GACC
GATWICK AREA CONSERVATION CAMPAIGN

Interested Party Reference number: 20045900
Gatwick Airport Northern Runway Project – Development Consent Order (DCO)
Written Representations for Deadline 6 26th June, 2024

Dear Examining Authority
Please find our further written submissions for the 26th June Deadline 6
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Yours faithfully,
Peter Barclay
Chair, Gatwick Area Conservation Campaign

GACC response at DCO Deadline 6 on 26th June, 2024

1 Noise

Introduction

This submission comments on points made in ISH8 on noise issues (agenda item 6).

Noise context

GACC notes that of the 4,800 relevant representations made to the Authority well over 80% were opposed to expansion of Gatwick. The great majority of those referred to the noise impacts the proposed expansion would have.

GACC further notes that there is overwhelming and growing evidence - which is accepted by both the UK government and the World Health Organisation - that aircraft noise causes regular sleep disturbance, increases the risk of stroke and heart disease, can impede memory and learning in children and has a range of other health and quality of life impacts. Aircraft noise is a serious public health issue.

Noise envelope

Consultation and engagement

The Government's Airport's National Policy Statement (ANPS) requires noise envelopes to be "*defined in consultation with local communities*".

The CAA's guidance on noise envelopes (CAP 1129) says it is "*… essential that agreement is achieved between stakeholders on the envelope's criteria, limit values and means of implementation and enforcement*".

The airport consulted and engaged on its noise envelope proposals in 2021/22.

However, it's engagement was defective in numerous material respects and therefore failed to meet the ANPS and CAP 1129 tests.

First, the airport rejected all engagement process proposals made by community groups and councils. These proposals were designed to align the engagement process with CAA guidance and the ANPS. For example, community groups proposed the engagement should be independently chaired as CAP1129 envisages may be necessary. This was rejected. We note that the airport states in its response to deadline 4 submissions (Rep 5-072, NV.1.9) that "both subgroups of the Noise Envelope Group were independently chaired". That is not true. Numerous other process and timetable proposals were rejected.

The airport then refused to provide additional data and analysis that was essential to effective noise envelope engagement and which only it could provide, rendering meaningful engagement impossible.

Finally, the airport rejected the overwhelming majority of comments on its proposals.

In ISH 8 Mr Sinclair, speaking for the applicant, said he would defy anyone to argue that

the airport had not listened to comments on its noise envelope proposals. The evidence shows clearly that it has not done so. The noise envelope proposed by the airport is (subject to changes alluded to in ISH 8) in all material respects the same as the one described in its 2021 consultation. There have been only two changes of any significance. First the airport proposes to report a number of secondary metrics. Given these will have no limits or enforcement processes associated with them they are of no practical value to communities. Secondly the airport corrected an oversight which might have meant that the noise envelope limit stepdown proposed for the end of the first period (after nine years) was never triggered. This was merely the correction of an error.

The airport's noise envelope engagement process was tokenistic and ineffective. The proposed noise envelope has not been "*defined in consultation with local communities*" as required by the ANPS and agreement has not been reached on any material aspect of the envelope as required by CAA guidance.

In our view the airport should be required to engage properly, under independent chairmanship, to develop new noise envelope proposals.

Metrics

Gatwick has proposed a single, average noise, (Leq) metric.

It is widely accepted, including by government, the CAA and ICAO, that average noise measures do not portray aircraft noise as experienced by communities. All relevant policy and guidance advises against its use as a sole metric.

The APF says "*… we recommend that average noise contours should **not** be the only measure used …. Instead the Government encourages airport operators to use alternative measures which better reflect how aircraft noise is experienced in different localities, developing these measures in consultation with their consultative committee and local communities. The objective should be to ensure a better understanding of noise impacts and to inform the development of targeted noise mitigation measures".*

CAA guidance on noise envelopes recommends using a "*combination of parameters*" and states that "*where unilateral agreement cannot be achieved using standard metrics, consideration should be given to designing envelopes using other metrics provided that they are scientifically valid and robust".*

Gatwick's envelope, based solely on Leq metrics, does not meet any of those tests. It could not be clearer that an envelope based on a single metric is neither appropriate nor policy compliant.

Policy compliance

Government policy (the 2013 Aviation Policy Framework) says that "*as a general principle, the Government expects that future growth in aviation should ensure that benefits are shared between the aviation industry and local communities. This means that the industry must continue to reduce and mitigate noise as airport capacity grows. As noise levels fall with technology improvements the aviation industry should be expected to share the benefits from these improvements".*

The ANPS says that "*The benefits of future technological improvements should be shared between the applicant and its local communities, hence helping to achieve a balance between growth and noise reduction.*"

Gatwick's noise envelope proposals do not achieve these policy principles.

For the first noise envelope period, for nine years, the benefits of growth would accrue almost entirely to the airport. It would enjoy a more than 60% increase in passenger capacity while communities would suffer substantial increases in noise. Even if the airport's revised noise envelope proposals offer a marginal reduction in noise (using Leq metrics solely) from 2019 levels, it will not have met the test that the benefits of growth should be shared in any plausible way.

For the second noise envelope period the noise impacts on communities would continue to be greater than in 2019 once account was taken of the frequency of aircraft, a key measure of community impact. After the second noise envelope period, the proposed review process would potentially allow noise to increase above the 2019 base year level on any measure.

Gatwick's assessment of benefit sharing, set out in Environmental Statement Appendix 14.9.9: Report on Engagement on the Noise Envelope is misleading and incomplete. The airport has attempted to assess the sharing of benefits arising from technology improvements (i.e. a new fleet), using a single and inappropriate metric, but has made no assessment of whether overall benefits are being shared, as both the Aviation Policy Framework and the ANPS require.

Rather than the airport reducing noise as capacity grows, as policy requires, noise would increase substantially and potentially indefinitely. And rather than the benefits of growth being shared, they would flow almost entirely to the industry.

In summary the noise envelope proposed by Gatwick fails to meet all relevant policy tests and should be rejected.

Noise envelope seasonal coverage

The airport's proposals only set limits in relation the summer peak period. At all other time of year there would be no noise envelope limits. It would therefore be possible for the noise impacts on communities, and the associated costs, to increase very substantially from current levels for 10 months of the year with no limits or controls.

The Aviation Policy Framework states that "*The Government wishes to pursue the concept of noise envelopes as a means of giving certainty to local communities about the levels of noise which can be expected in the future …*".

It is clear that an envelope which only sets limits for a two-month period cannot provide communities with certainty.

The noise envelope must therefore set limits, that adhere to the policy

principles set out above for all periods of the year.

Noise envelope reviews

The airport has proposed noise envelope review, compliance and breach arrangements that are wholly one sided and do not comply with policy.

New review, compliance and breach arrangements should be developed and agreed.

Noise envelope conclusions and next steps

The airport's noise envelope proposals are inadequate in multiple and fundamental respects.

If development consent is to be granted a mechanism needs to be found to develop a new envelope that complies with policy and guidance. Specifically, it must:

a. ensure that noise reduces as capacity grows, at a pace that achieves a genuine sharing of the benefits of growth between industry and communities;
b. cover all periods of the year to provide the certainty policy requires;
c. incentivise noise reduction;
d. be based on a suite of metrics and limits to be agreed with all stakeholders, not a single average noise metric; and
e. contain review, compliance and breach arrangements that reflect these principles.

GACC's response to EA question NV.1.10, submitted at deadline 4, proposes a combination of measures for the period 2029 to 2038 that would better achieve government policy. These were as follows:

a. A Leq 16 hour Day 51 dB peak summer season noise envelope limit of 108.8 km^2 for the period to 2038; and
b. A ban on night flights between 11pm and 7am as required by the Airports National Policy Statement; and
c. A noise envelope limit for the remainder of the summer day period (i.e for the British Summer Time period outside the peak summer season for which Gatwick has proposed the noise envelope should apply) that requires noise to reduce materially in that period; and
d. A noise envelope limit for the winter day period that require noise to reduce materially in that period; and
e. Limits on aircraft movements between 10.00 pm to 11.00 pm, a period of high community impact and sensitivity, to no more than operated in 2019; and
f. Limits on the noisiness of individual aircraft.

Night flights

The ANPS requires a ban on scheduled night flights between 11pm and 7am.

The ANPS is clearly stated to be an important and relevant consideration for applications for any airport nationally significant infrastructure project in the South East of England, not just Heathrow.

The airport's view that current night flight regulation by the Secretary of State is adequate and can be relied upon by the EA in the context of a substantial expansion of the airport is plainly wrong. Parliament voted by a very substantial majority to ban night flights at Heathrow as a condition of any expansion and made clear that a similar approach should be considered for any other airport expansion in the South East of England.

A ban on night flights and a comprehensive package of measures to incentivise the use of the quietest aircraft at night outside the hours of a ban should be conditions of any approval of the DCO.

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2 Climate Impacts

Significance of Climate Impacts of Gatwick Expansion Plans

The Applicant have claimed that the DCO application and their plans to make the Northern Runway operational at Gatwick Airport and increase flights such as to increase passenger numbers from 46 mppa to 80 mppa by 2050 are not significant with respect to their climate impact.

GACC have challenged this assertion. Principally in our main written submission, and subsequently.

On Thursday 20th June the Supreme Court ruled in the case of Finch v Surrey County Council that a Project to drill for oil must consider the downstream impacts of burning that oil in its assessment of climate impacts as part of its Environmental Impact Assessment.

GACC believe that this should be applied to the similar link between building a runway that enables increase in flights from an airport.

The judgement clearly states that it doesn't matter if the GHG emissions occur in a different place from the development, they still need to be assessed. In particular we highlight:

1. "There is no principle that, if environmental harm is exported, it may be ignored."
2. "It is wrong ... to treat the impact on climate of GHG emissions as local to the places where the combustion occurs." [paragraph 96 of the judgement].
3. "Climate change is a global problem precisely because there is no correlation between where GHGs are released and where climate change is felt. Wherever GHG emissions occur, they contribute to global warming." [paragraph 97].
4. "The effect of the combustion emissions on climate does not depend on where they occur, and it is thus unnecessary to know where the GHG emissions will occur to assess their environmental impact." [paragraph 114].

The full judgement is attached for consideration of the Planning Inspectorate in Appendix 1

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3 Air Quality- Ultra Fine Particles

A new report was published on Tuesday 25th June 2024 by a leading European transport campaign group, T&E. This report (attached in Appendix 2) finds that ultra-fine particles (UFPs) from aircraft could pose serious health risks to the populations around airports. Using extrapolated data, the report suggests that at the four UK airports studied – London Gatwick, Stansted, Heathrow and Manchester – UFP from aircraft could be associated with, in total, an additional 41,000 cases of high blood pressure, 44,000 cases of diabetes and 2,200 cases of dementia.

The study provides an estimate of the scale of health effects caused by aviation in Europe, by extrapolating data from Schiphol Airport in Amsterdam. It takes into account population exposure at major airports, and adjusts for the health impact of other factors such as noise and other air pollutants in order to identify the harm caused specifically by UFPs. Actual risk for any individual will vary depending on their personal circumstances, the report notes, as well as their 'exposure history' (how long they have lived near the airport, for example).

In the UK, air pollution laws provide some protection from dangerous levels of pollutants such as nitrogen oxides and particulate matter generally (including UFPs), but there are no legal limits focused specifically on levels of UFPs. A growing body of evidence links UFP exposure with various forms of cancer, heart disease, COPD and respiratory diseases.

The AEF has published policy recommendations based on the report findings and which GACC fully support :

> The UK is lacking an up to date, comprehensive national review of pollution levels (including UFPs) and health risks of living near major airports. The UK Government should undertake to provide an updated review in these areas.
>
> •Government should follow WHO guidance and integrate UFP monitoring into existing air quality monitoring.
>
> •Airport expansion should be paused, and measures to protect populations near airports must be considered. Suggested precautionary measures include: establishing limit values for UFP exposure and updating PM2.5 and NOx targets to align with the latest WHO guidance and Ella's Law.
>
> •Consider introducing new standards for aviation fuel to reduce the amount of particulate matter release on combustion. Such standards could be supported by processes such as hydrotreatment.

The Examining Authority is asked to review the report and note the AEF/GACC policy recommendations above.

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Water Neutrality

Water neutrality is defined as development that takes place which does not increase the rate of water abstraction for drinking water supplies above existing levels. (Natural England, 14 September 2021)HTC

GACC is concerned that whilst the water utilities are indicating provision of water supplies required for an expanded Gatwick as proposed can be adequately met locally SES Water is promoting the introduction of water meters locally because they note there is a shortage of water availability. Their promotion literature states:

"In addition, climate change is affecting how much water is available for us to supply and it is predicted that droughts will become more common and severe. The water we supply comes from local rivers and underground sources that feed rare chalk streams, which are under threat from climate change.
So, at SES Water, we need to plan to make sure there is enough water for all our customers and to protect the environment, which provides our water supplies.

