial statements – Note 1 Significant accounting policies, judgements, estimates and assumptions – Investment in Rosneft and Note 17 - Investments in Associates.

[j] All periods primarily reflect charges due to the annual update of environmental provisions, including asbestos-related provisions for past operations, together with updates of non-Gulf of Mexico oil spill related legal provisions.

[k] From 2021 bp is presenting temporary valuation differences associated with the group's interest rate and foreign currency exchange risk management of finance debt as an adjusting item within finance costs. These amounts represent: (i) the impact of ineffectiveness and the amortization of cross currency basis resulting from the application of fair value hedge accounting; and (ii) the net impact of

★ See glossary on page 389

foreign currency exchange movements on finance debt and associated derivatives where hedge accounting is not applied. In 2020 these amounts, which were not material, were presented within production and manufacturing expenses and as an 'other' adjusting item in the other business & corporate segment.

l Includes the unwinding of discounting effects relating to Gulf of Mexico oil spill payables and the income statement impact associated with the buyback of finance debt (see Financial statements – Note 26 for further information).

m Includes certain foreign exchange effects on tax as adjusting items. These amounts represent the impact of: (i) foreign exchange on deferred tax balances arising from the conversion of local currency tax base amounts into functional currency, and (ii) taxable gains and losses from the retranslation of US dollar-denominated intra-group loans to local currency.

n 2022 includes the deferred tax impact of the UK Energy Profits Levy (EPL) on existing temporary differences unwinding over the period 1 January 2023 to 31 March 2028. The revised EPL substantively enacted in the fourth quarter 2022 increases the headline rate of tax to 75% and applies to taxable profits from bp's North Sea business made from 1 January 2023 until 31 March 2028. The original UK EPL enacted in the third quarter increased the headline rate of tax to 65% on taxable profits between 26 May 2022 and 31 December 2025. The revised EPL supersedes the original EPL from 1 January 2023.

o 2022 includes a $505-million charge in respect of the EU Solidarity Contribution.

## Non-GAAP information on fair value accounting effects

The impacts of fair value accounting effects, relative to management's internal measure of performance, are set out below. Further information on fair value accounting effects is provided on page 393.

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| gas & low carbon energy | | | |
| Unrecognized (gains) losses brought forward from previous period | **(8,149)** | (485) | 253 |
| Favourable (adverse) impact relative to management's measure of performance | **(1,811)** | (7,662) | (738) |
| Exchange translation gains (losses) on fair value accounting effects | **—** | (2) | — |
| Unrecognized (gains) losses carried forward | **(9,960)** | (8,149) | (485) |
| customers & products | | | |
| Unrecognized (gains) losses brought forward from previous period | **391** | (45) | 104 |
| Favourable (adverse) impact relative to management's measure of performance | **(309)** | 436 | (149) |
| Exchange translation gains (losses) on fair value accounting effects | **(3)** | — | — |
| Unrecognized (gains) losses carried forward | **79** | 391 | (45) |
| other businesses & corporate | | | |
| Unrecognized (gains) losses brought forward from previous period | **(174)** | 675 | — |
| Favourable (adverse) impact relative to management's measure of performance[a] | **(1,381)** | (849) | 675 |
| Unrecognized (gains) losses carried forward | **(1,555)** | (174) | 675 |
| Group | | | |
| Unrecognized (gains) losses brought forward from previous period | **(7,932)** | 145 | 357 |
| Favourable (adverse) impact relative to management's measure of performance | **(3,501)** | (8,075) | (212) |
| Exchange translation gains (losses) on fair value accounting effects | **(3)** | (2) | — |
| Unrecognized (gains) losses carried forward | **(11,436)** | (7,932) | 145 |
| Favourable (adverse) impact relative to management's measure of performance – by region | | | |
| gas & low carbon energy | | | |
| US | **(1,140)** | (92) | 198 |
| Non-US | **(671)** | (7,570) | (936) |
| | **(1,811)** | (7,662) | (738) |
| customers & products | | | |
| US | **3** | 105 | 27 |
| Non-US | **(312)** | 331 | (176) |
| | **(309)** | 436 | (149) |
| other businesses & corporate | | | |
| US | **—** | — | — |
| Non-US | **(1,381)** | (849) | 675 |
| | **(1,381)** | (849) | 675 |
| | **(3,501)** | (8,075) | (212) |
| Taxation credit (charge) | **434** | 862 | (11) |
| | **(3,067)** | (7,213) | (223) |

a Includes changes in the fair value of derivatives entered into by the group to manage currency exposure and interest rate risks relating to hybrid bonds to their respective first call periods. For further information see page 393.

## Net debt including leases

Net debt including leases★ is shown in the table below.

| | | $ million |
|---|---|---|
| At 31 December | 2022 | 2021 |
| Net debt★ | **21,422** | 30,613 |
| Lease liabilities | **8,549** | 8,611 |
| Net partner (receivable) payable for leases entered into on behalf of joint operations★ | **19** | 187 |
| Net debt including leases | **29,990** | 39,411 |
| Total equity | **82,990** | 90,439 |
| Gearing including leases★ | **26.5%** | 30.4% |

## Surplus cash flow★ components

| | | $ million |
|---|---|---|
| | 2022 | 2021 |
| **Sources:** | | |
| Net cash provided by operating activities | **40,932** | 23,612 |
| Cash provided from investing activities | **2,617** | 7,154 |
| Other proceeds[a] | **573** | — |
| Receipts relating to transactions involving non-controlling interests | **11** | 683 |
| | **44,133** | 31,449 |
| | | |
| **Uses:** | | |
| Lease liability payments | **(1,961)** | (2,082) |
| Payments on perpetual hybrid bonds | **(708)** | (538) |
| Dividends paid – bp shareholders | **(4,358)** | (4,304) |
| – non-controlling interests | **(294)** | (311) |
| Total capital expenditure★ | **(16,330)** | (12,848) |
| Net repurchase of shares relating to employee share schemes | **(500)** | (500) |
| Payments relating to transactions involving non-controlling interests | **(9)** | (560) |
| Currency translation differences relating to cash and cash equivalents | **(684)** | (269) |
| | **(24,844)** | (21,412) |

[a] Other proceeds for the year 2022 includes $573 million of proceeds from the disposal of a loan note related to the Alaska divestment. The cash was received in the fourth quarter 2021, reported as a financing cash flow and was not included in other proceeds at the time due to potential recourse from the counterparty. The proceeds have been recognized as the potential recourse reduces and by end second quarter 2022 all proceeds were recognized.

# Liquidity and capital resources

## Financial framework

bp has a resilient financial framework that, taken together with our strategy, creates a compelling investor proposition offering committed distributions, profitable growth and sustainable value. The framework comprises a coherent approach to capital allocation, a resilient balance sheet, a disciplined approach to investment allocation and a relentless focus on executing bp's business plan.

bp's approach to capital allocation leads to a clear set of priorities – funding our resilient dividend as the first priority, maintaining a strong investment grade credit rating, disciplined investment in our transition growth★ engines to advance our energy transition strategy and investment in oil, gas, refining and other businesses, and then returning surplus cash★ as share buybacks. In a period of low prices, the group has the flexibility to reduce cash costs and to reduce or defer capital investment, as appropriate.

Our shareholder distribution policy reflects these priorities for the uses of cash alongside an ongoing consideration of factors, including changes in the environment, the underlying performance of the business, the outlook for the group financial framework, and other market factors which may vary quarter to quarter.

Net debt★ at 31 December 2022 was $21.4 billion and is expected to reduce in line with the growth in operating cash flow★. As at 31 December 2022 our target of $25 billion of divestment and other proceeds between the second half of 2020 and 2025 was underpinned by agreed or completed transactions of around $18.6 billion with $15.9 billion of proceeds received.

We expect operating cash flow to cover capital expenditure★ and the dividend. Capital expenditure in 2022 was $16.3 billion, including $3.9 billion of inorganic capital expenditure★. bp expects capital expenditure of $16-18 billion in 2023 and expects a range of $14-18 billion per annum through 2030 including inorganic expenditure. bp's cash balancing point is expected to average around $40 per barrel Brent (assuming an average refining marker margin of around $11 per barrel and Henry Hub gas price at $3 per mmBtu) in 2021 real terms.

In 2022, the return on average capital employed★ was 30.5%[a] at an average of $101 per barrel. The return on average capital employed is targeted to be over 18% by 2025 at $70 per barrel in 2021 real terms, and assuming bp planning assumptions, as we continue to execute our strategy. This is supported by an expected growth on adjusted EBIDA per share compound annual growth rate★ from the second half 2019/first half 2020[b] to 2025 and subject to the same price and planning assumptions.

[a] Nearest equivalent GAAP measures: Profit/(loss) for the period attributable to bp shareholders divided by total equity (3.0)%.
[b] Adjusted to exclude Rosneft.

## Dividends and other distributions to shareholders

The dividend is determined in US dollars, the economic currency of bp, and the dividend level is reviewed by the board each quarter. The quarterly dividend was increased from 5.460 to 6.006 cents per ordinary share per quarter in the second quarter of 2022 and to 6.610 cents per ordinary share per quarter in the fourth quarter of 2022.

The total dividend distributed to bp shareholders in 2022 was $4.4 billion (2021 $4.3 billion). This dividend was all paid in cash as shareholders no longer have the option to receive a scrip dividend in place of receiving cash.

Included in the distribution policy is a commitment that, subject to maintaining a strong investment grade credit rating, at least 60% of surplus cash will be distributed to shareholders through share buybacks. In 2022 bp executed $10.0 billion of share buybacks (2021 $3.2 billion), including fees and stamp duty. Since 1 January 2023 an additional $0.7 billion shares have been repurchased up to 17 February 2023, including fees and stamp duty. Based on bp's current forecasts, at around $60 per barrel Brent and subject to the board's discretion each quarter, bp expects to be able to deliver share buybacks of around $4.0 billion per annum, at the lower end of its capital expenditure range, and have capacity for an annual increase in the dividend per ordinary share of around 4%. In setting the dividend and share buybacks each quarter, the board will continue to take into account factors including the cumulative level of and outlook for surplus cash flow, the cash balance point★ and the maintenance of a strong investment grade credit rating.

## Financing the group's activities

The group's principal commodities, oil and gas, are priced internationally in US dollars. Group policy has generally been to minimize economic exposure to currency movements by financing operations with US dollar debt. Where debt and hybrid bonds are issued in other currencies, they are generally swapped back to US dollars using derivative contracts, or else hedged by maintaining offsetting cash positions in the same currency. Cash balances of the group are mainly held in US dollars or swapped to US dollars and holdings are well diversified to reduce concentration risk. The group is not, therefore, exposed to significant currency risk regarding its cash or borrowings. Also see Risk factors on page 73 for further information on risks associated with prices and markets and Financial statements – Note 29.

The group's finance debt at 31 December 2022 amounted to $46.9 billion (2021 $61.2 billion). Of the total finance debt, $3.2 billion is classified as short term at the end of 2022 (2021 $5.6 billion). See Financial statements – Note 26 for more information on the short-term balance. Net debt★ was $21.4 billion at the end of 2022, a decrease of $9.2 billion from the 2021 year-end position of $30.6 billion. BP p.l.c. fully and unconditionally guarantees securities issued by BP Capital Markets p.l.c. and BP Capital Markets America Inc., which are 100%-owned finance subsidiaries of BP p.l.c.

At 31 December 2022 the group held a balance of $13.4 billion (2021 $13.0 billion) issued perpetual subordinated hybrid bonds, of which $1.3 billion (2021 $1.0 billion) were issued to fund one of the group's major projects. As the group has the unconditional right to avoid transfer of cash or another financial asset in relation to these hybrid bonds, which were issued by group subsidiaries, they are classified as equity instruments and reported within non-controlling interest.

The ratio of finance debt to finance debt plus total equity at 31 December 2022 was 36.1% (2021 40.3%). Gearing was 20.5% at the end of 2022 (2021 25.3%). See Financial statements – Note 27 for finance debt, which is the nearest equivalent measure on an IFRS basis, and for further information on net debt.

Cash and cash equivalents of $29.2 billion at 31 December 2022 (2021 $30.7 billion) are included in net debt. We manage our cash position so that the group has adequate cover to respond to potential short-term market liquidity, short-term price environment volatility and expect to maintain a robust cash position.

The group also has an undrawn committed $8 billion credit facility and undrawn committed bank facilities of $4 billion (see Financial statements – Note 29 for more information).

We believe that the group's resilient balance sheet and strong investment grade credit rating will allow the group to meet its known contractual and other obligations in both the short and long term with the group having sufficient working capital, taking into account the amounts of undrawn borrowings facilities, access to capital markets, levels of cash and cash equivalents and its ongoing ability to generate cash through operations. This belief is subject to a degree of uncertainty that can be expected to increase looking out over time and, accordingly, that future outcomes cannot be guaranteed or predicted with certainty.

bp utilizes various arrangements in order to manage its working capital including discounting of receivables and, in the supply and trading business, the active management of supplier payment terms, inventory and collateral.

Standard & Poor's Ratings' long-term credit rating for BP p.l.c. is A- (positive), the Moody's Investors Service rating is A2 (positive) and the Fitch Ratings' long-term credit rating is A (positive).

The group's sources of funding, its access to capital markets and maintaining a strong cash position are described in Financial statements – Note 25 and Note 29. Further information on the management of liquidity risk and credit risk, and the maturity profile and fixed/floating rate characteristics of the group's debt are also provided in Financial statements – Note 26 and Note 29.

**The information above contains forward-looking statements, which by their nature involve risk and uncertainty because they relate to events and depend on circumstances that will or may occur in the future and are outside the control of bp.**

**You are urged to read the Cautionary statement on page 377 and Risk factors on page 73, which describe the risks and uncertainties that may cause actual results and developments to differ materially from those expressed or implied by these forward-looking statements.**

## Off-balance sheet arrangements

At 31 December 2022, the group's share of third-party finance debt of equity-accounted entities was $8.8 billion (2021 $20.5 billion). The decrease is primarily due to bp no longer accounting for its interest in Rosneft as an equity-accounted entity (see Financial statements – Note 1). These amounts are not reflected in the group's debt on the balance sheet. The group has issued third-party guarantees under which amounts outstanding, incremental to amounts recognized on the balance sheet, at 31 December 2022 were $1,704 million (2021 $1,407 million) in respect of liabilities of joint ventures★ and associates★ and $680 million (2021 $694 million) in respect of liabilities of other third parties. Of these amounts, $1,701 million (2021 $1,407 million) of the joint ventures and associates guarantees relate to borrowings and, for other third-party guarantees, $557 million (2021 $594 million) relate to guarantees of borrowings.

## Contractual obligations

The following table summarizes the group's capital expenditure commitments for property, plant and equipment at 31 December 2022 and the proportion of that expenditure for which contracts have been placed.

| | | | $ million |
|---|---|---|---|
| | Payments due by period | | |
| Capital expenditure | Less than 1 year | More than 1 year | Total |
| Committed | 11,395 | 7,893 | 19,288 |
| of which is contracted | 6,024 | 3,364 | 9,388 |

Capital expenditure is considered to be committed when the project has received the appropriate level of internal management approval. For joint operations★, the net bp share is included in the amounts above.

In addition, at 31 December 2022, the group had committed to capital expenditure relating to investments in equity-accounted entities amounting to $3,535 million. Contracts were in place for $1,782 million of this total.

The following table summarizes the group's principal contractual obligations at 31 December 2022, distinguishing between those for which a liability is recognized on the balance sheet and those for which no liability is recognized. See Financial framework above for bp's approach to capital allocation and Financing the group's activities above for bp's plan and ability to generate and obtain cash in the short and long term. Also see Financial statements – Note 23 for more information on provisions, Note 24 on pensions and other post-retirement benefits, Note 26 on borrowings, Note 28 on leases, Note 29 and Note 30 on derivatives and financial instruments.

| | | | $ million |
|---|---|---|---|
| | Payments due by period | | |
| Expected payments by period under contractual obligations | Less than 1 year | More than 1 year | Total |
| Balance sheet obligations | | | |
| Borrowings[a] | 5,111 | 58,177 | 63,288 |
| Lease liabilities[b] | 2,348 | 7,516 | 9,864 |
| Decommissioning liabilities[c] | 610 | 21,559 | 22,169 |
| Environmental liabilities[c] | 362 | 1,776 | 2,138 |
| Gulf of Mexico oil spill liabilities[d] | 1,224 | 10,661 | 11,885 |
| Pensions and other post-retirement benefits[e] | 588 | 12,104 | 12,692 |
| | 10,243 | 111,793 | 122,036 |
| Off-balance sheet obligations | | | |
| Unconditional purchase obligations[f] | | | |
| Crude oil and oil products | 48,939 | 4,566 | 53,505 |
| Natural gas and LNG | 29,759 | 65,260 | 95,019 |
| Chemicals and other refinery feedstocks | 254 | 428 | 682 |
| Power | 6,557 | 13,428 | 19,985 |
| Utilities | 135 | 694 | 829 |
| Transportation | 1,875 | 13,669 | 15,544 |
| Use of facilities and services | 2,621 | 14,932 | 17,553 |
| | 90,140 | 112,977 | 203,117 |
| Total | 100,383 | 224,770 | 325,153 |

a Expected payments include interest totalling $15,827 million (less than 1 year $2,133 million, more than 1 year $13,694 million).
b Expected payments include interest totalling $1,315 million (less than 1 year $227 million, more than 1 year $1,088 million).
c The amounts presented are undiscounted.
d The amounts presented are undiscounted. Gulf of Mexico oil spill liabilities are included in the group balance sheet, on a discounted basis, within other payables. See Financial statements – Note 22 for further information.
e Represents the expected future contributions to funded pension plans and payments by the group for unfunded pension plans and the expected future payments for other post-retirement benefits.
f Represents any agreement to purchase goods or services that is enforceable and legally binding and that specifies all significant terms (such as fixed or minimum purchase volumes, timing of purchase and pricing provisions). Agreements that do not specify all significant terms, or that are not enforceable, are excluded. The amounts shown include arrangements to secure long-term access to supplies of crude oil, natural gas, feedstocks and pipeline systems. In addition, the amounts shown for 2023 include purchase commitments existing at 31 December 2022 entered into principally to meet the group's short-term manufacturing and marketing requirements. The price risk associated with these crude oil, natural gas and power contracts is discussed in Financial statements – Note 29.

### Commitments for the delivery of oil and gas

We sell crude oil, natural gas and liquefied natural gas under a variety of contractual obligations. Some of these contracts specify the delivery of fixed and determinable quantities. For the period from 2023 to 2025 worldwide, we are contractually committed to deliver approximately 194 million barrels of oil, 8,403 billion cubic feet of natural gas, and 68 million tonnes of liquefied natural gas. The commitments principally relate to group subsidiaries★ based in Egypt, Oman, Singapore, Trinidad & Tobago and the US. We expect to fulfil these delivery commitments with production from our proved developed reserves and supplies from existing contracts, supplemented by market purchases as necessary.

## Oil and gas disclosures for the group

### Analysis by region

Our oil and gas operations are set out below by geographical area, with associated significant events for 2022. bp's percentage working interest in oil and gas assets is shown in brackets. Working interest is the cost-bearing ownership share of an oil or gas lease. Consequently, the percentages disclosed for certain agreements do not necessarily reflect the percentage interests in proved reserves, production or revenue.

In addition to exploration, development and production activities, our oil production & operations (OP&O) and gas businesses also include certain midstream and liquefied natural gas (LNG) supply activities. Midstream activities involve the management of crude oil and natural gas pipelines, processing facilities and export terminals, LNG processing facilities and transportation, and our natural gas liquids (NGLs) processing business.

Our upstream LNG activities are located in Abu Dhabi, Angola, Australia, Indonesia, Mauritania, Senegal and Trinidad. In 2022 our production was 9 million tonnes of LNG from these assets, of which 2 million tonnes were marketed through trading & shipping, which supplements equity production with merchant third party volumes to build a global trading portfolio. The LNG is marketed through contractual rights to access import terminal capacity into the liquid gas markets of Europe, UK and US, and relationships to market directly to end user customers or trading entities. LNG is supplied to all major LNG demand centres, including Argentina, Brazil, Caribbean, China, Croatia, Mediterranean, Iberian Peninsula and North West Europe, India, Israel, Japan, Kuwait, Lithuania, Mexico, Poland, Singapore, South Korea, Taiwan, Thailand, Türkiye and the UK.

#### Europe

bp is active in the North Sea and the Norwegian Sea. In 2022 bp's production came from three key areas: the Shetland area comprising the Clair and Schiehallion fields; the central area comprising the Andrew area, Culzean, Vorlich and ETAP fields; and Norway, through our equity accounted 15.9% interest in Aker BP.

- Following completion of the acquisition of RockRose Energy's 28% interest in East Foinaven and the removal of the Foinaven FPSO in the third quarter of 2022, bp continues to evaluate options for the Foinaven field.
- On 30 June Aker BP completed the acquisition of Lundin Energy's exploration and production business announced in December 2021. The combined entity, in which bp now owns a 15.9% stake, is the second-largest operating company on the Norwegian continental shelf.

#### North America

Our oil and gas activities in North America are located in four areas: deepwater Gulf of Mexico, the Lower 48 states, Canada and Mexico.

bp has around 260 lease blocks in the Gulf of Mexico and operates four production hubs.

- During the year, the hook-up and commissioning of the Mad Dog 2 (bp 60.5% and operator) Argos platform continued. As a result of an issue that was found with the subsea production flexible joints start-up was delayed. bp now expects Mad Dog 2 to commence production in the second quarter of 2023.
- Following the enactment of the Inflation Reduction Act in 2022, 45 of the 46 leases on which bp was the apparent high bidder in the Gulf of Mexico Lease Sale 257 that took place in November 2021 were awarded to bp.

See also Financial Statements – Note 1 for further information on exploration leases.

bpx energy, bp's onshore oil and gas business in the Lower 48 states, has significant operated and non-operated activities across Louisiana and Texas producing natural gas, oil, NGLs and condensate, with primary focus on developing unconventional resources. It had a 1.6 billion boe proved reserve base at 31 December 2022, predominantly in unconventional reservoirs (tight gas★, shale gas and shale oil). bpx energy's core assets span 0.9 million net developed acres with nearly 2000 operated gross wells at 31 December 2022. Daily net production averaged 325mboe/d in 2022.

bpx energy continues to operate as a separate business while remaining part of the OP&O segment. With its own governance, systems and processes, it is structured to increase competitive performance through swift decision making and innovation, while maintaining bp's commitment to safe, reliable and compliant operations.

bp's onshore US crude oil and product pipelines and related transportation assets were included in the customers & products segment in 2022.

- In December bpx energy executed an acreage trade in the Permian Basin with Oxy and ConocoPhillips covering approximately 8,000 acres. The trade will facilitate a material increase in long lateral wells and their associated lower development and operating costs.

In Canada bp is focused on pursuing offshore exploration opportunities. We hold offshore exploration licences and significant discovery licences offshore Newfoundland and Labrador.

- In 2022, bp sold its interest in the Pike oil sands leases, Kirby and Leismer leases and the Sunrise oil sands project in Alberta. bp also acquired Cenovus's 35% interest in the Bay du Nord assets in offshore Newfoundland Labrador.
- The order issued by the government of Canada in 2019 prohibiting any work or activity authorized under the Canada Oil and Gas Operations Act on frontier lands that are situated in Canadian Arctic offshore waters has been extended until 31 December 2023.

In Mexico, bp held interests in two exploration blocks in the Salina Basin with Equinor and Total, Block 1 (bp 33%) and Block 3 (bp 33%), and one exploration block in the Sureste Basin, Block 34 (bp 42.5% and operator), with Total, QPI Mexico and Hokchi Energy. The blocks are either expired or in process of relinquishment. Hokchi Energy is a subsidiary of Pan American Energy Group (PAEG, see below) in which bp owns 50%. Separate to the above holdings in Mexico, Hokchi Energy also holds an interest in two other blocks.

- In Block 3, Equinor's relinquishment filed in 2021 on behalf of the JV is still pending regulatory approval.

#### South America

bp has oil and gas activities in Argentina, Brazil and Trinidad & Tobago and, through PAEG, in Argentina and Bolivia.

In Argentina bp and Total are partners on a 50/50 basis in two offshore exploration concessions. Total is the operator.

In Brazil bp has interests in 10 exploration concessions across three basins.

- In October 2020 bp as the operator of BM-C-35 block issued a relinquishment notice to the regulator, which was approved in January 2022.
- In June 2021, Petrobras as the operator of BM-POT-16 issued a relinquishment notice to the regulatory authorities, which is still pending approval.
- In April, the discovery of a new oil accumulation in the Alto de Cabo Frio central block, in the southern portion of the Campos Basin (bp 50%) was announced. In July, bp's partner Petrobras announced a successful drill stem test confirming good productivity from the well.
- During the year, after completion of seismic studies bp as operator took the decision to relinquish blocks C-M-755, C-M-793 and S-M-1500.
- In Brazil's first Permanent Production Sharing Offer bid round in December, bp successfully bid on the Bumerangue block, an area of 1,118$km^2$ located in the Santos Pré Salt Basin. bp will hold 100% interest in the block when the contract is executed in 2023.

PAEG, a joint venture that is owned by bp (50%) and BC E&P Uruguay S.A. (50%), has activities mainly in Argentina and as noted above Mexico, and is also present in Bolivia. During the year bp recognised an impairment charge of $2.9 billion in relation to PAEG as a result of expected portfolio changes.

In Trinidad & Tobago bp holds interests in exploration and production licences and production-sharing contracts (PSCs)★ covering 1.6 million acres offshore of the east and north-east coast. Facilities include 16 offshore platforms and two onshore processing facilities. Production comprises gas and associated liquids.

bp also holds interests in the Atlantic LNG facility. The total gross capacity of the four LNG trains making up the facility is approximately 15 million tonnes per annum. bp's shareholding averages 40% across the three companies which own the LNG trains comprising the LNG facility. During

2022 bp sold gas to trains 2 and 3 and processed gas in train 4. Most of the LNG produced from bp gas supplied to trains 2, 3 and 4 is sold under long-term contracts.

- In September bp announced Cypre, its third subsea gas development in Trinidad and Tobago. Cypre is expected to start drilling in 2023 with first gas expected in 2025. The project is expected to have seven wells and be tied back to the Juniper platform.
- In November bp Trinidad and Tobago (bpTT) announced first gas from the Cassia C platform off Trinidad's south-east coast. It is bp's 16th offshore facility in the region and, its first offshore compression platform. It is connected to the existing Cassia hub and will enable bpTT to access and produce low pressure gas resources from the Greater Cassia area.
- The Joe Douglas rig returned to Trinidad and commenced drilling of an infill program at the end of 2022, starting with Mango and progressing to Savonette and Angelin. This development will leverage existing infrastructure and contribute to sustained delivery.
- Since the conclusion of short-term gas supply agreements, the Atlantic Train 1 plant has not been operational. The Atlantic shareholders (bp, Shell and NGC) have unanimously agreed to decouple the Train from the rest of the Atlantic facility with a view to decommissioning it. Decoupling work has largely been completed and a decommissioning plan is currently being developed. In December 2022, the shareholders agreed a non-binding heads of agreement with the government reflecting key commercial terms for the long-term restructuring of the current three separate joint ventures into a unitized ownership and commercial model. Under the agreement, the parties are targeting entry into binding definitive agreements in early 2023 with effective date expected to be in 2024.
- The Mento major project (bp 50%) progressed its front-end engineering during the year. Mento targets joint resources and will flow liquids and gas to EOG's Pelican platform. It is the 2nd joint venture field development project with EOG in Trinidad.
- In the first quarter of 2022 appraisal drilling was completed for the Calypso Project (bp 30%) with progression into the concept development project phase in June 2022. Calypso will develop resources in deep water blocks 14 and 23(a) and is the first of its kind in Trinidad.
- bp is operator of the Manakin block which was discovered in 1998 and is a cross border reservoir field with the Venezuelan reservoir, Cocuina. Manakin declared commerciality in January 2018 however cross border discussions have not progressed due to the impact of US sanctions.
- During the year an impairment reversal of $1.3 billion was recognised as a result of changes to the group's oil and gas price assumptions.

## Africa

bp's oil and gas activities in Africa are located in Algeria, Angola, Egypt, Libya, Mauritania and Senegal.

In Algeria bp, Sonatrach and Equinor are partners in the In Salah (bp 33.15%) and In Amenas (bp 45.89%) non-operated joint ventures that supply gas and liquids to the domestic and European markets.

- In September, bp announced that it had agreed to sell its interests in the In Salah and In Amenas gas-producing fields to Eni. The transaction completed on 28 February 2023.

In Angola, bp owned an interest in five deepwater offshore licences. and an equity interest in the Angola LNG plant (bp 13.6%).

- Following the signing of the agreement to form a new 50:50 independent company through the combination of the two companies' Angolan businesses in March 2022, bp and Eni announced the completion of the Azule Energy transaction in August 2022. Azule Energy is now Angola's largest independent equity producer of oil and gas, holding stakes in 16 licences of which six are exploration blocks, as well as an interest in the Angola LNG plant.

In Egypt, bp's investments in the country include West Nile Delta, Atoll and Zohr. Through its joint ventures with Egyptian Natural Gas Holding Company (EGAS), Egyptian General Petroleum Corporation (EGPC), International Egyptian Oil Company (IEOC) - Eni, the Pharaonic Petroleum Company (PhPC) and through collaboration with Belayim Petroleum Company (Petrobel), bp Egypt now produces more than 60% of Egypt's total gas supply.

- In March, bp agreed with EGAS to amend the concession boundary of the North El Tabya offshore licence by adding 200km$^2$ to the original concession agreement area. The amended area will have the same terms and conditions as applied in the original concession agreement.
- In June bp was awarded the King Mariout exploration block (bp 100%) offshore Egypt. The block is located approximately 20 kilometres west of the Raven field in the Mediterranean Sea.
- In November, bp was awarded two new exploration blocks in the Mediterranean Sea, offshore Egypt, by the Egyptian Natural Gas Holding Company. The Northwest Abu Qir Offshore Area (bp 82.75% and operator) is located west of the recently awarded North King Mariout block (bp 100%) and north of the Raven field and covers an area of approximately 1,038 square kilometres. The Bellatrix-Seti East block (bp 50%) is located west of the Atoll field and North El Tabya blocks and covers an area of approximately 3,440 square kilometres.

In Libya, bp partners with the Libyan Investment Authority (LIA) in an exploration and production-sharing agreement (EPSA) to explore acreage in the onshore Ghadames and offshore Sirt basins (bp 85%). bp wrote off all balances associated with the Libya EPSA in 2015.

- Eni's acquisition of a 42.5% interest in the bp-operated EPSA in Libya has been ratified by the Libyan authorities upon which ratification Eni became operator under the EPSA. bp, LIA and Eni continue to work with the Libyan NOC towards finalizing the transfer of operatorship and the necessary changes to the governance structure.

In Mauritania and Senegal, bp retains the exploitation licences in the respective C8 and Saint Louis Offshore Profond blocks pertinent to the GTA (Greater Tortue Ahmeyim) Unit cross-border development. In addition, in Senegal, bp has a 60% participating interest in the Cayar Offshore Profond exploration block. In 2022 we relinquished our 62% participating interest in the C12 exploration block in Mauritania.