Reducing the demand for water is an important part of how we will achieve this. Evidence shows that, on average, metered customers use 15 per cent less water, meaning that by having a meter customers are not only using water more efficiently, they are – in most cases - also lowering their bills.

That's why we've started to provide meters for our customers who don't currently have one, in the hope that by 2025 90% of our customers will be on a meter."

The Examining Authority is asked to obtain assurances that the water utility companies categorically do not enter into agreements with GAL that provide it with water supplies to the detriment of local communities. There should be a review of evidence as to the impact of climate change on the water supply in the area surrounding Gatwick.

GACC would note that in the absence of SES Water agreeing to provide water the Examining Authority considers also any application by GAL for water supply from Southern Water and propose suitable conditions on Gatwick that protects local communities in the same way should any DCO permission be granted.

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Appendix 1

Trinity Term
[2024] UKSC 20
On appeal from: [2022] EWCA Civ 187

JUDGMENT

R (on the application of Finch on behalf of the Weald Action Group) (Appellant) *v* Surrey County Council and others (Respondents)

before

Lord Kitchin
Lord Sales
Lord Leggatt
Lady Rose
Lord Richards

JUDGMENT GIVEN ON
20 June 2024

Heard on 21 and 22 June 2023

Appellant
Marc Willers KC
Estelle Dehon KC
Ruchi Parekh
(Instructed by Leigh Day (London)])

1st Respondent
Harriet Townsend
Alex Williams
(Instructed by Surrey County Council Legal & Democratic Services)

2nd Respondent
David Elvin KC
Matthew Fraser
(Instructed by Hill Dickinson LLP (Manchester))

3rd Respondent
Richard Moules KC
Nick Grant
(Instructed by Government Legal Department)

1st Intervener – Friends of the Earth (written submissions only)
Paul Brown KC
Nina Pindham
(Instructed by Friends of the Earth Ltd)

2nd Intervener – Greenpeace UK (written submissions only)
Ruth Crawford KC
Richard Harwood KC
David Welsh
(Instructed by Harper Mcleod LLP (Edinburgh))

3rd Intervener – Office of Environmental Protection (written submissions only)
Stephen Tromans KC
Ruth Keating
(Instructed by Head of Litigation and Casework)

4th Intervener - West Cumbria Mining Ltd (written submissions only)
Gregory Jones KC
Alexander Greaves
(Instructed by Ward Hadaway (Newcastle))

LORD LEGGATT (with whom Lord Kitchin and Lady Rose agree):

1. Introduction

Anyone interested in the future of our planet is aware by now of the impact on its climate of burning fossil fuels - chiefly oil, coal and gas. When fossil fuels are burnt, they release carbon dioxide and other "greenhouse gases" - so called because they act like a greenhouse in the earth's atmosphere, trapping the sun's heat and causing global surface temperatures to rise. According to the United Nations Environment Programme ("UNEP") Production Gap Report 2023, p 3, close to 90% of global carbon dioxide emissions stem from burning fossil fuels.

The whole purpose of extracting fossil fuels is to make hydrocarbons available for combustion. It can therefore be said with virtual certainty that, once oil has been extracted from the ground, the carbon contained within it will sooner or later be released into the atmosphere as carbon dioxide and so will contribute to global warming. This is true even if only the net increase in greenhouse gas emissions is considered. Leaving oil in the ground in one place does not result in a corresponding increase in production elsewhere: see UNEP's 2019 Production Gap Report, p 50, which reported, based on studies using elasticities of supply and demand from the economics literature, that each barrel of oil left undeveloped in one region will lead to 0.2 to 0.6 barrels not consumed globally over the longer term.

Before a developer is allowed to proceed with a project which is likely to have significant effects on the environment, legislation in the United Kingdom and many other countries requires an environmental impact assessment ("EIA") to be carried out. The object of an EIA is to ensure that the environmental impact of a project is exposed to public debate and considered in the decision-making process. The legislation does not prevent the competent authority from giving development consent for projects which will cause significant harm to the environment. But it aims to ensure that, if such consent is given, it is given with full knowledge of the environmental cost.

This appeal raises a question about whether the greenhouse gas ("GHG") emissions which will occur when oil extracted from an oil well, after being refined, is burnt as fuel must be included in the EIA required before development consent may be given for the extraction of the oil. The answer to this question depends on whether, for the purpose of the applicable legislation, the effect on climate measured by the GHG emissions that will occur upon combustion of the oil is an effect of the project on climate.

The competent authority, Surrey County Council, initially considered that the EIA for a project to extract oil for commercial purposes at a well site in Surrey should include an assessment of the combustion emissions from the oil to be produced. The council advised the developer that its environmental statement describing the likely significant effects of the project on the environment should assess the effect of the project on climate and "should consider, in particular, the global warming potential of the oil and gas that would be produced by the proposed well site." But later the council changed its

mind. It accepted as sufficient an environmental statement which assessed only direct releases of greenhouse gases at the project site over the lifetime of the project and contained no assessment of the impact on climate of the combustion of the oil. In consequence, no information about the combustion emissions was made available to the public or considered by the council before it granted development consent for the project.

The issue which this court must now decide is whether it was lawful for the council to restrict the scope of the EIA in this way. In defence of the council's decision to do so, two alternative arguments are made. First, it is said that as a matter of law the combustion emissions could not be regarded as environmental effects of the project within the meaning of the legislation. So the council was right to omit them from the EIA. Alternatively, it is said that whether the combustion emissions were effects of the project was a matter of evaluative judgment for the council. Hence the council's decision not to assess the combustion emissions can be challenged only on the limited grounds on which a court can review an exercise of discretion by a public authority. Here, it is argued, there is no proper ground for such a challenge.

I am not persuaded by either argument. It is agreed that the project under consideration involves the extraction of oil for commercial purposes for a period estimated at 20 years in quantities sufficient to make an EIA mandatory. It is also agreed that it is not merely likely, but inevitable, that the oil extracted will be sent to refineries and that the refined oil will eventually undergo combustion, which will produce GHG emissions. It is not

disputed that these emissions, which can easily be quantified, will have a significant impact on climate. The only issue is whether the combustion emissions are effects of the project at all. It seems to me plain that they are.

Before explaining my reasons for so concluding, I must identify the applicable legislative provisions and say a little more about the factual and procedural background to this appeal.

2. The legislation

The legislation which the council had to apply was contained in the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (SI 2017/571). I will refer to these as "the 2017 Regulations". The 2017 Regulations are one of a number of UK statutory instruments designed to implement Directive 2011/92/EU of the European Parliament and of the Council, as amended by Directive 2014/52/EU. I will refer to Directive 2011/92/EU, as amended, as "the EIA Directive" and to Directive 2014/52/EU as "the 2014 Directive".

We are concerned with the law as it stood in September 2019 when the council's decision to grant development consent for the project was taken. This was before the United Kingdom left the European Union. It is not suggested that the analysis of this case is affected by any changes made to English law as a result of Brexit.

The 2017 Regulations are to be interpreted in line with the EIA Directive which they were intended to implement. In these circumstances it is appropriate to focus directly on the provisions of the EIA Directive: see eg *R (Friends of the Earth Ltd) v Secretary of State for Transport* [2020] UKSC 52; [2021] PTSR 190, para 136.

The EIA Directive

The principle underpinning the EIA Directive, as stated in recital (7), is that:

> "Development consent for public and private projects which are likely to have significant effects on the environment should be granted only after an assessment of the likely significant environmental effects of those projects has been carried out."

"Development consent" is defined in article 1 as "the decision of the competent authority or authorities which entitles the developer to proceed with the project." The term "project" is widely defined and specifically includes "the extraction of mineral resources."

The general obligation imposed by the EIA Directive is set out in article 2(1):

> "Member States shall adopt all measures necessary to ensure that, before development consent is given, projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects on the environment. Those projects are defined in article 4."

Certain projects - such as oil refineries, power stations and waste disposal installations among others - are regarded as inherently likely to have significant effects on the environment and therefore automatically require development consent and an EIA: see article 4(1). These projects are listed in Annex I. The list includes, at item 14:

> "Extraction of petroleum and natural gas for commercial purposes where the amount extracted exceeds 500 tonnes/day in the case of petroleum and 500 000 cubic metres/day in the case of gas."

It is agreed that the project here falls within this description. Development consent for the project and an EIA were therefore required.

As defined in article 1(2)(g) of the EIA Directive, "environmental impact assessment" is a process consisting of: (i) the preparation of an EIA report by the developer; (ii) the carrying out of consultations, including public consultation; (iii) the examination by the competent authority of the information received; (iv) a reasoned conclusion by the competent authority on the significant effects of the project on the environment, taking into account the results of its examination; and (v) the integration of this reasoned conclusion into any decisions taken by the competent authority.

Article 3(1) requires the EIA to "identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project" on various factors, which include "climate." Article 5(1) specifies information which the developer must provide in an EIA report where an EIA is required. This information includes "a description of the likely significant effects of the project on the

environment" and any additional information specified in Annex IV relevant to the particular project or type of project in question: see article 5(1)(b) and (f). The information specified in Annex IV includes, at para 5, a "description of the likely significant effects of the project on the environment resulting from, inter alia":

> "…
>
> (f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) …"

Annex IV, para 5, further stipulates:

> "The description of the likely significant effects on the factors specified in article 3(1) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the project."

Public Participation

One of the objects of the EIA Directive is to provide for public participation in environmental decision-making.

The European Union and the United Kingdom are both parties to the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, known as "the Aarhus Convention", which was adopted in 1998 and ratified by the EU and the UK in 2005. As its full name indicates, this international agreement is designed to secure three rights in relation to environmental matters: a right

of access to information, a right of public participation in decision-making, and a right of access to justice. The Aarhus Convention was itself partly based on Council Directive 85/337/EEC of 27 June 1985, which introduced the EIA procedure within the European Economic Community (as it was then called). That directive was amended after the Aarhus Convention came into force by Directive 2003/35/EC to implement obligations arising under the Aarhus Convention and was later codified in the EIA Directive. Recital (18) to the EIA Directive refers to the Aarhus Convention and recital (19) records that:

> "Among the objectives of the Aarhus Convention is the desire to guarantee rights of public participation in decision-making in environmental matters in order to contribute to the protection of the right to live in an environment which is adequate for personal health and wellbeing."

Obligations arising under the Aarhus Convention have been built into articles 6, 8 and 9 of the EIA Directive. Thus, article 6 imposes obligations on Member States to inform the public early in the decision-making procedure of various matters, which include details of the arrangements made for public participation in the process; to make available to the public concerned the information gathered where an EIA is required; and to give the public concerned early and effective opportunities to express comments and opinions before the decision on the request for development consent is taken. The "public concerned" is defined in article 1(2)(e) as "the public affected or likely to be affected by, or having an interest in, the environmental decision-making procedures" required by the EIA Directive and specifically includes NGOs promoting environmental protection. Article 8 of the EIA Directive requires the results of such public consultation

to be "duly taken into account" in the decision-making procedure; and article 9(1) provides that the public must be promptly informed of the decision taken and of "the main reasons and considerations on which the decision is based, including information about the public participation process."

The rationale underpinning these public participation requirements is expressed in recital (16) to the EIA Directive:

> "Effective public participation in the taking of decisions enables the public to express, and the decision-maker to take account of, opinions and concerns which may be relevant to those decisions, thereby increasing the accountability and transparency of the decision-making process and contributing to public awareness of environmental issues and support for the decisions taken."

Two important ideas are included within this rationale. First, public participation is necessary to increase the democratic legitimacy of decisions which affect the environment. Second, the public participation requirements serve an important educational function, contributing to public awareness of environmental issues. Guaranteeing rights of public participation in decision-making and promoting education of the public in environmental matters does not guarantee that greater priority will be given to protecting the environment. But the assumption is that it is likely to have that result, or at least that it is a prerequisite. You can only care about what you know about.

The 2014 amendments

As well as the provisions implementing the Aarhus Convention, it is relevant to note amendments to the EIA Directive made by the 2014 Directive. These included the incorporation in Annex IV of climate and GHG emissions as specific factors which must be addressed in the description of the likely significant effects of the project on the environment (see para 16 above).

The rationale for these amendments is explained in recitals (7) and (13) to the 2014 Directive. Recital (7) stated:

> "Over the last decade, environmental issues, such as … climate change … have become more important in policy making. They should therefore also constitute important elements in assessment and decision-making processes."

Recital (13) stated:

> "Climate change will continue to cause damage to the environment and compromise economic development. In this regard, it is appropriate to assess the impact of projects on climate (for example greenhouse gas emissions) and their vulnerability to climate change."

Further background to the amendments appears from a proposal to amend the EIA Directive sent by the European Commission to the Council on 26 October 2012, accompanied by an impact assessment, and from *Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment* published by the

Commission in 2013 ("the 2013 Guidance") in anticipation of the relevant amendments being made. These documents explain that, although the EIA Directive had previously included "climate" as a factor specified in article 3(1), experience had shown that climate change issues were not being adequately identified and assessed. One of the aims of the 2014 Directive was to change this, including by the incorporation of an explicit requirement to consider GHG emissions. The aim of the 2013 Guidance was to help Member States improve the way in which climate change (and biodiversity) issues were integrated into the EIA process.

The 2017 Regulations

The EIA Directive has been transposed into English law through a series of statutory instruments applicable to different types of project for which, under the EIA Directive, development consent and an EIA are required. There are separate statutory regimes for - to give just a few examples - projects related to forestry, harbour works, marine works, pipeline works, offshore petroleum works and nuclear reactor decommissioning works.

The regulations applicable to projects for offshore petroleum production in an amount exceeding 500 tonnes per day (and therefore falling within item 14 of Annex I to the EIA Directive) are the Offshore Petroleum Production and Pipe-lines (Assessment of Environmental Effects) Regulations 1999 (SI 1999/360). Under those regulations, the authority responsible for deciding whether to grant development consent and for carrying out an EIA when required is the Secretary of State.

In the case of projects for onshore petroleum production (and many other types of project), the United Kingdom has chosen to implement the EIA Directive through the town and country planning regime, by way of the 2017 Regulations. The responsibility for deciding whether to grant development consent and for carrying out an EIA when required is conferred by the 2017 Regulations on the "relevant planning authority" which is, broadly speaking, the body responsible for determining an application for planning permission for the development. Where the development involves the extraction of oil or other minerals, this is the county council for the area in which it is proposed that the extraction will take place.

I pause to note that the EIA Directive did not oblige the UK to adopt this approach. Article 2(2) of the EIA Directive states that the EIA "may be integrated into the existing procedures for development consent to projects in the Member States" or into "other procedures or into procedures to be established to comply with the aims of [the] Directive." There is nothing in the EIA Directive which prevented the UK, if it thought necessary or fit, from establishing a national regime for decisions whether to give development consent for projects for onshore oil production - just as the UK has done in relation to projects for offshore oil production. I will return to this point when addressing a suggestion that, because the public authority responsible for granting development consent here is a county council, the EIA process cannot require an assessment of the combustion emissions, as such effects on climate are properly considered at a national level. A short answer is that this looks at the matter the wrong way round. If (which I do not accept) a county council cannot carry out EIAs for

projects for onshore petroleum production that are adequate to comply with the aims of the EIA Directive, then a different procedure should be established - if necessary, at a national level - that will achieve such compliance.

Regulation 3 of the 2017 Regulations enacts the basic rule that:

> "The relevant planning authority, the Secretary of State or an inspector must not grant planning permission or subsequent consent for EIA development, unless an EIA has been carried out in respect of that development."

The definition of "EIA development" includes (subject to exemptions not relevant in this case) development of a description mentioned in Schedule 1 to the 2017 Regulations, which reproduces Annex I to the EIA Directive. It therefore encompasses the project for the extraction of oil which is the subject of this case.

The 2017 Regulations contain provisions which mirror the provisions of the EIA Directive referred to at paras 14-17 above. The EIA report which under article 5(1) of the EIA Directive the developer must prepare is referred to in the 2017 Regulations as an "environmental statement."

3. Factual background

The project

The relevant "EIA development" in this case is a project to expand oil production from a well site at Horse Hill near Horley in Surrey. The developer, a company called Horse Hill Developments Ltd, applied to Surrey County Council, as the relevant mineral planning authority, for planning permission to retain and extend the existing well site (comprising two wells) and drill four new wells, and to extract hydrocarbons from the six wells for commercial production. The plan was to carry out the project over 25 years in six phases, starting with construction works to modify the well site, drill the new wells and install facilities for exporting crude oil from the site, and ending with decommissioning and site restoration. The relevant phase is phase 4, which encompasses the extraction of oil from the wells over 20 years. It is estimated that over this period the total quantity of oil produced could be of the order of 3.3 million tonnes.

The scope of the environmental statement

The 2017 Regulations (in regulation 15, which implements article 5(2) of the EIA Directive) allow the developer, before making an application for planning permission for EIA development, to ask the relevant planning authority for a "scoping opinion" on the information to be provided in the environmental statement. There is nothing which prevents the planning authority from deciding to grant planning permission if the environmental statement does not conform to the scoping opinion. But there is an

expectation that, where there is a scoping opinion, the environmental statement will be based on it. This is explicit in regulation 18(4), giving effect to article 5(1), which states that, where a scoping opinion has been issued, the environmental statement "must … be based" on that opinion.

In this case the developer requested, and the council issued, a scoping opinion. The scoping opinion said (in para 3.13) that "the indirect effects associated with the production and sale of fossil fuels which would likely be used in the generation of heat or power, consequently giving rise to carbon emissions, cannot be dismissed as insignificant." This led (in para 3.14) to the following recommendation:

> "Given the nature of the proposed development, which is concerned with the production of fossil fuels, the use of which will result in the introduction of additional greenhouse gases into the atmosphere, it is recommended that the submitted EIA include an assessment of the effect of the scheme on the climate. *That assessment should consider, in particular, the global warming potential of the oil and gas that would be produced by the proposed well site*."
> (emphasis added)

The developer did not comply with this recommendation. The environmental statement submitted by the developer contained no information about the global warming potential of the oil that would be produced by the proposed well site. The section dealing with "Greenhouse Gas Emissions and The Climate" stated that:

> "The scope of the assessment is confined to the direct releases of greenhouse gases from within the well site boundary resulting from the site's construction, production,

> decommissioning and subsequent restoration over the lifetime of the proposed development."

The decision to restrict the scope of the assessment in this way was explained (in paras 121 and 122 of the environmental statement) on these grounds:

> "121. … The essential character of the proposed development is the extraction and production of hydrocarbons and does not extend to their subsequent use by facilities and process beyond the planning application boundary and outwith the control of the site operators.
>
> 122. The assessment methodology pays regard to national planning policy and guidance that establishes that decision-makers should 'focus on whether the development is an acceptable use of land, rather than on control of processes or emissions where these are subject to approval under pollution control regimes'. These non-planning regimes regulate hydrocarbon development and other downstream industrial processes and decision-makers can assume that these regimes will operate effectively to avoid or mitigate the scope for material environmental harm."

As I read these paragraphs (in agreement with Moylan LJ at para 116 of the Court of Appeal judgment), the developer was giving two, or possibly three, reasons for confining the scope of the assessment to "the direct releases of greenhouse gases from within the well site boundary" contrary to the council's scoping opinion. The first reason (or pair of reasons) was that it was unnecessary to assess GHG emissions resulting from the subsequent processing and use of the hydrocarbons beyond the well site boundary because such processes and use (a) were not part of the proposed development and (b) were "outwith the control of the site operators." The other reason given (in para 122) was that the planning authority should not concern itself with GHG

emissions that will occur "downstream" when the oil produced from the wells is processed and used because such processes are regulated by other, non-planning regimes, and the planning authority can assume that these regimes will operate effectively to avoid or mitigate the scope for material environmental harm.

The council's decision

The council accepted the developer's explanation for not preparing an environmental statement which complied with the scoping opinion. The environmental statement was reviewed by a council officer, Dr Jessica Salder. Her review noted (at para 5.15) that the assessment of the impact of the proposed development on GHG emissions and climate change was limited to "the direct greenhouse gas emissions" of the development and operation of the proposed well site and that "[t]he potential contribution of the hydrocarbons that would be produced over the lifetime of the well site is not covered." The review also noted that the reasons for excluding those emissions were set out in paras 121 and 122 of the environmental statement (quoted above) and said that the council accepted the justification given there for excluding consideration of the global warming potential of the produced hydrocarbons from the scope of the EIA process.

At a meeting on 11 September 2019, the council's planning and regulatory committee decided that planning permission should be granted for the project. The committee had sight of an officer's report which included consideration of the effect of the development on climate. But because of the council's acceptance of the approach taken in the developer's environmental statement, this report ignored the combustion

emissions. This limitation in the scope of the EIA was recognised, even if only obliquely, in the conclusion (at para 97 of the report) that:

> "the proposed development would not give rise to significant impacts on the climate as a consequence of the emissions of greenhouse gases *directly* attributable to the implementation and operation of the scheme." (emphasis added)

The report said nothing about impacts on the climate as a consequence of GHG emissions *indirectly* attributable to the operation of the well site, as no assessment had been made of those indirect effects of the project.

4. Classifying GHG emissions

It is convenient at this stage to introduce some terminology which, although not used in the EIA Directive and 2017 Regulations, has become widely used in reporting GHG emissions and was used in the judgments of the Court of Appeal. The terminology derives from the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (the "GHG Protocol"). This is a document published by the Greenhouse Gas Protocol Initiative, an international initiative involving businesses, NGOs, governments and others. Its aim is to develop internationally accepted GHG accounting and reporting standards for business and to promote their broad adoption.

The GHG Protocol classifies GHG emissions using three categories, labelled "scope 1", "scope 2" and "scope 3". Scope 1 emissions are defined as direct GHG emissions that occur from sources that are owned or controlled by an entity. Scope 2 emissions are a

special category of indirect emissions. This category consists of GHG emissions from the generation of purchased electricity consumed by an entity. Scope 2 emissions occur at the facility where the electricity is generated. Scope 3 encompasses all other indirect emissions. Scope 3 emissions are consequences of the activities of the entity but (like scope 2 emissions) occur from sources not owned or controlled by the entity. Some examples of scope 3 activities given in the GHG Protocol (at p 25) are extraction and production of purchased materials, transportation of sold products, and use of sold products and services.

In November 2021 the International Financial Reporting Standards ("IFRS") Foundation announced the formation of the International Sustainability Standards Board. The Board's aim is to develop international standards for the disclosure of information related to sustainability. Sustainability is defined very broadly and includes direct and indirect effects of the entity's business on the environment. So far two standards have been issued: IFRS S1 and IFRS S2. IFRS S1 establishes general requirements for disclosure of sustainability-related financial information. IFRS S2 is concerned with disclosure of climate-related information. Among other information, IFRS S2 requires entities to disclose their absolute gross GHG emissions during the reporting period, classified as scope 1, scope 2 and scope 3 GHG emissions. Scope 3 GHG emissions are themselves required to be classified in 15 categories derived from the GHG Protocol. These categories include "downstream transportation and distribution", "processing of sold products" and "use of sold products".

The UK Government is currently consulting on whether to endorse IFRS S2 for use in the UK and, in particular, whether to introduce reporting requirements for UK companies which include an obligation to report their scope 3 GHG emissions: see "Scope 3 Emissions in the UK Reporting Landscape: A Call for Evidence" (October 2023).

Using the taxonomy adopted in the GHG Protocol Standard and IFRS S2, the council's decision to confine the scope of the assessment of GHG emissions to "the direct releases of greenhouse gases from within the well site boundary" (see para 37 above) meant that only scope 1 GHG emissions were assessed. That is, only direct GHG emissions from sources within the control of the developer / site operator were included in the EIA. No indirect GHG emissions resulting from the project but occurring from sources outside the control of the developer / site operator were assessed. As it happens, there were no relevant scope 2 GHG emissions. This is because the project was intended to generate its own electricity. There was therefore no plan to consume any purchased electricity generated at facilities elsewhere. So the GHG emissions from the generation of electricity used in the operation of the well site would all be scope 1 GHG emissions. The combustion emissions which are the centre of controversy here are scope 3 GHG emissions, as they are indirect GHG emissions not included in scope 2. Under IFRS S2 they fall within scope 3, category (11): emissions from the use of sold products.

5. These proceedings

The claim

The claimant, who lives near the site and represents an association called the Weald Action Group, has brought this claim for judicial review of the council's decision to grant planning permission for the project. Her primary ground of challenge (and the only one still relevant on this appeal) is that the council did not comply with the obligations imposed by the EIA Directive and the 2017 Regulations because, in carrying out the EIA required for the project, it failed to assess the combustion emissions that will result from the oil to be produced. There are three defendants to the claim, all of whom oppose it. They are the council, the developer and the Secretary of State for Levelling Up, Housing and Communities.