- The GTA project (bp 56%) continues to progress with phase 1 critical milestones including the completion of the offshore hub terminal construction and installation of all subsea risers and umbilicals. FPSO sea trials commenced ahead of subsequent sail away to the Mauritania and Senegal region.
- In October, the area covering the BirAllah gas resource (which was previously held under the C8 exploration licence in Mauritania which expired in June 2022) was granted in a new exploration license with a 30-month exploration and production sharing contract to evaluate the gas resource (bp 62%).
- In 2022, an impairment charge of $729 million was recognized in respect of certain assets in the region due to increased future expenditure.

In September, we completed the assignment of our 50% interests in two offshore blocks under production-sharing agreements (PSA)★ in São Tomé & Príncipe to Shell.

## Asia

bp has activities in Abu Dhabi, Azerbaijan, China, India, Indonesia, Iraq, Kuwait and Oman.

In China we have a 30% equity stake in the Guangdong LNG regasification terminal and trunkline project (GDLNG) with a total storage capacity of 640,000 cubic metres. bp also has 0.6 million tons per annum of regasification capacity at GDLNG for up to 12 years starting from the beginning of 2021. bp imports LNG from our global portfolio and delivers regasified natural gas via the terminal to power plant and city gas customers in Guangdong province under long term sales contracts.

In Azerbaijan, bp operates two PSAs, Azeri-Chirag-Gunashli (ACG) (bp 30.37%) and Shah Deniz (bp 29.99%) and also holds a number of other exploration leases.

- In December, bp and SOCAR signed a protocol to extend the Shafag-Asiman exploration period for six months until the end of June 2023 to allow completion of the seismic data re-processing study.
- Following dry hole results in each of the three prospective areas of the Shallow Water Absheron Peninsula (SWAP) PSA, the contract area was relinquished in December 2022. The joint operating agreement will continue in effect until final settlement has been made upon completion of the 2022 cost recovery report audit expected at the end of 2023.

★ See glossary on page 389

- Naftiran Intertrade Co Ltd (NICO), a subsidiary of the National Iranian Oil Company, holds a 10% interest in the Shah Deniz joint venture. For information on the exclusion of this project from EU and US trade sanctions, see International trade sanctions on page 373.

bp holds a 30.1% interest in and operates the Baku-Tbilisi-Ceyhan (BTC) oil pipeline. The 1,768-kilometre pipeline transports oil from the ACG oilfield and gas condensate from the Shah Deniz gas field in the Caspian Sea, along with other third-party oil, to the eastern Mediterranean port of Ceyhan. The pipeline has a capacity of 1mmboe/d, with an average throughput in 2022 of 618mboe/d.

bp (as operator of Azerbaijan International Operating Company and the Georgian Pipeline Company for the Georgian section) also operates the Western Route Export Pipeline (WREP) that transports ACG oil to Supsa on the Black Sea coast of Georgia, with an average throughput of 20mboe/d in 2022. Exports through the pipeline have been suspended since May 2022 due to a lack of nominations from the shipper group. In current market conditions WREP serves as a contingency export route for ACG crude product. In February 2023 WREP was restarted for two weeks following a temporary suspension of liftings from BTC in the wake of the Turkish earthquake on 6 February 2023.

bp holds a 29.99% interest in and operates certain parts of the 693 kilometre South Caucasus Pipeline. The pipeline takes gas from the Shah Deniz field in Azerbaijan through Georgia to the Turkish border and has a capacity of 440mboe/d (including expansion), with average throughput in 2022 of 353mboe/d.

bp also holds a 12% interest in the Trans Anatolian Natural Gas Pipeline (TANAP). The pipeline takes Shah Deniz gas from the Turkish border and transports it to Eskisehir in Türkiye and to the Greek border where it connects with the Trans Adriatic Pipeline (TAP). The current capacity of TANAP is 275mboe/d and the average throughput in 2022 was 283mboe/d. bp has a 20% interest in TAP, that takes gas through Greece and Albania into Italy. The current capacity of TAP is 167mboe/d and the total average throughout in 2022 was 189mboe/d. TAP and TANAP throughputs exceeded capacity during 2022 due to high flow tests taking place during the year.

In Oman bp operates Block 61, the largest tight gas★ development in the Middle East (bp 40%), bp also has a 50% interest in Block 77 with ENI (operator) in which an exploration well is expected to be drilled in 2023.

In Abu Dhabi, bp holds a 10% interest in the ADNOC Onshore concession. We also have a 10% equity shareholding in ADNOC LNG and a 10% shareholding in the shipping company NGSCO. ADNOC LNG supplied approximately 5.31 million tonnes of LNG (0.7bcfe/d regasified) in 2022. Our interest in the ADNOC Onshore concession expires at the end of 2054.

In 2016 bp signed an enhanced technical service agreement for south and east Kuwait conventional oilfields, which includes the Burgan field, with Kuwait Oil Company. Delivery of the 2022-2023 plan is underway.

In India we have a participating interest in two oil and gas PSAs (KG D6 33.33% and NEC25 33.33%), and one oil and gas block under a revenue sharing contract (KG-UDWHP-2018/1 40%), all operated by Reliance Industries Limited (RIL). We also have a 50% stake in India Gas Solutions Private Limited, a joint venture with RIL, for the sourcing and marketing of gas in India.

- Start-up of the MJ field in block KG D6 off the east coast of India is expected in the first half of 2023 . MJ will be the third of the three KG D6 developments to come onstream, following the start-up of Satellites Cluster in 2021 and R Series in 2020.

In Indonesia bp holds a 30% working interest in the Andaman II PSC exploration block (operated by Harbour Energy), located offshore North Sumatra.

- In July, Harbour Energy announced drilling completion of the Timpan-1 exploration well on the Andaman II licence. The well was declared as a gas discovery and a further exploration and appraisal program is underway.
- In June, bp announced that it had signed PSCs for the Agung I and Agung II exploration blocks offshore Indonesia. Agung I covers over 6,000km$^2$ off the coast of Bali and East Java and Agung II spans almost 8,000km$^2$ offshore South Sulawesi, West Nusa Tenggara and East Java.

In Iraq bp held a 47.6% participating interest and was the lead contractor in the technical service contract for the Rumaila oil field in southern Iraq until June 2022.

- During 2021, bp and PetroChina (PC) established Basra Energy Company Limited (BECL) and agreed to contribute their respective interests in the Rumaila technical service contract to BECL. BECL is an incorporated joint venture (IJV) company owned by bp (49%) and PC (51%). Following approval by the Government of Iraq, the transaction completed in June 2022. At completion, BECL was appointed as the new Rumaila lead contractor.

### Russia

On 27 February 2022, bp announced that it would exit its shareholding in Rosneft and its other businesses with Rosneft within Russia. Those other businesses included its 20% interest in Taas-Yuryakh Neftegazodobycha, its 49% interest in Kharampurneftegaz LLC and its 49% interest in Yermak Neftegaz LLC. See also Financial Statements – Note 1 for further information.

### Australasia

bp has activities in Australia and Eastern Indonesia.

In Australia bp is one of seven participants in the North West Shelf (NWS) venture, which has been producing LNG, pipeline gas, condensate, LPG and oil since the 1980s. Six partners (including bp) hold an equal 16.67% interest in the gas infrastructure and an equal 15.78% interest in the gas and condensate reserves, with a seventh partner owning the remaining 5.32% of these reserves. bp also had a 16.67% interest in some of the NWS oil reserves and related infrastructure. The NWS venture is one of the largest LNG export projects in the region, with five LNG trains in operation, and supplies domestic gas into the Western Australia market. bp’s net share of the capacity of NWS LNG trains 1-5 is 2.8 million tonnes of LNG per year. From March 2022, NWS has enhanced its facilities to allow the import of third party gas into the onshore plant for processing into LNG.

bp is also one of five participants in the Browse LNG venture (operated by Woodside) and holds a 17.33% interest.

bp also has a 50% interest in the WA-541 exploration title in Western Australia's offshore Northern Carnarvon basin. the JV, operated by Santos, is working towards the drilling of two commitment wells.

- In November bp divested its 16.67% interest in the NWS oil reserves and associated infrastructure.
- The Browse joint venture participants continue to progress the development of Browse by connecting it via a 900km pipeline to the NWS Venture's Karratha Gas Plant. The final investment decision is expected in 2025.
- In September, a Woodside led joint venture that includes bp (20%) was awarded greenhouse gas permit G-10-AP in the northern Carnarvon basin offshore Western Australia as they pursue a potential CCS project. The permit covers an area of 1,775km$^2$ including the depleted Angel gas field.

In Papua Barat, Eastern Indonesia, bp operates the Tangguh LNG plant (bp 40.22%). The asset currently comprises 18 producing wells, two offshore platforms, two pipelines and an LNG plant with two production trains. It has a total capacity of 7.6 million tonnes of LNG per annum. Tangguh supplies LNG to customers in Indonesia, Mexico, China, South Korea, and Japan through a combination of long, medium and short-term contracts.

The Tangguh expansion project comprises a third LNG processing train, two offshore platforms, 10 new production wells, an expanded LNG loading facility, and supporting infrastructure. The project will add 3.8 million tonnes per annum (mtpa) of production capacity to the existing facility, bringing total plant capacity to 11.4mtpa. First LNG production from the project is expected in late 2023.

The government of Indonesia has recently granted a 20-year extension of the Tangguh PSC. The current contract was due to expire in 2035 and will now last until 2055.

## Oil and natural gas

### Resource progression

bp manages its hydrocarbon resources in three major categories: prospect inventory, contingent resources and reserves. When a discovery is made, volumes usually transfer from the prospect inventory to the contingent resources category. The contingent resources move through various sub-categories as their technical and commercial maturity increases through appraisal activity.

At the point of final investment decision, most proved reserves will be categorized as proved undeveloped (PUD). Volumes will subsequently be recategorized from PUD to proved developed (PD) as a consequence of development activity. When part of a well's proved reserves depends on a later phase of activity, only that portion of proved reserves associated with existing, available facilities and infrastructure moves to PD. The first PD bookings will typically occur at the point of first oil or gas production. Major development projects typically take one to five years from the time of initial booking of PUD to the start of production. Changes to proved reserves bookings may be made due to analysis of new or existing data concerning production, reservoir performance, commercial factors and additional reservoir development activity.

Volumes can also be added or removed from our portfolio through acquisition or divestment of properties and projects. When we dispose of an interest in a property or project, the volumes associated with our adopted plan of development for which we have a final investment decision will be removed from our proved reserves upon completion of the transaction. When we acquire an interest in a property or project, the volumes associated with the existing development and any committed projects will be added to our proved reserves if bp has made a final investment decision and they satisfy the SEC's criteria for attribution of proved status. Following the acquisition, additional volumes may be progressed to proved reserves from non-proved reserves or contingent resources.

Non-proved reserves and contingent resources in a field will only be recategorized as proved reserves when all the criteria for attribution of proved status have been met and the volumes are included in the business plan and scheduled for development, typically within five years. bp will only book proved reserves where development is scheduled to commence after more than five years, if these proved reserves satisfy the SEC's criteria for attribution of proved status and bp management has reasonable certainty that these proved reserves will be produced.

At the end of 2022 bp had material volumes of proved undeveloped reserves held for more than five years in the Gulf of Mexico, Azerbaijan, the North Sea and PAEG. These are part of ongoing infrastructure-led development activities for which bp has a historical track record of completing comparable projects in these countries. We have no proved undeveloped reserves held for more than five years in our onshore US developments.

In each case the volumes are being progressed as part of an adopted development plan where there are physical limits to the development timing such as infrastructure limitations, contractual limits including gas delivery commitments and the complex nature of working in remote locations, or where there are significant commitments on delivery to the relevant authority.

Over the past five years, bp has annually progressed a weighted average 18% (16% for 2021 five-year average) of our group proved undeveloped reserves (including the impact of disposals and price acceleration effects in PSAs) to proved developed reserves. This equates to a turnover time of five and a half years.

Proved reserves as estimated at the end of 2022 meet bp's criteria for project sanctioning and SEC tests for proved reserves. We have not halted or changed our commitment to proceed with any material project to which proved undeveloped reserves have been attributed.

In 2022 we progressed 554mmboe of proved undeveloped reserves (497mmboe for our subsidiaries★ alone) to proved developed reserves through ongoing investment in our subsidiaries' and equity-accounted entities' development activities. Total development expenditure, excluding midstream activities, was $9,744 million in 2022 ($7,750 million for subsidiaries and $1,994 million for equity-accounted entities). Of the $7,750 million of total development expenditure for our subsidiaries, approximately $2,300 million was used for development activity to progress proved undeveloped reserves to proved developed. Of the $1,994 million development expenditure for our equity-accounted entities, approximately $738 million was used for development activity to progress proved undeveloped reserves to proved developed. The major areas with progressed volumes in 2022 were the US, Asia Pacific, Trinidad & Tobago and the Middle East.

Revisions of previous estimates for proved undeveloped reserves are due to changes relating to field performance, well results, revisions to future activity plans (including alignment to our investment criteria and changes to the macro-economic climate) or changes in commercial conditions including price impacts. The net revisions to previous estimates across both our subsidiaries and our equity-accounted entities include net positive revisions driven by field performance and revisions to activity plans, and net negative revisions driven by price and well results. The net revisions to previous estimates across only our subsidiaries include net positive revisions driven by field performance and net negative revisions driven by price, well results and revisions to activity plans. In each case, none of these factors resulted in revisions that were material to the group as a whole. The following tables describe the changes to our proved undeveloped reserves position through the year for our subsidiaries and equity-accounted entities and for our subsidiaries alone.

| Subsidiaries and equity-accounted entities[b] | volumes in mmboe[a]<br>Group |
|---|---|
| Proved undeveloped reserves at 1 January 2022 | **7,214** |
| Revisions of previous estimates | **26** |
| Price | (34) |
| Revision of future activity plans | 26 |
| Field performance | 37 |
| Well results | (3) |
| Improved recovery | **84** |
| Discoveries and extensions | **50** |
| Purchases | **78** |
| Sales | **(4,060)** |
| Total in year proved undeveloped reserves changes | **(3,823)** |
| Proved developed reserves reclassified as undeveloped | **39** |
| Progressed to proved developed reserves by development activities (e.g. drilling/completion) | **(554)** |
| **Proved undeveloped reserves at 31 December 2022** | **2,877** |

| Subsidiaries only | volumes in mmboe[a] |
|---|---|
| Proved undeveloped reserves at 1 January 2022 | **2,973** |
| Revisions of previous estimates | **(16)** |
| Price | (32) |
| Revision of future activity plans | (1) |
| Field performance | 46 |
| Well results | (30) |
| Improved recovery | **30** |
| Discoveries and extensions | **47** |
| Purchases | **6** |
| Sales | **(192)** |
| Total in year proved undeveloped reserves changes | **(124)** |
| Proved developed reserves reclassified as undeveloped | **39** |
| Progressed to proved developed reserves by development activities (e.g. drilling/completion) | **(497)** |
| **Proved undeveloped reserves at 31 December 2022** | **2,392** |

[a] Because of rounding, some totals may not agree exactly with the sum of their component parts.
[b] Includes bp's share of Rosneft and bp's Russia joint ventures' proved undeveloped reserves. On 27 February 2022, bp announced that it will exit its shareholding in Rosneft and its other businesses with Rosneft within Russia.

bp bases its proved reserves estimates on the requirement of reasonable certainty with rigorous technical and commercial assessments based on conventional industry practice and regulatory requirements. bp only applies technologies that have been field tested and have been demonstrated to provide reasonably certain results with consistency and repeatability in the formation being evaluated or in an analogous formation. bp applies high-

★ See glossary on page 389

resolution seismic data for the identification of reservoir extent and fluid contacts only where there is an overwhelming track record of success in its local application. In certain cases bp uses numerical simulation as part of a holistic assessment of recovery factor for its fields, where these simulations have been field tested and have been demonstrated to provide reasonably certain results with consistency and repeatability in the formation being evaluated or in an analogous formation. In certain deepwater fields bp has booked proved reserves before production flow tests are conducted, in part because of the significant safety, cost and environmental implications of conducting these tests. The industry has made substantial technological improvements in understanding, measuring and delineating reservoir properties without the need for flow tests. To determine reasonable certainty of commercial recovery, bp employs a general method of reserves assessment that relies on the integration of three types of data:

- well data used to assess the local characteristics and conditions of reservoirs and fluids
- field scale seismic data to allow the interpolation and extrapolation of these characteristics outside the immediate area of the local well control
- data from relevant analogous fields.

Well data includes appraisal wells or sidetrack holes, full logging suites, core data and fluid samples. bp considers the integration of this data in certain cases to be superior to a flow test in providing understanding of overall reservoir performance. The collection of data from logs, cores, wireline formation testers, pressures and fluid samples calibrated to each other and to the seismic data can allow reservoir properties to be determined over a greater volume than the localized volume of investigation associated with a short-term flow test. There is a strong track record of proved reserves recorded using these methods, validated by actual production levels.

### Governance

bp's centrally controlled process for proved reserves estimation approval forms part of a holistic and integrated system of internal control. It consists of the following elements:

- Accountabilities of certain officers of the group to ensure that there is review and approval of proved reserves bookings independent of the operating business and that there are effective controls in the approval process and verification that the proved reserves estimates and the related financial impacts are reported in a timely manner.
- Capital allocation processes, whereby delegated authority is exercised to commit to capital projects that are consistent with the delivery of the group's business plan. A formal review process exists to ensure that both technical and commercial criteria are met prior to the commitment of capital to projects.
- Internal audit, whose role is to consider whether the group's system of internal control is adequately designed and operating effectively to respond appropriately to the risks that are significant to bp.
- Approval hierarchy, whereby proved reserves changes above certain threshold volumes require immediate review and all proved reserves require annual central authorization and have scheduled periodic reviews. The frequency of periodic review ensures that 100% of the bp proved reserves base undergoes central review every three years.

bp's vice president of reserves is the individual primarily responsible for overseeing the preparation of the reserves estimate. He has more than 29 years of diversified industry experience in reserves estimation with the past four years managing the governance and compliance. He is a past Chairman of the Society of Petroleum Engineers (Russia & Caspian) and a member of the United Nations Economic Commission for Europe Expert Group on Resource Management.

No specific portion of compensation bonuses for senior management is directly related to proved reserves targets. Additions to proved reserves is one of several indicators by which the performance of the gas & low carbon and oil production & operations segments is assessed by the remuneration committee for the purposes of determining compensation bonuses for the executive directors. Other indicators include a number of financial and operational measures.

bp's variable pay programme for the other senior managers in the gas & low carbon and oil production & operations segments is based on individual performance contracts. Individual performance contracts are based on agreed items from the business performance plan, one of which, if chosen, could relate to proved reserves.

### Compliance

International Financial Reporting Standards (IFRS) do not provide specific guidance on reserves disclosures. bp estimates proved reserves in accordance with SEC Rule 4-10 (a) of Regulation S-X and relevant Compliance and Disclosure Interpretations (C&DI) and Staff Accounting Bulletins as issued by the SEC staff.

By their nature, there is always risk involved in the ultimate development and production of proved reserves including, but not limited to: final regulatory approval; the installation of new or additional infrastructure, as well as changes in oil and gas prices; changes in operating and development costs; and the continued availability of additional development capital. All the group's proved reserves held in subsidiaries and equity-accounted entities are estimated by the group's petroleum engineers or by independent petroleum engineering consulting firms and then assured by the group's petroleum engineers.

Netherland, Sewell & Associates (NSAI), an independent petroleum engineering consulting firm, has estimated the net proved crude oil, condensate, natural gas liquids (NGLs) and natural gas reserves, as of 31 December 2022, of certain properties owned by bp in the US Lower 48. The properties evaluated by NSAI account for 100% of bp's net proved reserves in the US Lower 48 as of 31 December 2022. The net proved reserves estimates prepared by NSAI were prepared in accordance with the reserves definitions of Rule 4-10(a)(1)-(32) of Regulation S-X. All reserves estimates involve some degree of uncertainty. bp has filed NSAI's independent report on its reserves estimates as an exhibit to this Annual Report on Form 20-F filed with the SEC.

Our proved reserves are associated with both concessions (tax and royalty arrangements) and agreements where the group is exposed to the upstream risks and rewards of ownership, but where our entitlement to the hydrocarbons is calculated using a more complex formula, such as with PSAs. In a concession, the consortium of which we are a part is entitled to the proved reserves that can be produced over the licence period, which may be the life of the field. In a PSA, we are entitled to recover volumes that equate to costs incurred to develop and produce the proved reserves and an agreed share of the remaining volumes or the economic equivalent. As part of our entitlement is driven by the monetary amount of costs to be recovered, price fluctuations will have an impact on both production volumes and reserves.

We disclose our share of proved reserves held in equity-accounted entities (joint ventures★ and associates★), although we do not control these entities or the assets held by such entities. The 2022 disclosures do not include bp's share of proved reserves held by Rosneft and bp's Russia joint ventures. bp announced on 27 February 2022 that it intends to exit its shareholding in Rosneft and its other businesses with Rosneft within Russia including these Russian joint ventures.

## bp's estimated net proved reserves and proved reserves replacement

94% of our total proved reserves of subsidiaries at 31 December 2022 were held through joint operations★ (94% in 2021), and 34% of the proved reserves were held through such joint operations where we were not the operator (35% in 2021).

### Estimated net proved reserves of crude oil at 31 December 2022[abc]

| | | | million barrels |
|---|---|---|---|
| | Developed | Undeveloped | Total |
| UK | 153 | 109 | 261 |
| US | 679 | 527 | 1,206 |
| Rest of North America | — | — | — |
| South America[d] | 4 | 5 | 9 |
| Africa | 24 | 2 | 26 |
| Rest of Asia | 717 | 356 | 1,073 |
| Australasia | 20 | 1 | 21 |
| Subsidiaries | 1,596 | 1,000 | 2,596 |
| Equity-accounted entities | 592 | 342 | 935 |
| **Total** | **2,188** | **1,343** | **3,531** |

### Estimated net proved reserves of natural gas liquids at 31 December 2022[ab]

| | | | million barrels |
|---|---|---|---|
| | Developed | Undeveloped | Total |
| UK | 6 | — | 6 |
| US | 181 | 236 | 417 |
| Rest of North America | — | — | — |
| South America | 1 | — | 1 |
| Africa | 6 | 1 | 7 |
| Rest of Asia | — | — | — |
| Australasia | 1 | — | 1 |
| Subsidiaries | 196 | 237 | 432 |
| Equity-accounted entities | 23 | 10 | 34 |
| **Total** | **219** | **247** | **466** |

### Estimated net proved reserves of liquids★

| | | | million barrels |
|---|---|---|---|
| | Developed | Undeveloped | Total |
| Subsidiaries[e] | 1,791 | 1,237 | 3,029 |
| Equity-accounted entities | 616 | 352 | 968 |
| **Total** | **2,407** | **1,590** | **3,997** |

### Estimated net proved reserves of natural gas at 31 December 2022[ab]

| | | | billion cubic feet |
|---|---|---|---|
| | Developed | Undeveloped | Total |
| UK | 360 | 41 | 401 |
| US | 2,655 | 3,154 | 5,809 |
| Rest of North America | — | — | — |
| South America[f] | 1,077 | 748 | 1,825 |
| Africa | 1,021 | 221 | 1,242 |
| Rest of Asia | 2,594 | 2,125 | 4,719 |
| Australasia | 1,684 | 407 | 2,091 |
| Subsidiaries | 9,392 | 6,696 | 16,087 |
| Equity-accounted entities | 1,627 | 767 | 2,394 |
| **Total** | **11,018** | **7,463** | **18,481** |

### Estimated net proved reserves on an oil equivalent basis

| | | | million barrels of oil equivalent |
|---|---|---|---|
| | Developed | Undeveloped | Total |
| Subsidiaries[e] | 3,411 | 2,392 | 5,802 |
| Equity-accounted entities | 896 | 485 | 1,381 |
| **Total** | **4,307** | **2,877** | **7,183** |

a Proved reserves exclude royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently, and include non-controlling interests in consolidated operations. We disclose our share of reserves held in joint ventures and associates that are accounted for by the equity method although we do not control these entities or the assets held by such entities.

b The 2022 marker prices used were Brent $101.24/bbl (2021 $69.23/bbl and 2020 $41.31/bbl) and Henry Hub $6.19/mmBtu (2021 $3.61/mmBtu and 2020 $1.94/mmBtu).

c Includes condensate.

d Includes 3 million barrels of liquids in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.

e Includes assets held for sale in Algeria.

f Includes 547 billion cubic feet of natural gas in respect of the 30% non-controlling interest in BP Trinidad and Tobago LLC.

Because of rounding, some totals may not agree exactly with the sum of their component parts.

### Proved reserves replacement

Total hydrocarbon proved reserves at 31 December 2022, on an oil equivalent basis including equity-accounted entities, decreased by 58% compared with 31 December 2021 (16% decrease for subsidiaries and 86% decrease for equity-accounted entities). Natural gas decreased by 53% (13% decrease for subsidiaries and 89% decrease for equity-accounted entities). This includes a 9,013mmboe reduction in our equity-accounted entities resulting from our decision to exit our Russia joint ventures and our shareholding in Rosneft.

Excluding the impact of our exit from Russia, there was a net decrease from acquisitions and disposals of 84mmboe (decrease of 434mmboe within our subsidiaries and increase of 350mmboe within our equity-accounted entities). Acquisition and divestment activity occurred in our equity-accounted entities in the Southern Cone and the North Sea, and divestment activity in our subsidiaries in Canada, the US and the North Sea. The creation of Azule Energy in Angola resulted in divestment of subsidiary entities and purchase of equity-accounted entities.

The proved reserves replacement ratio★ is the extent to which production is replaced by proved reserves additions. This ratio is expressed in oil equivalent terms and includes changes resulting from revisions to previous estimates, improved recovery, and extensions and discoveries. For 2022, the proved reserves replacement ratio excluding acquisitions and disposals was 20% (50% in 2021 and 78% in 2020) for subsidiaries and equity-accounted entities, 13% for subsidiaries alone and 52% for equity-accounted entities alone. There was a net decrease (196mmboe) of reserves due to higher gas and oil prices impacting some of our PSAs in Azerbaijan and the Middle East, partially offset by increases in the US and the North Sea.

In 2022 net additions to the group's proved reserves (excluding production, sales and purchases of reserves-in-place) amounted to 180mmboe (94mmboe for subsidiaries and 86mmboe for equity-accounted entities), through revisions to previous estimates including price, improved recovery from, and extensions to, existing fields and discoveries of new fields. The majority of subsidiary additions were through improved recovery from, and extensions to, existing fields and discoveries of new fields where they represented a mixture of proved developed and proved undeveloped reserves. The principal proved reserves additions in our subsidiaries by region were in the US, North Africa and the Middle East. The principal reserves additions in our equity-accounted entities were in Angola and PAEG.

26% of our proved reserves are associated with PSAs. The countries in which we produced under PSAs in 2022 were Algeria, Angola, Azerbaijan, Egypt, India, Indonesia, Mexico and Oman. In addition, the technical service contract (TSC)★ governing our investment in the Rumaila field in Iraq functions as a PSA.

The group holds no licences in our PSAs or TSCs due to expire within the next three years that would have a significant impact on bp's reserves or production, including undeveloped acreage.

For further information on our reserves see page 270.

★ See glossary on page 389

## bp's net production by country – crude oil[a] and natural gas liquids

| | | | | | | thousand barrels per day |
|---|---|---|---|---|---|---|
| | | | | | | bp net share of production[b] |
| | | | Crude oil | | | Natural gas liquids |
| | 2022 | 2021 | 2020 | 2022 | 2021 | 2020 |
| **Subsidiaries** | | | | | | |
| UK[c] | **80** | 82 | 96 | **5** | 5 | 5 |
| Total Europe | **80** | 82 | 96 | **5** | 5 | 5 |
| Alaska[c] | **–** | – | 38 | **–** | – | – |
| Lower 48 onshore[c] | **71** | 69 | 72 | **56** | 48 | 59 |
| Gulf of Mexico deepwater | **225** | 239 | 235 | **19** | 22 | 20 |
| Total US | **296** | 308 | 345 | **76** | 70 | 79 |
| Canada[cd] | **15** | 25 | 22 | **–** | – | – |
| Total Rest of North America | **15** | 25 | 22 | **–** | – | – |
| Total North America | **311** | 333 | 367 | **76** | 70 | 79 |
| Trinidad & Tobago | **5** | 5 | 7 | **4** | 4 | 7 |
| Total South America | **5** | 5 | 7 | **4** | 4 | 7 |
| Angola[c] | **49** | 80 | 108 | **–** | – | – |
| Egypt | **28** | 23 | 9 | **–** | – | – |
| Algeria | **5** | 6 | 6 | **6** | 7 | 8 |
| Total Africa | **83** | 110 | 123 | **6** | 7 | 8 |
| Abu Dhabi | **195** | 171 | 158 | **–** | – | – |
| Azerbaijan | **73** | 77 | 97 | **–** | – | – |
| Iraq[c] | **15** | 43 | 100 | **–** | – | – |
| Oman[c] | **24** | 26 | 21 | **–** | – | – |
| Total Rest of Asia | **307** | 318 | 375 | **–** | – | – |
| Total Asia | **307** | 318 | 375 | **–** | – | – |
| Australia[c] | **11** | 11 | 13 | **2** | 2 | 2 |
| Eastern Indonesia | **1** | 2 | 2 | **–** | – | – |
| Total Australasia | **12** | 13 | 15 | **2** | 2 | 2 |
| Total subsidiaries | **797** | 860 | 983 | **93** | 88 | 101 |
| **Equity-accounted entities (bp share)** | | | | | | |
| Rosneft[e] (Russia, Egypt) | **144** | 857 | 873 | **–** | 3 | 3 |
| Argentina | **51** | 50 | 52 | **1** | 1 | 1 |
| Mexico | **6** | 3 | – | **–** | – | – |
| Bolivia | **2** | 2 | 2 | **–** | | |
| Egypt | **–** | | | **3** | 3 | 2 |
| Norway | **47** | 48 | 50 | **2** | 3 | 3 |
| Russia | **7** | 30 | 30 | **–** | – | – |
| Iraq | **25** | | | **–** | | |
| Angola | **33** | 1 | 1 | **2** | 3 | 5 |
| Total equity-accounted entities | **314** | 991 | 1,009 | **9** | 12 | 14 |
| Total subsidiaries and equity-accounted entities[f] | **1,111** | 1,851 | 1,991 | **102** | 100 | 115 |

[a] Includes condensate.
[b] Production excludes royalties due to others whether payable in cash or in kind where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
[c] In 2022, bp disposed of its interests in Angola, its interest in Sunrise Oil Sands in Canada, its interest in Rumaila in Iraq, and certain Lower 48 onshore interests in the US and certain offshore interests in Australia. In 2021, bp disposed 20% of its interest in Block 61 in Oman, its interest in Shearwater in the UK North Sea, and certain Lower 48 onshore interests in the US. In 2020, bp disposed of its Alaska interests and certain Lower 48 onshore interests in the US.
[d] All of the production from Canada in Subsidiaries is bitumen.
[e] 2022 reflects bp's estimated share of Rosneft production for the period 1 January to 27 February, averaged over the year (see Financial statements – Note 1 – Change in segmentation). Includes production in respect of the non-controlling interest in Rosneft, including production held through bp's interests in Russia other than Rosneft.
[f] Includes 2 net mboe/d of NGLs from processing plants in which bp has an interest (2021 3mboe/d and 2020 3mboe/d).