The High Court decision

In the High Court Holgate J dismissed the claim for reasons given in a characteristically clear and comprehensive judgment: [2020] EWHC 3566 (Admin); [2021] PTSR 1160. The judge found, at para 69, that it is impossible to say where the oil produced would be refined or used, and whether this would be in the United Kingdom or abroad. But the judge also made this important finding, at para 100, which is an agreed fact on this appeal:

> "… it is *inevitable* that oil produced from the site will be refined and, as an end product, will eventually undergo combustion, and that that combustion will produce GHG emissions." (emphasis added)

Even so, the judge concluded that assessment of the combustion emissions was, as a matter of law, incapable of falling within the scope of the EIA required by the 2017 Regulations: see para 126. Alternatively, if that was wrong and it was legally possible to take the view that the combustion emissions fell within the scope of the required EIA, the judge thought it impossible to say that the council's opinion that the combustion emissions were not indirect effects of the proposed development was irrational or otherwise unlawful: see paras 127, 132.

Decision of the Court of Appeal

The Court of Appeal, by a majority, affirmed the judge's decision, on the basis of his alternative reasoning: [2022] EWCA Civ 187; [2022] PTSR 958. The majority (Sir Keith Lindblom, Senior President of Tribunals, and Lewison LJ) did not agree with the judge that, as a matter of law, the combustion emissions were incapable of being regarded as effects on climate requiring assessment in the EIA. In their view, whether the combustion emissions are indirect effects of the extraction of the oil which therefore had to be assessed depends on whether there was a "sufficient causal connection" between the two, which they saw as a matter of fact and evaluative judgment for the council: see paras 43, 57, 60, 63, 141. The Senior President was satisfied that, in the circumstances of this case, the council had a reasonable and lawful basis for excluding the combustion emissions from the EIA: paras 60-66. Lewison LJ was more doubtful

but ultimately concluded, “not without hesitation”, that the reasons given by the council for its decision “just about pass muster”: para 149.

Moylan LJ, dissented. He agreed with the majority that whether the combustion emissions needed to be assessed was a matter to be determined by the council. But he considered that cogent reasons would be required to exclude those GHG emissions from assessment and that the reasons given by the council were legally flawed: paras 129-130.

This appeal

On this further appeal by the claimant, the parties’ positions are as follows:

The claimant contends that, on the proper interpretation of the legislation, the “effects of the project” on climate which the council needed to assess as part of the EIA included the combustion emissions.

Two of the defendants - the council and the Secretary of State - invite this court to endorse the analysis of the majority of the Court of Appeal (and alternative approach of the judge) that the council was entitled to decide, as a matter of evaluative judgment, that the combustion emissions were not “effects of the project” on climate.

The developer submits (as its primary position) that the judge was right to hold that the combustion emissions cannot as a matter of law be regarded as "effects of the project" on climate.

With the court's permission, four interveners have also made written submissions. I have found particularly helpful submissions made by the Office for Environmental Protection. This is a public body established under section 22 of the Environment Act 2021 and sponsored by the Department for the Environment, Food and Rural Affairs. Its principal objective is to contribute to environmental protection and the improvement of the natural environment.

Two of the interveners, Friends of the Earth Ltd and Greenpeace UK, support the claimant's case. Another, West Cumbria Mining Ltd, supports the approach of the majority of the Court of Appeal. The submissions made by the Office for Environmental Protection do not take sides between the parties but explain the reasons for its concern that the decisions of the lower courts, if upheld, "could have an adverse effect on sound environmental decision making and hence on environmental protection and the improvement of the natural environment."

6. The issue

The overall issue in the appeal is whether, under the EIA Directive and the 2017 Regulations, it was lawful for the council not to include the combustion emissions in the EIA for the proposed project.

The council could not lawfully grant planning permission for the project unless an EIA had been carried out which complied with the obligation to "identify, describe and assess in an appropriate manner … the direct and indirect significant effects" of the project on (among other factors) "climate": see regulation 4(2), reflecting article 3(1) of the EIA Directive. If the significant effects of the project on climate include the combustion emissions, the council was therefore obliged to assess them as part of the EIA and its failure to do so renders the decision to grant planning permission unlawful. On the other hand, if (as the judge held) the combustion emissions were incapable as a matter of law of being regarded as "effects of the project" on climate within the meaning of the legislation, then the council was right not to assess them and its decision to grant planning permission was lawful. Its decision was also lawful if (as the majority of the Court of Appeal held) the question whether the combustion emissions are "effects of the project" on climate within the meaning of the legislation was a matter of evaluative judgment for the council and the council's reasons for leaving the combustion emissions out of account were lawful.

7. The meaning and application of legislation

The approach taken by the Court of Appeal raises a question about the respective roles of the competent authority and the court when a dispute arises about whether the authority has correctly applied legislation to the facts of a particular case.

Interpreting the law, by establishing the meaning and legal effect of legislation, is the court's role. If a decision-making authority bases its decision on an interpretation of

legislation which the court concludes was mistaken, then the authority makes an error of law and its decision is unlawful.

Interpreting a legislative provision requires the court to identify, from the language and purpose of the legislation, the criteria to be applied in deciding whether the facts of any individual case fall within its scope. These criteria may be so precise that, when applied to the facts of a given case, they rationally yield only one answer. But sometimes, as Lord Mustill pointed out in *R v Monopolies and Mergers Commission, Ex p South Yorkshire Transport Ltd* [1993] 1 WLR 23, 32, the criteria are sufficiently imprecise that there is room for different decision-makers, each acting rationally, to reach different answers. In such a case the court will not interfere with the decision taken unless it is "irrational" in the sense either that it is outside the range of reasonable decisions open to the decision-maker or that there is a demonstrable flaw in the reasoning which led to the decision. Examples of such a flaw would be that significant reliance was placed on an irrelevant consideration, or that there was no evidence to support an important step in the reasoning, or that the reasoning involved a serious logical or methodological error: see eg *R (Law Society) v Lord Chancellor* [2018] EWHC 2094 (Admin); [2019] 1 WLR 1649, para 98.

The question in *South Yorkshire Transport* was whether, for the purpose of particular competition legislation, an area of South Yorkshire in which a transport company was providing bus services constituted "a substantial part of the United Kingdom." The House of Lords held that, even after eliminating inappropriate senses of the term

"substantial", the meaning was broad enough to call for an exercise of judgment and that the conclusion arrived at by the decision-maker was well within the "permissible field of judgment."

The term "substantial" is intrinsically vague because, in the absence of some further, more precise criterion, there will be cases in which the question whether the term applies has no answer on which reasonable people who understand the meaning of the term could all be expected to agree. The same is true of the term "significant" which is used in article 3(1) and other provisions of the EIA Directive. Deciding whether an effect of a project on the environment is "significant" clearly requires a value judgment and carries the potential for cases to arise in which different decision-makers may legitimately reach different conclusions without it being possible to say that any of them has made an error in interpreting or applying the term.

The concept of "the effects of a project" on the environment is not - or at least not obviously - vague in this way. One might think that whether a particular environmental impact is or is not an effect of the project is a question which, in principle, admits of only one answer. In my view, in the great majority of cases that impression is indeed correct. I think it is true here. But it will be necessary to consider the contrary view taken by the Court of Appeal that whether something is an "effect of the project" is a matter of degree which requires the decision-making authority to evaluate whether there is a "sufficient causal connection" between the project and the putative effect. The concept of a "sufficient causal connection" is intrinsically vague. If no more precise

criterion can be identified, it would leave a wide range of cases in which the question whether a particular environmental impact is or is not an "effect of the project" has no single right or wrong answer.

As an initial comment, this would be a very unsatisfactory state of affairs. It would mean that in cases of the present kind there would be no consistency, or means of ensuring consistency, between decisions made by different planning authorities when faced with similar issues, or even between decisions made by the same authority on different occasions in relation to similar projects. That would be all the more regrettable when issues relating to climate change and the extent to which disclosure of information about GHG emissions should be required are becoming more and more salient in policy-making and public debate. To treat inconsistent approaches to questions of whether and when direct or indirect GHG emissions should be included in EIAs as equally valid would be a form of arbitrary administration. The fact that the interpretation of the EIA Directive favoured by the Court of Appeal would have such an unreasonable result is itself a good reason to reject it.

8. Interpreting the EIA Directive

In interpreting the EIA Directive, certain core principles are not in dispute. To determine what is meant by the "direct and indirect effects of a project", it is necessary to examine the language and in particular the purpose of the EIA Directive: *R v North Yorkshire County Council, Ex p Brown* [2000] 1 AC 397, 401. The Court of Justice of the European Union ("CJEU") has repeatedly emphasised that the EIA Directive is wide

in scope and its purpose very broad: see eg *Aannemersbedrijf P K Kraaijeveld BV v Gedeputeerde Staten van Zuid-Holland* (Case C-72/95) [1997] All ER (EC) 134, para 31; *World Wildlife Fund (WWF) v Autonome Provinz Bozen* (Case C-435/97) [1999] ECR I-5613, para 40; *Abraham v Wallonia* (Case C-2/07) [2008] Env LR 32, paras 32 and 42. Concisely stated, that purpose is to ensure that decisions whether to give development consent for projects which may affect the environment are made on the basis of full information: *R v North Yorkshire County Council, Ex p Brown* [2000] 1 AC 397, 404; *Berkeley v Secretary of State for the Environment* [2001] 2 AC 603, 615.

It is also important to keep in mind that the legislation is essentially procedural in nature. It is not concerned with the substance of the decision whether to grant development consent but with how the decision is taken. Thus, as the House of Lords held in *Berkeley*, it is no answer to a challenge based on failure to carry out an EIA that complies with the EIA Directive to say that complying with the EIA Directive would not have affected the decision. It is essential to the validity of the decision that, before it is made, there has been a systematic and comprehensive assessment of the likely significant effects of the project on the environment in accordance with the EIA Directive. As well explained by one writer on the subject:

> "EIA is not a procedure for preventing actions with significant environmental impacts from being implemented, although in certain circumstances this could be the appropriate outcome of the process. Rather the intention is that actions are authorised in the full knowledge of their environmental consequences."

See Christopher Wood, Environmental Impact Assessment: A Comparative Review, 2nd ed (2002), p 3.

As noted earlier, public participation is also integral to the process of assessment. This was also emphasised in *Berkeley*, where Lord Hoffmann stated, at p 615:

> "The directly enforceable right of the citizen which is accorded by the [EIA] Directive is not merely a right to a fully informed decision on the substantive issue. It must have been adopted on an appropriate basis and that requires the inclusive and democratic procedure prescribed by the Directive in which the public, however misguided or wrongheaded its views may be, is given an opportunity to express its opinion on the environmental issues."

With these principles in mind, I turn to the key question of what, on the proper interpretation of the EIA Directive, is meant by the "direct and indirect effects of a project" on the factors specified in article 3(1) - and, in particular, on "climate" - which the EIA is required to identify, describe and assess.

9. What are "effects of a project"?

What are or are not "effects of a project" is, to state the obvious, a question of causation. An effect is the obverse of a cause.

Causation in fact

Whether one event or state of affairs (Y) is an effect of another event or state of affairs (X) - or, to say the same thing the other way round, whether X is a cause of Y - is in the first place a question of fact. To determine whether two events are causally connected, we apply scientific knowledge, understanding of human behaviour and other knowledge about the world. Such knowledge may of course increase as new research is undertaken and new discoveries are made. Understanding of climate change is a good illustration. Until quite recently it was uncertain and controversial whether global temperatures have been rising as a result of human activities. But there is now overwhelming scientific proof of this phenomenon demonstrating the past, present and likely future effects on climate of, among other human activities, burning fossil fuels to generate energy.

Causation in law

Establishing that, as a matter of fact, there is a causal relationship between events X and Y, does not by itself answer the question whether, as a matter of law, X is to be regarded as a cause of Y (and Y as an effect of X). To answer that question, it is necessary to understand the purpose for which the question is being asked: see eg *Environment Agency (formerly National Rivers Authority) v Empress Car Co (Abertillery) Ltd* [1999] 2 AC 22, 29-31.

Depending on the context, various tests of causation may be applied, some more demanding than others. A test often used at least as a minimum requirement is whether

X is a necessary condition for the occurrence of Y. This is known by lawyers as the "but for" test because one simple way of expressing it is to ask: would event Y have occurred but for the occurrence of event X? The "but for" test is generally seen as a weak test of causation because, in any given situation, many events (or states of affairs) will satisfy the "but for" test which would not usually be regarded as causes of the event under consideration: see eg *Financial Conduct Authority v Arch Insurance (UK) Ltd* [2021] UKSC 1; [2021] AC 649, para 181.

The strongest possible test of causation, which is seldom satisfied when questions of causation arise in law, requires the occurrence of event X to be both a necessary and sufficient condition for the occurrence of Y. If X is a sufficient cause of Y, then every time X happens Y will always follow. This is the kind of unbreakable connection that exists, for example, where laws of physics, such as Newton's laws of motion, operate.

An example of a test not as strong as this but much stronger than the "but for" test is the interpretation placed on pollution control legislation in the *Environment Agency* case mentioned earlier. The legislation made it an offence to cause polluting matter to enter controlled waters. Diesel oil stored in a tank in the defendant's yard had overflowed into a river but only because an outlet tap without a lock had been turned on by a person unknown. The question was whether the defendant had caused the oil to enter the river. The House of Lords held that the criterion for identifying which intervening acts and events negative causal connection for this purpose was whether the intervening act or event was a matter of ordinary occurrence or was something extraordinary. If, as on the

facts of that case, the third party act which was the immediate cause of the pollution was a matter of ordinary occurrence, it should not be regarded as negativing the causal effect of the defendant's acts. The proper conclusion would therefore be that the defendant had caused the polluting matter to enter the river.

A similar test applies in insurance law where, unless the insurance policy otherwise provides, the insurer is liable only for losses "proximately" caused by a peril insured against. As explained in *Financial Conduct Authority v Arch Insurance*, paras 164-168, the term "proximate" means "real or efficient" and whether the occurrence of an insured peril was the proximate (or efficient) cause of the loss involves making a judgment as to whether it made the loss inevitable - if not, which could seldom if ever be said, in all conceivable circumstances - then in the ordinary course of events. For this purpose, human actions are not generally regarded as negativing causal connection, provided at least that those actions were not wholly unreasonable or erratic.

Predicting likely effects

Typically, when questions of causation arise in law the inquiry involves looking backwards to determine whether one past event caused another past event. In determining the required scope of an EIA, however, the inquiry is forward-looking. The question is: on the assumption that the project goes ahead, what possible future effects on the environment will constitute "effects of the project" which (if significant) must therefore be assessed? The EIA Directive answers that question by imposing the test of whether the effect is "likely". Thus, article 5(1)(b) requires the information provided by

the developer to include "a description of the *likely* significant effects of the project on the environment" (emphasis added) and Annex IV further specifies what this obligation involves.

The term "likely" can bear more than one meaning. It can mean "more probable than not", or it may connote some other (lesser or greater) degree of probability. A guide provided by the Intergovernmental Panel on Climate Change, quoted with approval by the European Commission in its 2013 Guidance at p 40, equates the term "likely" with a probability of between 66% and 100%. Arguably, this is too strict a standard. But, as I will soon discuss, there is no need to express any view on this question to decide this case.

Whatever the precise meaning of the term, to determine that a potential effect is "likely" requires evidence on which to base such a determination. If evidence is lacking so that a possible future occurrence is a matter of speculation or conjecture, then a rational person would not feel able to judge that it is "likely". Such agnosticism is not the same as judging the event to be unlikely. It reflects a belief that there is too little knowledge on which to base a judgment.

The need for sufficient evidence on which to base an assessment is not spelt out as a requirement in the EIA Directive. But it can be deduced from the description and purpose of the EIA procedure. As set out in article 1(2)(g), stage (iv) of that procedure - which follows (i) the preparation of the environmental statement by the developer, (ii)

the carrying out of consultations, and (iii) the examination by the competent authority of the information received - is:

> "[a] reasoned conclusion by the competent authority on the significant effects of the project on the environment, taking into account the results of [its] examination;"

The initial, information gathering stages of the process, including the preparation of the environmental statement, are thus directed towards the ability to reach a reasoned conclusion on the significant effects of the project on the environment. This is confirmed in article 5(1), which provides that the environmental statement shall "include the information that may reasonably be required for reaching a reasoned conclusion on the significant effects of the project on the environment, taking into account current knowledge and methods of assessment." Similarly, article 5(3)(c) provides that, "where necessary, the competent authority shall seek from the developer supplementary information, in accordance with Annex IV, which is directly relevant to reaching [a] reasoned conclusion on the significant effects of the project on the environment."

Implicit in these provisions, and in the aims of the EIA Directive, is the criterion that material should be included in the environmental statement and taken into account in the procedure only if it is information on which a reasoned conclusion could properly be based. Conjecture and speculation have no place in the EIA process. Thus, if there is insufficient evidence available to found a reasoned conclusion that a possible environmental effect is "likely", there is no requirement to identify, describe and try to

assess this putative effect. This criterion must also govern, where a possible effect is regarded as "likely", the nature and extent of the assessment of the effect.

There is here an area of evaluative judgment involved in determining the scope of an EIA. Judging whether a possible effect of a project is likely and capable of assessment may, depending on the circumstances, be a matter on which different decision-makers, each acting rationally, may take different views.

Causation in this case

In this case there is no uncertainty about the relevant facts. It is known with certainty that the extraction of oil at the proposed well site in Surrey - which is the activity giving rise to the requirement to carry out an EIA - would initiate a causal chain that would lead to the combustion of the oil and release of greenhouse gases into the atmosphere. It is not necessary to consider what is meant by "likely" because it is an agreed fact that, if the project goes ahead, this chain of events and the resulting effects on climate are not merely likely but inevitable.

Expressed in terms of necessary and sufficient conditions, this is not simply a case in which the "but for" test is satisfied in that, but for the extraction of the oil, the oil would stay in the ground and so would not be burnt as fuel. On the agreed facts, the extraction of the oil is not just a necessary condition of burning it as fuel; it is also sufficient to bring about that result because it is agreed that extracting the oil from the ground guarantees that it will be refined and burnt as fuel. As discussed above, a situation

where X is both necessary and sufficient to bring about Y is the strongest possible form of causal connection - much stronger than is required as a test of causation for most legal purposes.

It is also common ground that general estimates of combustion emissions can be made using methodology such as that described in guidance issued by the Institute of Environmental Management and Assessment. Estimating the combustion emissions which will occur if the project proceeds is not a difficult task. It could easily have been performed by the developer and has in fact been performed by Dr Jessica Salder, the council officer who reviewed the environmental statement, when she made a witness statement in these proceedings. All that is required is to identify from published sources a suitable "conversion factor" - which is the estimated amount of carbon dioxide emitted upon combustion of each tonne of oil produced. The total estimated quantity of oil to be produced is then multiplied by this conversion factor to calculate the total combustion emissions. In her evidence Dr Salder used a conversion factor of 3.22 tonnes of carbon dioxide for each tonne of oil produced. Multiplying the total estimated output from the proposed project of 3.3 million tonnes of oil (see para 31 above) by this factor gives an estimated total of 10.6 million tonnes of CO_2 emissions over the lifetime of the project.

It is instructive to compare the amount of these emissions with the "direct" GHG emissions at the well site over the lifetime of the project which were included in the environmental statement. The estimated amount of the "direct" GHG emissions was

140,958 tonnes of CO_2. As well as providing this figure, the developer calculated the proportion which this figure would represent of the total UK carbon budget. Based on this calculation, the environmental statement described the effects of the proposed development on climate as "negligible". Had the combustion emissions been included in the assessment, the figure for GHG emissions attributable to the project would have been nearly two orders of magnitude greater and could not have been dismissed as "negligible" in that way.

Direct and indirect effects

Article 3(1) of the EIA Directive requires the EIA to assess both the "direct and indirect" effects of a project on the specified environmental factors, one of which is climate. The express requirement to assess indirect as well as direct effects is clearly intended to emphasise the wide causal reach of the required assessment. This is further emphasised by the stipulation in Annex IV, para 5, that the description of the likely significant effects on the factors specified in article 3(1) should cover both the direct effects and "any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the project." It would be hard to devise broader wording than this.

From one point of view the distinction between "direct" and "indirect" effects does not matter, as both types of effect must be assessed in the EIA process. There is still, I think, some value in considering what these terms mean. No case law has been cited which has sought to define "direct" and "indirect" effects. A natural way to understand

the distinction - and how it is commonly used in social sciences - is to define a direct effect of one event on another event as an effect which is not mediated by one or more variables. An indirect effect, by contrast, is one which depends on one or more variable intermediate factors that may alter the total effect observed: see eg J Pearl, "Direct and indirect effects" in Proceedings of the American Statistical Association, Joint Statistical Meetings (2005), pp 1572–1581.

On this definition combustion emissions are direct effects of the extraction of oil because they are almost entirely independent of any intermediate variables. To know that combustion emissions will occur and quantify them, there is no need to know anything about where the oil will go after it is extracted or what the oil will be used for or when or where it will be burnt. It is sufficient to know - as is known with virtual certainty - that the oil will be refined and ultimately used as fuel. There are no variables in the intervening events which will significantly alter the fact or amount of the combustion emissions or their impact on climate. So on this definition the combustion emissions are a direct effect of the activity of extracting the oil.

An alternative approach is to draw the distinction by reference to the immediate source of the impact. This approach gets some support from guidance issued by the European Commission. In May 1999 the European Commission published *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions*. These Guidelines were said to be intended for use by EIA practitioners and developers and to

be designed to apply to a wide range of projects and to assist in the EIA process throughout member states.

After observing that there are no agreed and accepted definitions, the Guidelines define "indirect impacts" as:

> "Impacts on the environment, which are not a direct result of the project, often produced away from or as a result of a complex pathway. Sometimes referred to as second or third level impacts, or secondary impacts."

This definition offers little assistance beyond spelling out that, as might be thought obvious, indirect effects can be and often are produced away from the site of the project.

Somewhat more useful are the definitions given in the 2013 Guidance referred to at para 24 above. This defines "direct effects" as:

> "Environmental effects directly caused by the preparation, construction or operation of a project in a particular location." (p 6)

"Indirect effects/impacts" are defined as:

> "Effects/impacts that occur away from the immediate location or timing of the proposed action, eg quarrying of aggregates elsewhere in the country as a result of a new road proposal, or as a consequence of the operation of the project (see also secondary effects)." (p 7)

The definition of "secondary effects", to which cross-reference is made, is:

> "Effects that occur as a consequence of a primary effect or as a result of a complex pathway." (p 8)

When applied to GHG emissions, these definitions distinguish between those which are "direct" and "indirect" effects in much the same way as the GHG Protocol and IFRS S2. As noted earlier, those standards define direct GHG emissions (labelled "scope 1") as GHG emissions that occur from sources that are owned or controlled by an entity. Indirect GHG emissions (ie scope 2 and 3) are defined as GHG emissions that are a consequence of the activities of an entity but occur at sources owned or controlled by another entity.

On these definitions the combustion emissions are indirect effects of the project, as they will occur, probably far away from the project site, at sources owned or controlled by entities other than the developer / site operator. They are like impacts from the quarrying of aggregates in the illustration given by the Commission in defining "indirect effects." If the quarrying of aggregates used in building a new road would be likely to generate significant GHG emissions, the Commission contemplates, correctly in my view, that these would be indirect effects of the project which, if significant, must therefore be assessed. I can see no reason why combustion emissions that will occur elsewhere as a consequence of the operation of a project to extract oil should be regarded differently.

The 2013 Guidance, at p 29, also provides a table of "examples of main climate change and biodiversity concerns to consider as part of EIA." Under the heading "climate change mitigation" the table lists: "direct GHG emissions"; "indirect GHG emissions

due to increased demand for energy"; and "indirect GHG emissions caused by any supporting activities or infrastructure that is directly linked to the implementation of the proposed project (eg transport …)." In the terminology of the GHG Protocol and IFRS S2, the first of these categories corresponds broadly to scope 1 GHG emissions, the second to scope 2 GHG emissions, and the third to certain types of scope 3 GHG emissions.

Doubtless the categories given as examples were chosen because they are likely to be relevant to many different types of project - unlike combustion emissions which arise as a consequence of projects for the extraction of fossil fuels. But there is no suggestion that the categories stated as examples are considered to be exhaustive of the circumstances in which GHG emissions can occur as indirect effects of a project. To the contrary, the 2013 Guidance states expressly that they are examples only, that the list "is not comprehensive", that "the issues and impacts relevant to a particular EIA should be defined by the specific context of each project", that "flexibility is therefore needed", and that the table provided "should be used only as a starting point for discussion." The examples given therefore cannot be read as somehow cutting down the definition of "indirect effects" given earlier in the 2013 Guidance. Applying that definition, the combustion emissions are "indirect effects" of the project in issue here.

Transboundary effects

It is worth emphasising that the EIA Directive does not impose any geographical limit on the scope of the environmental effects of a project which must be identified,

described and assessed when an EIA is required. In principle, all likely significant effects of the project must be assessed, irrespective of where (or when) those effects will be generated or felt. There is no justification for limiting the scope of the assessment to effects which are expected to occur at or near the site of the project. The fact that an environmental impact will occur or have its immediate source at a location away from the project site is not a reason to exclude it from assessment. There is no principle that, if environmental harm is exported, it may be ignored.

That is no less true if the effect will be produced or felt outside the territorial jurisdiction of the state (here, the UK) whose national law requires the EIA to be carried out. If there were otherwise any doubt about this, it is removed by the express inclusion in Annex IV, para 5, of "transboundary" effects in the description of the likely significant effects on the factors specified in article 3(1) which should be covered (see para 83 above).