Because of rounding, some totals may not agree exactly with the sum of their component parts.

## bp's net production by country – natural gas

| | million cubic feet per day | | |
|---|---|---|---|
| | bp net share of production[a] | | |
| | **2022** | 2021 | 2020 |
| **Subsidiaries** | | | |
| UK[b] | **271** | 236 | 221 |
| Total Europe | **271** | 236 | 221 |
| Lower 48 onshore[b] | **1,148** | 1,043 | 1,405 |
| Gulf of Mexico deepwater | **143** | 154 | 154 |
| Alaska[b] | **–** | – | 3 |
| Total US | **1,291** | 1,197 | 1,561 |
| Canada | **–** | 2 | 2 |
| Total Rest of North America | **–** | 2 | 2 |
| Total North America | **1,291** | 1,199 | 1,563 |
| Trinidad & Tobago | **1,276** | 1,260 | 1,695 |
| Total South America | **1,276** | 1,260 | 1,695 |
| Egypt | **1,272** | 1,206 | 782 |
| Algeria | **81** | 126 | 141 |
| Total Africa | **1,353** | 1,332 | 923 |
| Azerbaijan | **670** | 539 | 413 |
| India | **216** | 169 | 2 |
| Oman[b] | **599** | 571 | 550 |
| Total Rest of Asia | **1,485** | 1,279 | 966 |
| Total Asia | **1,485** | 1,279 | 966 |
| Australia | **331** | 332 | 396 |
| Eastern Indonesia | **421** | 429 | 399 |
| Total Australasia | **752** | 760 | 795 |
| Total subsidiaries[c] | **6,428** | 6,067 | 6,163 |
| **Equity-accounted entities (bp share)** | | | |
| Rosneft[d] (Russia, Canada, Egypt, Vietnam) | **238** | 1,380 | 1,286 |
| Argentina | **238** | 223 | 230 |
| Bolivia | **56** | 60 | 56 |
| Mexico | **2** | 1 | – |
| Norway | **66** | 66 | 61 |
| Russia | **10** | 42 | 41 |
| Angola | **64** | 77 | 92 |
| Total equity-accounted entities[c] | **674** | 1,849 | 1,765 |
| Total subsidiaries and equity-accounted entities | **7,101** | 7,915 | 7,929 |

a Production excludes royalties due to others whether payable in cash or in kind where the royalty owner has a direct interest in the underlying production and the option and ability to make lifting and sales arrangements independently.
b In 2022, bp disposed of certain Lower 48 onshore interests in the US. In 2021, bp disposed 20% of its interest in Block 61 in Oman, its interest in Shearwater in the UK North Sea, and certain Lower 48 onshore interests in the US. In 2020, bp disposed of its Alaska interests and certain Lower 48 onshore interests in the US.
c Natural gas production volumes exclude gas consumed in operations within the lease boundaries of the producing field, but the related reserves are included in the group's reserves.
d 2022 reflects bp's estimated share of Rosneft production for the period 1 January to 27 February, averaged over the year (see Financial statements – Note 1– Change in segmentation). Includes production in respect of the non-controlling interest in Rosneft, including production held through bp's interests in Russia other than Rosneft.

Because of rounding, some totals may not agree exactly with the sum of their component parts.

The following tables provide additional data and disclosures in relation to our oil and gas operations.

## Average sales price per unit of production (realizations★)[a]

$ per unit of production

| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total group average |
|---|---|---|---|---|---|---|---|---|---|---|
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia | | |
| **Subsidiaries** | | | | | | | | | | |
| **2022** | | | | | | | | | | |
| **Crude oil[b]** | **102.54** | **–** | **90.05** | **84.88** | **99.09** | **102.00** | **–** | **98.74** | **86.11** | **95.70** |
| **Natural gas liquids** | **60.41** | **–** | **31.72** | **–** | **60.55** | **54.78** | **–** | **–** | **54.20** | **37.00** |
| **Gas** | **33.45** | **–** | **5.61** | **3.68** | **7.65** | **5.21** | **–** | **11.81** | **12.33** | **9.29** |
| 2021 | | | | | | | | | | |
| Crude oil[b] | 71.99 | – | 62.58 | 52.49 | 67.62 | 68.98 | – | 67.94 | 61.46 | 65.81 |
| Natural gas liquids | 52.07 | – | 26.85 | – | 32.81 | 51.01 | – | – | 40.98 | 30.89 |
| Gas[c] | 14.59 | – | 3.68 | 2.63 | 4.06 | 4.36 | – | 5.66 | 7.25 | 5.20 |
| 2020 | | | | | | | | | | |
| Crude oil[b] | 42.70 | – | 38.14 | 26.70 | 42.27 | 41.60 | – | 37.76 | 33.21 | 38.46 |
| Natural gas liquids | 25.31 | – | 10.22 | – | 16.49 | 25.39 | – | – | 24.73 | 12.91 |
| Gas | 3.13 | – | 1.30 | 1.70 | 1.86 | 3.89 | – | 3.91 | 4.66 | 2.75 |
| **Equity-accounted entities[d]** | | | | | | | | | | |
| **2022** | | | | | | | | | | |
| **Crude oil[b]** | **–** | **71.14** | **–** | **–** | **78.05** | **86.73** | **102.84** | **90.16** | **–** | **90.18** |
| **Natural gas liquids[e]** | **–** | **–** | **–** | **–** | **46.64** | **–** | **N/A** | **–** | **–** | **46.64** |
| **Gas** | **–** | **24.23** | **–** | **–** | **4.75** | **–** | **4.35** | **–** | **–** | **6.91** |
| 2021 | | | | | | | | | | |
| Crude oil[b] | – | 69.23 | – | – | 62.62 | – | 61.98 | – | – | 62.60 |
| Natural gas liquids[e] | – | – | – | – | 42.47 | – | N/A | – | – | 42.47 |
| Gas | – | 15.26 | – | – | 3.44 | – | 1.69 | – | – | 2.49 |
| 2020 | | | | | | | | | | |
| Crude oil[b] | – | 40.00 | – | – | 40.41 | – | 35.10 | – | – | 35.94 |
| Natural gas liquids[e] | – | – | – | – | 15.93 | – | N/A | – | – | 15.93 |
| Gas | – | 3.76 | – | – | 2.88 | – | 1.51 | – | – | 1.85 |

## Average production cost per unit of production[f]

$ per unit of production

| | Europe | | North America | | South America | Africa | Asia | | Australasia | Total group average |
|---|---|---|---|---|---|---|---|---|---|---|
| | UK | Rest of Europe | US | Rest of North America | | | Russia | Rest of Asia | | |
| **Subsidiaries** | | | | | | | | | | |
| **2022** | **10.36** | **–** | **9.70** | **15.36** | **3.92** | **5.02** | **–** | **3.52** | **2.04** | **6.07** |
| 2021 | 13.97 | – | 9.17 | 13.18 | 4.49 | 6.17 | – | 4.92 | 2.27 | 6.82 |
| 2020 | 12.49 | – | 8.11 | 12.46 | 3.76 | 7.71 | – | 4.41 | 2.02 | 6.39 |
| **Equity-accounted entities** | | | | | | | | | | |
| **2022** | **–** | **6.01** | **–** | **–** | **15.55** | **21.01** | **7.39** | **20.81** | **–** | **11.47** |
| 2021 | | 9.75 | | | 11.21 | | 2.76 | | | 3.82 |
| 2020 | – | 8.14 | – | – | 12.71 | – | 3.54 | – | – | 4.55 |

a Units of production are barrels for liquids and thousands of cubic feet for gas. Realizations include transfers between businesses, except in the case of Russia.
b Includes condensate.
c Realizations calculation methodology has been changed to reflect gas price fluctuations within the North Sea region in the UK. UK and total group average realizations are restated. There is no impact on financial results.
d In certain countries it is common for equity-accounted entities' agreements to include pricing clauses that require selling a significant portion of the entitled production to local governments or markets at discounted prices.
e Natural gas liquids for Russia are included in crude oil.
f Units of production are barrels for liquids and thousands of cubic feet for gas. Amounts do not include ad valorem and severance taxes.

# Additional information for customers & products

## Reconciliation of customers & products RC profit before interest and tax to underlying RC profit before interest and tax to adjusted EBITDA★ by business

| | | | $ million |
|---|---|---|---|
| | 2022 | 2021 | 2020 |
| RC profit before interest and tax for customers & products | 8,869 | 2,208 | 3,418 |
| Less: Adjusting items gains (charges) | (1,920) | (1,044) | 330 |
| Underlying RC profit before interest and tax for customers & products | 10,789 | 3,252 | 3,088 |
| By business: | | | |
| customers – convenience & mobility | 2,966 | 3,052 | 2,883 |
| *Castrol – included in customers* | 700 | 1,037 | 818 |
| products – refining & trading | 7,823 | 200 | (28) |
| petrochemicals | — | — | 233 |
| Add back: Depreciation, depletion and | 2,870 | 3,000 | 2,990 |
| By business: | | | |
| customers – convenience & mobility | 1,286 | 1,306 | 1,200 |
| *Castrol – included in customers* | 153 | 150 | 161 |
| products – refining & trading | 1,584 | 1,694 | 1,686 |
| petrochemicals | — | — | 104 |
| Adjusted EBITDA for customers & products | 13,659 | 6,252 | 6,078 |
| By business: | | | |
| customers – convenience & mobility | 4,252 | 4,358 | 4,083 |
| *Castrol – included in customers* | 853 | 1,187 | 979 |
| products – refining & trading | 9,407 | 1,894 | 1,658 |
| petrochemicals | — | — | 337 |

## Sales volume

| | | | thousand barrels per day |
|---|---|---|---|
| | 2022 | 2021 | 2020 |
| Marketing sales[a] | 2,613 | 2,439 | 2,275 |
| Trading/supply sales[b] | 350 | 393 | 416 |
| Total refined product sales | 2,963 | 2,832 | 2,691 |
| Crude oil[c] | 184 | 249 | 295 |
| Total | 3,147 | 3,081 | 2,986 |

[a] Marketing sales include branded and unbranded sales of refined fuel products and lubricants to business-to-business and business-to-consumer customers, including service station dealers, jobbers, airlines, small and large resellers such as hypermarkets, and the military.

[b] Trading/supply sales are fuel sales to large unbranded resellers and other oil companies.

[c] Crude oil sales relate to third-party transactions executed primarily by trading and shipping. In addition, reported crude oil sales in 2022 includes 67 thousand barrels per day (2021 50 thousand barrels per day) relating to volumes sold directly by the gas & low carbon energy and oil production & operations segments.

In the table above, volumes of crude oil and refined product trading/supply sales are presented on a basis consistent with income statement presentation. These figures do not correspond to actual volumes of physically traded energy products and are not intended for use in assessing emissions volumes or carbon intensity. Marketing volumes shown represent physically delivered transactions regardless of income statement presentation of such transactions.

## Reconciliation of customers & products RC profit before interest and tax to convenience gross margin

| | | | $ million |
|---|---|---|---|
| | 2022 | 2021 | 2020 |
| RC profit before interest and tax for customers & products | 8,869 | 2,208 | 3,418 |
| Subtract RC profit (loss) before interest and tax for refining & trading and petrochemicals | 6,008 | (468) | 1,169 |
| | 2,861 | 2,676 | 2,249 |
| Net (favourable) adverse impact of adjusting items for convenience & mobility | 105 | 376 | 634 |
| Underlying RC profit before interest and tax for convenience & mobility | 2,966 | 3,052 | 2,883 |
| Subtract underlying RC profit for Castrol | 700 | 1,037 | 818 |
| Add back convenience & mobility (excluding Castrol) depreciation, depletion and amortization | 1,133 | 1,156 | 1,039 |
| Add back convenience & mobility (excluding Castrol) production and manufacturing, distribution and administration expenses and adjusted for fuels, EV charging, aviation, B2B and midstream gross margin | (1,648) | (1,304) | (1,548) |
| Subtract earnings from equity-accounted entities in convenience & mobility (excluding Castrol) | 225 | 330 | 228 |
| Convenience gross margin | 1,526 | 1,537 | 1,328 |
| Foreign exchange effects | — | (131) | (62) |
| At constant foreign exchange[a] | 1,526 | 1,406 | 1,266 |
| Convenience gross margin growth | 9% | | |

[a] Values are all at end 2022 foreign exchange rates.

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## Retail sites[a]

| | 2022 | 2021 | 2020 |
|---|---|---|---|
| | | | Number of bp-branded retail sites |
| US | **7,750** | 7,450 | 7,250 |
| Europe | **8,150** | 8,250 | 8,250 |
| Rest of world | **4,750** | 4,800 | 4,800 |
| Total | **20,650** | 20,500 | 20,300 |

[a] Reported to the nearest 50. Includes sites operated by dealers, jobbers, franchisees, brand licensees or JV partners, under the bp brand. These may move to and from the bp brand as their fuel supply agreement or brand licence agreement expires and are renegotiated in the normal course of business. Retail sites are primarily branded *bp*, *ARCO*, *Amoco*, *Aral* and *Thorntons*, and also include sites in India through our Jio-bp JV.

## Refinery throughputs[a b]

| | 2022 | 2021 | 2020 |
|---|---|---|---|
| | | | thousand barrels per day |
| US | **678** | 719 | 693 |
| Europe | **804** | 787 | 742 |
| Rest of world | **22** | 88 | 192 |
| Total | **1,504** | 1,594 | 1,627 |
| | | | % |
| Refining availability★ | **94.5** | 94.8 | 96.0 |

[a] This does not include bp's interest in Pan American Energy Group.
[b] Refinery throughputs reflect crude oil and other feedstock volumes.

## Refinery capacity

The following table[ab] summarizes bp group's interests in refineries and average daily crude distillation capacities as at 31 December 2022.

| Fuels value chain | Country | Refinery | Crude distillation capacities[c] Group interest[d] (%) | bp share thousand barrels per day |
|---|---|---|---|---|
| **US** | | | | |
| US North West | US | Cherry Point | 100.0 | **251** |
| US East of Rockies | | Whiting | 100.0 | **440** |
| | | Toledo[e] | 50.0 | **80** |
| | | | | **771** |
| **Europe** | | | | |
| Rhine | Germany | Gelsenkirchen | 100.0 | **265** |
| | | Lingen | 100.0 | **97** |
| | Netherlands | Rotterdam | 100.0 | **394** |
| Iberia | Spain | Castellón | 100.0 | **110** |
| | | | | **866** |
| Total bp share of capacity at 31 December 2022 | | | | **1,637** |

[a] This does not include bp's interest in Pan American Energy Group.
[b] In April 2022, the New Zealand Whangarei refinery, in which bp holds a share, converted to an import-only terminal. In February 2022, SAPREF shareholders (bp and Shell) announced the pause of refinery operations in South Africa for an indefinite period from the end of March 2022.
[c] Crude distillation capacity is gross rated capacity, which is defined as the highest average sustained unit rate for a consecutive 30-day period under normal operational conditions.
[d] bp share of equity, which is not necessarily the same as bp share of processing entitlements.
[e] On 28 February 2023, bp completed the sale of its 50% interest in the bp-Husky Toledo refinery in Ohio, US, to Cenovus Energy, its partner in the facility.

## Environmental expenditure

| | | | $ million |
|---|---|---|---|
| | 2022 | 2021 | 2020 |
| Operating expenditure | 416 | 362 | 531 |
| Capital expenditure | 224 | 222 | 241 |
| Clean-ups | 16 | 17 | 29 |
| Additions to environmental remediation provision | 502 | 363 | 297 |
| Increase (decrease) in decommissioning provision | 1,248 | 1,231 | (686) |

Operating and capital expenditure on the prevention, control, treatment or elimination of air and water emissions and solid waste is often not incurred as a separately identifiable transaction. Instead, it forms part of a larger transaction that includes, for example, normal operations and maintenance expenditure. The figures for environmental operating and capital expenditure in the table are therefore estimates, based on the definitions and guidelines of the American Petroleum Institute.

Environmental operating expenditure of $416 million in 2022 (2021 $362 million) showed an overall increase of 15%, largely due to increased expenditure in BP Products North America and BP Rotterdam.

Environmental capital expenditure of $224 million in 2022 was broadly the same prior year (2021 $222 million) with increased expenditure for BP Products North America and decreased expenditure for BP Energia Espana who had two projects completing in early 2022.

Clean-up costs were $16 million in 2022 (2021 $17 million), representing oil spill clean-up costs and other associated remediation and disposal costs.

In addition to operating and capital expenditure, we also establish provisions for future environmental remediation work. Expenditure against such provisions normally occurs in subsequent periods and is not included in environmental operating expenditure reported for such periods.

Provisions for environmental remediation are made when a clean-up is probable and the amount of the obligation can be reliably estimated. Generally, this coincides with the commitment to a formal plan of action or, if earlier, on divestment or on closure of inactive sites.

The extent and cost of future environmental restoration, remediation and abatement programmes are inherently difficult to estimate. They often depend on the extent of contamination, and the associated impact and timing of the corrective actions required, technological feasibility and bp's share of liability. Though the costs of future programmes could be significant and may be material to the results of operations in the period in which they are recognized, it is not expected that such costs will be material to the group's overall results of operations or financial position.

Additions to our environmental remediation provision reflect new liabilities and scope/cost reassessments of the remediation plans of a number of our sites in the US and Europe. The charge for environmental remediation provisions in 2022 arising from new sites was $67 million (2021 $33 million and 2020 $8 million).

In addition, we make provisions on installation of our oil and gas producing assets and related pipelines to meet the cost of eventual decommissioning. On installation of an oil or natural gas production facility, a provision is established that represents the discounted value of the expected future cost of decommissioning the asset.

In 2022 the net increase in the decommissioning provision was primarily due to recognition of additional provisions and changes in cost estimate assumptions.

We undertake periodic reviews of existing provisions. These reviews take account of revised cost assumptions, changes in decommissioning requirements and any technological developments.

Provisions for environmental remediation and decommissioning are usually established on a discounted basis, as required by IAS 37 'Provisions, Contingent Liabilities and Contingent Assets'.

Further details of decommissioning and environmental provisions appear in Financial statements – Note 23.

## Regulation of the group's business

Our businesses and operations are subject to the laws and regulations applicable in each country, state or other regional or local area in which they occur. These cover virtually all aspects of bp's activities and include matters such as the acquisition of rights to develop and operate projects, production rates, royalties, environmental, health and safety protection, fuel specifications and transportation, trading, pricing, anti-trust, export, taxes, and foreign exchange.

### Oil and gas contractual and regulatory framework

The terms and conditions of the leases, licences and contracts under which our upstream oil and gas interests are held vary from country to country. These leases, licences and contracts are generally granted by or entered into with a government entity or state-owned or controlled company and are sometimes entered into with private property owners. Arrangements with governmental or state entities usually take the form of licences or production-sharing agreements★ (PSAs), although arrangements with private entities and the US government entities are usually by lease.

Licences (or concessions) give the holder the right to explore for, develop and produce a commercial discovery. Under a licence, the holder bears the risk of exploration, development and production activities and provides the financing for these operations. In principle, the licence holder is entitled to all production, minus any royalties that are payable in kind. A licence holder is generally required to pay production taxes or royalties, which may be in cash or in kind.

In certain countries, separate licences are required for exploration and production activities, and in some cases production licences are limited to only a portion of the area covered by the original exploration licence.

PSAs entered into with a government entity or state-owned or -controlled company generally require bp (alone or with other contracting companies) to provide all the financing and bear the risk of exploration and production activities in exchange for a share of the production remaining after royalties, if any. Less typically, bp may explore for, develop and produce hydrocarbons under a service agreement with the host entity in exchange for reimbursement of costs and/or a fee paid in cash rather than production.

bp frequently conducts its exploration and production activities in joint arrangements or co-ownership arrangements with other international oil companies, state-owned or -controlled companies and/or private companies. Conventionally, all costs, benefits, rights, obligations, liabilities and risks incurred in carrying out joint arrangement or co-ownership operations under a lease, licence or PSA are shared among the joint arrangement or co-owning parties according to agreed ownership interests which are set out in a joint operating agreement. To the extent that any liabilities arise, whether to governments or third parties, or as between the joint arrangement parties or co-owners themselves, each joint arrangement party or co-owner will generally be liable under the terms of a joint operating agreement to meet these in proportion to its ownership interest. Any agreed allocation of liability amongst the joint arrangement parties is, however, often different to the position under the relevant licence, lease or PSA which may provide for joint and several liability of the joint arrangement parties including for decommissioning obligations. In many upstream operations, a party (known as the operator) will be appointed (pursuant to a joint operating agreement) to carry out day to-day operations on behalf of the joint arrangement or co-ownership. The operator is typically one of the joint arrangement parties or a co-owner and will carry out its duties either through its own staff, or by contracting out various elements to third-party contractors or service providers. bp acts as operator on behalf of joint arrangements and co-ownerships in a number of countries.

Frequently, work (including drilling and related activities) will be contracted out to third-party service providers. The relevant contract will specify the work, the remuneration, and typically the risk allocation between the parties. Depending on the service to be provided, the contract may also contain provisions allocating risks and liabilities associated with pollution and environmental damage, damage to a well or hydrocarbon reservoirs and for

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claims from third parties or other losses. The allocation of those risks varies among contracts and is determined through negotiation between the parties.

In general, bp incurs income tax on income generated from production activities (whether under a licence or PSA). In addition, depending on the area, bp's production activities may be subject to a range of other taxes, levies and assessments, including special petroleum taxes and revenue taxes. The taxes imposed on oil and gas production profits and activities may be substantially higher than those imposed on other activities, for example in Abu Dhabi, Angola, Egypt, Norway, the UK, the US and Trinidad & Tobago.

In May 2022 the UK Government introduced a new temporary 25% levy on profits from oil and gas extraction in the North Sea. In November 2022 the UK Government announced that the energy profits levy would increase to 35% with effect from 1 January 2023 and remain in place until 31 March 2028.

bp is closely studying the Organisation for Economic Co-operation and Development's two pillar solution to address the tax challenges arising from the digitalisation of the economy. The Pillar Two model rules were published on 20 December 2021. Draft UK legislation to implement the model rules was published in July 2022 and final legislation is expected to be substantively enacted during 2023. The tax accounting impact will be considered when the relevant legislation is in place.

## Low carbon energy – renewables contractual and regulatory framework

The majority of our renewable assets are held indirectly through interests in incorporated joint ventures or special purpose entities (in either case, a Project Company). The renewables contractual and regulatory framework and the rights granted in relation to a renewable asset significantly vary from country to country. In some countries, the regulatory framework is still under development or subject to significant change as the renewables industry evolves.

In general terms the rights to a renewable asset are usually held by a Project Company through a package of assets that together form the renewable project owned by such Project Company, including:

- one or more leases, easements, or licences over land or seabed granted by a public or private individual or entity that grant the Project Company rights to develop, build and operate the renewable asset in such areas of land or seabed;
- one or more generation licences that grant the Project Company the right to produce and sell the electricity to the market;
- an interconnection agreement that grants the Project Company the right to connect the power project into the grid;
- an offtake agreement which, depending on the country's electricity market, is entered into with a utility company, a corporate buyer or a public entity; and
- potentially, a subsidy mechanism in the form of a feed in tariff, contract for difference, hedging mechanism or renewable energy certificate to support the development of the project.

The risk allocation between the developer/generator and the host government or private entity has not been standardized in the industry. However, in general terms the Project Company bears the risk of the development, construction and operation of the renewable energy project and secures the financing for these operations and receives any profit from the revenue generated through the offtake agreement and/or subsidy mechanism (if available).

## US Inflation Reduction Act

The US Inflation Reduction Act (IRA), which was signed into law in August 2022, includes a significant package of largely supply-side measures supporting low carbon energy sources and decarbonization technologies in the US. The impact of the IRA both on bp's businesses and more widely on the US economy is likely to depend on various factors which are currently uncertain, including the implementation of the incentives by the US authorities as well as regulatory reform at a state and federal level.

## Greenhouse gas regulation

In December 2015, nearly 200 nations at the United Nations climate change conference in Paris (COP21) agreed to the Paris Agreement which aims to hold the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. Signatories aim to reach global peaking of greenhouse gas (GHG) emissions as soon as possible and to undertake rapid reductions thereafter, so as to achieve a balance between human caused emissions and removals by sinks of GHGs in the second half of this century. The Paris Agreement commits all signatories to submit Nationally Determined Contributions (NDCs) (i.e. pledges or plans of climate action) and pursue domestic measures aimed at achieving the objectives of their NDCs. Signatories are required to submit revised NDCs every five years, and the revised NDCs are expected to be more ambitious with each revision. Global assessments of progress will occur every five years, starting in 2023.

Agreement of rules which could enable international carbon trading to assist in meeting NDCs was adopted at the UNFCCC COP26 in Glasgow, Scotland in November 2021.

More stringent national and regional measures relating to the transition to a lower carbon economy, such as the UK's 2050 net zero carbon emissions commitment, can be expected in the future. These measures could increase bp's production costs for certain products, increase compliance and litigation costs, increase demand for competing energy alternatives or products with lower-carbon intensity, and affect the sales and specifications of many of bp's products. Further, such measures could lead to constraints on production and supply and access to new reserves, particularly due to the long-term nature of many of bp's projects.

Certain current and announced GHG measures and developments potentially affecting bp's businesses in various markets in which bp operates are summarized below. For information on steps that bp is taking in relation to climate change issues and for details of bp's GHG reporting, see Sustainability – Net zero aims on page 45.

### United States

In the US, bp's operations are affected by GHG regulation in a number of ways.

The federal Clean Air Act (CAA) regulates air emissions, permitting, fuel specifications and other aspects of our production, refining, distribution and marketing activities.

Under the current administration of US President Joseph Biden, the Environmental Protection Agency (EPA) has issued proposed "Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review" which were open to public comment until early 2023. If finalized in form substantially similar to the proposal, these regulations would require significant reductions in methane emissions from oil and gas production at new and existing facilities.

Other EPA GHG and environmental regulations affect electricity generation practices and prices and have an impact on the market for fuels used to generate electricity and on renewable energy installations. These regulations are in flux due to changes in approach between presidential administrations, as well as lawsuits challenging those regulations.

In June 2022, the Supreme Court decision in *West Virginia v. EPA* limited EPA's regulatory authority to require electricity "generation shifting" (e.g., from coal to natural gas or renewable sources).

The Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007 impose the Renewable Fuel Standard (RFS), requiring transportation fuel sold in the United States to contain a minimum volume of renewable fuels. In July 2022, EPA issued a final rule in which it modified certain volume targets and requirements, established the 2020, 2021, and 2022 renewable fuel percentage standards for all biofuels, and made other RFS program changes. In December 2022, EPA announced a proposed rule to establish required RFS volumes and percentage standards for 2023, 2024, and 2025, as well as to make modifications designed to enhance the RFS program. EPA took public comments on this proposed rule until 10 February 2023. In addition, certain state initiatives impose carbon-intensity reduction requirements on transportation fuels sold in those states (e.g., in California, Oregon and Washington).

The federal GHG Mandatory Reporting Rule requires operators of certain facilities and producers and importers/exporters of petroleum products to file annual GHG emissions reports with EPA quantifying direct emissions from affected facilities, as well as volumes of petroleum products, certain natural gas liquids and GHG products and notional GHG emissions as if these products were fully combusted.

A number of states, municipalities and regional organizations continue to advance climate initiatives that affect our US operations. For example, California extended its Low Carbon Fuel Standard (LCFS) to 2030 with a 20% reduction in carbon intensity required by that time. The State of Washington enacted state-wide carbon cap and invest legislation and a Clean Fuel Program (similar to California's LCFS) in 2021. In 2022, the State of Washington finalized rules implementing both of those programs.

In November 2022, the Department of Defense, General Services Administration, and National Aeronautics and Space Administration in their capacity as the Federal Acquisition Regulation Council proposed a new rule that would require major contractors (those with contractual obligations to the federal government of more than $50 millionillion) to disclose scopes 1, 2 and 3 GHG emissions and climate-related financial risks and set science-based emissions reduction targets. The details of any final rule are not certain but could potentially impact bp as T&S does hold and enter into contracts with the US federal government.

Our US businesses are subject to increased GHG and other environmental requirements and regulatory uncertainty, including that the current or any future US administration could revise or revoke current or prior administration programs, as well as the possibility of increased expenditures in having to comply with numerous diverse and non-uniform regulatory initiatives at the state and local level.

US fuel markets are affected by EPA regulation of light, medium and heavy-duty vehicle emissions (both fuel economy and tailpipe standards) as well as for non-road engines and vehicles and certain large GHG stationary emission sources. California also imposes Low Emission Vehicle (LEV) and Zero Emission Vehicle (ZEV) standards on vehicle manufacturers, and a number of other states, as allowed by CAA authority, have adopted California's standards. These regulations may impact bp's product mix and demand for particular products in those states. In August 2020, California also entered into agreements with several carmakers to meet more demanding emissions standards in California.

In December 2021, the Biden administration revised the fuel economy and tailpipe carbon dioxide emissions standards for passenger cars and light trucks covering model years (MY) 2023 through 2026. The revised standards are more stringent through MY 2026 than the August 2020 agreements California reached with several carmakers. EPA has also restored California's Clean Air Act waiver allowing it to set its own GHG automotive tailpipe standards and for other states to adopt those standards.

In December 2022, EPA promulgated regulations establishing new emission standards for oxides of nitrogen (NOx) and other pollutants for highway heavy-duty engines. California has also adopted a "Heavy-Duty Low NOx Omnibus Regulation" which will require manufacturers to comply with stricter emissions standards and a number of other states have opted or are planning to opt into those California standards. The rule is being phased in, with the first phase effective in 2024. bp continues to monitor these rules for implications for fuels. These and other EPA initiatives to reduce GHG emissions may have a significant effect on the production, sale and profitability of many of bp's products in the US.