The developer in the present case advanced an argument that the express requirement to assess "transboundary" effects actually tells in favour of a narrow interpretation of the scope of the effects on climate which are to be assessed. This paradoxical claim makes no more sense on analysis than it does at first sight. The argument is based on article 7 of the EIA Directive. Article 7 applies where a Member State is aware that a project intended to be carried out in one Member State is likely to have significant effects on the environment in another Member State. In such a case the Member State in whose territory the project is intended to be carried out must give the other Member State an

opportunity to participate in the environmental decision-making procedures. Article 7 also requires the Member States concerned to enter into consultations regarding the potential transboundary effects of the project. The argument made is that it cannot sensibly have been intended that the article 7 procedure should have to be invoked in any case where a project is likely to give rise to "downstream" GHG emissions in another Member State.

Plainly it would be impossibly burdensome if, for example, in relation to the present project it were necessary to give every Member State of the European Union an opportunity to participate in the environmental decision-making procedures on the footing that oil produced from the well site might find its way into that country and generate GHG emissions when used as fuel. But that is a false fear. There is no risk of such an obligation arising, for two reasons. First, there is no way of knowing where the oil produced from the well site will ultimately be used as fuel. There is therefore no foreign state of which it can be said (on anything more than speculation) that the oil is likely to be consumed there. Second, and more fundamentally, it is wrong in any event to treat the impact on climate of GHG emissions as local to the places where the combustion occurs.

Climate change is a global problem precisely because there is no correlation between where GHGs are released and where climate change is felt. Wherever GHG emissions occur, they contribute to global warming. This is also why the relevance of GHG emissions caused by a project does not depend on where the combustion takes place. If

an activity is carried on which will inevitably result in significant GHG emissions, people who carry on the activity cannot be heard to say: "These emissions are not effects of our activity because they are occurring far away among people of whom we know nothing."

On a proper interpretation, the obligations set out in article 7 of the EIA Directive are not triggered by awareness that, as a consequence of a project intended to be carried out in one Member State, GHG emissions are likely to occur in another Member State. To avoid absurdity, the reference in article 7(1) to "effects on the environment in another Member State" must be read as meaning effects on the environment which are specific to that other Member State rather than purely global effects that affect the whole world. Thus effects on climate of GHG emissions occurring in one state as a consequence of a project undertaken in another state do not fall within article 7.

This conclusion is reinforced by the 1991 UN Convention on Environmental Impact Assessment in a Transboundary Context (known as the "Espoo Convention"), to which - as recital (15) of the EIA Directive confirms - article 7 is intended to give effect. Article 1(8) of the Espoo Convention defines a "transboundary impact" to mean "any impact, *not exclusively of a global nature*, within an area under the jurisdiction of a Party caused by a proposed activity the physical origin of which is situated wholly or in part within the area under the jurisdiction of another Party" (emphasis added). The EIA Directive does not itself define a "transboundary impact" or "transboundary effect", but

it is reasonable to interpret these terms where they are used in the EIA Directive as having a similar meaning to their meaning in the Espoo Convention.

The fact that the combustion emissions from the oil produced are likely to occur outside the UK therefore does not give rise to any requirement to invoke the article 7 procedure. As the effects of GHG emissions on the environment are exclusively of a global nature, they are not "transboundary effects" which engage obligations of consultation between the nation in which the oil is produced and the nation(s) in which its combustion occurs.

10. The council's approach

Coming now to the EIA carried out in this case, the legal error made as regards the scope of the assessment is apparent on the face of the relevant reports. The environmental statement explained that the developer had confined its assessment of GHG emissions to the "direct releases of greenhouse gases from within the well site boundary." Admittedly, therefore, the developer chose to provide information only about the direct effects of the project on climate and to exclude indirect effects, contrary to the express requirement in the EIA Directive and 2017 Regulations that indirect effects must be included. The council accepted and adopted this approach. As a result, the officer's report on which the council's decision to grant development consent was based advised that the proposed development would not give rise to significant effects on the climate by way of GHG emissions "directly attributable" to the operation of the scheme. GHG emissions indirectly caused by the project were not considered. Again,

therefore, the scope of the assessment self-evidently did not comply with the legal requirement to assess both direct and indirect effects of the proposed development.

Effects "outwith the control" of the site operators

The flaws in the reasons given by the developer and accepted by the council for limiting the scope of the assessment in this way are also in my view plain. The fact that the combustion emissions would emanate from activities beyond the well site boundary which were not themselves part of the project was not a valid reason to exclude them. An impact is not precluded from being an effect of a project by the fact that its immediate source is another activity that occurs away from the project site. As already discussed, it is in the very nature of "indirect" effects that they may occur as a result of a complex pathway involving intermediate activities away from the place where the project is located.

The associated reason given that GHG emissions beyond the well site boundary are "outwith the control of the site operators" (see para 36 above) was equally flawed. The combustion emissions are manifestly not outwith the control of the site operators. They are entirely within their control. If no oil is extracted, no combustion emissions will occur. Conversely, any extraction of oil by the site operators will in due course result in GHG emissions upon its inevitable combustion. It is true that the time and place at which the combustion takes place are not within the control of the site operators. But the effect of the combustion emissions on climate does not depend on when or where the

combustion takes place. Those factors are irrelevant to the size and significance of the environmental impact.

One potential benefit of the EIA process is that it may sometimes result in the identification of ways in which the design of the project can be modified without undue detriment to its aims so as to avoid or reduce what would otherwise have been a significant adverse environmental effect of the project. The EIA Directive contains provisions specifically aimed at this. Thus, article 5(1)(c) states that the information provided by the developer in the environmental statement must include "a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment"; see also Annex IV, para 7. And where development consent is granted, the decision to grant it must incorporate "a description of any features of the project and/or measures envisaged to avoid, prevent or reduce and, if possible, offset significant adverse effects on the environment": see article 8a(1)(b). Member States must ensure that any such features or measures are implemented by the developer: article 8a(4).

In the case of oil extraction, there are no measures within the control of the developer which, if the project proceeds, would avoid or reduce the combustion emissions and their impact on climate. But that is not a reason to dispense with an EIA. Identifying mitigating measures, where they are available, may be a valuable result of the EIA process. But it is not its sole - or even its main - purpose. If there are no measures which could be taken to mitigate adverse environmental effects of a project, then this is itself

something the decision-maker and the public need to know. The EIA process would not fulfil its essential purpose of ensuring that decisions likely to affect the environment are made on the basis of full information if the fact that significant adverse effects are unavoidable were treated as a reason not to identify and assess them.

Other environmental regimes

The further reason given by the developer and accepted by the council for confining the assessment to direct GHG emissions from sources within the well site boundary was that the council should not concern itself with emissions that will occur "downstream" when the oil produced from the wells is processed and used because such processes are regulated by other, non-planning regimes and the council "can assume that these regimes will operate effectively to avoid or mitigate the scope for material environmental harm" (see para 36 above).

Para 122 of the developer's environmental statement, which made this argument, quoted from the National Planning Policy Framework (July 2018), para 183, which stated:

> "The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. …"

Reference was also made in footnotes to para 122 to the National Planning Practice Guidance, Minerals, para 012, which was in similar terms, and to *R (Frack Free*

Balcombe Residents Association) v West Sussex County Council [2014] EWHC 4108 (Admin). This case was cited for the proposition that a "local planning authority may consider that matters of regulatory control can be left to a statutory regulatory authority to consider."

It was a clear legal error to regard this aspect of planning policy as a justification for limiting the scope of an EIA. An assumption made for planning purposes that non-planning regimes will operate effectively to avoid or mitigate significant environmental effects does not remove the obligation to identify and assess in the EIA the effects which the planning authority is assuming will be avoided or mitigated. This is clear from a line of authority referred to in the *Frack Free Balcombe Residents Association* case. In *R (Lebus) v South Cambridgeshire District Council* [2002] EWHC 2009 (Admin); [2003] Env LR 17, paras 41-46, Sullivan J held that it is an error of law to reason that no environmental statement is needed because, although a project would otherwise have significant effects on the environment, mitigation measures will render them insignificant. What is required in such a case is an environmental statement setting out the likely significant effects and the measures which can be taken to mitigate them; see also *R (Champion) v North Norfolk District Council* [2015] UKSC 52; [2015] 1 WLR 3710, paras 49-51. The same principle must apply in determining the scope of the assessment required where an environmental statement is carried out.

As pointed out in those cases, the requirement in the EIA Directive to describe "measures envisaged to avoid, prevent or reduce and, if possible, offset significant

adverse effects on the environment" (see para 104 above) implies that the potentially significant environmental impacts of a development should be described together with the measures expected to avoid or reduce them. The public is thereby able to understand the assumption made and to comment on it.

In any case it does not appear that there are any separate pollution control or other non-planning regimes which could be relied on to avoid or reduce the combustion emissions which would be indirect effects of the project proposed here. No such regimes have been identified in these proceedings. Indeed, it follows from the agreed fact that it is inevitable that oil produced from the well site will be refined and will eventually undergo combustion, which will produce GHG emissions, that the combustion emissions are unavoidable if the project proceeds and no pollution control regime could be relied on to prevent or reduce them.

The reasons accepted by the council for excluding the combustion emissions from consideration and assessing only direct GHG emissions from within the well site boundary are therefore demonstrably flawed. Unless there is some other reason not given in the environmental statement or the council's review of it which required the EIA to exclude the combustion emissions, it follows that the council's decision was unlawful.

11. The judge's approach

Although the Court of Appeal did not think that there was any such reason, the judge did. I will therefore consider next the judge's view that assessment of the combustion emissions was, as a matter of law, incapable of falling within the scope of the EIA required by the legislation. As discussed earlier, to justify that conclusion, it would be necessary through interpretation of the EIA Directive and the 2017 Regulations to identify a criterion governing the scope of the EIA which, when applied, dictates - without any room for reasonable differences of opinion - that the combustion emissions are not likely effects of the project on climate.

What might that criterion be? The judge's reason for his conclusion was expressed in this passage (at para 126) of his judgment:

> "In my judgment the scope of that obligation [ie the obligation to assess the environmental effects of the project] does not include the environmental effects of consumers using (in locations which are unknown and unrelated to the development site) an end product which will be made in a separate facility from materials to be supplied from the development being assessed. I therefore conclude that, in the circumstances of this case, the assessment of GHG emissions from the future combustion of refined oil products said to emanate from the development site was, as a matter of law, incapable of falling within the scope of the EIA required by the 2017 Regulations …"

This reasoning needs to be unpicked. One point made, although only parenthetically, is that the combustion emissions will occur in "locations which are unknown and unrelated to the development site." In so far as the judge relied on this fact, I have

already pointed out its irrelevance. The effect of the combustion emissions on climate does not depend on where they occur, and it is thus unnecessary to know where the emissions will occur to assess their environmental impact. There is therefore no justification for restricting the scope of the assessment to GHG emissions occurring at known locations at or related to the development site. To the contrary, such a restriction is inconsistent with the language and purpose of the EIA Directive and the 2017 Regulations.

I do not, however, perceive the judge's reference to the locations where the combustion emissions will occur as essential to his reasoning. I understand his central point to be that the source of the emissions will not be use of the oil in the state in which it is extracted from the ground but the use of "an end product which will be made in a separate facility from materials to be supplied from the development." Hence the fact that the oil will undergo an intermediate process of being refined in a separate facility before it is burnt as fuel is seen as pivotal. This is what, in the judge's view, entails that the combustion emissions are incapable as a matter of law of being effects of the project within the meaning of the legislation.

This view also has the support of the Court of Session (Inner House) in *Greenpeace Ltd v Advocate General* [2021] CSIH 53; 2021 SLT 1303, para 65, which in obiter dicta agreed with Holgate J's reasoning and conclusion that the effects of the project do not include effects of "the consumption of any retailed product ultimately emerging as a result of a refinement of the raw material."

The relevance of refinement

This is also the position which the developer seeks to defend on this appeal. Counsel for the developer submitted that the combustion emissions cannot be regarded as effects of the project because the crude oil produced from the well site could not itself be used as fuel. What results in the combustion of the oil, so it was argued, is the separate activity of manufacturing fuel products at a refinery. Crude oil refineries are projects which themselves require development consent and an EIA (at least if they are situated in the UK or the European Union). Mr David Elvin KC for the developer expressly accepted that, in carrying out an EIA for a refinery, it would be necessary to assess the combustion emissions from the refined oil because they would be effects of the activity of refining the crude oil. But he submitted that these emissions cannot, in law, be regarded as effects of the activity of extracting the crude oil because of the need for this intermediate refining process to take place before the oil can be used.

I cannot accept that the existence of this intermediate process has the legal significance contended for by the developer and attributed to it by the judge. The process of refining crude oil does not alter the basic nature and intended use of the commodity. Given that the process of refining the oil is one which it is always expected and intended that the oil will undergo - and which it is agreed that the oil produced here will inevitably undergo - it is unreasonable to regard it as breaking the causal connection between the extraction of the oil and its use.

The judge was clearly concerned that, if it were to be accepted that combustion emissions are environmental effects of the extraction of the oil, then this would have "ramifications far beyond the legal merits of the present challenge as they relate to the production of crude oil" (para 4). The judge drew a comparison with the production of other minerals and raw materials for use in industrial processes. He observed that, for example, the production of metals, followed by their use to manufacture parts for motor vehicles and the assembly of such vehicles, will result in GHG emissions from the cars, vans and lorries when they are eventually purchased and driven (para 4). The judge also gave an example of a factory that manufactures components for use in the construction of aircraft. He observed that such manufacture will result in GHG emissions, not just from the industrial processes involved but ultimately from the fuel burnt when the aircraft are used for aviation (para 5). Holgate J was clearly worried that, if all the GHG emissions generated from these activities had to be assessed, the EIA process would be unduly onerous and unworkable.

In my view, this concern was misplaced. Recognising that combustion emissions are effects of producing crude oil does not open floodgates in the way the judge feared. There are sound reasons for distinguishing examples of the kind he gave, without resorting to the artificial notion that refining crude oil transforms it into something fundamentally different and so breaks the chain of causation between the extraction of the oil and its use.

Oil is a very different commodity from, say, iron or steel, which have many possible uses and can be incorporated into many different types of end product used for all sorts of different purposes. In the case of a facility to manufacture steel, it could reasonably be said that environmental effects of the use of products which the steel will be used to make are not effects of manufacturing the steel. That is because the manufacture of the steel is far from being sufficient to bring about those effects. Such effects will depend on innumerable decisions made "downstream" about how the steel is used and how products made from the steel are used. This indeterminacy regarding future use would also make it impossible to identify any such effects as "likely" or to make any meaningful assessment of them at the time of the decision whether to grant development consent for the construction and operation of the steel factory.

Similar considerations apply to Holgate J's examples of manufacturing components for use in the construction of motor vehicles or aircraft. Where a component is manufactured which forms a small part of a much larger object, such as a motor vehicle or aircraft, the view might reasonably be taken that the contribution of the component is not material enough to justify attributing the impact on the environment of the end product to the activity of manufacturing the component part. In any event, the number of motor vehicles or aircraft in which such parts will be incorporated and the use which will subsequently be made of them may be so conjectural that no realistic estimate could be made of GHG emissions arising from such use on which a reasoned conclusion could be based. I have discussed above that the EIA process does not require that attempts be made to measure or assess putative effects which are incapable of such assessment.

But that is not the position here. The oil produced from the well site will not be used in the creation of a different type of object, in the way that a component part is incorporated - along with many other different and equally necessary components - in manufacturing a motor vehicle or aircraft. Refining the oil is simply a process that it inevitably undergoes on the pathway from extraction to combustion. Nor is there any element of conjecture or speculation about what will ultimately happen to the oil. It is agreed that it will inevitably be burnt as fuel. And a reasonable estimate can readily be made of the quantity of GHGs which will be released when that happens.

It is also instructive to compare what the position would be if the fossil fuel extracted from the ground were, for example, coal. Coal need not undergo any intermediate process before it is burnt as fuel. So, on the developer's approach, the combustion emissions from the coal would be effects that it would be necessary to assess in an EIA for a project to mine coal. I do not think it rational to distinguish between combustion emissions from different fossil fuels on this basis.

Nor can it affect the analysis that crude oil refineries are themselves among the projects referred to in article 4(1) and Annex I of the EIA Directive which automatically require an EIA before development consent may be granted. There is no reason to suppose that oil produced by the well site in Surrey would be sent to a refinery for which an EIA would be required before the oil could be refined (or even that the refinery would necessarily have required an EIA pursuant to the EIA Directive when it was built). More importantly, there is no rule that the same effect on the environment cannot result

from more than one activity or that, if particular effects have been or will be assessed in the context of one project, this dispenses with the need to assess them as part of an EIA required for another project. It is in any event an objective of the EIA Directive, recorded in recital (2), that effects on the environment should be taken into account at the earliest possible stage in decision-making. That entails that, whatever other assessments might be required in which some of those GHG emissions are included, an assessment of the GHG emissions from the combustion of oil should be made before permission is given to extract the oil from the ground and the oil begins the journey which will inevitably end with these emissions.

For these reasons, the fact that the crude oil produced from the well site would need to be refined before it is used as fuel is not a valid ground for excluding the combustion emissions from the scope of the EIA. Still less does the need to process the oil at a refinery justify the conclusion that the combustion emissions cannot as a matter of law count as effects of the project.

The project "itself"

Can anything else provide a criterion which, when applied, leads to the conclusion that the combustion emissions are not, as a matter of law, effects of the project on climate and are therefore incapable of falling within the scope of the EIA? At para 101 of his judgment Holgate J said that "the true legal test is whether an effect on the environment is an effect of the development for which planning permission is sought." It is impossible to disagree with this statement as it merely repeats what the legislation says.

Holgate J also said, at para 110, that "indirect effects" of the proposed development cover "consequences which are less immediate, but they must, nevertheless, be effects which *the development itself* has on the environment" (emphasis in original). Outside the realms of Kantian metaphysics, there is no such thing as "the development itself" which enjoys some sort of separate noumenal existence. There are only the human activities which constitute the physical development (or "project", to use the terminology of the EIA Directive).

If referring to "the project itself" is intended to emphasise that it is necessary to distinguish between direct and indirect effects of the project, or between local and geographically distant effects, then that is untenable for the reasons I have already explained. The EIA must include all effects of the project, whether direct or indirect, immediate or remote. Further, the fact that something is an effect of the project does not mean that it cannot also be an effect of something else. It does not follow that because the combustion emissions are effects of some other activity, such as the refinement of the oil or its subsequent use as fuel by consumers, then they cannot also be effects of the project of extracting the oil. As Lord Hoffmann pointed out several times in the *Environment Agency* case, the fact that an activity has caused an environmental impact (or other event) is not inconsistent with another activity having caused it as well.

In short, the assertion that "effects of the project" must be effects which "the project" or "*the project itself*" has on the environment does not take matters any further.

12. The Court of Appeal's approach

As already noted, the Court of Appeal did not think it possible to say that the combustion emissions are legally incapable of being an environmental effect requiring assessment under the legislation. All the same, the Senior President of Tribunals attached significance to the intermediate steps which would have to occur before combustion could take place. He did not adopt the judge's view that the need to refine the oil before it could be used as fuel was a critical consideration. But he emphasised the fact that the oil extracted at the project site would pass through "several other distinct processes and activities, including, initially, its refinement, followed by the onward transportation and distribution of the refined products, and their eventual sale for use as fuel, which would only then, in various places at various times, produce emissions of greenhouse gases": see para 65.

In the view of the Senior President, whether the combustion emissions were "indirect effects" of the project depended on an evaluative judgment as to whether, given these intermediate events, there was a "sufficient causal connection" between the extraction of the oil and its eventual combustion. This was a question to which he thought that different decision-makers, each acting reasonably and lawfully, could give opposite answers. Thus, the Senior President concluded, at para 66, that:

> "the environmental effects of [the combustion] emissions could reasonably be seen as far removed from the proposed development itself, and not causally linked to it, because of the series of intervening stages between the extraction of the crude oil and the ultimate generation of those emissions …"

The first difficulty with this approach is that it is unclear how the decision-making authority is supposed to judge whether the existence or nature of the intervening stages between the extraction of the oil and the ultimate generation of emissions is such as to render the connection between them insufficiently close. Is the number of intervening stages supposed in itself to be important? Does the nature of these stages matter and, if so, how? Is the geographical distance between the project site and the places where the GHG emissions will take place supposed to be a relevant consideration and, if so, why? What else, if anything, would be relevant in making a judgment that there was or was not a "sufficient causal connection"? Without any criteria to answer these questions, developers and decision-making authorities are left completely adrift. If the idea is that it is for each decision-maker to decide for itself what factors to treat as relevant, this is not a reasonable interpretation of the EIA Directive. As discussed earlier in this judgment, it would be a recipe for unpredictable, inconsistent and arbitrary decision-making.

There is another fundamental problem with this approach. It is not just that it is intolerably vague. Considering the questions that I have posed above shows that it rests on a false premise. The fact that there is a series of intervening stages between the extraction of the oil and the ultimate generation of emissions does not itself provide any rational basis for denying that the two are causally linked. If there is a clear and inexorable causal path from event X to event Y, then Y is an effect of X. The number of intermediate steps along the way, the nature of those steps and the fact that Y occurs far away from X does not alter or affect that conclusion.

The Senior President gave two reasons to justify the proposition that a decision-maker could reasonably decide that the GHG emissions generated when the oil produced is burnt are not even indirect effects of the proposed development, because of the intervening stages through which the oil must pass (see para 65 of the Court of Appeal judgment). Both reasons are, in my opinion, mistaken. The first was that "decisions yet to be made 'downstream' would determine how much of the oil would end up being combusted." If true, that might make it impossible to assess what the likely quantity of combustion emissions would be. But it is not true. It was an error to say that how much of the oil would end up being combusted would depend on decisions yet to be made 'downstream'. It is common ground that *all* of the oil would be combusted. This follows from the agreed fact that it is inevitable that the oil produced would be refined and would eventually undergo combustion. There is no difficulty, let alone impossibility, in these circumstances in assessing the likely quantity of the combustion emissions.

The Senior President added a suggestion that the emissions generated by combustion of the oil would depend on "whether the economic demand for it would rise or fall." That is also incorrect. Rise or fall in demand would doubtless affect the price for which the oil is sold and purchased. But it has not been suggested - and it would be inconsistent with the agreed facts to suggest - that any such rise or fall in demand would result in any of the oil remaining unused.

The second reason given by the Senior President was that the claimant had not argued that any of the environmental impacts resulting from the intermediate process of refinement ought to have been included in the EIA for the project. He said, at para 65:

> "That is not part of the argument advanced … What is submitted, in effect, is that the county council could only reasonably conclude that environmental impacts several steps further away than refinement ought to have been assessed. That proposition is, in my view, untenable."

This reasoning is also invalid because it assumes that, just because something was not argued, it must be wrong, and that its invalidity can then be relied on to draw further inferences without the need to identify whether or why the argument not made could not have succeeded.

Given the agreed fact that all the oil produced would be refined, I see no reason why environmental impacts resulting from the process of refining the oil should not in principle fall within the scope of the EIA for the project of extracting the oil. There are, however, potential reasons why the view might reasonably be taken that it was not necessary to include an assessment of such impacts in the EIA. One would be that there was insufficient information available on which to make a reasonable assessment of the relevant impacts. Another potential reason would be that, so far as it was possible to judge, such impacts were not themselves likely to be significant. I express no view about whether such reasons would in fact have been tenable as the question has never been raised or explored. What matters is that it cannot properly be assumed that, because the claimant has not complained about the failure to assess effects of refining

the oil, the council could reasonably exclude the effect on climate of ultimate use of the oil as fuel from the EIA.

In my view, there was no basis on which the council could reasonably decide that it was unnecessary to assess the combustion emissions. These further suggested possible reasons for that decision, like the reasons actually relied on by the council, are flawed.

13. Relationship between EIA and national policy

There is another line of argument that I must consider as it appears to have weighed with the judge and the defendants have sought to make something of it. This is, broadly stated, that local planning authorities are unsuited or incompetent to incorporate into decisions whether to grant planning permission for a mineral extraction project an assessment of the potential contribution of the project to climate change. To understand the basis for this argument it is necessary to look, in overview, at UK national policy as regards climate change and the extraction of oil and gas.

The Paris Agreement and the production gap

In adopting the Paris Agreement on 12 December 2015, most of the nations of the world have acknowledged that climate change represents "an urgent and potentially irreversible threat to human societies and the planet" (Preamble to the decision to adopt the agreement) and have agreed on 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": article 2(1)(a). It is left to each state party to decide what measures it will take towards achieving this goal by preparing, communicating and maintaining successive "nationally determined contributions" that it intends to achieve: see article 4(2).