### European Union

- The EU and its member states have adopted various targets and measures seeking to reduce GHG emissions and promote renewables. These include the EU Emissions Trading Scheme (EU ETS); the Renewable Energy Directive (RED) – including an obligation on transport fuel suppliers to increase the share of renewables of their fuel supply; and CO2 targets for the sales of new vehicles which are expected to accelerate the decarbonisation of the transport sector and impact fuel demand.
- The EU has adopted a goal of achieving climate neutrality by 2050 as part of the European Green Deal and, subsequently, a 55% GHG reduction target by 2030 compared to 1990 levels. To achieve this target, the European Commission proposed a set of measures in 2021 – as part of the so-called 'Fit for 55' and 'gas decarbonisation' packages. Once fully adopted and implemented, this would lead to increased ambition levels across various EU legislative instruments and initiatives, including higher shares of renewables across all sectors, a reduced number of GHG emission allowances under the EU ETS, and a target of zero gramme of CO2 per km for new passenger cars by 2035. New measures would be expected to increase the supply and demand of renewable fuel and energy, extend emissions trading to the maritime sector and emissions from road transport and heating fuels. The European Commission also proposed measures to reduce methane emissions.
- Detailed implementation rules set at EU level, such as Delegated Acts, are currently being adopted or revised. Whilst detailed in nature, such rules can often influence the commercial prospects of existing and future projects either to help meet bp's own compliance obligations (e.g. supply of renewable fuels under RED) or supplying renewable and low carbon products that help others meet their compliance obligation. Such rules relate, for example, to defining when hydrogen is deemed 'renewable' or which biofuel feedstocks are eligible to meet RED targets.
- Some EU member states have adopted national targets above and beyond current EU climate goals, such as Germany, with a climate neutrality target by 2045 and a national emissions trading system for transport and heating fuels.

### United Kingdom

- In April 2021, the UK Government announced a target of a 78% reduction in emissions by 2035 compared to 1990 levels.
- The UK Emissions Trading System (UK ETS) launched on 1 January 2021 following the end of the Brexit transition period and the UK's participation in the EU ETS. It seeks to provide a carbon pricing mechanism as a tool for helping achieve the UK's net zero target and covers the same GHGs and sectors as the EU ETS. bp's North Sea operations are subject to the UK ETS.
- From March to June 2022 the UK Government held a consultation on proposed changes to the rules for sectors currently covered by the UK ETS, such as upstream oil and gas, to ensure more GHG emissions are covered, and expansion of the UK ETS to cover new sectors such as the domestic maritime sector and energy-from-waste. The UK Government has not yet published a full response to the consultation.

### Other countries and regions

- China is operating emission trading pilot programmes in a number of cities and provinces. One of bp's subsidiaries in China is participating in these programmes. In February 2021 China introduced a national emissions trading market (National ETS). The National ETS is intended to be an essential tool for China to fulfil its commitment to reach peak emissions by 2030 and carbon neutrality by 2060. For now, the National ETS participants are limited to the key emission entities identified by each provincial-level government authority and approved by Ministry for Ecology and Environment of China. bp is not participating in the National ETS.
- In October 2021, as part of its '1+N' climate policy framework, China issued working guidance setting out specific targets and measures for achieving peak carbon emissions and carbon neutrality, and an action plan which sets out the main objectives for the next decade to achieve peak carbon emissions by 2030. The working guidance is the "1" (i.e. a long-term approach to combating climate change), while "N" are various policies starting with the action plan. In June 2022, 17 government authorities jointly released the National Climate Change Adaptation Strategy 2035 making overall plans to prepare the country to adapt to climate change from the present to 2035.

## Other environmental regulation

In addition to GHG regulations referred to above, climate change programmes and regulation of unconventional oil and gas extraction under a number of environmental laws may have a significant effect on the production, sale and profitability of many of bp's products.

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Environmental laws also require bp to remediate and restore areas affected by the release of hazardous substances or hydrocarbons associated with our operations or properties. These laws may apply to sites that bp currently owns or operates, sites that it previously owned or operated, or sites used for the disposal of its and other parties' waste. See Financial Statements – Note 23 for information on provisions for environmental restoration and remediation.

A number of pending or anticipated governmental proceedings against certain bp group companies under environmental laws could result in monetary or other sanctions. Group companies are also subject to environmental claims for personal injury and property damage alleging the release of, or exposure to, hazardous substances. The costs associated with future environmental remediation obligations, governmental proceedings and claims could be significant and may be material to the results of operations in the period in which they are recognized. We cannot accurately predict the effects of future developments, such as stricter environmental laws and regulations or enforcement policies, or future events at our facilities on the group, and there can be no assurance that material liabilities and costs will not be incurred in the future. For a discussion of the group's environmental expenditure, see page 369 and for a discussion of legal proceedings, see page 257.

Significant health, safety and environmental legislation and regulation affecting our businesses and profitability, in addition to those referred to above, include the following:

### United States

- The Clean Water Act regulates wastewater and other effluent discharges from bp's facilities, and bp is required to obtain discharge permits, install control equipment and implement operational controls and preventative measures.
- The Resource Conservation and Recovery Act regulates the generation, storage, transportation and disposal of wastes associated with our operations and can require corrective action at locations where such wastes have been disposed of or released. bp has incurred, or is likely to incur, liability under RCRA or similar state laws in connection with sites bp operates or previously operated.
- The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) can, in certain circumstances, impose the entire cost of investigation and remediation on a party who owned or operated a site contaminated with a hazardous substance, or who arranged for disposal of a hazardous substance at a site. bp has incurred, or is likely to incur, liability under CERCLA or similar state laws, including costs attributed to insolvent or unidentified parties. bp is also subject to claims for remediation costs and natural resource damages under CERCLA and other federal and state laws.
- The Emergency Planning and Community Right-to-Know Act requires reporting on the storage, use and releases of certain quantities of listed hazardous substances to designated government agencies.
- The Toxic Substances Control Act (TSCA) regulates bp's manufacture, import, export, sale and use of chemical substances and products. In addition, EPA has revised processes and procedures for prioritisation of existing chemicals for risk evaluation, assessment and management. Agency actions and announcements are monitored regularly to identify developments with potential impacts on chemical substances important to bp products and operations.
- The Occupational Safety and Health Act imposes workplace safety and health requirements on bp operations along with significant process safety management obligations, requiring continuous evaluation and improvement of operational practices to enhance safety and reduce workplace emissions at gas processing, refining and other regulated facilities.
- The Oil Pollution Act 1990 (OPA) imposes operational requirements, liability standards and other obligations governing the transportation of petroleum products in US waters. States may impose additional obligations. Alaska and the West Coast states have more demanding state requirements.
- The Outer Continental Shelf Land Act, the Mineral Leasing Act and other statutes give the Department of Interior (DOI) and the BLM authority to regulate operations and air emissions, including equipment and testing, on offshore and onshore operations on federal lands subject to DOI authority.
- The Endangered Species Act (ESA) and Marine Mammal Protection Act protect certain species' habitats from adverse human impacts by restricting operations or development at certain times and in certain places. In 2020, the US Fish and Wildlife Service published regulatory definitions impacting habitat designations under the ESA, but in June 2022, the Biden administration rescinded those definitions. The Biden administration rescission of those definitions could expand the geographic areas subject to habitat protections.

### European Union

- The Industrial Emissions Directive (IED) 2010 provides the framework for granting permits for major industrial sites. It lays down rules on integrated prevention and control of air, water and soil pollution arising from industrial activities. As part of the IED framework, additional emission limit values are informed by sector specific and cross-sector Best Available Technique (BAT) Reference Documents and BAT Conclusions. These include the BAT Conclusions for the refining sector, for large combustion plants as well as common wastewater and waste gas treatment and management systems in the chemical sector. In addition, a revision of the IED was proposed by the European Commission in 2022. Once adopted and implemented, this could potentially expand the scope of the IED to activities and substances that are currently not regulated by the IED, set more stringent permitting requirements, and lead to a further tightening of emission limit values. As a result, permits issued by Competent Authorities under the current and future IED framework might require bp to further reduce its emissions, particularly its air and water emissions, as well as to review and update its permits with the competent authorities.
- The EU Registration, Evaluation Authorization and Restriction of Chemicals (REACH) Regulation 2006 requires registration of chemical substances manufactured in or imported into the EU, together with the submission of relevant hazard and risk data. REACH affects our manufacturing or trading/import operations in the EU. bp maintains compliance by checking whether imports are covered by the registrations of non-EU suppliers' representatives, preparing and submitting registration dossiers to cover new manufactured and imported substances, and updating previously submitted registrations as required. Some substances registered previously, including substances supplied to us by third parties for our use, are now subject to evaluation and review for potential authorization or restriction procedures, and possible banning, by the European Chemicals Agency and EU member state authorities. In addition, bp's facilities and operations in several EU countries continue to undergo REACH compliance inspections by the competent authority for the respective EU member state. An amendment to the Annex of the Regulation on classification, labelling and packaging of substances and mixture (CLP Regulation) requires harmonized notification of information on hazardous materials (certain lubricant and fuel formations) to EU member state poison centres. The uniform notification rules applied as of January 2020 for consumer products, from 2021 for professional and will apply from 2024 for industrial uses.
- The EU Offshore Safety Directive was adopted in 2013. Its purpose is to introduce a harmonized regime aimed at reducing the potential environmental, health and safety impacts of the offshore oil and gas industry throughout EU waters.
- The Water Framework Directive (WFD) published in 2000 aims to protect the quantity and quality of ground and surface waters of the EU member states. The implementation in the EU member states is still ongoing, planned to be finalised by 2027. Future proceedings on the determination of pollutants/priority substances as well as environmental quality standards in line with the WFD may require additional compliance efforts and increased costs for managing freshwater withdrawals and discharges from bp's EU operations.
- The Corporate Sustainability Reporting Directive (CSRD) entered into force on 5 January 2023 introducing new requirements for companies with securities listed on an EU regulated market or which exceed a threshold for turnover derived in the EU, to include disclosures related to climate, the environment and wider sustainability issues. The CSRD also expands to in-scope entities the requirements introduced by the EU Taxonomy Regulation, to identify environmentally sustainable activities and then disclose metrics related to capital and operating expenditure

and turnover associated with those activities. Disclosure requirements will be phased in from 2025, in respect of the 2024 financial year.

### United Kingdom

- Following the UK's exit from the European Union, operative EU laws were retained in UK law by the European Union (Withdrawal) Act 2018.
- Since the end of the transition period on 31 December 2020, there has been a parallel UK REACH regime which applies in Great Britain only, with EU REACH continuing to apply in Northern Ireland. UK REACH contains equivalent requirements to EU REACH, although future developments and potential divergences are uncertain.
- The Environment Act 2021 comprises various key parts including governance, waste and resource efficiency, air quality and environmental recall, water, nature and biodiversity and conservation covenants. The governance parts include a comprehensive framework for legally-binding environmental improvement targets; establish a framework for future policy statements on environmental principles to protect the environment by making environmental considerations a key part of policy development process across government; and establish the Office for Environmental Protection, an independent public body to have oversight of environmental matters. The UK Government's first suite of environmental targets became law in January 2023 but these are not expected to have a material impact on bp.
- In September 2022 the UK Government introduced draft legislation which would make significant changes to the status and operation of retained EU law (the Retained EU Law (Revocation and Reform) Bill). A wide range of legislation could potentially be affected, including legislation relating to environmental matters. Government departments are currently conducting legislative reviews, with a view to determining which particular retained EU laws should be preserved or amended. The legislative reviews are due to be completed by 31 December 2023.

### Other countries and regions

Regulations governing the discharge of treated water have also been developed in countries outside of the US and EU. This includes regulations in Trinidad and Angola which impacts bp's production operations in those countries. In Trinidad, bp commissioned a new wastewater treatment plant in 2020 to meet consent levels agreed with the regulators to apply water discharge rules arising from the Certificate of Environmental Clearance (CEC) Regulations 2001 and associated Water Pollution Rules 2007. In Angola, bp has upgraded produced water treatment systems to meet revised oil in water limits for produced water discharge under Executive Decree ED 97-14.

The Abidjan Convention, along with the Additional Protocol published in 2012, sets environmental quality standards for the discharge of chemicals to the marine environment. Mauritania and Senegal are both signatories to the Abidjan Convention. bp is currently constructing the offshore facilities to include produced water management systems to meet the environmental quality standards for our future gas operations in Mauritania and Senegal.

## Environmental maritime regulations

bp's shipping operations are subject to extensive national and international regulations governing operations, training, pollution prevention, liability, and insurance. These include:

- Liability and spill prevention and planning requirements governing, among others, tankers, barges, and offshore facilities are imposed by OPA in US waters. OPA also mandates a levy on imported and domestically produced oil to fund oil spill responses. Some states, including Alaska, Washington, Oregon and California, impose additional liability for oil spills. Outside US territorial waters, bp shipping tankers are subject to international pollution prevention, liability, spill response and preparedness regulations developed through the UN's International Maritime Organization (IMO), including the International Convention on Civil Liability for Oil Pollution Damage, the International Convention for the Prevention of Pollution from Ships (MARPOL), the International Convention on Oil Pollution, Preparedness, Response and Co-operation, and the International Convention on Civil Liability for Bunker Oil Pollution Damage. In April 2010, the Hazardous and Noxious Substance (HNS) Protocol 2010 was adopted to address issues that have inhibited ratification of the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea 1996. As at 31 December 2022, the HNS Convention had not entered into force.
- A global sulphur cap of 0.5% applies to marine fuel under MARPOL. In order to comply, ships either need to consume low sulphur marine fuels, operate on alternative low sulphur fuels such as LNG or implement approved abatement technology to enable them to meet the low sulphur emissions requirements while continuing to use higher sulphur fuel. This global cap does not alter the lower limits that apply in the sulphur oxides Emissions Control Areas established by the IMO.
- From 2023 all vessels over 400 gross tonnage will be subject to IMO requirements as to energy efficiency design (EEXI) and the carbon intensity of operations (CII).
- Under provisionally agreed EU legislation, maritime transport will be gradually brought into the scope of the EU ETS from 2024, applicable to all vessels over 5000 gross tonnage calling at EU ports regardless of a vessel's flag.
- Under the proposed Fuel EU Maritime Regulation, we expect that ship owners will need to reduce the GHG intensity of their fuel use by 6% by 2030.
- The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR), aims to protect the marine environment of the North-East Atlantic. The OSPAR 2012 Recommendation and Guideline for the implementation of a risk-based approach to the management of produced water discharges from offshore installations in the North Sea supports a key goal of working towards eliminating harmful discharges. In 2020 the International Association of Oil and Gas Producers issued a report "Oil And Gas Risk Based Assessment of Offshore Produced Water Discharges" which presents industry good practice and aims to broaden the understanding and acceptance of Risk Based Assessment (RBA) techniques internationally and improve consistency in the application of assumptions, levels of conservatism, and selection of risk endpoints.

To meet its financial responsibility requirements, BP Shipping maintains marine oil pollution liability insurance in respect of its operated ships to a maximum limit of $1 billion for each occurrence through mutual insurance associations (P&I Clubs), although there can be no assurance that a spill would necessarily be adequately covered by insurance or that liabilities would not exceed insurance recoveries.

## International trade sanctions

During the period covered by this report, non-US subsidiaries★, or other non-US entities of bp, conducted limited activities in, or with persons from, certain countries identified by the US Department of State as State Sponsors of Terrorism or otherwise subject to US, EU and UK sanctions (Sanctioned Countries). Sanctions restrictions continue to be insignificant to the group's financial condition and results of operations. bp monitors its activities with Sanctioned Countries, persons from Sanctioned Countries and individuals and companies subject to US, EU and UK sanctions and seeks to comply with applicable sanctions laws and regulations.

bp has a 29.99% interest in and operates the Shah Deniz field in Azerbaijan (Shah Deniz), has a 29.99% interest in and performs some operations for a related gas pipeline entity, South Caucasus Pipeline Company Limited (SCPC), and has a 23.99% non-operating interest in a related gas marketing entity, Azerbaijan Gas Supply Company Limited (AGSC). Naftiran Intertrade Co. Limited and NICO SPV Limited (collectively, NICO) have a 10% non-operating interest in each of Shah Deniz and SCPC and an 8% non-operating interest in AGSC. Shah Deniz, SCPC and AGSC continue in operation as they were excluded from the application of US sanctions and fall within the exception for certain natural gas projects under Section 603 of the Iran Threat Reduction and Syria Human Rights Act of 2012 (ITRA).

On 3 December 2018 bp entered into an agreement with, among others, SOCAR and NICO pursuant to which SOCAR pays to BP Exploration (Shah Deniz) Limited (BPXSD), as the Shah Deniz operator, compensation for NICO's waiver of its right to lift its share of Shah Deniz condensate. Such amounts are used to cover cash calls to NICO in respect of operating costs due from NICO to BPXSD. On 12 February 2022, OFAC issued a renewed licence in relation to these arrangements.

Following the imposition in 2011 of further US and EU sanctions against Syria, bp terminated all sales of crude oil and petroleum products into Syria, though bp continues to supply aviation fuel to non-governmental Syrian resellers outside of Syria.

bp has a joint arrangement in Cuba which imports, manufactures, markets and sells lubricants.

During 2014, the US and the EU imposed sanctions on certain sectors of the Russian economy (energy, finance and defence/military) and on certain individuals and entities, including Rosneft. These sectoral sanctions include restrictions on the provision of financial assistance, technical assistance, and services in relation to exploration and production activity in deep water, shale, and offshore Arctic.

Additional US sanctions have been imposed since 2014, broadening the scope of US sanctions on Russia-related activity to include certain international deep water, shale, and offshore Arctic projects as well as the provision of goods and services for Russian energy export pipelines.

In response to Russia's military action in Ukraine in 2022, the US, EU, UK and many other countries have imposed broad economic and trade sanctions. The scope of these sanctions continues to evolve across various jurisdictions and includes restrictions on dealing with designated individuals and entities; restrictions on the Russian financial sector; blocking economic activity in certain areas of Ukraine not controlled by the Ukrainian government; prohibitions in relation to investment in Russia; prohibitions and restrictions relating to Russian origin oil and oil products; prohibitions and restrictions in relation to transportation, including shipping and aircraft; trade controls limiting the purchase and import of a wide range of goods from Russia, and export controls limiting the export of a wide range of goods and technical assistance to Russia.

In response, Russia has implemented new counter-sanctions including restrictions on the divestment from Russian assets by foreign investors and restrictions on the payments of dividends to certain foreign shareholders, including those based in the UK, requiring such dividends to be paid in roubles into restricted bank accounts and a requirement for approval of the Russian government for transfers from any such bank accounts out of Russia.

On 27 February 2022 bp announced that we will exit our shareholding in Rosneft and our other businesses with Rosneft in Russia. The impact of those decisions on bp is discussed elsewhere in this bp Annual Report and Form 20-F, see for example pages 43-44. Other than Rosneft and the joint ventures with Rosneft in Russia, the bp group does not source any materials directly from Russia, except deliveries of LNG from Russian sources under a small number of contracts predating the Russia and Ukraine conflict in compliance with all applicable sanctions. bp has also discontinued sales of our products to customers in Russia. Such sales were not material to the bp group. As a result, outside of our shareholding in Rosneft and related businesses in Russia, direct impacts due to exposure to Russia have not been material and are not expected to be material in the future.

Nevertheless, the Russia and Ukraine conflict and related export bans, export control restrictions and sanctions have had a significant impact on the macro environment and the markets in which we operate by contributing to price volatility and inflationary pressure, and thus have had an indirect impact on our business and our margins. bp continues to monitor Russia related sanctions and other international restrictions for any impacts on our businesses and the exit of our shareholding in Rosneft.

bp maintains bank accounts and has registered and paid required fees to maintain registrations of patents and trademarks in certain Sanctioned Countries.

bp has equity interests in non-operated joint arrangements with air fuel sellers, resellers, and fuel delivery services around the world.

From time to time, the joint arrangement operator or other partners may sell or deliver fuel to airlines from Sanctioned Countries or flights to Sanctioned Countries, without bp's involvement.

bp has no control over the activities non-controlled associates may undertake in Sanctioned Countries or with persons from Sanctioned Countries.

### Disclosure pursuant to ITRA Section 219

To our knowledge, none of bp's activities, transactions or dealings are required to be disclosed pursuant to ITRA Section 219, with the following possible exceptions.

In 2022, payments in relation to tax with an aggregate US dollar equivalent value of approximately $4,400 were paid from a bp trust account held with Tadvin Co. to Iranian public entities on behalf of BP Iran. No gross revenues or net profits are attributable to BP Iran's activities.

In February 2023, we identified that our European Fleet Business had issued ten fuel cards to the embassy and consulate of Iran in both Germany and Austria. Fuel cards enable holders to acquire goods and services at bp retail sites and at retail sites operated by acceptance partners in Europe without payment in cash. Goods and services purchased with fuel cards are invoiced on a monthly or bi-monthly basis. In 2022, the total aggregate invoiced amount was approximately $18,800, in 2021 $11,900, in 2020 $9,200 and in 2023 until termination $2,700. bp has terminated the cards and related accounts.

## Material contracts

On 4 April 2016 the district court approved the Consent Decree among BP Exploration & Production Inc., BP Corporation North America Inc., BP p.l.c., the United States and the states of Alabama, Florida, Louisiana, Mississippi and Texas (the Gulf states) which fully and finally resolved any and all natural resource damages (NRD) claims of the United States, the Gulf states, and their respective natural resource trustees and all Clean Water Act (CWA) penalty claims, and certain other claims of the United States and the Gulf states.

Concurrently, the definitive Settlement Agreement that bp entered into with the Gulf states (Settlement Agreement) with respect to State claims for economic, property and other losses became effective.

bp has filed the Consent Decree and the Settlement Agreement as exhibits to its *Annual Report on Form 20-F 2020* filed with the SEC. For further details of the Consent Decree and the Settlement Agreement, see Legal proceedings in *bp Annual Report and Form 20-F 2015*.

## Property, plant and equipment

bp has freehold and leasehold interests in real estate and other tangible assets in numerous countries, but no individual property is significant to the group as a whole. For more on the significant subsidiaries★ of the group at 31 December 2022 and the group percentage of ordinary share capital see Financial statements – Note 37. For information on significant joint ventures★ and associates★ of the group see Financial statements – Notes 16 and 17.

## Related party transactions

Transactions between the group and its significant joint ventures and associates are summarized in Financial statements – Note 16 and Note 17. In the ordinary course of its business, the group enters into transactions with various organizations with which some of its directors or executive officers are associated. Except as described in this report, the group did not have any material transactions or transactions of an unusual nature with, and did not make loans to, related parties in the period commencing 1 January 2022 to 17 February 2023.

## Corporate governance practices

In the US, bp ADSs are listed on the New York Stock Exchange (NYSE). The significant differences between bp's corporate governance practices as a UK company and those required by NYSE listing standards for US companies are listed as follows:

### Independence

As set out on page 86, bp has adopted separate terms of reference for the board and each of its committees as part of its corporate governance framework. The terms of reference for the board and each of its committees were last updated with effect from 1 December 2021, excluding the audit committee terms of reference which were updated on 22 July 2022. The terms of reference reflect the UK Corporate Governance Code approach to corporate governance. As such, the way in which bp makes determinations of directors' independence differs from the NYSE approach.

bp's corporate governance framework requires that all non-executive directors be determined by the board to be 'independent in character and judgement and free from any business or other relationship which could materially interfere with the exercise of their judgement'. The bp board has determined that, in its judgement, all of the non-executive directors are independent. In doing so, however, the board did not explicitly take into consideration the independence requirements outlined in the NYSE's listing standards.

### Committees

bp has a number of board committees that are broadly comparable in purpose and composition to those required by NYSE rules for domestic US companies. For instance, bp has a remuneration (rather than a compensation) committee. bp also has an audit committee, which NYSE rules require for both US companies and foreign private issuers. These committees are composed solely of non-executive directors whom the board has determined to be independent, in the manner described above.

Each committee operates under its own terms of reference together with a set of terms applicable to all the committees (see the board committee reports on pages 98-147).

Under US securities law and the listing standards of the NYSE, bp is required to have an audit committee that satisfies the requirements of Rule 10A-3 under the Exchange Act and Section 303A.06 of the NYSE Listed Company Manual. bp's audit committee complies with these requirements. The bp audit committee does not have direct responsibility for the appointment, reappointment or removal of the independent auditors. Instead, it follows the UK Companies Act 2006 and the UK Corporate Governance code 2018 by making recommendations to the board on these matters for it to put forward for shareholder approval at the AGM.

One of the NYSE's additional requirements for the audit committee states that at least one member of the audit committee is to have 'accounting or related financial management expertise'. The board determined that Tushar Morzaria possesses such expertise and also possesses the financial and audit committee experiences set forth in both the UK Corporate Governance Code and SEC rules (see Audit committee report on page 102). Mr Morzaria is the audit committee financial expert as defined in Item 16A of Form 20-F.

### Shareholder approval of equity compensation plans

The NYSE rules for US companies require that shareholders must be given the opportunity to vote on all equity-compensation plans and material revisions to those plans. bp complies with UK requirements that are similar to the NYSE rules. The board, however, does not explicitly take into consideration the NYSE's detailed definition of what are considered 'material revisions'.

### Code of ethics

The NYSE rules require that US companies adopt and disclose a code of business conduct and ethics for directors, officers and employees. bp has adopted a code of conduct, which applies to all employees and members of the board. In addition, bp has adopted a code of ethics for senior financial officers as required by the SEC. bp considers that these codes and policies address the matters specified in the NYSE rules for US companies. During 2021, the board adopted a diversity policy, which requires it to encourage a diverse and inclusive working environment in the boardroom, where everyone is accepted, valued and receives fair treatment according to their different needs and situations without discrimination or prejudice. The policy was reviewed by the board in 2022, and amendments were made to reflect regulatory changes and market practice. The updated policy was then approved and published in February 2023.

## Code of ethics

The company has adopted a code of ethics for its chief executive officer, chief financial officer, svp accounting reporting control and svp internal audit whose roles are equivalent to the SEC roles as required by the provisions of Section 406 of the Sarbanes-Oxley Act of 2002 and the rules issued by the SEC. There have been no waivers from the code of ethics relating to any officers. A copy of the code of ethics can be found at [redacted]

bp also has a code of conduct, which is applicable to all employees, officers and members of the board. This was updated (and published) in January 2023.

## Controls and procedures

### Evaluation of disclosure controls and procedures

The company maintains 'disclosure controls and procedures', as such term is defined in Exchange Act Rule 13a-15(e), that are designed to ensure that information required to be disclosed in reports the company files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms, and that such information is accumulated and communicated to management, including the company's group chief executive and chief financial officer, as appropriate, to allow timely decisions regarding required disclosure.

In designing and evaluating our disclosure controls and procedures, our management, including the group chief executive and chief financial officer, recognize that any controls and procedures, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the objectives of the disclosure controls and procedures are met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud within the company, if any, have been detected. Further, in the design and evaluation of our disclosure controls and procedures our management necessarily was required to apply its judgement in evaluating the costs and benefits of possible control and procedure design options. Also, we have investments in unconsolidated entities. As we do not control these entities, our disclosure controls and procedures with respect to such entities are necessarily substantially more limited than those we maintain with respect to our consolidated subsidiaries★. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected. The company's disclosure controls and procedures have been designed to meet, and management believes that they meet, reasonable assurance standards.

The company's management, with the participation of the company's group chief executive and chief financial officer, has evaluated the effectiveness of the company's disclosure controls and procedures pursuant to Exchange Act Rule 13a-15(b) as of the end of the period covered by this annual report. Based on that evaluation, the group chief executive and chief financial officer have concluded that the company's disclosure controls and procedures were effective at a reasonable assurance level.

### Management's report on internal control over financial reporting

Management of bp is responsible for establishing and maintaining adequate internal control over financial reporting. bp's internal control over financial reporting is a process designed under the supervision of the principal executive and financial officers to provide reasonable assurance regarding the reliability of financial reporting and the preparation of bp's financial statements for external reporting purposes in accordance with IFRS.

As of the end of the 2022 fiscal year, management conducted an assessment of the effectiveness of internal control over financial reporting in accordance with the criteria in the UK Financial Reporting Council's Guidance on Risk Management, Internal Control and Related Financial and Business Reporting relating to internal control over financial reporting. Based on this assessment, management has determined that bp's internal control over financial reporting as of 31 December 2022 was effective.

Management's assessment of the effectiveness of internal control over financial reporting excluded Archaea Energy Inc., which was acquired on 28 December 2022. Archaea Energy's financial statements constitute 5.6% and 2.1% of net and total assets respectively, 0.0% of sales and other operating revenues, and 2.2% of profit (loss) for the year of the consolidated financial statement amounts as of and for the year ended 31 December 2022. Management's assessment also excluded EDF Energy Services LLC, which was acquired on 30 November 2022. EDF Energy Services financial statements constitute 0.7% and 1.0% of net and total assets respectively, 0.0% of sales and other operating revenues and 1.3% of profit (loss) for the year of the consolidated financial statement amounts as of and for the year ended 31 December 2022. These exclusions are in accordance with the general guidance issued by the SEC that an assessment of a recent business combination may be omitted from management's report on internal control over financial reporting in the first year of consolidation.

The company's internal control over financial reporting includes policies and procedures that pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect transactions and dispositions of assets; provide reasonable assurances that transactions are recorded as necessary to permit preparation of financial statements in accordance with IFRS and that receipts and expenditures are being made only in accordance with authorizations of management and the directors of bp; and provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of bp's assets that could have a material effect on our financial statements. bp's internal control over financial reporting as of 31 December 2022 has been audited by Deloitte LLP, an independent registered public accounting firm, as stated in their report appearing on page 179 of *bp Annual Report and Form 20-F 2022*.

### Changes in internal control over financial reporting

There were no changes in the group's internal control over financial reporting that occurred during the period covered by the Form 20-F that have materially affected or are reasonably likely to materially affect our internal control over financial reporting.

## Principal accountant's fees and services

The audit committee has established policies and procedures for the engagement of the independent registered public accounting firm, Deloitte LLP, to render audit and certain assurance services. The policies provide for pre-approval by the audit committee of specifically defined audit, audit-related, non-audit and other services that are not prohibited by regulatory or other professional requirements. Deloitte is engaged for these services when its expertise and experience of bp are important. Most of this work is of an audit nature. The committee regularly reviews the policy, including in 2022, when it was updated to remove restrictions on EY following bp's announcement on 27 February 2022 of its intention to exit its interests in Rosneft and capture additional detail for the processes applicable to separately listed bp entities.

Under the policy, pre-approval is given for specific services within the following categories: i) audit-related services, such as those required by law or where the auditor is best placed to undertake such work on similar terms, ii) non-audit services required by law, such as reporting required by a regulatory authority, and iii) other services, such as additional assurance or updates on applicable law and accounting standards. bp operates a two-tier system for audit and non-audit services. For audit related services, the audit committee has a pre-approved aggregate level, within which specific work may be approved by management. Non-audit services are pre-approved for management to authorize per individual engagement, but above a defined level must be approved by the chairman of the audit committee or the full committee. The audit committee has delegated to the chair of the audit committee authority to approve permitted services provided that any decisions are reported to the committee at its next scheduled meeting. Any proposed service not included in the approved service list must be approved in advance of commencing the engagement by the audit committee chair or the full audit committee depending on the level of fee payable.

The audit committee evaluates the performance of the auditor each year. The audit fees payable to Deloitte are reviewed by the committee in the context of other global companies for cost effectiveness. The committee keeps under review the scope and results of audit work and the independence and objectivity of the auditor. External regulation and bp policy requires the auditor to rotate its lead audit partner every five years. See Financial statements – Note 36 and Audit committee report on page 102 for details of fees for services provided by the auditor.

## Additional Directors' report disclosures

This section of *bp Annual Report and Form 20-F 2022* forms part of the Directors' report. Certain information has been included in the Strategic report that would otherwise be required to be disclosed in the Directors' report, as noted below.

### Indemnity provisions

In accordance with BP's Articles of Association, on appointment each director is granted an indemnity from the company in respect of liabilities incurred as a result of their office, to the extent permitted by law. These indemnities were in force throughout the financial year and at the date of this report. In respect of those liabilities for which directors may not be indemnified, the company maintained a directors' and officers' liability insurance policy throughout 2022. During the year, a review of the terms and scope of the policy was undertaken as part of the annual renewal. Although their defence costs may be met, neither the company's indemnity nor insurance provides cover in the event that the director is proved to have acted fraudulently or dishonestly. Certain subsidiaries★ are trustees of the group's pension schemes. Each director of these subsidiaries is granted an indemnity from the company in respect of liabilities incurred as a result of such a subsidiary's activities as a trustee of the pension scheme, to the extent permitted by law. These indemnities were in force throughout the financial year and at the date of this report.

### Financial risk management objectives and policies

The disclosures in relation to financial risk management objectives and policies, including the policy for hedging, are included in How we manage risk on pages 69-72, Liquidity and capital resources on page 356 and Financial statements – Notes 29 and 30.

### Exposure to price risk, credit risk, liquidity risk and cash flow risk

The disclosures in relation to exposure to price risk, credit risk, liquidity risk and cash flow risk are included in Financial statements – Note 29.

### Important events since the end of the financial year

Disclosures of the particulars of the important events affecting bp which have occurred since the end of the financial year are included in the Strategic report as well as in other places in the Directors' report.

### Likely future developments in the business

An indication of the likely future developments in the business of the company is included in the Strategic report.

### Research and development

Indications of our activities in the field of research and development are provided throughout the Strategic report and the Directors' report. See also pages 12 and 213 for our expenditure on research and development.

### Branches

As a global group our interests and activities are held or operated through subsidiaries, branches, joint arrangements★ or associates★ established in – and subject to the laws and regulations of – many different jurisdictions.

### Employees

Disclosures in respect of how the directors have engaged with employees and had regard to their interests are included in Stakeholder engagement on pages 94-95.

The disclosures concerning policies in relation to the employment of disabled persons and employee involvement are included in Sustainability – our people on pages 67-68.

### Employee share schemes

Certain shares held as a result of participation in some employee share plans carry voting rights. Voting rights in respect of such shares are exercisable via a nominee. Dividend waivers are in place in respect of unallocated shares held in employee share plan trusts.

### Suppliers, customers and others

Disclosures in respect of how the directors have engaged with suppliers, customers and others in business relationships with the company are included in Stakeholder engagement on pages 92-93.

### Change of control provisions

On 5 October 2015, the United States lodged with the district court in MDL 2179 a proposed Consent Decree between the United States, the Gulf states, BP Exploration & Production Inc., BP Corporation North America Inc. and BP p.l.c., to fully and finally resolve any and all natural resource damages claims of the United States, the Gulf states and their respective natural resource trustees and all Clean Water Act penalty claims, and certain other claims of the United States and the Gulf states. Concurrently, bp entered into a definitive Settlement Agreement with the five Gulf states (Settlement Agreement) with respect to state claims for economic, property and other losses. On 4 April 2016, the district court approved the Consent Decree, at which time the Consent Decree and Settlement Agreement became effective. The federal government and the Gulf states may jointly elect to accelerate the payments under the Consent Decree in the event of a change of control or insolvency of BP p.l.c., and the Gulf states individually have similar acceleration rights under the Settlement Agreement. For further details of the Consent Decree and the Settlement Agreement, see Legal proceedings in *BP Annual Report and Form 20-F 2015*.

### Political donations, etc

Disclosures in relation to political donations, expenditure and contributions are included on page 68.

### Greenhouse gas emissions, energy consumption and energy efficiency

Disclosures in relation to greenhouse gas emissions, energy consumption and energy efficiency are included in Sustainability on pages 48-49.

## Disclosures required under Listing Rule 9.8.4R

The information required to be disclosed by Listing Rule 9.8.4R can be located as set out below:

| Information required | Page |
|---|---|
| (1) Amount of interest capitalized | 213 |
| (2) – (4) | Not applicable |
| (5), (6) Waiver of director emoluments | Not applicable |
| (7) – (11) | Not applicable |
| (12), (13) Dividend waivers | 376 |
| (14) | Not applicable |

## Cautionary statement

In order to utilize the 'safe harbor' provisions of the United States Private Securities Litigation Reform Act of 1995 (the 'PSLRA') and the general doctrine of cautionary statements, bp is providing the following cautionary statement.

This document contains certain forecasts, projections and forward-looking statements - that is, statements related to future, not past, events and circumstances - with respect to the financial condition, results of operations and businesses of bp and certain of the plans and objectives of bp with respect to these items. These statements may generally, but not always, be identified by the use of words such as 'will', 'expects', 'is expected to', 'aims', 'should', 'may', 'objective', 'is likely to', 'intends', 'believes', 'anticipates', 'plans', 'we see' or similar expressions.In particular, among other statements, (i) certain statements in the Chair and chief executive officer's letter (pages 4-5), the Strategic report (inside cover and pages 1-76), Additional disclosures (pages 351-378) and Shareholder information (pages 379-388), including but not limited to statements under the headings 'Energy Outlook', 'Our strategy', 'Our business model', 'Progress against our strategy', 'Our financial frame and investor proposition', '2023 guidance' and 'Consistency with the Paris goals' and including but not limited to statements regarding: plans and expectations relating to business, financial performance, results of operations, cash flow, capital expenditure (including total capital expenditure, organic capital expenditure and inorganic capital expenditure) and allocation of capital expenditure; plans and expectations regarding bp's financial frame, working capital, operating cash flows, liquidity, capital discipline, credit rating, future shareholder distributions, amount or timing of payments related to divestment and other proceeds, net debt, gearing and future dividend payments and share buybacks; plans and expectations relating to bp's investment process and capital investment, including future capital investment breakdowns and access to capital; expectations regarding inflation, oil and gas prices, price volatility, refining margins and price assumptions; plans and expectations relating to risk, including risk management processes and climate-related risks plans and expectations regarding bp's transition growth engines, including plans to increase capital investment in these growth engines; plans and expectations regarding bp's oil and gas business, including related investment plans, oil and gas production targets, and divestment plans; plans, expectations regarding underlying replacement cost profit before interest, tax, depreciation and amortization, ROACE, adjusted EBITDA, adjusted EBIDA per share CAGR; plans, expectations and projections regarding bp's oil and gas resources and reserves; expectations regarding earnings from bp's convenience and mobility business; bp's aims related to sustainable aviation fuel; bp's plans and expectations regarding the development of hydrogen, including its production and export; bp's plans and expectations regarding renewable power, including aims to expand wind and solar capacity and expectations related to bp's offshore wind projects and lease options; bp's 2025 targets and 2030 aims relating to resilient hydrocarbons (including upstream unit production costs, upstream production, bp-operated upstream plant reliability, bp-operated refining availability, biofuels production, biogas supply volumes and LNG portfolio), convenience and mobility (including customer touchpoints per day, strategic convenience sites and electric vehicle charge points) and low carbon energy (including net hydrogen production, developed renewables to final investment decision and net installed renewables capacity); plans and expectations in relation to announced acquisitions and divestments including the outcome of any applicable third party approvals and timing of completion; bp's plans and expectations related to climate change, sustainability, greenhouse gas emissions, water use, bp's resilience across different climate scenarios, and bp's decarbonization and net zero aims and targets, its targets related to methane and carbon intensity of bp's products and the transition to a lower carbon economy and energy system; expectations relating to the effects of the Russia-Ukraine war; plans and expectations regarding bp's exit of its shareholding in Rosneft and other investments in Russia; expectations regarding future legislative or regulatory action and its impact on bp, including regulatory action related to climate change and inflation and bp's plans regarding compliance with such actions; plans and expectations regarding bp's workforce including targets related to workforce recruitment, incentives and diversity; expectations regarding the costs of environmental restoration, remediation and abatement programmes; expectations regarding contingent liabilities and legal proceedings and their impact on bp; expectations regarding the future value of assets; plans and expectations regarding projects, joint ventures, partnerships, agreements and memoranda of understanding with governments, commercial entities and other third party partners; expectations regarding legal and trial proceedings, court decisions, potential investigations and civil actions by regulators, government entities and/or other entities or parties, and the timing and potential impact of such proceedings and bp's intentions in respect thereof; plans and expectations regarding relationships with governments, customers, partners, suppliers, communities and key stakeholders; plans and expectations regarding the number of retail sites; expectations regarding upstream reported and underlying production, depreciation, depletion and amortization charges, Gulf of Mexico oil spill payments (pre-tax), other businesses and corporate underlying annual charge, and the effective tax rate and the underlying effective tax rate; plans and expectations regarding the effectiveness of the group's foreign currency exchange risk management, including sources of ineffectiveness; expectations that demand for refined products will remain strong over the remaining useful life of existing assets; expectations that the majority of bp's existing upstream oil and gas properties will start decommissioning within the next two decades; expectations regarding fulfillment of existing delivery commitments for oil and gas; plans and expectations relating to major project start-ups; plans and expectations relating to Launchpad; plans and expectations regarding bp ventures and its investments; plans and expectations relating to bp's refineries, including Solomon refining availability and net cash margins; plans and expectations relating to bp's research and development spend; plans and expectations regarding operations and safety; and (ii) certain statements in Corporate governance (pages 77-111 and 148) and the Directors' remuneration report (pages 112-147) with regard to: the anticipated future composition of the board of directors and the effects thereof; the board's goals and areas of focus, including changes to KPIs and those goals stemming from the board's annual evaluation; plans and expectations relating to the induction and training of new directors; plans and expectations regarding the diversity of the board and senior management; plans and expectations regarding directors' share ownership and remuneration; plans regarding the governance and remuneration processes, including base pay and base salary increases and adjustments, performance share plan, various policies, pension allowances, benefits and bonuses; plans relating to the societies in which bp operates and to maintain a strong reputation globally; and goals, activities and areas of focus of board committees, are all forward-looking in nature.

By their nature, forward-looking statements involve risk and uncertainty because they relate to events and depend on circumstances that will or may occur in the future and are outside the control of bp.

Actual results or outcomes, including the fair value of bp's Rosneft shareholding, may differ materially from those expressed in such statements, depending on a variety of factors, including: the specific factors identified in the discussions accompanying such forward-looking statements; the extent and duration of the impact of current market conditions including the volatility of oil prices; the effects of bp exiting its shareholding in Rosneft and other investments in Russia; the effects of the COVID-19 pandemic and uncertainties about its impact and duration; overall global economic and business conditions impacting bp's business and demand for bp's products; the receipt of relevant third party and/or regulatory approvals; the timing and level of maintenance and/or turnaround activity; the timing and volume of refinery additions and outages; the timing of bringing new projects onstream; the timing, quantum and nature of certain acquisitions and divestments; future levels of industry product supply, demand and pricing, including supply growth in North America; OPEC+ quota restrictions; production-sharing agreements effects; operational and safety problems; potential lapses in product quality; economic and financial market conditions generally or in various countries and regions; political stability and economic growth in relevant areas of the world; changes in laws and governmental regulations and policies, including related to climate change; changes in social attitudes and customer preferences; regulatory or legal actions including the types of enforcement action pursued and the nature of remedies sought or imposed; the actions of prosecutors, regulatory authorities and courts; delays in the processes for resolving claims; amounts ultimately determined to be payable and the timing of payments relating to the Gulf of Mexico oil spill; exchange rate fluctuations; development and use of new technology; recruitment and retention of a skilled workforce; the success or otherwise of partnering; the actions of competitors, trading partners, contractors, subcontractors, creditors, rating agencies and others; bp's access to future credit resources; business disruption and crisis management; the impact on bp's reputation of ethical misconduct and noncompliance with regulatory obligations; trading losses; major uninsured losses; the possibility that international sanctions or other steps or actions taken by any competent authorities or any other relevant persons may impact bp's interests in Russia including bp's ability to sell its interests in Rosneft, or the price for which bp could sell such interests; decisions by Rosneft's management and board of directors; the actions of contractors; natural disasters and adverse weather conditions; changes in public expectations and other changes to business conditions; public health situations (including an outbreak of an epidemic or pandemic); wars and acts of terrorism; cyberattacks or sabotage; and other factors discussed elsewhere in this report including under Risk factors (pages 73-75). In addition to factors set forth elsewhere in this report, those set out above are important factors, although not exhaustive, that may cause actual results and developments to differ materially from those expressed or implied by these forward-looking statements.

## Statements regarding competitive position

Statements referring to bp's competitive position are based on the company's belief and, in some cases, rely on a range of sources, including investment analysts' reports, independent market studies and bp's internal assessments of the relevant market based on publicly available information about the financial results and performance of market participants.

## Shareholder information

## Share prices and listings

### Markets and market prices

The primary market for the company's ordinary shares (trading symbol 'BP.'), 8% cumulative first preference shares (trading symbol 'BP.A') and 9% cumulative second preference shares (trading symbol 'BP.B') is the London Stock Exchange (LSE). The company's ordinary shares are a constituent element of the Financial Times Stock Exchange 100 Index.

In the US, the company's securities are listed and traded on the New York Stock Exchange (NYSE) in the form of ADSs (trading symbol 'BP'), for which JPMorgan Chase Bank, N.A. is the depositary (the Depositary) and transfer agent. The Depositary's principal office is 383 Madison Avenue, Floor 11, New York, NY, 10179, US. Each ADS represents six ordinary shares. ADSs are evidenced by American depositary receipts (ADRs), which may be issued in either certificated or book entry form.

The company's ordinary shares are also traded in the form of a global depositary certificate representing the company's ordinary shares on the Frankfurt, Hamburg and Dusseldorf Stock Exchanges.

On 17 February 2023, 760,485,699 ADSs (equivalent to approximately 4,562,914,194 ordinary shares or some 25.28% of the total issued share capital, excluding shares held in treasury) were outstanding and were held by approximately 66,677 ADS holders. Of these, about 65,925 had registered addresses in the US at that date. One of the registered holders of ADSs represents approximately 1,325,215 underlying holders.

On 17 February 2023, there were approximately 207,383 ordinary shareholders. Of these shareholders, around 1,515 had registered addresses in the US and held a total of some 4,159,804 ordinary shares.

Since a number of the ordinary shares and ADSs were held by brokers and other nominees, the number of holders in the US may not be representative of the number of beneficial holders or their respective country of residence.

## Dividends

The company's current policy is to pay interim dividends on a quarterly basis on its ordinary shares.

Its policy is also to announce dividends for ordinary shares in US dollars and state an equivalent sterling dividend. Dividends on the company's ordinary shares will be paid in sterling and on the company's ADSs in US dollars. The rate of exchange used to determine the sterling amount equivalent is the average of the market exchange rates in London over the three business days prior to the sterling equivalent announcement date. The directors may choose to declare dividends in any currency provided that a sterling equivalent is announced. It is not the company's intention to change its current policy of announcing dividends on ordinary shares in US dollars.

Information regarding dividends announced and paid by the company on ordinary shares and preference shares is provided in the consolidated Financial statements – Note 10.

A Scrip Dividend Programme (Scrip Programme) was approved by shareholders in 2010 and was renewed for a further three years at the 2021 AGM. It enabled the company's ordinary shareholders and ADS holders to elect to receive dividends by way of new fully paid ordinary shares (or ADSs in the case of ADS holders) instead of cash. The operation of the Scrip Programme is always subject to the directors' decision to make the Scrip Programme offer available in respect of any particular dividend.

The company announced on 29 October 2019 and as part of all subsequent quarterly results announcements made since, that the board had suspended the Scrip Programme in respect of those quarterly dividends. The company does not expect to offer a scrip election for the foreseeable future. Ordinary shareholders and ADS holders (subject to certain exceptions) may be able to participate in dividend reinvestment plans. Any decisions with respect to future dividends will be made by the board of BP p.l.c. following the end of each quarter.

Future dividends will be dependent on future earnings, the financial condition of the group, the Risk factors set out on page 73 and other matters that may affect the business of the group set out in Our strategy on page 10 and in Liquidity and capital resources on page 356.

The following table shows dividends announced and paid by the company per ADS for the past five years.

| Dividends per ADS[a] | | March | June | September | December | Total |
|---|---|---|---|---|---|---|
| 2018 | UK pence | 43.01 | 44.66 | 47.58 | 48.15 | 183.40 |
| | US cents | 60.00 | 60.00 | 61.50 | 61.50 | 243.00 |
| 2019 | UK pence | 46.43 | 48.39 | 50.09 | 46.95 | 191.86 |
| | US cents | 61.50 | 61.50 | 61.50 | 61.50 | 246.00 |
| 2020 | UK pence | 48.94 | 50.05 | 24.26 | 23.50 | 146.75 |
| | US cents | 63.00 | 63.00 | 31.50 | 31.50 | 189.00 |
| 2021 | UK pence | 22.61 | 22.27 | 23.72 | 24.63 | 92.23 |
| | US cents | 31.50 | 31.50 | 32.76 | 32.76 | 128.52 |
| 2022 | **UK pence** | **24.96** | **26.13** | **31.01** | **29.64** | **111.74** |
| | **US cents** | **32.76** | **32.76** | **36.04** | **36.04** | **137.60** |

a Dividends announced and paid by the company on ordinary and preference shares are provided in the consolidated Financial statements – Note 10.

There are currently no UK foreign exchange controls or restrictions on remittances of dividends on the ordinary shares or on the conduct of the company's operations, other than restrictions applicable to certain countries and persons subject to EU economic sanctions or those sanctions adopted by the UK government which implement resolutions of the Security Council of the United Nations.

## Shareholder taxation information

This section describes the material US federal income tax and UK taxation consequences of owning ordinary shares or ADSs to a US holder who holds the ordinary shares or ADSs as capital assets for tax purposes. This section does not discuss tax consequences arising under the Medicare contribution tax on net investment income or the alternative minimum tax. It also does not apply inter alia to members of special classes of holders some of which may be subject to other rules, including: tax-exempt entities, life insurance companies, dealers in securities, traders in securities that elect a mark-to-market method of accounting for securities holdings, holders that, directly or indirectly, hold 10% or more of the company's shares (as measured by voting power or value), holders that hold the shares or ADSs as part of a straddle or a hedging or conversion transaction, holders that purchase or sell the shares or ADSs as part of a wash sale for US federal income tax purposes, or holders whose functional currency is not the US dollar. In addition, if a partnership holds the shares or ADSs, the US federal income tax treatment of a partner will generally depend on the status of the partner and the tax treatment of the partnership and may not be described fully below.

A US holder is any beneficial owner of ordinary shares or ADSs that is for US federal income tax purposes (1) a citizen or resident of the US, (2) a US domestic corporation, (3) an estate whose income is subject to US federal income taxation regardless of its source, or (4) a trust if a US court can exercise primary supervision over the trust's administration and one or more US persons are authorized to control all substantial decisions of the trust.

This section is based on the tax laws of the United States, including the Internal Revenue Code of 1986, as amended, its legislative history, existing and proposed US Treasury regulations thereunder, published rulings and court decisions, and the taxation laws of the UK, all as currently in effect, as well as the income tax convention between the US and the UK that entered into force on 31 March 2003 (the 'Treaty'). These laws are subject to change, possibly on a retroactive basis. This section further assumes that each obligation under the terms of the deposit agreement relating to bp ADSs and any related agreement will be performed in accordance with its terms.

For purposes of the Treaty and the estate and gift tax Convention (the 'Estate Tax Convention') and for US federal income tax and UK taxation purposes, a holder of ADRs evidencing ADSs will be treated as the owner of the company's ordinary shares represented by those ADRs. Exchanges of ordinary shares for ADRs and ADRs for ordinary shares generally will not be subject to US federal income tax or to UK taxation other than stamp duty or stamp duty reserve tax, as described below.

Investors should consult their own tax adviser regarding the US federal, state and local, UK and other tax consequences of owning and disposing of ordinary shares and ADSs in their particular circumstances, and in particular whether they are eligible for the benefits of the Treaty in respect of their investment in the shares or ADSs.

## Taxation of dividends

### UK taxation

Under current UK taxation law, no withholding tax will be deducted from dividends paid by the company, including dividends paid to US holders. A shareholder that is a company resident for tax purposes in the UK or trading in the UK through a permanent establishment generally will not be taxable in the UK on a dividend it receives from the company. A shareholder who is an individual resident for tax purposes in the UK is subject to UK tax on dividends received from the company, including dividends received under the dividend reinvestment plan (DRIP) for ordinary shareholders, that are in excess of the annual dividend allowance.

For 2022/23 the dividend allowance is £2,000 which means there is no UK tax due on the first £2,000 of dividends received. Dividends above this level are subject to tax at 8.75% for basic tax payers, 33.75% for higher rate tax payers and 39.35% for additional rate tax payers.

Although the first £2,000 of dividend income is not subject to UK income tax, it does not reduce the total income for tax purposes. Dividends within the dividend allowance still count towards basic or higher rate bands, and may therefore affect the rate of tax paid on dividends received in excess of the £2,000 allowance. For instance, if an individual has an annual gross salary of £50,000 and also receives a dividend of £12,000 they will be subject to the following scenario. The individual's personal allowance and the basic rate tax band will be used up by the gross salary. The remaining part of the salary and the whole of the dividend will be subject to tax at the higher rate, although the dividend allowance will reduce the amount of dividend subject to tax. The dividend of £12,000 will be reduced by the dividend allowance of £2,000 leaving taxable dividend income of £10,000. The dividend will be taxed at 33.75% so that the total tax payable on the dividends is £3,375.

How the shareholder pays the tax arising on the dividend income depends on the amount of dividend income and salary they receive in the tax year. If less than £2,000 they will not need to report anything or pay any tax. If between £2,000 and £10,000, the shareholder can pay what they owe by: contacting the HMRC helpline; asking HMRC to change their tax code – the tax will be taken from their wages or pension or through completion of the 'Dividends' section of their self-assessment tax return, where one is already being filed. If over £10,000 they will be required to file a self-assessment tax return and should complete the 'Dividends' section with details of the amounts received.

### US federal income taxation

A US holder is subject to US federal income taxation on the gross amount of any dividend paid by the company (including dividends paid but reinvested received under the Global Invest Direct (GID) Dividend Reinvestment Plan for ADS holders) out of its current or accumulated earnings and profits (as determined for US federal income tax purposes). Dividends paid to a non-corporate US holder that constitute qualified dividend income will be taxable to the holder at a preferential rate, provided that the holder has a holding period in the ordinary shares or ADSs of more than 60 days during the 121-day period beginning 60 days before the ex-dividend date and meets other holding period requirements. Dividends paid by the company with respect to the ordinary shares or ADSs will generally be qualified dividend income.

For US federal income tax purposes, a dividend must be included in income when the US holder, in the case of ordinary shares, or the Depositary, in the case of ADSs, actually or constructively receives the dividend and will not be eligible for the dividends-received deduction generally allowed to US corporations in respect of dividends received from other US corporations. US ADS holders should consult their own tax adviser regarding the US tax treatment of the dividend fee in respect of dividends. Dividends will be income from sources outside the US and generally will be 'passive category income' for purposes of computing a US holder's foreign tax credit limitation.

As noted above in UK taxation, a US holder will not be subject to UK withholding tax. Accordingly, the receipt of a dividend will not entitle the US holder to a foreign tax credit.

The amount of the dividend distribution on the ordinary shares that is paid in pounds sterling will be the US dollar value of the pounds sterling payments made, determined at the spot pounds sterling/US dollar rate on the date the dividend is distributed, regardless of whether the payment is, in fact, converted into US dollars. Generally, any gain or loss resulting from currency exchange fluctuations during the period from the date the pounds sterling dividend payment is distributed to the date the payment is converted into US dollars will be treated as ordinary income or loss and will not be eligible for the preferential tax rate on qualified dividend income. The gain or loss generally will be income or loss from sources within the US for foreign tax credit limitation purposes.

Distributions in excess of the company's earnings and profits, as determined for US federal income tax purposes, will be treated as a return of capital to the extent of the US holder's basis in the ordinary shares or ADSs and thereafter as capital gain, subject to taxation as described in Taxation of capital gains – US federal income taxation section below.

In addition, the taxation of dividends may be subject to the rules for passive foreign investment companies (PFIC), described below under 'Taxation of capital gains – US federal income taxation'. Distributions made by a PFIC do not constitute qualified dividend income and are not eligible for the preferential tax rate applicable to such income.

## Taxation of capital gains

### UK taxation

A US holder may be liable for both UK and US tax in respect of a gain on the disposal of ordinary shares or ADSs if the US holder is (1) resident for tax purposes in the UK at the date of disposal, (2) if he or she has left the UK for a period not exceeding five complete tax years between the year of departure from and the year of return to the UK and acquired the shares before leaving the UK and was resident in the UK in the previous four out of seven tax years before the year of departure, (3) a US domestic corporation resident in the UK by reason of its business being managed or controlled in the UK or (4) a citizen of the US that carries on a trade or profession or vocation in the UK through a branch or agency or a corporation that carries on a trade, profession or vocation in the UK, through a permanent establishment, and that has used, held, or acquired the ordinary shares or ADSs for the purposes of such trade, profession or vocation of such branch, agency or permanent establishment. However, such persons may be entitled to a tax credit against their US federal income tax liability for the amount of UK capital gains tax or UK corporation tax on chargeable gains (as the case may be) that is paid in respect of such gain.

Under the Treaty, capital gains on dispositions of ordinary shares or ADSs generally will be subject to tax only in the jurisdiction of residence of the relevant holder as determined under both the laws of the UK and the US and as required by the terms of the Treaty.

Under the Treaty, individuals who are residents of either the UK or the US and who have been residents of the other jurisdiction (the US or the UK, as the case may be) at any time during the six years immediately preceding the relevant disposal of ordinary shares or ADSs may be subject to tax with respect to capital gains arising from a disposition of ordinary shares or ADSs of the company not only in the jurisdiction of which the holder is resident at the time of the disposition but also in the other jurisdiction.

For gains on or after 23 June 2010, the UK Capital Gains Tax rate will be dependent on the level of an individual's taxable income. Where total taxable income and gains after all allowable deductions are less than the upper limit of the basic rate income tax band of £37,700 (for 2022/23), the rate of Capital Gains Tax will be 10%. For gains (and any parts of gains) above that limit the rate will be 20%.

From 6 April 2008, entitlement to the annual exemption is based on an individual's circumstances (taking into account Domicile status, remittance basis of taxation and number of years in the UK). For individuals who are entitled to the exemption for 2022/23, this has been set at £12,300. Corporation tax on chargeable gains is levied at 25 per cent for companies from 1 April 2023.

★ See glossary on page 389

### US federal income taxation

A US holder who sells or otherwise disposes of ordinary shares or ADSs will recognize a capital gain or loss for US federal income tax purposes equal to the difference between the US dollar value of the amount realized on the disposition and the US holder's tax basis, determined in US dollars, in the ordinary shares or ADSs. Any such capital gain or loss generally will be long-term gain or loss, subject to tax at a preferential rate for a non-corporate US holder, if the US holder's holding period for such ordinary shares or ADSs exceeds one year. The tax basis of shares acquired through reinvested dividends under the GID Dividend Reinvestment Plan for ADS holders) is equal to the fair market value of the stock on the investment date. The holding period for shares acquired under the plan begins the day after the applicable investment date.

Gain or loss from the sale or other disposition of ordinary shares or ADSs will generally be income or loss from sources within the US for foreign tax credit limitation purposes. The deductibility of capital losses is subject to limitations.

We do not believe that ordinary shares or ADSs will be treated as stock of a passive foreign investment company (PFIC) for US federal income tax purposes, but this conclusion is a factual determination that is made annually and thus is subject to change. If we are treated as a PFIC, unless a US holder elects to be taxed annually on a mark-to-market basis with respect to ordinary shares or ADSs, any gain realized on the sale or other disposition of ordinary shares or ADSs would in general not be treated as capital gain. Instead, a US holder would be treated as if he or she had realized such gain rateably over the holding period for ordinary shares or ADSs and would be taxed at the highest tax rate in effect for each such year to which the gain was allocated, in addition to which an interest charge in respect of the tax attributable to each such year would apply. Certain 'excess distributions' would be similarly treated if we were treated as a PFIC.

## Additional tax considerations

### Scrip Programme

Until the publication of the 2019 third quarter results, the company had an optional Scrip Programme, wherein holders of bp ordinary shares or ADSs could elect to receive any dividends in the form of new fully paid ordinary shares or ADSs of the company instead of cash. Please consult your tax adviser for the consequences to you.

### UK inheritance tax

The Estate Tax Convention applies to inheritance tax. ADSs held by an individual who is domiciled for the purposes of the Estate Tax Convention in the US and is not for the purposes of the Estate Tax Convention a national of the UK will not be subject to UK inheritance tax on the individual's death or on transfer during the individual's lifetime unless, among other things, the ADSs are part of the business property of a permanent establishment situated in the UK used for the performance of independent personal services. In the exceptional case where ADSs are subject to both inheritance tax and US federal gift or estate tax, the Estate Tax Convention generally provides for tax payable in the US to be credited against tax payable in the UK or for tax paid in the UK to be credited against tax payable in the US, based on priority rules set forth in the Estate Tax Convention.

### UK stamp duty and stamp duty reserve tax

The statements below relate to what is understood to be the current practice of HM Revenue & Customs in the UK under existing law.

Provided that any instrument of transfer is not executed in the UK and remains at all times outside the UK and the transfer does not relate to any matter or thing done or to be done in the UK, no UK stamp duty is payable on the acquisition or transfer of ADSs. Neither will an agreement to transfer ADSs in the form of ADRs give rise to a liability to stamp duty reserve tax.

Purchases of ordinary shares, as opposed to ADSs, through the CREST system of paperless share transfers will be subject to stamp duty reserve tax at 0.5%. The charge will arise as soon as there is an agreement for the transfer of the shares (or, in the case of a conditional agreement, when the condition is fulfilled). The stamp duty reserve tax will apply to agreements to transfer ordinary shares even if the agreement is made outside the UK between two non-residents. Purchases of ordinary shares outside the CREST system are subject either to stamp duty at a rate of £5 per £1,000 (or part, unless the stamp duty is less than £5, when no stamp duty is charged), or stamp duty reserve tax at 0.5%. Stamp duty and stamp duty reserve tax are generally the liability of the purchaser.

A subsequent transfer of ordinary shares to the Depositary's nominee will give rise to further stamp duty at the rate of £1.50 per £100 (or part) or stamp duty reserve tax at the rate of 1.5% of the value of the ordinary shares at the time of the transfer. For ADR holders electing to receive ADSs instead of cash, after the 2012 first quarter dividend payment, HM Revenue & Customs no longer seeks to impose 1.5% stamp duty reserve tax on issues of UK shares and securities to non-EU clearance services and depositary receipt systems.

## Major shareholders

The disclosure of certain major and significant shareholdings in the share capital of the company is governed by the Companies Act 2006, the UK Financial Conduct Authority's Disclosure Guidance and Transparency Rules (DTR) and the US Securities Exchange Act of 1934.

Register of members holding bp ordinary shares as at 31 December 2022

| Range of holdings | Number of ordinary shareholders | Percentage of total ordinary shareholders | Percentage of total ordinary share capital excluding shares held in treasury |
|---|---|---|---|
| 1-200 | 51,663 | 24.75 | 0.01 |
| 201-1,000 | 69,447 | 33.27 | 0.21 |
| 1,001-10,000 | 76,473 | 36.63 | 1.35 |
| 10,001-100,000 | 9,695 | 4.64 | 1.12 |
| 100,001-1,000,000 | 832 | 0.40 | 1.67 |
| Over 1,000,000[a] | 636 | 0.31 | 95.64 |
| Totals | 208,746 | 100.00 | 100.00 |

a Includes JPMorgan Chase Bank, N.A. holding 25.26% of the total ordinary issued share capital (excluding shares held in treasury) as the approved depositary for ADSs, a breakdown of which is shown in the table below.

Register of holders of American depositary shares (ADSs) as at 31 December 2022[a]

| Range of holdings | Number of ADS holders | Percentage of total ADS holders | Percentage of total ADSs |
|---|---|---|---|
| 1-200 | 40,163 | 59.57 | 0.28 |
| 201-1,000 | 17,720 | 26.28 | 1.10 |
| 1,001-10,000 | 9,182 | 13.62 | 3.08 |
| 10,001-100,000 | 349 | 0.52 | 0.74 |
| 100,001-1,000,000 | 5 | 0.01 | 0.11 |
| Over 1,000,000[b] | 2 | 0.00 | 94.69 |
| Totals | 67,421 | 100.00 | 100.00 |

a One ADS represents six 25 cent ordinary shares.
b One holder of ADSs represents 1,342,043 approx. underlying shareholders.

As at 31 December 2022 there were also 1,122 preference shareholders. Preference shareholders represented 0.47% and ordinary shareholders represented 99.53% of the total issued nominal share capital of the company (excluding shares held in treasury) as at that date.

As at 17 February 2023, the total preference shares in issue comprised only 0.47% of the company's total issued nominal share capital (excluding shares held in treasury), the rest being ordinary shares.

### Substantial shareholders

The following table shows holdings of 3% or more voting rights in ordinary shares of 25 cents in BP p.l.c. as per the most recent notification of each respective holder to bp under DTR 5. The percentage of voting rights detailed below was calculated as at the date of the relevant disclosures.

| | As at 31 December 2022 | | As at 17 February 2023 | |
|---|---|---|---|---|
| | Number of voting rights | Percentage of capital | Number of voting rights | Percentage of capita |
| BlackRock, Inc. | 1,504,412,502 | 7.37 | 1,504,412,502 | 7.37 |
| Norges Bank | 578,458,498 | 2.97 | 545,382,375 | 3.02 |

There are no current disclosable interests in holdings of 3% or more voting rights in 8% cumulative first preference shares of £1 each and 9% cumulative second preference shares of £1 each.

### Largest registered shareholders

Under the US Securities Exchange Act of 1934 bp is aware of the following interests as at 17 February 2023.

Ordinary shares of $0.25 in BP p.l.c.:

| Holder | Holding of ordinary shares | Percentage of ordinary share capital excluding shares held in treasury |
|---|---|---|
| JPMorgan Chase Bank N.A., depositary for ADSs, through its nominee Guaranty Nominees Limited | 4,562,914,195 | 25.28 |
| BlackRock, Inc. | 1,849,825,380 | 10.25 |
| The Vanguard Group, Inc | 782,245,186 | 4.33 |
| Norges Bank | 559,049,264 | 3.10 |

8% cumulative first preference shares of £1 each in BP p.l.c.:

| Holder | Holding of 8% cumulative first preference shares | Percentage of class |
|---|---|---|
| The National Farmers Union Mutual Insurance Society Limited | 945,000 | 13.07 |
| Hargreaves Lansdown Asset Management Limited | 786,496 | 10.87 |
| Interactive Investor Share Dealing Services | 741,210 | 10.25 |
| BlackRock, Inc. | 528,150 | 7.30 |
| Barclays, Plc. | 520,672 | 7.20 |
| Halifax Share Dealing Services | 455,739 | 6.30 |
| Canaccord Genuity Group Inc. | 429,585 | 5.94 |

9% cumulative second preference shares of £1 each in BP p.l.c.:

| Holder | Holding of 9% cumulative second preference shares | Percentage of class |
|---|---|---|
| The National Farmers Union Mutual Insurance Society Limited | 987,000 | 18.03 % |
| BlackRock, Inc. | 644,450 | 11.77 % |
| Hargreaves Lansdown Asset Management Limited | 387,320 | 7.08 % |
| Canaccord Genuity Group Inc. | 351,605 | 6.42 % |
| Safra Group | 347,500 | 6.35 % |
| Interactive Investor Share Dealing Services | 341,565 | 6.24 % |

The company's major shareholders' voting rights may differ to their total interest and can be found under the substantial shareholders heading above where voting rights are over 3%.

## Annual general meeting

The 2023 AGM is scheduled to be held on Thursday 27 April 2023 at 1:00pm BST. A separate notice convening the meeting is distributed to shareholders, which includes an explanation of the items of business to be considered at the meeting.

All resolutions for which notice has been given will be decided on a poll. Deloitte LLP have expressed their willingness to continue in office as auditors and a resolution for their reappointment is included in the *Notice of bp Annual General Meeting 2023*.

## Memorandum and Articles of Association

The following summarizes certain provisions of the company's Memorandum and Articles of Association and applicable English law. This summary is qualified in its entirety by reference to the UK Companies Act 2006 (the Act) and the company's Memorandum and Articles of Association. The Memorandum and Articles of Association are available online at *bp.com/usefuldocs*.

The company's Articles of Association may be amended by a special resolution at a general meeting of the shareholders. At the annual general meeting (AGM) held on 21 May 2018 shareholders voted to adopt new Articles of Association to reflect developments in market practice and to provide clarification and additional flexibility where necessary or appropriate.

### Objects and purposes

BP p.l.c. is a public company limited by shares and registered in England and Wales with the registered number 102498. The provisions regulating the operations of the company, known as its 'objects', were historically stated in a company's memorandum. The Act abolished the need to have object provisions and so at the AGM held on 15 April 2010 shareholders approved the removal of its objects clause together with all other provisions of its Memorandum that, by virtue of the Act, are treated as forming part of the company's Articles of Association.

### Directors and secretary

The business and affairs of the company shall be managed by the directors. The company's Articles of Association provide that any person may be appointed by the existing directors or by the shareholders in a general meeting either as a replacement for another director or as an additional director. Any person appointed by the directors will hold office only until the next general meeting, notice of which is first given after their appointment and will then be eligible for re-election by the shareholders. A director may be removed by the company as provided for by applicable law and shall vacate office in certain circumstances as set out in the Articles of Association. In addition, the company may, by special resolution, remove a director before the expiration of his/her period of office and, subject to the Articles of Association, may by ordinary resolution appoint another person to be a director instead. There is no requirement for a director to retire on reaching any age.

The Articles of Association place a general prohibition on a director voting in respect of any contract or arrangement in which the director has a material interest other than by virtue of such director's interest in shares in the company. However, in the absence of some other material interest not indicated below, a director is entitled to vote and to be counted in a quorum for the purpose of any vote relating to a resolution concerning the following matters:

- The giving of security or indemnity with respect to any money lent or obligation taken by the director at the request or benefit of the company or any of its subsidiary undertakings.
- The giving of security or indemnity to a third party with respect to any debt or obligation of the company or any of its subsidiary undertakings for which the director has assumed responsibility.
- Any proposal in which the director is interested, concerning the underwriting of company securities or debentures or the giving of any security to a third party for a debt or obligation of the company or any of its subsidiary undertakings.
- Any proposal concerning any other company in which the director is interested, directly or indirectly (whether as an officer or shareholder or otherwise) provided that the director and persons connected with such director are not the holder or holders of 1% or more of the voting interest in the shares of such company.
- Any proposal concerning the purchase or maintenance of any insurance policy under which the director may benefit.
- Any proposal concerning the giving to the director of any other indemnity which is on substantially the same terms as indemnities given or to be given to all of the other directors or to the funding by the company of his expenditure on defending proceedings or the doing by the company of anything to enable the director to avoid incurring such expenditure where all other directors have been given or are to be given substantially the same arrangements.

- Any proposal concerning an arrangement for the benefit of the employees and directors or former employees and former directors of the company or any of its subsidiary undertakings, including but without being limited to a retirement benefits scheme and an employees' share scheme, which does not accord to any director any privilege or advantage not generally accorded to the employees or former employees to whom the arrangement relates.

The Act requires a director of a company who is in any way interested in a contract or proposed contract with the company to declare the nature of the director's interest at a meeting of the directors of the company. The definition of 'interest' includes the interests of spouses, children, companies and trusts. The Act also requires that a director must avoid a situation where a director has, or could have, a direct or indirect interest that conflicts, or possibly may conflict, with the company's interests. The Act allows directors of public companies to authorize such conflicts where appropriate, if a company's Articles of Association so permit. The company's Articles of Association permit the authorization of such conflicts. The directors may exercise all the powers of the company to borrow money, except that the amount remaining undischarged of all moneys borrowed by the company shall not, without approval of the shareholders, exceed two times the amount paid up on the share capital plus the aggregate of the amount of the capital and revenue reserves of the company and its subsidiary undertakings incorporated in the UK. Variation of the borrowing power of the board may only be affected by amending the Articles of Association.

Remuneration of non-executive directors shall be determined in the aggregate by resolution of the shareholders. Remuneration of executive directors is determined by the remuneration committee. This committee is made up of non-executive directors only. There is no requirement of share ownership for a director's qualification.

The Articles of Association provide entitlement to the directors' pensions and death and disability benefits to the directors' relations and dependants respectively.

The circumstances in which a director's office will automatically terminate include, amongst others: when a director ceases to hold an executive office of the company and the directors resolve that they should cease to be a director; if a medical practitioner provides an opinion that a director has become incapable of acting as a director and may remain so incapable for more than a further three months and the directors resolve that they should cease to be a director; and if all of the other directors vote in favour of a resolution stating that the person should cease to be a director.

The company secretary has express powers to delegate any of the powers or discretions conferred on him or her.

### Dividend rights; other rights to share in company profits; capital calls

Shareholders of the company may, by resolution, declare dividends but no such dividend may be declared in excess of the amount recommended by the directors. The directors may also pay interim dividends without obtaining shareholder approval. No dividend may be paid other than out of profits available for distribution, as determined under IFRS and the Act. Dividends on ordinary shares are payable only after payment of dividends on bp preference shares. Any dividend unclaimed after a period of 10 years from the date of declaration of such dividend shall be forfeited and reverts to bp. If the company exercises its right to forfeit shares and sells shares belonging to an untraced shareholder then any entitlement to claim dividends or other monies unclaimed in respect of those shares will be for a period of 12 months after the sale. The company may take such steps as the directors decide are appropriate in the circumstances to trace the member entitled and the sale may be made at such time and on such terms as the directors may decide.

The directors have the power to declare and pay dividends in any currency provided that a sterling equivalent is announced. It is not the company's intention to change its current policy of paying dividends in US dollars. At the company's AGM held on 15 April 2010, shareholders approved the introduction of a Scrip Dividend Programme (Scrip Programme) and to include provisions in the Articles of Association to enable the company to operate the Scrip Programme. The Scrip Programme was renewed at the company's AGM held on 12 May 2021 for a further three years. The Scrip Programme enables ordinary shareholders and bp ADS holders to elect to receive new fully paid ordinary shares (or bp ADSs in the case of bp ADS holders) instead of cash. The operation of the Scrip Programme is always subject to the directors' decision to make the scrip offer available in respect of any particular dividend. Should the directors decide not to offer the scrip in respect of any particular dividend, cash will automatically be paid instead. The directors may determine in relation to any scrip dividend plan or programme how the costs of the programme will be met, the minimum number of ordinary shares required in order to be able to participate in the programme and any arrangements to deal with legal and practical difficulties in any particular territory.

Apart from shareholders' rights to share in bp's profits by dividend (if any is declared or announced), the Articles of Association provide that the directors may set aside:

- A special reserve fund out of the balance of profits each year to make up any deficit of cumulative dividend on the bp preference shares.
- A general reserve out of the balance of profits each year, which shall be applicable for any purpose to which the profits of the company may properly be applied. This may include capitalization of such sum, pursuant to an ordinary shareholders' resolution, and distribution to shareholders as if it were distributed by way of a dividend on the ordinary shares or in paying up in full unissued ordinary shares for allotment and distribution as bonus shares.

Any such sums so deposited may be distributed in accordance with the manner of distribution of dividends as described above.

Holders of shares are not subject to calls on capital by the company, provided that the amounts required to be paid on issue have been paid off. All shares are fully paid.

## Share transfers and share certificates

The directors may permit transfers to be effected other than by an instrument in writing. Share certificates will not be required to be issued by the company if they are not required by law.

The company may charge an administrative fee in the event that a shareholder wishes to replace two or more certificates representing shares with a single certificate or wishes to surrender a single certificate and replace it with two or more certificates. All certificates are sent at the member's risk.

## Voting rights

The Articles of Association of the company provide that voting on resolutions at a shareholders' meeting will be decided on a poll other than resolutions of a procedural nature, which may be decided on a show of hands. If voting is on a poll, every shareholder who is present in person or by proxy has one vote for every ordinary share held and two votes for every £5 in nominal amount of bp preference shares held. If voting is on a show of hands, each shareholder who is present at the meeting in person or whose duly appointed proxy is present in person will have one vote, regardless of the number of shares held, unless a poll is requested.

Shareholders do not have cumulative voting rights.

For the purposes of determining which persons are entitled to attend or vote at a shareholders' meeting and how many votes such persons may cast, the company may specify in the notice of the meeting a time, not more than 48 hours before the time of the meeting, by which a person who holds shares in registered form must be entered on the company's register of members in order to have the right to attend or vote at the meeting or to appoint a proxy to do so.

Holders on record of ordinary shares may appoint a proxy, including a beneficial owner of those shares, to attend, speak and vote on their behalf at any shareholders' meeting, provided that a duly completed proxy form is received not less than 48 hours (or such shorter time as the directors may determine) before the time of the meeting or adjourned meeting or, where the poll is to be taken after the date of the meeting, not less than 24 hours (or such shorter time as the directors may determine) before the time of the poll.

Record holders of bp ADSs are also entitled to attend, speak and vote at any shareholders' meeting of the company by the appointment by the approved depositary, JPMorgan Chase Bank N.A., of them as proxies in respect of the ordinary shares represented by their ADSs. Each such proxy may also appoint a proxy. Alternatively, holders of bp ADSs are entitled to vote by supplying their voting instructions to the Depositary, who will vote the ordinary shares represented by their ADSs in accordance with their instructions.

Proxies may be delivered electronically.

Corporations who are members of the company may appoint one or more persons to act as their representative or representatives at any shareholders' meeting provided that the company may require a corporate representative to produce a certified copy of the resolution appointing them before they are permitted to exercise their powers.

Matters are transacted at shareholders' meetings by the proposing and passing of resolutions, of which there are two types: ordinary or special.

An ordinary resolution requires the affirmative vote of a majority of the votes of those persons voting at a meeting at which there is a quorum. A special resolution requires the affirmative vote of not less than three quarters of the persons voting at a meeting at which there is a quorum. Any AGM requires 21 clear days' notice. The notice period for any other general meeting is 14 clear days subject to the company obtaining annual shareholder approval, failing which, a 21 clear day notice period will apply.

## Liquidation rights; redemption provisions

In the event of a liquidation of bp, after payment of all liabilities and applicable deductions under UK laws and subject to the payment of secured creditors, the holders of bp preference shares would be entitled to the sum of (1) the capital paid up on such shares plus, (2) accrued and unpaid dividends and (3) a premium equal to the higher of (a) 10% of the capital paid up on the bp preference shares and (b) the excess of the average market price over par value of such shares on the LSE during the previous six months. The remaining assets (if any) would be divided pro rata among the holders of ordinary shares.

Without prejudice to any special rights previously conferred on the holders of any class of shares, bp may issue any share with such preferred, deferred or other special rights, or subject to such restrictions as the shareholders by resolution determine (or, in the absence of any such resolutions, by determination of the directors), and may issue shares that are to be or may be redeemed.

## Variation of rights

The rights attached to any class of shares may be varied with the consent in writing of holders of 75% of the shares of that class or on the adoption of a special resolution passed at a separate meeting of the holders of the shares of that class. At every such separate meeting, all of the provisions of the Articles of Association relating to proceedings at a general meeting apply, except that the quorum with respect to a meeting to change the rights attached to the preference shares is 10% or more of the shares of that class, and the quorum to change the rights attached to the ordinary shares is one third or more of the shares of that class.

## Shareholders' meetings and notices

Shareholders must provide bp with a postal or electronic address in the UK to be entitled to receive notice of shareholders' meetings. Holders of bp ADSs are entitled to receive notices under the terms of the deposit agreement relating to bp ADSs. The substance and timing of notices are described above under the heading Voting rights.

Under the Act, the AGM of shareholders must be held once every year, within each six-month period beginning with the day following the company's accounting reference date. All general meetings shall be held at a time and place determined by the directors. If any shareholders' meeting is adjourned for lack of quorum, notice of the time and place of the adjourned meeting may be given in any lawful manner, including electronically. Powers exist for action to be taken either before or at the meeting by authorized officers to ensure its orderly conduct and safety of those attending.

The directors have power to convene a general meeting which is a hybrid meeting, that is to provide facilities for shareholders to attend a meeting which is being held at a physical place by electronic means as well (but not to convene a purely electronic meeting).

The provisions of the Articles of Association in relation to satellite meetings permit facilities being provided by electronic means to allow those persons at each place to participate in the meeting.

## Limitations on voting and shareholding

There are no limitations, either under the laws of the UK or under the company's Articles of Association, restricting the right of non-resident or foreign owners to hold or vote bp ordinary or preference shares in the company other than limitations that would generally apply to all of the shareholders and limitations applicable to certain countries and persons subject to EU economic sanctions or those sanctions adopted by the UK government which implement resolutions of the Security Council of the United Nations.

## Disclosure of interests in shares

The Act permits a public company to give notice to any person whom the company believes to be or, at any time during the three years prior to the issue of the notice, to have been interested in its voting shares requiring them to disclose certain information with respect to those interests. Failure to supply the information required may lead to disenfranchisement of the relevant shares and a prohibition on their transfer and receipt of dividends and other payments in respect of those shares and any new shares in the company issued in respect of those shares. In this context the term 'interest' is widely defined and will generally include an interest of any kind whatsoever in voting shares, including any interest of a holder of bp ADSs.

## Called-up share capital

Details of the allotted, called-up and fully-paid share capital at 31 December 2022 are set out in Financial statements – Note 31. In accordance with institutional investor guidelines, the company deems it appropriate to grant authority to the directors to allot shares and other securities and to disapply pre-emption rights by way of shareholders' resolutions at each AGM in place of authority granted by virtue of the company's Articles of Association. At the AGM on 12 May 2022, authorization was given to the directors to allot shares in the company and to grant rights to subscribe for, or to convert any security into, shares in the company up to an aggregate nominal amount as set out in the *Notice of Annual General Meeting 2022*. These authorities were given for the period until the next AGM in 2023 or 12 August 2023, whichever is the earlier. These authorities are renewed annually at the AGM.

## Company records and service of notice

In relation to notices not covered by the Act, the reference to notice by advertisement in a national newspaper also includes advertisements via other means such as a public announcement.

## Purchases of equity securities by the issuer and affiliated purchasers

During the 2022 financial year the company repurchased 1,900,404,352 ordinary shares with a nominal value of $0.25 each for a total consideration of $9,995,499,736 (including transaction costs), for the purpose of reducing the issued share capital of the company in order to return capital to shareholders and to offset the expected dilution from the vesting of awards under employee share schemes. The shares repurchased in 2022 represented 10.47% of the company's issued share capital, excluding shares held in treasury, on 31 December 2022. Of the shares repurchased in 2022, shares purchased under the 2021 AGM authority represented 4.82%, and shares purchased under the 2022 AGM authority represented 5.65%, of bp's issued share capital, excluding shares held in treasury, on 31 December 2022. A further 107,262,524 ordinary shares were repurchased between the end of the financial year and 17 February 2023 at a cost of $652,754,724 (including transaction costs) representing 0.59% of the company's issued share capital, excluding shares held in treasury, on 31 December 2022. All ordinary shares repurchased in 2022 and in 2023 up to 17 February under the share buyback programmes were cancelled.

Authorization for the company to make market purchases (as defined in section 693(4) of the Companies Act 2006) of ordinary shares with a nominal value of $0.25 each in the company was renewed at the company's 2022 AGM covering the period until the date of the company's 2023 AGM or 12 August 2023, whichever is earlier. The maximum number of ordinary shares to be purchased under this authority will not exceed 1,947,382,612 ordinary shares. The shares purchased will be canceled.

The following table provides details of ordinary share purchases made (1) under the share buyback programmes and (2) by the Employee Share Ownership Plans (ESOPs) and other purchases of ordinary shares and ADSs made to satisfy the requirements of certain employee share-based payment plans.

| | **Total number of shares purchased**[a] | **Average price paid per share $** | Number of shares purchased by ESOPs or for certain employee share-based plans[b] | Number of shares purchased under buyback programmes[c] | Maximum approximate dollar value of shares yet to be purchased under the programmes $ million |
|---|---|---|---|---|---|
| **2022** | | | | | |
| January 10 - January 31 | **74,320,029** | **5.24** | | 74,320,029 | N/A |
| February 01 - February 28 | **183,889,664** | **5.43** | | 183,889,664 | N/A |
| March 01 - March 03 | **41,326,825** | **4.93** | | 41,326,825 | N/A |
| April 06 - April 27 | **80,108,830** | **5.08** | | 80,108,830 | N/A |
| May 03 - May 31 | **191,881,731** | **5.21** | | 191,881,731 | N/A |
| June 01 - June 30 | **171,239,984** | **5.15** | | 171,239,984 | N/A |
| July 01 - July 22 | **132,371,860** | **4.63** | | 132,371,860 | N/A |
| August 02 - August 31 | **208,957,375** | **5.20** | | 208,957,375 | N/A |
| September 01 - September 30 | **232,867,309** | **5.12** | 3,050,000 | 229,817,309 | N/A |
| October 03 - October 27 | **238,655,790** | **5.17** | | 238,655,790 | N/A |
| November 01 - November 30 | **193,152,231** | **5.70** | | 193,152,231 | N/A |
| December 01 - December 20 | **165,782,724** | **5.83** | 11,100,000 | 154,682,724 | N/A |
| **2023** | | | | | |
| January 05 - January 31 | **68,903,875** | **5.90** | — | 68,903,875 | N/A |
| February 01 - February 17 | **38,358,649** | **6.43** | — | 38,358,649 | N/A |

a All share purchases were of ordinary shares of $0.25 each and/or ADSs (each representing six ordinary shares) and were on/open market transactions.
b Transactions represent the purchases of ADSs made to satisfy requirements of certain employee share-based payment plans.
c Share repurchases from 1 January to 7 February 2022 were made under the two share buyback programmes announced on 2 November 2021 and 10 January 2022 respectively, which covered the period up to and including 7 February 2022. On 8 February 2022 the company announced a further programme in relation to surplus cash generated during 2021 for a period up to and including 29 April 2022. The company announced the first programme covering the 2022 financial year on 3 May 2022 for a period up to and including 1 August 2022. The company announced a second programme on 2 August 2022 for a period up to and including 31 October 2022. The company announced a third programme on 1 November 2022 for a period up to and including 3 February 2023 and announced two programmes in one announcement on 7 February 2023. One covers a period up to and including 28 April 2023 and the other, relating to employee share schemes, is for a period up to and including 30 September 2023.

## Fees and charges payable by ADS holders

The Depositary collects fees for delivery and surrender of ADSs directly from investors depositing shares or surrendering ADSs for the purpose of withdrawal or from intermediaries acting for them. The Depositary collects fees for making distributions to investors by deducting those fees from the amounts distributed or by selling a portion of the distributable property to pay the fees.

The charges of the Depositary payable by investors are as follows:

| Type of service | Depositary actions | Fee |
|---|---|---|
| Depositing or substituting the underlying shares | Issuance of ADSs against the deposit of shares, including deposits and issuances in respect of:<br>• Share distributions, stock splits, rights, merger.<br>• Exchange of securities or other transactions or event or other distribution affecting the ADSs or deposited securities. | $5.00 per 100 ADSs (or portion thereof) evidenced by the new ADSs delivered. |
| Selling or exercising rights | Distribution or sale of securities, the fee being an amount equal to the fee for the execution and delivery of ADSs that would have been charged as a result of the deposit of such securities. | $5.00 per 100 ADSs (or portion thereof). |
| Withdrawing an underlying share | Acceptance of ADSs surrendered for withdrawal of deposited securities. | $5.00 for each 100 ADSs (or portion thereof) evidenced by the ADSs surrendered. |
| Expenses of the Depositary | Expenses incurred on behalf of holders in connection with:<br>• Stock transfer or other taxes and governmental charges.<br>• Delivery by cable, telex, electronic and facsimile transmission.<br>• Transfer or registration fees, if applicable, for the registration of transfers of underlying shares.<br>• Expenses of the Depositary in connection with the conversion of foreign currency into US dollars (which are paid out of such foreign currency). | Expenses payable are subject to agreement between the company and the Depositary by billing holders or by deducting charges from one or more cash dividends or other cash distributions. |
| Dividend fees | ADS holders who receive a cash dividend are charged a fee which bp uses to offset the costs associated with administering the ADS programme. | The Deposit Agreement provides that a fee of $0.05 or less per ADS can be charged. The current fee is $0.02 per bp ADS per calendar year (equivalent to $0.005 per bp ADS per quarter per cash distribution). |
| Global Invest Direct (GID) Plan | New investors and existing ADS holders can buy, sell or reinvest dividends into further bp ADSs by enrolling in bp's GID Plan, sponsored and administered by the Depositary. | Cost per transaction is $2.00 for recurring, $2.00 for one-time automatic investments, and $5.00 for investment made by check. Dividend reinvestment is 5% of the dividend amount up to a maximum of $5.00. Purchase trading commission is $0.12 per share. |

## Fees and payments made by the Depositary to the issuer

The Depositary has agreed to reimburse certain company expenses related to the company's ADS programme and incurred by the company in connection with the ADS programme arising during the year ended 31 December 2022. The Depositary reimbursed to the company, or paid amounts on the company's behalf to third parties, or waived its fees and expenses, of $18,883,522.07 for the year ended 31 December 2022.

The table below sets out the types of expenses that the Depositary has agreed to reimburse and the fees it has agreed to waive for standard costs associated with the administration of the ADS programme relating to the year ended 31 December 2022.

| Category of expense reimbursed, waived or paid directly to third parties | Amount reimbursed, waived or paid directly to third parties for the year ended 31 December 2022 |
|---|---|
| Fees for delivery and surrender of bp ADSs | 3,652,316.64 |
| Dividend fees[a] | 15,228,754.28 |
| Waived fees | 2,451.15 |
| Total | 18,883,522.07 |

[a] Dividend fees are charged to ADS holders who receive a cash distribution, which bp uses to offset the costs associated with administering the ADS programme.

Under certain circumstances, including removal of the Depositary or termination of the ADS programme by the company, the company is required to repay the Depositary certain amounts reimbursed and/or expenses paid to or on behalf of the company during the 12-month period prior to notice of removal or termination.

## Documents on display

The *bp Annual Report and Form 20-F 2022* is available online at *bp.com/annualreport*. To obtain a hard copy of bp's complete audited financial statements, free of charge, UK based shareholders should contact bp Distribution Services by calling +44 (0) 870 241 3269 or by emailing *bpdistributionservices@bp.com*. If based in the US or Canada shareholders should contact Issuer Direct by calling +1 888 301 2505 or by emailing *bpreports@issuerdirect.com*.

The company is subject to the information requirements of the US Securities Exchange Act of 1934 applicable to foreign private issuers. In accordance with these requirements, the company files its *Annual Report and Form 20-F* and other related documents with the SEC. The SEC maintains an internet site at *sec.gov* that contains reports and other information regarding issuers, including bp, that file electronically with the SEC. bp's SEC filings are also available at *bp.com/sec*. bp discloses in this report (see Corporate governance practices (Form 20-F Item 16G) on page 374) significant ways (if any) in which its corporate governance practices differ from those mandated for US companies under NYSE listing standards.

## Shareholding administration

If you have any queries about the administration of shareholdings, such as change of address, change of ownership, dividend payment options or to change the way you receive your company documents (such as the *bp Annual Report and Form 20-F* and *Notice of bp Annual General Meeting*) please contact the bp Registrar or the bp ADS Depositary.

Holders of American Depositary Receipts may request to inspect the books of the Depositary and the listing of receipt holders by contacting the bp ADS Depositary.

### Ordinary and preference shareholders

The bp Registrar, Link Group, Central Square,
29 Wellington Street,
Leeds, LS1 4DL
Freephone in the UK 0800 701107
From outside the UK +44 (0)371 277 1014
bp share centre mybpshares.com

### ADS holders

bp Shareowner Services
PO Box 64504, St Paul, MN 55164-0504, US
Toll-free in the US +1 877 638 5672
From outside the US +1 651 306 4383

## 2023 shareholder calendar[a]

| | |
|---|---|
| 31 Mar 2023 | Fourth quarter interim dividend payment for 2022 |
| 27 April 2023 | Annual general meeting |
| 2 May 2023 | First quarter results announced |
| 12 May 2023 | Record date (to be eligible for the first quarter interim dividend) |
| 23 Jun 2023 | First quarter interim dividend payment for 2023 |
| 30 Jun 2023 | 8% and 9% preference shares record date |
| 31 Jul 2023 | 8% and 9% preference shares dividend payment |
| 1 Aug 2023 | Second quarter results announced |
| 11 Aug 2023 | Record date (to be eligible for the second quarter interim dividend) |
| 22 Sep 2023 | Second quarter interim dividend payment for 2023 |
| 31 Oct 2023 | Third quarter results announced |
| 10 Nov 2023 | Record date (to be eligible for the third quarter interim dividend) |
| 19 Dec 2023 | Third quarter interim dividend payment for 2023 |

[a] All future dates are provisional and may be subject to change. For the full calendar see *bp.com/financialcalendar*.

# Glossary
## Abbreviations

**ADR**
American depositary receipt.

**ADS**
American depositary share. 1 ADS = 6 ordinary shares.

**Barrel (bbl)**
159 litres, 42 US gallons.

**bcf**
Billion cubic feet.

**bcfe**
Billion cubic feet equivalent.

**boe**
Barrels of oil equivalent.

**EJ/yr**
Exajoules per year.

**EVP**
Executive vice president.

**FPSO**
Floating production, storage and offloading.

**GAAP**
Generally accepted accounting practice.

**Gas**
Natural gas.

**$gCO_2e/MJ$**
Grams of carbon dioxide equivalent per megajoule of energy.

**GHG**
Greenhouse gas.

**GRI**
Global Reporting Initiative.

**$GtCO_2$**
Gigatonnes of carbon dioxide.

**GW**
Gigawatt.

**GWh**
Gigawatt hour.

**HSSE**
Health, safety, security and environment.

**IFRS**
International Financial Reporting Standards.

**kb/d**
Thousand barrels per day.

**KPIs**
Key performance indicators.

**kt**
Thousand tonnes.

**LNG**
Liquefied natural gas.

**LPG**
Liquefied petroleum gas.

**mb/d**
Thousand barrels per day.

**Mbbl**
Million barrels.

**mboe/d**
Thousand barrels of oil equivalent per day.

**mmb/d**
Million barrels per day.

**mmboe/d**
Million barrels of oil equivalent per day.

**mmBtu**
Million British thermal units.

**mmcf/d**
Million cubic feet per day.

**Mt**
Million tonnes.

**$MtCO_2e$**
Million tonnes of $CO_2$ equivalent.

**Mtpa**
Million tonnes per annum.

**MW**
Megawatt.

**MWe**
Megawatt electrical.

**MWp**
Megawatt peak.

**NGLs**
Natural gas liquids.

**PSA**
Production-sharing agreement.

**PTA**
Purified terephthalic acid.

**RC**
Replacement cost.

**SEC**
The United States Securities and Exchange Commission.

**TWh**
Terawatt hour.

**SVP**
Senior vice president.

## Definitions

Unless the context indicates otherwise, the definitions for the following glossary terms are given below.

Non-GAAP measures are sometimes referred to as alternative performance measures.

### CA100+ resolution glossary

**CA100+ resolution**
The CA100+ resolution means the special resolution requisitioned by Climate Action 100+ and passed at bp's 2019 Annual General Meeting, the text of which is set out below.

Special resolution: Climate Action 100+ shareholder resolution on climate change disclosures.

That in order to promote the long-term success of the company, given the recognized risks and opportunities associated with climate change, we as shareholders direct the company to include in its strategic report and/or other corporate reports, as appropriate, for the year ending 2019 onwards, a description of its strategy which the board considers, in good faith, to be consistent with the goals of Articles 2.1(a)(1) and 4.1(2) of the Paris Agreement (3) (the 'Paris goals'), as well as:

(1) Capital expenditure: how the company evaluates the consistency of each new material capex investment, including in the exploration, acquisition or development of oil and gas resources and reserves and other energy sources and technologies, with (a) the Paris goals and separately (b) a range of other outcomes relevant to its strategy.

(2) Metrics and targets: the company's principal metrics and relevant targets or goals over the short, medium and/or long term, consistent with the Paris goals, together with disclosure of:

a. The anticipated levels of investment in (i) oil and gas resources and reserves; and (ii) other energy sources and technologies.

b. The company's targets to promote reductions in its operational greenhouse gas emissions, to be reviewed in line with changing protocols and other relevant factors.

c. The estimated carbon intensity of the company's energy products and progress on carbon intensity over time.

d. Any linkage between the above targets and executive remuneration.

(3) Progress reporting: an annual review of progress against (1) and (2) above.

Such disclosure and reporting to include the criteria and summaries of the methodology and core assumptions used, and to omit commercially confidential or competitively sensitive information and be prepared at reasonable cost; and provided that nothing in this resolution shall limit the company's powers to set and vary its strategy, or associated targets or metrics, or to take any action which it believes in good faith, would best promote the long-term success of the company.

### The Paris goals

(1) Article 2.1(a) of the Paris Agreement states the goal of 'Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change'.

(2) Article 4.1 of the Paris Agreement: In order to achieve the long-term temperature goal set out in Article 2, parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty.

(3) U.N. Framework Convention on Climate Change Conference of Parties, Twenty-First Session, Adoption of the Paris Agreement, U.N. Doc. FCCC/CP/2015/L.9/Rev.1 (Dec. 12, 2015).

### New material capex investment

For the purposes of the 2022 evaluation discussed on pages 28-31, 'new material capex investment' means a decision taken by the resource commitment meeting (RCM) in 2022 to incur inorganic or organic investments greater than $250 million that relate to a new project or asset, extending an existing project or asset, or acquiring or increasing a share in a project, asset or entity.

There were five investments that met the above criteria in 2022.

### Material capex evaluation: Paris-consistency quantitative tests.

For the purposes of evaluating material capex investments for consistency with the Paris goals, two quantitative tests were applied, see page 31.

### Operational carbon intensity (CI)

The annual average operational GHG emissions ($TeCO_2e$/unit), divided by the relevant unit of output:

- per thousand barrels of oil equivalent in upstream
- per utilized equivalent distillation capacity in refining
- per thousand tonnes of petrochemicals production.

## Net zero aims and ambition glossary

### Average carbon intensity of sold energy products

The rate of GHG emissions per unit of energy delivered (in grams $CO_2e$/MJ) estimated in respect of sold energy products★. GHG emissions are estimated on a lifecycle basis covering use, production, and distribution of sold energy products.

### Energy product

For the purposes of our 2022 disclosures relating to our aim 3, we consider an energy product to be one that is generally used to satisfy an energy demand. In the case of fuels, to burn them to release their calorific content, and in the case of electricity to provide work or heat. For further information on products included in bp's 2022 aim 3 reporting see the basis of reporting *bp.com/basisofreporting*.

### Emissions from the carbon in our upstream oil and gas production

Estimated $CO_2$ emissions from the combustion of upstream production of crude oil, natural gas and natural gas liquids (NGLs) based on bp's net share of production, excluding bp's share of Rosneft production and assuming that all produced volumes undergo full stoichiometric combustion to $CO_2$.

### Methane intensity

Methane intensity refers to the amount of methane emissions from bp's operated upstream oil and gas assets as a percentage of the total gas that goes to market from those operations. Our methodology is aligned with the Oil and Gas Climate Initiative's (OGCI).

### Net zero

References to global net zero in the phrase, 'to help the world get to net zero', means achieving '...a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases...on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty', as set out in Article 4(1) of the Paris Agreement.

References to net zero for bp in the context of our ambition and aims 1, 2 and 3 mean achieving a balance between (a) the relevant Scope 1 and 2 emissions (for aim 1), Scope 3 emissions (for aim 2) or product lifecycle emissions (for aim 3) and (b) the aggregate of applicable deductions from qualifying activities such as sinks under our methodology at the applicable time.

### Net zero★ operations

bp's aim to reach net zero operational greenhouse gas ($CO_2$ and methane) emissions by 2050 or sooner, on a gross operational control basis, in accordance with bp's aim 1 which relates to our reported Scope 1 and 2 emissions. Any interim target or aim in respect of bp's aim 1 is defined in terms of absolute reductions relative to the baseline year of 2019.

### Net zero★ production

bp's aim to reach net zero $CO_2$ emissions, in accordance with bp's aim 2, from the carbon in our upstream oil and gas production, in respect of the estimated $CO_2$ emissions from the combustion of upstream production of crude oil, natural gas and natural gas liquids (based on bp's net share of production, excluding bp's share of Rosneft production and assuming that all produced volumes undergo full stoichiometric combustion to $CO_2$). Aim 2 is bp's Scope 3 aim and relates to Scope 3 category 11 emissions. Any interim target or aim in respect of bp's aim 2 is defined in terms of absolute reductions relative to the baseline year of 2019.

### Net zero★ sales

bp's aim to reach net zero for the carbon intensity of sold energy products★, in accordance with bp's aim 3. Any interim target or aim in respect of bp's aim 3 is defined in terms of reductions in the carbon intensity of the energy products we sell (in grams $CO_2e$/MJ) relative to the baseline year of 2019.

### Physically traded energy products

For the purposes of aim 3, this includes trades in energy products★ which are physically settled, with the exception of, for example, financial trades and certain other transactions where the purpose or effect is that the volumes traded or supplied net off against each other.

### Sold energy products
For the purposes of aim 3, these represent the energy products★ we sell to third parties including both marketed sales and physically traded energy products★. For these purposes bp group subsidiaries and equity accounted entities are not considered third parties, other than in our trading & shipping and customer & products businesses, where sales to equity accounted entities are considered third-party sales.

### Sustainable emissions reductions (SER)
SERs result from actions or interventions that have led to ongoing reductions in Scope 1 (direct) and/or Scope 2 (indirect) greenhouse gas (GHG) emissions (carbon dioxide and methane) such that GHG emissions would have been higher in the reporting year if the intervention had not taken place. SERs must meet three criteria: a specific intervention that has reduced GHG emissions, the reduction must be quantifiable and the reduction is expected to be ongoing. Reductions are reportable for a 12-month period from the start of the intervention/action.

### Adjusted EBIDA
Adjusted EBIDA is a non-GAAP measure and is defined as profit or loss for the period, adjusting for finance costs and net finance (income) or expense relating to pensions and other post-retirement benefits and taxation, inventory holding gains or losses before tax, net adjusting items★ before interest and tax, and taxation on an underlying RC basis, and adding back depreciation, depletion and amortization (pre-tax) and exploration expenditure written-off (net of adjusting items, pre-tax). bp believes that adjusted EBIDA is a useful measure for investors because it is a measure closely tracked by management to evaluate bp's operating performance and to make financial, strategic and operating decisions and because it may help investors to understand and evaluate, in the same manner as management, the underlying trends in bp's operational performance on a comparable basis, period on period. The nearest equivalent measure on an IFRS basis is profit or loss for the period. A reconciliation of profit or loss for the period to adjusted EBIDA is provided on page 399.

### Adjusted EBIDA per share compound annual growth rate (CAGR)
Non-GAAP measure. Adjusted EBIDA per share is calculated based on the shares in issue at period end.

### Adjusted EBITDA
Adjusted EBITDA is a non-GAAP measure presented for bp's operating segments and is defined as replacement cost (RC) profit before interest and tax, excluding net adjusting items before interest and tax, and adding back depreciation, depletion and amortization and exploration write-offs (net of adjusting items). Adjusted EBITDA by business is a further analysis of adjusted EBITDA for the customers & products businesses. bp believes it is helpful to disclose adjusted EBITDA by operating segment and by business because it reflects how the segments measure underlying business delivery. The nearest equivalent measure on an IFRS basis for the segment is RC profit or loss before interest and tax, which is bp's measure of profit or loss that is required to be disclosed for each operating segment under IFRS. A reconciliation to GAAP information is provided on pages 367 and 400.

Adjusted EBITDA for the group is defined as profit or loss for the period, adjusting for finance costs and net finance (income) or expense relating to pensions and other post-retirement benefits and taxation, inventory holding gains or losses before tax, net adjusting items before interest and tax, and adding back depreciation, depletion and amortization (pre-tax) and exploration expenditure written-off (net of adjusting items, pre-tax). The nearest equivalent measure on an IFRS basis for the group is profit or loss for the period. A reconciliation to GAAP information is provided on page 400.

We are unable to present reconciliations of forward-looking information for adjusted EBITDA for the group, strategic themes or transition growth engine, because without unreasonable efforts, we are unable to forecast accurately certain adjusting items required to calculate a meaningful comparable GAAP forward-looking financial measure. These items include inventory holding gains or losses, adjusting items and exploration expenditure written off that are difficult to predict in advance in order to include in a GAAP estimate.

### Adjusted free cash flow
Adjusted free cash flow, as applicable to the directors' remuneration performance measure, is a non-GAAP measure and is defined as Operating cash flow less: (1) net cash used in investing activities as presented in the group cash flow statement; and (2) lease liability payments included in financing activities and adjusting for other proceeds reported within financing activities in the group cash flow statement and movements in lease creditor.

### Adjusting items
Adjusting items are items that bp discloses separately because it considers such disclosures to be meaningful and relevant to investors. They are items that management considers to be important to period-on-period analysis of the group's results and are disclosed in order to enable investors to better understand and evaluate the group's reported financial performance. Adjusting items include gains and losses on the sale of businesses and fixed assets, impairments, environmental and other provisions, restructuring, integration and rationalization costs, fair value accounting effects, costs relating to the Gulf of Mexico oil spill and other items. Adjusting items within equity-accounted earnings are reported net of incremental income tax reported by the equity-accounted entity. Adjusting items are used as a reconciling adjustment to derive underlying RC profit or loss and related underlying measures which are non-GAAP measures. An analysis of adjusting items by segment and type is shown on page 353.

### Associate
An entity over which the group has significant influence and that is neither a subsidiary nor a joint arrangement of the group. Significant influence is the power to participate in the financial and operating policy decisions of the investee but is not control or joint control over those policies.

### Biofuels production
Biofuels production is average thousands of barrels of biofuel production per day during the period covered net to bp. This includes equivalent ethanol production, bp Bunge biopower for grid export, refining co-processing and standalone hydrogenated vegetable oil (HVO).

### Biogas supply volumes
Biogas supply volumes is the average thousands of barrels of oil equivalent per day of production and offtakes during the period covered net to bp.

### Bio-refinery
A facility that is dedicated to processing biological materials (including waste oil and crop waste) to produce biofuels such as biodiesel and sustainable aviation fuel, which may be blended to customer specifications with other components such as hydrocarbons at co-located or adjacent terminals and tanks.

### Blue hydrogen
Hydrogen made from natural gas in combination with carbon captured and stored (CCS).

### Capital employed
Non-GAAP measure. It is defined as total equity plus finance debt.

### Capital expenditure
Total cash capital expenditure as stated in the group cash flow statement. Capital expenditure for the operating segments and customers & products businesses is presented on the same basis.

### Cash balance point
Cash balance point is defined as the implied Brent oil price 2021 real to balance bp's sources and uses of cash assuming an average bp refining marker margin around $11/bbl and Henry Hub at $3/mmBtu in 2021 real terms.

### Commodity trading contracts
bp participates in regional and global commodity trading markets in order to manage, transact and hedge the crude oil, refined products and natural gas that the group either produces or consumes in its manufacturing operations. The range of contracts the group enters into in its commodity trading operations is described below. Using these contracts, in combination with rights to access storage and transportation capacity, allows the group to access advantageous pricing differences between locations, time periods and grades.

### Exchange-traded commodity derivatives

Contracts that are typically in the form of futures and options traded on a recognized exchange, such as Nymex and ICE. Such contracts are traded in standard specifications for the main marker crude oils, such as Brent and West Texas Intermediate; the main product grades, such as gasoline and gasoil; and for natural gas and power. Gains and losses, otherwise referred to as variation margin, are generally settled on a daily basis with the relevant exchange. These contracts are used for the trading and risk management of crude oil, refined products, and natural gas and power. Realized and unrealized gains and losses on exchange-traded commodity derivatives are included in sales and other operating revenues for accounting purposes.

### Over-the-counter (OTC) contracts

Contracts that are typically in the form of forwards, swaps and options. Some of these contracts are traded bilaterally between counterparties or through brokers, others may be cleared by a central clearing counterparty. These contracts can be used both for trading and risk management activities. Realized and unrealized gains and losses on OTC contracts are included in sales and other operating revenues for accounting purposes. Many grades of crude oil bought and sold use standard contracts including US domestic light sweet crude oil, commonly referred to as West Texas Intermediate, and a standard North Sea crude blend – Brent, Forties, Oseberg and Ekofisk (BFOE). Forward contracts are used in connection with the purchase of crude oil supplies for refineries and for marketing and sales of the group's oil production and refined products. The contracts typically contain standard delivery and settlement terms. These transactions call for physical delivery of oil with consequent operational and price risk. However, various means exist and are used from time to time, to settle obligations under the contracts in cash rather than through physical delivery. Physically settled BFOE contracts delivered by cargo additionally specify a standard volume and tolerance.

Gas and power OTC markets are highly developed in North America and the UK, where commodities can be bought and sold for delivery in future periods. These contracts are negotiated between two parties to purchase and sell gas and power at a specified price, with delivery and settlement at a future date. Typically, the contracts specify delivery terms for the underlying commodity. Some of these transactions are not settled physically as they can be net settled by transacting offsetting sale or purchase contracts for the same location and delivery period. The contracts contain standard terms such as delivery point, pricing mechanism, settlement terms and specification of the commodity. Typically, volume, price and term (e.g. daily, monthly and balance of month) are the main variable contract terms.

Swaps are typically contractual obligations to exchange cash flows between two parties. A typical swap transaction usually references a floating price and a fixed price with the net difference of the cash flows being settled. Options give the holder the right, but not the obligation, to buy or sell crude, oil products, natural gas or power at a specified price on or before a specific future date. Amounts under these derivative financial instruments are settled at expiry. Typically, netting agreements are used to limit credit exposure and support liquidity.

### Spot and term contracts

Spot contracts are contracts to purchase or sell a commodity at the market price prevailing on or around the delivery date when title to the inventory is taken. Term contracts are contracts to purchase or sell a commodity at regular intervals over an agreed term. Though spot and term contracts may have a standard form, there is no offsetting mechanism in place. As such, these transactions result in physical delivery with operational and price risk. Spot and term contracts typically relate to purchases of crude for a refinery, products for marketing, or third-party natural gas, or sales of the group's oil production, oil products or gas production to third parties. For accounting purposes, spot and term sales are included in sales and other operating revenues when title passes. Similarly, spot and term purchases are included in purchases for accounting purposes.

## Consolidation adjustment – UPII

Unrealized profit in inventory arising on inter-segment transactions.

## Convenience gross margin

Non-GAAP measure. Convenience gross margin is calculated as RC profit before interest and tax for the customers & products segment, excluding RC profit before interest and tax for the refining & trading and petrochemicals businesses, and adjusting items★ (as defined above) for the convenience & mobility business to derive underlying RC profit before interest and tax for the convenience & mobility business; subtracting underlying RC profit before interest and tax for the Castrol business; adding back depreciation, depletion and amortization, production and manufacturing, distribution and administration expenses for convenience & mobility (excluding Castrol); subtracting earnings from equity-accounted entities in the convenience & mobility business (excluding Castrol) and gross margin for the retail fuels, EV charging, aviation, B2B and midstream businesses. bp believes it is helpful to disclose the convenience gross margin because this measure may help investors to understand and evaluate, in the same way as management, our progress against our strategic objectives of convenience growth. The nearest GAAP measure is RC profit before interest and tax for the customers & products segment.A reconciliation to GAAP information is provided on page 367.

## Convenience gross margin growth

Non-GAAP measure. See convenience gross margin definition above. Convenience gross margin growth in 2022 is compared to 2021 which has been restated for 2022 year-end foreign exchange.

## Cumulative cash costs reductions

Non-GAAP measure. Cash costs is defined as production and manufacturing expenses plus distribution and administration expenses and excludes costs that are classified as adjusting items and costs that are variable, primarily with volumes (such as freight costs). It also includes exploration geological and geophysical costs, which are included in the exploration expenses line in the group income statement. Cumulative cash cost reductions by the end of 2022 compared to 2019 baseline, as applicable to the directors' remuneration performance measure, are defined as reinvent headcount savings, restructuring, location, agile, operational and other savings, less agreed portfolio changes and costs in direct support of growth.

## Customer touchpoints

Customer touchpoints are the number of retail customer transactions per day on bp forecourts globally. These include transactions involving fuel and/or convenience across all channels of trade.

## Developed renewables to final investment decision (FID)

Total generating capacity for assets developed to FID by all entities where bp has an equity share (proportionate to equity share). If asset is subsequently sold bp will continue to record capacity as developed to FID. If bp equity share increases developed capacity to FID will increase proportionately to share increase for any assets where bp held equity at the point of FID.

## Divestment proceeds

Disposal proceeds as per the group cash flow statement.

## Dividend yield

Sum of the four quarterly dividends announced in respect of the year as a percentage of the year-end share price.

## Dutch Title Transfer Facility

The TTF (Title Transfer Facility) is the virtual trading point for natural gas in the Netherlands. It is commonly used as a benchmark hub for gas prices in Europe.

## Effective tax rate (ETR) on replacement cost (RC) profit or loss

Non-GAAP measure. The ETR on RC profit or loss is calculated by dividing taxation on a RC basis by RC profit or loss before tax. Taxation on a RC basis for the group is calculated as taxation as stated on the group income statement adjusted for taxation on inventory holding gains and losses. Information on RC profit or loss is provided below. bp believes it is helpful to disclose the ETR on RC profit or loss because this measure excludes the impact of price changes on the replacement of inventories and allows for more meaningful comparisons between reporting periods. The nearest equivalent measure on an IFRS basis is the ETR on profit or loss for the period. A reconciliation to GAAP information is provided on page 398.

## Electric vehicle charge points / EV charge points

Defined as the number of connectors on a charging device, operated by either bp or a bp joint venture.

### Fair value accounting effects

Non-GAAP adjustments to our IFRS profit (loss). They reflect the difference between the way bp manages the economic exposure and internally measures performance of certain activities and the way those activities are measured under IFRS. Fair value accounting effects are included within adjusting items. They relate to certain of the group's commodity, interest rate and currency risk exposures as detailed below. Other than as noted below, the fair value accounting effects described are reported in both the gas & low carbon energy and customer & products segments.

bp uses derivative instruments to manage the economic exposure relating to inventories above normal operating requirements of crude oil, natural gas and petroleum products. Under IFRS, these inventories are recorded at historical cost. The related derivative instruments, however, are required to be recorded at fair value with gains and losses recognized in the income statement. This is because hedge accounting is either not permitted or not followed, principally due to the impracticality of effectiveness-testing requirements. Therefore, measurement differences in relation to recognition of gains and losses occur. Gains and losses on these inventories, other than net realizable value provisions, are not recognized until the commodity is sold in a subsequent accounting period. Gains and losses on the related derivative commodity contracts are recognized in the income statement, from the time the derivative commodity contract is entered into, on a fair value basis using forward prices consistent with the contract maturity.

bp enters into physical commodity contracts to meet certain business requirements, such as the purchase of crude for a refinery or the sale of bp's gas production. Under IFRS these physical contracts are treated as derivatives and are required to be fair valued when they are managed as part of a larger portfolio of similar transactions. Gains and losses arising are recognized in the income statement from the time the derivative commodity contract is entered into.

IFRS require that inventory held for trading is recorded at its fair value using period-end spot prices, whereas any related derivative commodity instruments are required to be recorded at values based on forward prices consistent with the contract maturity. Depending on market conditions, these forward prices can be either higher or lower than spot prices, resulting in measurement differences.

bp enters into contracts for pipelines and other transportation, storage capacity, oil and gas processing, liquefied natural gas (LNG) and certain gas and power contracts that, under IFRS, are recorded on an accruals basis. These contracts are risk-managed using a variety of derivative instruments that are fair valued under IFRS. This results in measurement differences in relation to recognition of gains and losses.

The way that bp manages the economic exposures described above, and measures performance internally, differs from the way these activities are measured under IFRS. bp calculates this difference for consolidated entities by comparing the IFRS result with management's internal measure of performance. We believe that disclosing management's estimate of this difference provides useful information for investors because it enables investors to see the economic effect of these activities as a whole.

These include:

- Under management's internal measure of performance the inventory, transportation and capacity contracts in question are valued based on fair value using relevant forward prices prevailing at the end of the period.
- Fair value accounting effects also include changes in the fair value of the near-term portions of LNG contracts that fall within bp's risk management framework. LNG contracts are not considered derivatives, because there is insufficient market liquidity, and they are therefore accrual accounted under IFRS. However, oil and natural gas derivative financial instruments used to risk manage the near-term portions of the LNG contracts are fair valued under IFRS. The fair value accounting effect, which is reported in the gas & low carbon energy segment, represents the change in value of LNG contacts that are being risk managed and which is reflected in the underlying result, but not in reported earnings. Management believes that this gives a better representation of performance in each period.

Furthermore, the fair values of derivative instruments used to risk manage certain other oil, gas, power and other contracts, are deferred to match with the underlying exposure. The commodity contracts for business requirements are accounted for on an accruals basis.

In addition, fair value accounting effects include changes in the fair value of derivatives entered into by the group to manage currency exposure and interest rate risks relating to hybrid bonds to their respective first call periods. The hybrid bonds which were issued on 17 June 2020 are classified as equity instruments and were recorded in the balance sheet at that date at their USD equivalent issued value. Under IFRS these equity instruments are not remeasured from period to period, and do not qualify for application of hedge accounting. The derivative instruments relating to the hybrid bonds, however, are required to be recorded at fair value with mark-to-market gains and losses recognized in the income statement. Therefore, measurement differences in relation to the recognition of gains and losses occur. The fair value accounting effect, which is reported in the other businesses & corporate segment, eliminates the fair value gains and losses of these derivative financial instruments that are recognized in the income statement. We believe that this gives a better representation of performance, by more appropriately reflecting the economic effect of these risk management activities, in each period.

### Finance debt ratio

Finance debt ratio is defined as the ratio of finance debt to the total of finance debt plus total equity.

### Gearing and net debt

Non-GAAP measures. Net debt is calculated as finance debt, as shown in the balance sheet, plus the fair value of associated derivative financial instruments that are used to hedge foreign currency exchange and interest rate risks relating to finance debt, for which hedge accounting is applied, less cash and cash equivalents. Net debt does not include accrued interest, which is reported within other receivables and other payables on the balance sheet and for which the associated cash flows are presented as operating cash flows in the group cash flow statement. Gearing is defined as the ratio of net debt to the total of net debt plus total equity. bp believes these measures provide useful information to investors. Net debt enables investors to see the economic effect of finance debt, related hedges and cash and cash equivalents in total. Gearing enables investors to see how significant net debt is relative to total equity. The derivatives are reported on the balance sheet within the headings 'Derivative financial instruments'. See Financial statements – Note 27 for information on finance debt, which is the nearest equivalent measure to net debt on an IFRS basis. The nearest equivalent GAAP measure to gearing on an IFRS basis is finance debt ratio.

We are unable to present reconciliations of forward-looking information for net debt or gearing to finance debt and total equity, because without unreasonable efforts, we are unable to forecast accurately certain adjusting items required to present a meaningful comparable GAAP forward-looking financial measure. These items include fair value asset (liability) of hedges related to finance debt and cash and cash equivalents, that are difficult to predict in advance in order to include in a GAAP estimate.

### Gearing including leases and net debt including leases

Non-GAAP measures. Net debt including leases is calculated as net debt plus lease liabilities, less the net amount of partner receivables and payables relating to leases entered into on behalf of joint operations. Gearing including leases is defined as the ratio of net debt including leases to the total of net debt including leases plus total equity. bp believes these measures provide useful information to investors as they enable investors to understand the impact of the group's lease portfolio on net debt and gearing. See Financial statements – Note 27 for information on finance debt, which is the nearest equivalent measure to net debt including leases on an IFRS basis. The nearest equivalent GAAP measure to gearing including leases on an IFRS basis is finance debt ratio. A reconciliation to GAAP information is provided on page 355.

### Green hydrogen

Hydrogen produced by electrolysis of water using renewable power.

### Grey hydrogen

Produced via natural gas or coal without CCUS.

### Hydrocarbons

Liquids and natural gas. Natural gas is converted to oil equivalent at 5.8 billion cubic feet = 1 million barrels.

### Inorganic capital expenditure

A subset of capital expenditure on a cash basis and a non-GAAP measure. Inorganic capital expenditure comprises consideration in business combinations and certain other significant investments made by the group. It is reported on a cash basis. bp believes that this measure provides useful information as it allows investors to understand how bp's management invests funds in projects which expand the group's activities through acquisition. The nearest equivalent measure on an IFRS basis is capital expenditure on a cash basis. Further information and a reconciliation to GAAP information is provided on page 352.

### Installed renewables capacity

Installed renewables capacity is bp's share of capacity for operating assets owned by entities where bp has an equity share.

### Inventory holding gains and losses

Inventory holding gains and losses are non-GAAP adjustments to our IFRS profit (loss) and represent:

a the difference between the cost of sales calculated using the replacement cost of inventory and the cost of sales calculated on the first-in first-out (FIFO) method after adjusting for any changes in provisions where the net realizable value of the inventory is lower than its cost. Under the FIFO method, which we use for IFRS reporting of inventories other than for trading inventories, the cost of inventory charged to the income statement is based on its historical cost of purchase or manufacture, rather than its replacement cost. In volatile energy markets, this can have a significant distorting effect on reported income. The amounts disclosed as inventory holding gains and losses represent the difference between the charge to the income statement for inventory on a FIFO basis (after adjusting for any related movements in net realizable value provisions) and the charge that would have arisen based on the replacement cost of inventory. For this purpose, the replacement cost of inventory is calculated using data from each operation's production and manufacturing system, either on a monthly basis, or separately for each transaction where the system allows this approach; and

b an adjustment relating to certain trading inventories that are not price risk managed which relate to a minimum inventory volume that is required to be held to maintain underlying business activities. This adjustment represents the movement in fair value of the inventories due to prices, on a grade-by-grade basis, during the period. This is calculated from each operation's inventory management system on a monthly basis using the discrete monthly movement in market prices for these inventories.

The amounts disclosed are not separately reflected in the financial statements as a gain or loss. No adjustment is made in respect of the cost of inventories held as part of a trading position and certain other temporary inventory positions that are price risk-managed. See Replacement cost (RC) profit or loss definition below.

### Joint arrangement

An arrangement in which two or more parties have joint control.

### Joint control

Contractually agreed sharing of control over an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control.

### Joint operation

A joint arrangement whereby the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement.

### Joint venture

A joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement.

### Liquids

Comprises crude oil, condensate and natural gas liquids. For the oil production & operations segment, it also includes bitumen.

### LNG portfolio

LNG portfolio refers to bp group's LNG equity production plus additional long-term merchant LNG volumes.

### LNG train

An LNG train is a processing facility used to liquefy and purify natural gas in the formation of LNG.

### Low carbon activity

An activity relating to low carbon including: renewable electricity; bioenergy; electric vehicles and other future mobility solutions; trading and marketing low carbon products; blue or green hydrogen★ and carbon capture, use and storage (CCUS).

Note that, while there is some overlap of activities, these terms do not mean the same as bp's strategic focus area of low carbon energy or our low carbon energy sub-segment, reported within the gas & low carbon energy segment.

### Low carbon activity investment

Capital investment in relation to low carbon activity★.

### Major projects

Have a bp net investment of at least $250 million, or are considered to be of strategic importance to bp or of a high degree of complexity.

### Margin share from convenience and electrification

Convenience, retail fuels and electrification gross margin, as applicable to the directors' remuneration performance measure, is calculated as RC profit before interest and tax for the customers & products segment, excluding RC profit before interest and tax for the refining & trading and petrochemicals businesses, and adjusting items★ (as defined above) for the convenience & mobility business to derive underlying RC profit before interest and tax for the convenience & mobility business; subtracting underlying RC profit before interest and tax for the Castrol business; adding back depreciation, depletion and amortization, production and manufacturing, distribution and administration expenses for convenience & mobility (excluding Castrol); subtracting earnings from equity-accounted entities in the convenience & mobility business (excluding Castrol) and gross margin for aviation, B2B and midstream businesses. Margin share from convenience and electrification is the ratio of convenience and electrification gross margin to total gross margin for convenience, retail fuels and electrification.

### Operating cash flow

Net cash provided by (used in) operating activities as stated in the group cash flow statement. When used in the context of a segment rather than the group, the terms refer to the segment's share thereof.

### Operating management system (OMS)

bp's OMS helps us manage risks in our operating activities by setting out bp's principles for good operating practice. It brings together bp requirements on health, safety, security, the environment, social responsibility and operational reliability, as well as related issues, such as maintenance, contractor relations and organizational learning, into a common management system.

### Organic capital expenditure

Non-GAAP measure. Organic capital expenditure comprises capital expenditure on a cash basis less inorganic capital expenditure. bp believes that this measure provides useful information as it allows investors to understand how bp's management invests funds in developing and maintaining the group's assets. The nearest equivalent measure on an IFRS basis is capital expenditure on a cash basis. An analysis of organic capital expenditure by segment and region, and a reconciliation to GAAP information is provided on page 352.

We are unable to present reconciliations of forward-looking information for organic capital expenditure to total cash capital expenditure, because without unreasonable efforts, we are unable to forecast accurately the adjusting item, inorganic capital expenditure, that is difficult to predict in advance in order to derive the nearest GAAP estimate.

### Production-sharing agreement / contract (PSA / PSC)

An arrangement through which an oil and gas company bears the risks and costs of exploration, development and production. In return, if exploration is successful, the oil company receives entitlement to variable physical volumes of hydrocarbons, representing recovery of the costs incurred and a stipulated share of the production remaining after such cost recovery.

### Rapid / Rapid charging

Rapid charging includes electric vehicle charging of greater or equal to 50kW and less than 150kW.

### Realizations

Realizations are the result of dividing revenue generated from hydrocarbon sales, excluding revenue generated from purchases made for resale and royalty volumes, by revenue generating hydrocarbon production volumes. Revenue generating hydrocarbon production reflects the bp share of production as adjusted for any production which does not generate revenue. Adjustments may include losses due to shrinkage, amounts consumed during processing, and contractual or regulatory host committed volumes such as royalties. For the gas & low carbon energy and oil production & operations segments, realizations include transfers between businesses.

### Refining availability

Represents Solomon Associates' operational availability for bp-operated refineries, which is defined as the percentage of the year that a unit is available for processing after subtracting the annualized time lost due to turnaround activity and all planned mechanical, process and regulatory downtime.

### Refining marker margin (RMM)

The average of regional indicator margins weighted for bp's crude refining capacity in each region. Each regional marker margin is based on product yields and a marker crude oil deemed appropriate for the region. The regional indicator margins may not be representative of the margins achieved by bp in any period because of bp's particular refinery configurations and crude and product slate.

### Replacement cost (RC) profit or loss / RC profit or loss attributable to bp shareholders

Reflects the replacement cost of inventories sold in the period and is calculated as profit or loss attributable to bp shareholders, adjusting for inventory holding gains and losses (net of tax). RC profit or loss for the group is not a recognized GAAP measure. bp believes this measure is useful to illustrate to investors the fact that crude oil and product prices can vary significantly from period to period and that the impact on our reported result under IFRS can be significant. Inventory holding gains and losses vary from period to period due to changes in prices as well as changes in underlying inventory levels. In order for investors to understand the operating performance of the group excluding the impact of price changes on the replacement of inventories, and to make comparisons of operating performance between reporting periods, bp's management believes it is helpful to disclose this measure. The nearest equivalent measure on an IFRS basis is profit or loss attributable to bp shareholders. See Financial statements – Note 5. A reconciliation to GAAP information is provided on page 398.

### Renewables pipeline

Renewable projects satisfying the criteria below until the point they can be considered developed to FID:

Site based projects that have obtained land exclusivity rights, or for PPA based projects an offer has been made to the counterparty, or for auction projects pre-qualification criteria has been met, or for acquisition projects post a binding offer has been accepted.

### Reserves replacement ratio

The extent to which the year's production has been replaced by proved reserves added to our reserve base. The ratio is expressed in oil-equivalent terms and includes changes resulting from discoveries, improved recovery and extensions and revisions to previous estimates, but excludes changes resulting from acquisitions and disposals.

### Retail sites

Retail sites include sites operated by dealers, jobbers, franchisees or brand licensees or joint venture (JV) partners, under the bp brand. These may move to and from the bp brand as their fuel supply agreement or brand licence agreement expires and are renegotiated in the normal course of business. Retail sites are primarily branded *bp*, ARCO, *Amoco*, *Aral* and *Thorntons*, and also includes sites in India through our Jio-bp JV.

### Return on average capital employed

Non-GAAP measure. Return on average capital employed (ROACE) is defined as underlying replacement cost profit, which is defined as profit or loss attributable to bp shareholders adjusted for inventory holding gains and losses, adjusting items and related taxation on inventory holding gains and losses and adjusting items total taxation, after adding back non-controlling interest and interest expense net of tax, divided by the average of the beginning and ending balances of total equity plus finance debt, excluding cash and cash equivalents and goodwill as presented on the group balance sheet over the periods presented. Interest expense before tax is finance costs as presented on the group income statement, excluding lease interest, the unwinding of the discount on provisions and other payables and other adjusting items reported in finance costs. bp believes it is helpful to disclose the ROACE because this measure gives an indication of the company's capital efficiency. The nearest GAAP measures of the numerator and denominator are profit or loss for the period attributable to bp shareholders and total equity respectively. The reconciliation of the numerator and denominator is provided on page 399.

We are unable to present forward-looking information of the nearest GAAP measures of the numerator and denominator for ROACE, because without unreasonable efforts, we are unable to forecast accurately certain adjusting items required to calculate a meaningful comparable GAAP forward-looking financial measure. These items include inventory holding gains or losses and interest net of tax, that are difficult to predict in advance in order to include in a GAAP estimate.

### Strategic convenience sites

Strategic convenience sites are retail sites, within the bp portfolio, which sell bp-branded vehicle energy (e.g. *bp*, *Aral*, ARCO, *Amoco*, *Thorntons* and Pulse) and either carry one of the strategic convenience brands (e.g. M&S, REWE to Go) or a differentiated convenience offer. To be considered a strategic convenience site, the convenience offer should have a demonstrable level of differentiation in the market in which it operates. Strategic convenience site count includes sites under a pilot phase.

### Subsidiary

An entity that is controlled by the bp group. Control of an investee exists when an investor is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee.

### Surplus cash flow

Surplus cash flow does not represent the residual cash flow available for discretionary expenditures. It is a non-GAAP financial measure that should be considered in addition to, not as a substitute for or superior to, net cash provided by operating activities, reported in accordance with IFRS. The surplus cash flow forms part of bp's financial frame.

Surplus cash flow refers to the net surplus of sources of cash over uses of cash, after reaching the $35 billion net debt target. Sources of cash include net cash provided by operating activities, cash provided from investing activities and cash receipts relating to transactions involving non-controlling interests. Uses of cash include lease liability payments, payments on perpetual hybrid bond, dividends paid, cash capital expenditure, the cash cost of share buybacks to offset the dilution from vesting of awards under employee share schemes, cash payments relating to transactions involving non-controlling interests and currency translation differences relating to cash and cash equivalents as presented on the condensed group cash flow statement.

For 2022, the sources of cash includes other proceeds related to the proceeds from the disposal of a loan note related to the Alaska divestment. The cash was received in the fourth quarter 2021, was reported as a financing cash flow and was not included in other proceeds at the time due to potential recourse from the counterparty. The proceeds are being recognized as the potential recourse reduces.

The components of our sources of cash and uses of cash are provided on page 355.

### Technical service contract (TSC)

Technical service contract is an arrangement through which an oil and gas company bears the risks and costs of exploration, development and production. In return, the oil and gas company receives entitlement to variable physical volumes of hydrocarbons, representing recovery of the costs incurred and a profit margin which reflects incremental production added to the oilfield.

### Tier 1 and tier 2 process safety events

Tier 1 events are losses of primary containment from a process of greatest consequence – causing harm to a member of the workforce, damage to equipment from a fire or explosion, a community impact or exceeding defined quantities. Tier 2 events are those of lesser consequence. These represent reported incidents occurring within bp's operational HSSE reporting boundary. That boundary includes bp's own operated facilities and certain other locations or situations.

### Tight oil and gas

Natural oil and gas reservoirs locked in hard sandstone rocks with low permeability, making the underground formation extremely tight.

### Transition growth

Activities, represented by a set of transition growth engines, that transition bp toward its objective to be an Integrated Energy Company, and that comprise our low carbon activity★ alongside other businesses that support transition, such as our power trading & marketing business and convenience.

### Transition growth investment

Capital investment in relation to Transition growth★, that is aligned to our aim 5 (to increase the proportion of investment we make into our non-oil and -gas businesses. For this purpose, we define 'oil and gas' activities as those primarily encompassing the production, refining and sale of fossil hydrocarbons and their products and those associated with the dedicated gas and oil trading businesses).

### UK National Balancing Point

A virtual trading location for sale, purchase and exchange of UK natural gas. It is the pricing and delivery point for the Intercontinental Exchange natural gas futures contract.

### Ultra fast / Ultra-fast charging

Electric vehicle charging of greater than or equal to 150kW.

### Unconventionals

Resources found in geographic accumulations over a large area, that usually present additional challenges to development such as low permeability or high viscosity. Examples include shale gas and oil, coalbed methane, gas hydrates and natural bitumen deposits. These typically require specialized extraction technology such as hydraulic fracturing or steam injection.

### Underlying effective tax rate (ETR)

Non-GAAP measure. The underlying ETR is calculated by dividing taxation on an underlying replacement cost (RC) basis by underlying RC profit or loss before tax. Taxation on an underlying RC basis for the group is calculated as taxation as stated on the group income statement adjusted for taxation on inventory holding gains and losses and adjusting items total taxation. Information on underlying RC profit or loss is provided below. Taxation on an underlying RC basis presented for the operating segments is calculated through an allocation of taxation on an underlying RC basis to each segment. bp believes it is helpful to disclose the underlying ETR because this measure may help investors to understand and evaluate, in the same manner as management, the underlying trends in bp's operational performance on a comparable basis, period on period. Taxation on an underlying RC basis and underlying ETR are non-GAAP measures. The nearest equivalent measure on an IFRS basis is the ETR on profit or loss for the period.

We are unable to present reconciliations of forward-looking information for underlying ETR to ETR on profit or loss for the period, because without unreasonable efforts, we are unable to forecast accurately certain adjusting items required to present a meaningful comparable GAAP forward-looking financial measure. These items include the taxation on inventory holding gains and losses and adjusting items, that are difficult to predict in advance in order to include in a GAAP estimate. A reconciliation to GAAP information is provided on page 398.

### Underlying production

Production after adjusting for acquisitions and divestments and entitlement impacts in our production-sharing agreements (PSAs). 2022 underlying production, when compared with 2021, is production after adjusting for acquisitions and divestments, curtailments, and entitlement impacts in our production-sharing agreements/contracts and technical service contract.

### Underlying replacement cost (RC) profit or loss / underlying RC profit or loss attributable to bp shareholders

Non-GAAP measure. RC profit or loss★ (as defined above) after excluding net adjusting items and related taxation. See page 353 for additional information on the adjusting items that are used to arrive at underlying RC profit or loss in order to enable a full understanding of the items and their financial impact. **Underlying RC profit or loss before interest and tax** for the operating segments or customers & products businesses is calculated as RC profit or loss (as defined above) including profit or loss attributable to non-controlling interests before interest and tax for the operating segments and excluding net adjusting items for the respective operating segment or business.

bp believes that underlying RC profit or loss is a useful measure for investors because it is a measure closely tracked by management to evaluate bp's operating performance and to make financial, strategic and operating decisions and because it may help investors to understand and evaluate, in the same manner as management, the underlying trends in bp's operational performance on a comparable basis, period on period, by adjusting for the effects of these adjusting items. The nearest equivalent measure on an IFRS basis for the group is profit or loss attributable to bp shareholders. The nearest equivalent measure on an IFRS basis for segments and businesses is RC profit or loss before interest and taxation. A reconciliation to GAAP information is provided on page 398 for the group and pages 36-44 for the segments.

### Underlying RC profit or loss per share and underlying RC profit or loss per ADS

Non-GAAP measures. Earnings per share is defined in Note 11. Underlying RC profit or loss per ordinary share is calculated using the same denominator as earnings per share as defined in the consolidated financial statements. The numerator used is underlying RC profit or loss attributable to bp shareholders rather than profit or loss attributable to bp shareholders. Underlying RC profit or loss per ADS is calculated as outlined above for underlying RC profit or loss per share except the denominator is adjusted to reflect one ADS equivalent to six ordinary shares. bp believes it is helpful to disclose the underlying RC profit or loss per ordinary share and per ADS because these measures may help investors to understand and evaluate, in the same manner as management, the underlying trends in bp's operational performance on a comparable basis, period on period. The nearest equivalent measure on an IFRS basis is basic earnings per share based on profit or loss for the period attributable to bp shareholders. A reconciliation to GAAP information is provided on page 398.

### upstream

upstream includes oil and natural gas field development and production within the gas & low carbon energy and oil production & operations segments. References to upstream exclude Rosneft.

### upstream / hydrocarbon plant reliability

bp-operated upstream plant reliability is calculated taking 100% less the ratio of total unplanned plant deferrals divided by installed production capacity, excluding non-operated assets and bpx energy. Unplanned plant deferrals are associated with the topside plant and where applicable the subsea equipment (excluding wells and reservoir). Unplanned plant deferrals include breakdowns, which does not include Gulf of Mexico weather-related downtime.

### upstream unit production costs

upstream unit production costs are calculated as production costs divided by units of production. Production costs do not include ad valorem and severance taxes. Units of production are barrels for liquids and thousands of cubic feet for gas. Amounts disclosed are for bp subsidiaries only and do not include bp's share of equity-accounted entities.

### West Texas Intermediate (WTI)

A light sweet crude oil, priced at Cushing, Oklahoma, which serves as a benchmark price for purchases of oil in the US.

### Working capital

Movements in inventories and other current and non-current assets and liabilities as stated in the group cash flow statement.

## Trade marks

Trade marks of the bp group appear throughout this report. They include:

*Aral, Aral pulse, BP, bp pulse, Castrol, Castrol ON, Amoco, Thorntons*

Trade marks:

Amazon Web Services – a trademark of amazon.com, inc

REWE to Go – a registered trade mark of REWE.

## Non-GAAP measures reconciliations

### Reconciliation of profit or loss for the period to underlying RC profit or loss★

| | | | | | $ million |
|---|---|---|---|---|---|
| | **2022** | 2021 | 2020 | 2019 | 2018 |
| Profit (loss) for the year attributable to bp shareholders | **(2,487)** | 7,565 | (20,305) | 4,026 | 9,383 |
| Inventory holding (gains) losses★, before tax | **(1,351)** | (3,655) | 2,868 | (667) | 801 |
| Taxation charge (credit) on inventory holding gains and losses | **332** | 829 | (667) | 156 | (198) |
| RC profit (loss)★ for the year | **(3,506)** | 4,739 | (18,104) | 3,515 | 9,986 |
| Net (favourable) adverse impact of adjusting items★, before tax | **29,781** | 8,697 | 16,649 | 8,263 | 3,380 |
| Adjusting items total taxation | **1,378** | (621) | (4,235) | (1,788) | (643) |
| Underlying RC profit or loss for the year | **27,653** | 12,815 | (5,690) | 9,990 | 12,723 |

### Reconciliation of basic earnings per ordinary share to underlying RC profit per ordinary share★

| | | | Per ordinary share – cents |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Profit (loss) for the year attributable to bp shareholders | **(13.10)** | 37.57 | (100.42) |
| Inventory holding (gains) losses★, before tax | **(7.12)** | (18.16) | 14.18 |
| Taxation charge (credit) on inventory holding gains and losses | **1.75** | 4.12 | (3.29) |
| | **(18.47)** | 23.53 | (89.53) |
| Net (favourable) adverse impact of adjusting items★, before tax | **156.84** | 43.21 | 82.33 |
| Taxation charge (credit) on adjusting items | **7.26** | (3.09) | (20.94) |
| Underlying RC profit for the year | **145.63** | 63.65 | (28.14) |

### Reconciliation of basic earnings per ADS to underlying RC profit per ADS★

| | | | Per ADS – dollars |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Profit (loss) for the year attributable to bp shareholders | **(0.79)** | 2.25 | (6.03) |
| Inventory holding (gains) losses★, before tax | **(0.43)** | (1.09) | 0.85 |
| Taxation charge (credit) on inventory holding gains and losses | **0.11** | 0.25 | (0.20) |
| | **(1.11)** | 1.41 | (5.37) |
| Net (favourable) adverse impact of adjusting items★, before tax | **9.41** | 2.59 | 4.94 |
| Taxation charge (credit) on adjusting items | **0.44** | (0.19) | (1.26) |
| Underlying RC profit for the year | **8.74** | 3.82 | (1.69) |

### Reconciliation of effective tax rate (ETR) to ETR on RC profit or loss and underlying ETR★

**Taxation (charge) credit**

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Taxation on profit or loss before taxation for the year | **(16,762)** | (6,740) | 4,159 |
| Adjusted for taxation on inventory holding gains and losses | **(332)** | (829) | 667 |
| Taxation on a RC profit or loss basis | **(16,430)** | (5,911) | 3,492 |
| Adjusted for adjusting items total taxation | **(1,378)** | 621 | 4,235 |
| Taxation on an underlying RC basis | **(15,052)** | (6,532) | (743) |

**Effective tax rate**

| | | | % |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| ETR on profit or loss before taxation for the year | **109** | 44 | 17 |
| Adjusted for inventory holding gains and losses | **8** | 7 | (1) |
| ETR on RC profit or loss | **117** | 51 | 16 |
| Adjusted for adjusting items total taxation | **(83)** | (19) | (30) |
| Underlying ETR | **34** | 32 | (14) |

## Return on average capital employed (ROACE)★

| | | | | | $ million |
|---|---|---|---|---|---|
| | **2022** | 2021 | 2020 | 2019 | 2018 |
| Profit (loss) for the year attributable to bp shareholders | **(2,487)** | 7,565 | (20,305) | 4,026 | 9,383 |
| Inventory holding (gains) losses★, before tax | **(1,351)** | (3,655) | 2,868 | (667) | 801 |
| Taxation charge (credit) on inventory holding gains and losses | **332** | 829 | (667) | 156 | (198) |
| Adjusting items★, before tax | **29,781** | 8,697 | 16,649 | 8,263 | 3,380 |
| Taxation charge (credit) on adjusting items | **1,378** | (621) | (4,235) | (1,788) | (643) |
| Underlying RC profit | **27,653** | 12,815 | (5,690) | 9,990 | 12,723 |
| Interest expense[a] | **1,632** | 1,322 | 1,808 | 2,032 | 1,779 |
| Taxation on interest expense | **(296)** | (195) | (406) | (288) | (196) |
| Non-controlling interests (NCI) | **1,130** | 922 | (424) | 164 | 195 |
| | **30,119** | 14,864 | (4,712) | 11,898 | 14,501 |
| Total equity | **82,990** | 90,439 | 85,568 | 100,708 | 101,548 |
| Finance debt | **46,944** | 61,176 | 72,664 | 67,724 | 65,132 |
| Capital employed | **129,934** | 151,615 | 158,232 | 168,432 | 166,680 |
| Less: Goodwill | **11,960** | 12,373 | 12,480 | 11,868 | 12,204 |
| Cash and cash equivalents | **29,195** | 30,681 | 31,111 | 22,472 | 22,468 |
| | **88,779** | 108,561 | 114,641 | 134,092 | 132,008 |
| Average capital employed excluding goodwill and cash and cash equivalents | **98,670** | 111,601 | 124,367 | 133,050 | 128,925 |
| Profit (loss) for the year attributable to bp shareholders divided by total equity | **(3.0)%** | 8.4% | (23.7)% | 4.0% | 9.2% |
| ROACE | **30.5%** | 13.3% | (3.8)% | 8.9% | 11.2% |

[a] Finance costs, as reported in the Group income statement, were $2,703 million (2021 $2,857 million, 2020 $3,115 million, 2019 $3,489 million, 2018 $2,528 million). Interest expense is finance costs excluding lease interest of $257 million (2021 $306 million, 2020 $350 million), unwinding of discount on provisions and other payables of $808 million (2021 $890 million, 2020 $957 million, 2019 $1,074 million, 2018 $749 million) and for 2022 other adjusting items related to finance costs of $6 million (2021 $339 million). For 2018, pre-IFRS 16 implementation, interest expense includes lease interest of $51 million.

## Adjusted EBIDA★

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Profit (loss) for the period | **(1,357)** | 8,487 | (20,729) |
| Finance costs | **2,703** | 2,857 | 3,115 |
| Net finance (income) expense relating to pensions and other post-retirement benefits | **(69)** | (2) | 33 |
| Taxation | **16,762** | 6,740 | (4,159) |
| Profit (loss) before interest and tax | **18,039** | 18,082 | (21,740) |
| Inventory holding (gains) losses, before tax | **(1,351)** | (3,655) | 2,868 |
| | **16,688** | 14,427 | (18,872) |
| Net (favourable) adverse impact of adjusting items, before interest and tax | **29,356** | 7,915 | 16,024 |
| | **46,044** | 22,342 | (2,848) |
| Taxation on an underlying RC basis[a] | **(15,052)** | (6,532) | (743) |
| | **30,992** | 15,810 | (3,591) |
| Add back: | | | |
| Depreciation, depletion and amortization | **14,318** | 14,805 | 14,889 |
| Exploration expenditure written off, net of adjusting items[b] | **385** | 168 | 7,946 |
| Adjusted EBIDA | **45,695** | 30,783 | 19,244 |

[a] A definition for taxation on an underlying RC basis is included under Underlying ETR in the glossary on page 396.
[b] There are no adjusting items in 2022 and 2021. For 2020, exploration expenditure written off was $9,920 million, of which adjusting items were $1,974 million.

## Adjusted EBITDA★

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| Profit (loss) for the period | **(1,357)** | 8,487 | (20,729) |
| Finance costs | **2,703** | 2,857 | 3,115 |
| Net finance (income) expense relating to pensions and other post-retirement benefits | **(69)** | (2) | 33 |
| Taxation | **16,762** | 6,740 | (4,159) |
| Profit (loss) before interest and tax | **18,039** | 18,082 | (21,740) |
| Inventory holding (gains) losses, before tax | **(1,351)** | (3,655) | 2,868 |
| | **16,688** | 14,427 | (18,872) |
| Net (favourable) adverse impact of adjusting items, before interest and tax | **29,356** | 7,915 | 16,024 |
| Underlying RC profit (loss) before interest and tax | **46,044** | 22,342 | (2,848) |
| Add back: | | | |
| Depreciation, depletion and amortization | **14,318** | 14,805 | 14,889 |
| Exploration expenditure written off (EWO), net of adjusting items[a] | **385** | 168 | 7,946 |
| Adjusted EBITDA | **60,747** | 37,315 | 19,987 |

[a] There are no adjusting items in 2022 and 2021. For 2020, exploration expenditure written off was $9,920 million, of which adjusting items were $1,974 million.

## Reconciliation of RC profit before interest and tax for gas & low carbon energy and oil production & operations to adjusted EBITDA★

| | | | $ million |
|---|---|---|---|
| | **2022** | 2021 | 2020 |
| **gas & low carbon energy** | | | |
| RC profit (loss) before interest and tax | **14,696** | 2,133 | (7,068) |
| Less: Net favourable (adverse) impact of adjusting items★ | **(1,367)** | (5,395) | (7,757) |
| Underlying RC profit (loss) before interest and tax★ | **16,063** | 7,528 | 689 |
| Add back: Depreciation, depletion and amortization | **5,008** | 4,464 | 3,457 |
| Exploration write-offs, net of adjusting items[a] | **2** | 43 | 1,068 |
| Adjusted EBITDA | **21,073** | 12,035 | 5,214 |
| **oil production & operations** | | | |
| RC profit (loss) before interest and tax | **19,721** | 10,501 | (14,583) |
| Less: Net favourable (adverse) impact of adjusting items | **(503)** | 209 | (8,695) |
| Underlying RC profit (loss) before interest and tax | **20,224** | 10,292 | (5,888) |
| Add back: Depreciation, depletion and amortization | **5,564** | 6,528 | 7,787 |
| Exploration write-offs, net of adjusting items[b] | **383** | 125 | 6,878 |
| Adjusted EBITDA | **26,171** | 16,945 | 8,777 |

[a] 2020 excludes a write-off of $673 million which has been classified within the 'other' category of adjusting items.
[b] 2020 excludes a write-off of $1,301 million which has been classified within the 'other' category of adjusting items.

The Directors' report on pages 77-111, 112 (in respect of the remuneration committee report shown in the top green box only), 148-150, 263-290 and 351-400 was approved by the board and signed on its behalf by Ben J. S. Mathews, company secretary on 10 March 2023.

BP p.l.c.
Registered in England and Wales No. 102498

## Signatures

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

BP p.l.c.
(Registrant)

[redacted]

10 March 2023

# Cross reference to Form 20-F

## Information about this report

This document constitutes the Annual Report and Accounts in accordance with UK requirements and the Annual Report on Form 20-F in accordance with the US Securities Exchange Act of 1934, for BP p.l.c. for the year ended 31 December 2022. A cross reference to Form 20-F requirements is included on page 402.

This document contains the Strategic report on the inside front cover and pages 1-76 and the Directors' report on pages 77-111, 112 (in part only), 148-150, 263-290 and 351-400. The Strategic report and the Directors' report together include the management report required by DTR 4.1 of the UK Financial Conduct Authority's Disclosure Guidance and Transparency Rules. The Directors' remuneration report is on pages 112-147. The consolidated financial statements of the group are on pages 151-262 and the corresponding reports of the auditor are on pages 152-179. The parent company financial statements of BP p.l.c. are on pages 291-349.

The Directors' statements (comprising the Statement of directors' responsibilities; Risk management and internal control; Longer-term viability; Going concern; and Fair, balanced and understandable), the independent auditor's report on the annual report and accounts to the members of BP p.l.c., the parent company financial statements of BP p.l.c. and corresponding auditor's report do not form part of bp's Annual Report on Form 20-F as filed with the SEC.

*bp Annual Report and Form 20-F 2022* may be downloaded from *bp.com/annualreport*. No material on the bp website, other than the items identified as *bp Annual Report* and *Form 20-F 2022*, forms any part of this document. References in this document to other documents on the bp website, such as *bp Energy Outlook*, *bp Net zero ambition report*, *bp Sustainability Report* and *bp Statistical Review* of *World Energy* are included as an aid to their location and are not incorporated by reference into this document.

BP p.l.c. is the parent company of the bp group of companies. The company was incorporated in 1909 in England and Wales and changed its name to BP p.l.c. in 2001. Where we refer to the company, we mean BP p.l.c. The company and each of its subsidiaries★ are separate legal entities. Unless otherwise stated or the context otherwise requires, the term "BP" or 'bp' and terms such as "we", 'us" and "our" are used in this report for convenience to refer to one or more of the members of the bp group instead of identifying a particular entity or entities. Information in this document reflects 100% of the assets and operations of the company and its subsidiaries that were consolidated at the date or for the periods indicated, including non-controlling interests.

The company's primary share listing is the London Stock Exchange. In the US, the company's securities are traded on the New York Stock Exchange (NYSE) in the form of ADSs (see page 380 for more details) and in Germany in the form of a global depositary certificate representing bp ordinary shares traded on the Frankfurt, Hamburg and Dusseldorf Stock Exchanges.

The term 'shareholder' in this report means, unless the context otherwise requires, investors in the equity capital of BP p.l.c., both direct and indirect. As the company's shares, in the form of ADSs, are listed on the NYSE, an Annual Report on Form 20-F is filed with the SEC. Ordinary shares are ordinary fully paid shares in BP p.l.c. of 25 cents each. Preference shares are cumulative first preference shares and cumulative second preference shares in BP p.l.c. of £1 each.


| **Registered office and our worldwide headquarters:** | **Our agent in the US:** |
|---|---|
| **BP p.l.c.** | **BP America Inc.** |
| 1 St James's Square | 501 Westlake Park Boulevard |
| London SW1Y 4PD | Houston, Texas 77079 |
| UK | US |
| Tel +44 (0)20 7496 4000 | Tel +1 281 366 2000 |

**Registered in England and Wales No. 102498.**
**London Stock Exchange symbol 'BP.'**


## Exhibits

The following documents are filed in the Securities and Exchange Commission (SEC) EDGAR system, as part of this Annual Report on Form 20-F, and can be viewed on the SEC's website.

| | |
|---|---|
| Exhibit 1 | Memorandum and Articles of Association of BP p.l.c.***† |
| Exhibit 2 | Description of rights of each class of securities registered under Section 12 of the Securities Exchange Act of 1934† |
| Exhibit 4.1 | The BP Executive Directors' Incentive Plan**† |
| Exhibit 4.4 | Director's Service Agreement for B Looney****† |
| Exhibit 4.7 | Director's Service Contract for M Auchincloss*****† |
| Exhibit 4.10 | The BP Share Award Plan 2015***† |
| Exhibit 8 | Subsidiaries (included as Note 37 to the Financial Statements) |
| Exhibit 11 | Code of Ethics*† |
| Exhibit 12 | Rule 13a – 14(a) Certifications† |
| Exhibit 13 | Rule 13a – 14(b) Certifications#† |
| Exhibit 15.1 | Consent of Netherland, Sewell & Associates† |
| Exhibit 15.2 | Report of Netherland, Sewell & Associates† |
| Exhibit 15.3 | Consent Decree***† |
| Exhibit 15.4 | Gulf states Settlement Agreement***† |
| Exhibit 15.5 | Consent of Deloitte LLP† |
| Exhibit 17 | Guaranteed Securities† |
| Exhibit 101 | Inline XBRL data files |
| Exhibit 104 | Cover page interactive data file (formatted as Inline XBRL and contained in Exhibit 101) |

* Incorporated by reference to the company's Annual Report on Form 20-F for the year ended 31 December 2009.

** Incorporated by reference to the company's Annual Report on Form 20-F for the year ended 31 December 2014.

*** Incorporated by reference to the company's Annual Report on Form 20-F for the year ended 31 December 2015.

**** Incorporated by reference to the company's Annual Report on Form 20-F for the year ended 31 December 2019.

***** Incorporated by reference to the company's Annual Report on Form 20-F for the year ended 31 December 2020.

\# Furnished only.

† Included only in the annual report filed in the Securities and Exchange Commission EDGAR system.

The total amount of long-term securities of BP p.l.c. and its subsidiaries under any one instrument does not exceed 10% of their total assets on a consolidated basis.

The company agrees to furnish copies of any or all such instruments to the SEC on request.


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★ See glossary on page 389

bp's corporate reporting suite includes information about our financial and operating performance, sustainability performance and global energy trends and projections.

Find out more online [redacted]

**bp Annual Report and Form 20-F 2022**
Details of our financial and operating performance in print and online.

[redacted]

**bp Sustainability Report 2022**
Details of our sustainability performance with additional information online.

[redacted]

**bp Net zero ambition progress update**
Focuses on bp's net zero ambition: why we believe it's consistent with the Paris goals, our planned actions to deliver this decade and our progress to date.

[redacted]

**bp Energy Outlook 2023**
Provides our projections of future energy trends and factor that could affect them out to 2040.

[redacted]

**Group databook 2020-2022**
Three-year financial and operating data in PDF and Excel format.

[redacted]

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