To date, most state parties' planned contributions have focussed on setting targets for reducing GHG emissions from the consumption of fossil fuels within their own territory and taking measures aimed at reducing such consumption - for example, by promoting the development and use of alternative sources of energy. Comparatively little has been promised or done to reduce fossil fuel production. UNEP has published a series of reports highlighting and quantifying the "production gap" - that is, the difference between countries' planned fossil fuel production and global production levels consistent with limiting global warming to 1.5°C or 2°C. In analysing governments' policies and plans, these reports use an accounting method which allocates carbon dioxide emissions from fossil fuel combustion to the location of extraction. UNEP has consistently found that, viewed overall, the world's governments plan to produce more than twice the amount of fossil fuels in 2030 than would be consistent with limiting global warming to 1.5°C: see eg UNEP Production Gap Report 2023, p 4. The reports also examine national policies, plans and projections in key countries (including the UK). The general picture is that many governments continue to support, finance, and expand fossil fuel production, even though such policies are irreconcilable with global climate commitments: see eg UNEP Production Gap Report 2023, p 11.

UK legislation

The principal UK legislation addressing climate change is the Climate Change Act 2008. This sets a target for the year 2050 for a reduction of GHG emissions from sources in the UK (section 1). The Act also provides for a national system of carbon budgeting. Section 4(1) places a duty on the Secretary of State to set a carbon budget for each succeeding period of five years and to ensure that the net amount of UK emissions during a budgetary period does not exceed this budget. Carbon budgets must be set with a view to meeting the target for 2050 (section 8(2)). Section 13 requires the Secretary of State to prepare proposals and policies for meeting the carbon budgets set under the Act. Each time a new carbon budget is set, the Secretary of State must lay before Parliament a report setting out proposals and policies for meeting the carbon budgets for the current and future budgetary periods (section 14). There is also a duty to report to Parliament each year with a statement giving details of the amount of UK emissions for the year (section 16). Other provisions of the Act include the formation of a Committee on Climate Change which has duties to give advice to the Secretary of State and to report to Parliament on progress towards meeting the carbon budgets (sections 32 to 38).

In calculating "UK emissions" for the purpose of the Climate Change Act 2008 and measures taken under it, GHG emissions from fossil fuels extracted in the UK are not included unless the emissions occur in the UK.

Despite its impact on climate UK national policy remains geared towards encouraging domestic production of oil and gas. The Petroleum Act 1998 establishes a system of

licences to explore for and extract petroleum in the UK. The "principal objective" of the regime, as stated in section 9A, is that of "maximising the economic recovery of UK petroleum." Licences are granted by the Oil and Gas Authority (now named the North Sea Transition Authority), which conducts licensing rounds. A petroleum exploration and development licence grants exclusive rights within a defined area for a defined period in relation to hydrocarbon exploration, development and production. Such a licence confers exclusivity but does not give permission to carry out operations. For this, other consents are needed, including planning permission from the relevant mineral planning authority. As noted earlier, where a project falls within the scope of the EIA Directive and 2017 Regulations, planning permission cannot be granted unless an EIA has been carried out (see para 29 above).

National planning policy

The National Planning Policy Framework (in the version published in February 2019) at para 205, stated that, "when determining planning applications, great weight should be given to the benefits of mineral extraction, including to the economy." (There was an exception in relation to the extraction of coal.) This was originally supplemented by para 209(a), which stated that minerals planning authorities should "recognise the benefits of on-shore oil and gas development, including unconventional hydrocarbons, for the security of energy supplies and supporting the transition to a low-carbon economy; and put in place policies to facilitate their exploration and extraction." However, para 209(a) was removed after the High Court held in *R (Stephenson) v*

Secretary of State for Housing, Communities and Local Government [2019] EWHC 519 (Admin); [2019] PTSR 2209 that the decision to include it was unlawful because it was made without proper public consultation.

Arguments founded on national policy

Against this background, an argument is made that it would be inappropriate for a local planning authority, in deciding whether to grant planning permission for the extraction of oil at a particular site, to take into account the effects on climate of the GHG emissions that will result from the combustion of the oil. It is said that whether or to what extent measures should be taken aimed at reducing GHG emissions from oil extracted in the UK is a matter which can only sensibly and properly be addressed at a national level. It would not be appropriate for a local planning authority to take decisions on the basis of its own views on these issues.

It is further argued that the object of the EIA process is to obtain information that has a bearing on the decision whether to grant development consent (or attach conditions to such consent) for a project rather than simply to generate information for its own sake. It is said that this object would not be served by obtaining information about combustion emissions in relation to a project of the present kind, as there is nothing that the local planning authority could in practice do with this information. The burden of gathering and assessing such information would be disproportionate when it could not inform the decisions to be taken in any practical way.

This in turn is said to indicate that an interpretation of the EIA Directive under which GHG emissions from the combustion of extracted oil are capable of being regarded as "indirect effects of a project" cannot be correct. It cannot have been the intention that information about such GHG emissions should be taken into account in the EIA process, since such information could have no proper bearing on actions to be taken by local planning authorities.

I consider these arguments to be misguided. To begin with, I do not accept the premise that it would be wrong for a local planning authority, in deciding whether to grant planning permission, to take into account the fact that the proposed use of the land is one that will contribute to global warming through fossil fuel extraction. Of course, the authority must have regard to national policy; and in so far as UK national policy requires great weight to be given to the benefits of petroleum extraction, in particular for the economy, that must be taken into account. But it does not follow that the planning authority has to ignore adverse effects on climate of a proposed project or adopt an interpretation of what constitute such adverse effects which is contrary to reality. Just as *beneficial* indirect effects of a project on climate - for example, the "green" energy that would be generated by a project to develop a wind farm or solar farm - are clearly a relevant matter for the planning authority to consider, so corresponding *adverse* effects are also a material planning consideration.

Quite apart from this, the arguments based on UK national policy have two flaws. First, it is wrong to interpret the meaning and scope of the EIA Directive by reference to UK

policy and legislation (or that of any other country) for controlling GHG emissions and regulating petroleum production. Such matters are irrelevant to the proper interpretation of the EIA Directive. It is not simply that policies which member states (or non-member states) choose to adopt are generally irrelevant in construing EU legislation, though that is true. It is also necessary to recall that the aim of the EIA is to establish general principles for assessing environmental effects. UK national policy is clearly relevant to the substantive decision whether to grant development consent. But it is irrelevant to the scope of EIA. For reasons discussed earlier, the fact (if and in so far as it is a fact) that a decision to grant development consent for a particular project is dictated by national policy does not dispense with the obligation to conduct an EIA; nor does it justify limiting the scope of the EIA.

The second, related flaw is also fundamental. The argument made is a version of the claim that, if information about environmental impacts would make no difference to the decision whether to grant development consent (or on what conditions), it is not legally necessary to obtain and assess such information in the EIA process. Such a contention was resoundingly rejected by the House of Lords in *Berkeley*. It misunderstands the procedural nature of the EIA. The fact (if it be the fact) that information will have no influence on whether the project is permitted to proceed does not make it pointless to obtain and assess the information. It remains essential to ensure that a project which is likely to have significant adverse effects on the environment is authorised with full knowledge of these consequences.

Looking at the matter more broadly, it needs to be recognised that the process of EIA takes place in a political context and that the information generated by an EIA will be considered within a political decision-making arena. It is therefore inevitable that economic, social and other policy factors will outweigh environmental factors in many instances. But this does not avoid or reduce the need for comprehensive and high-quality information about the likely significant environmental effects of a project. If anything, it enhances the importance of such information. Nowhere is this more so than where issues arise relating to climate change.

It is foreseeable in today's world that, when development consent is sought for a project to produce oil, members of the public concerned will express comments and opinions about the impact of the project on climate change and the potential contribution to global warming of the oil produced. Indeed, as Lewison LJ observed (at para 148 of the judgment of the Court of Appeal) the officers' report recorded that such objections were made in this case. (Objections raised by two local parish councils were specifically mentioned in the report along with other public representations.) Lewison LJ thought that the fact that objections based on climate change were noted and considered by the council was a reason tending to show that the EIA was adequate because "it cannot be said that [the council] completely ignored the potential global warming effect of the proposed development": para 149. In my view, this fact shows the opposite. It confirms the inadequacy of the EIA. It is not good enough that the potential global warming effect of the proposed development was not "completely ignored". The effect should

have been properly assessed so that public debate could take place on an informed basis. That is a key democratic function of the EIA process. It was not fulfilled here.

14. Case law

Although many decisions of domestic and foreign courts were cited in argument on this appeal, most were of limited assistance. There is no previous decision of a court in this country or of the CJEU on the question we have to decide. Given the rapidly increasing prominence of issues relating to climate change and GHG emissions, more litigation raising such issues can be expected. But the question raised on this appeal must be answered by examining the wording and purpose of the EIA Directive, as transposed into UK law by the 2017 Regulations. The main relevance of decided cases lies not in providing analogies with the facts of this case but in helping to illuminate the purpose of the EIA Directive and the proper approach to its interpretation. Where decided cases assist with this, I have referred to them above.

That said, four further cases, for different reasons, deserve mention.

Abraham v Wallonia

In *Abraham v Wallonia* (Case C-2/07) [2008] Env LR 32 the CJEU held that, in deciding whether a project to modify an airport required an EIA, it was necessary to take into account the effects on the environment of a projected increase in the activity of the airport and air traffic which would result from the proposed construction works.

This decision confirms that the effects of a project which must be covered by an EIA are not limited to effects of construction works but include effects of the operational phase of the project - that is, of the activity which takes place after such works have been executed. In *Abraham* this was held to be so even though the project required an EIA because it fell within a category described in what is now Annex I, para 7, of the EIA Directive as "construction" of airports.

The claimant has sought to derive more from *Abraham* than this by reference to para 43 of the judgment, which states:

> "It would be simplistic and contrary to [the approach required by the Directive] to take account, when assessing the environmental impact of a project or of its modification, only of the direct effects of the works envisaged themselves, and not of the environmental impact liable to result from the use and exploitation of the end product of those works."

This statement was repeated in *Ecologistas en Acción-CODA v Ayuntamiento de Madrid* (Case C-142/07) [2009] PTSR 458, para 39. The claimant submits that the reference to "the use and exploitation of the end product of those works" is applicable to the use as fuel of the oil that would be produced by the proposed well site.

However, this submission takes the statement out of context. It is clear from the context that the phrase "end product" in the passage quoted above was intended to refer to the facility or installation that results from construction works. In *Abraham* that was the reconfigured airport. The equivalent here is the functioning well site after modifications to the existing site, the drilling of new wells and the installation of facilities for

exporting crude oil from the site. The "use and exploitation of the end product of those works" would consist in the production of oil from the expanded well site. The judgment in *Abraham* does not assist in determining the scope of the effects on the environment of, in that case, the increase in the activity of the airport or, in this case, the planned production of oil.

Squire

A second case relied on by the claimant is *R (Squire) v Shropshire Council* [2019] EWCA Civ 888; [2019] Env LR 36. This concerned a challenge to the grant of planning permission for a facility for the intensive rearing of chickens. A bye-product of the planned activity would be the production of substantial quantities of poultry manure. This was to be spread as fertiliser on agricultural land in the local area, some of it owned by the poultry farmer / developer and some of it owned by others. The Court of Appeal held, at paras 62-69, that the EIA for the project was deficient and unlawful because it did not include a proper assessment of indirect environmental effects of the proposed development in the form of smell and dust that would emanate from the storage and spreading of the manure, including on third party land.

This case provides an illustration, if it be needed, that the "indirect effects of a project" on the environment can include emissions occurring "downstream" from the development from sources that are not owned or controlled by the site owner. In his judgment in Court of Appeal here, at para 65, the Senior President said that *Squire* can be distinguished on the ground that:

> "In that case the manure was a product of the development itself in its operation as a poultry enterprise: a waste product with a commercial value. The connection between the development and the impacts in question was clear as a matter of fact, and not dependent on a series of intermediate processes."

I do not consider this to be a valid distinction. In this case too the oil would be a product of the development itself in its operation as a mining enterprise: a product with a commercial value. The connection between the development and the impacts in question is also clear as a matter of fact: it is common ground that the extraction of the oil will inevitably result in clear (and quantifiable) impacts on the environment upon its combustion. The only potential difference is in the existence of intermediate processes. It is unclear whether this is even a factual difference, as there may weIl be intermediate steps between the production of manure and its use as fertiliser. But assuming this to be a point of factual difference, I have already explained why, in my view, reliance on this as a material distinction is misplaced.

Kilkenny Cheese

Attention was also devoted in argument to the decision of the Irish Supreme Court in *An Taisce – The National Trust for Ireland v An Bord Pleanála (Kilkenny Cheese Ltd, notice Party)* [2022] IESC 8; [2022] 2 IR 173 ("the Kilkenny Cheese case"). The central issue in that case was whether or to what extent there was an obligation to include in the EIA for a proposed cheese factory the environmental effects of producing the milk needed to supply the factory. The Irish national planning authority, An Bord Pleanála ("the Board"), in granting permission for the project, calculated the gross CO_2 emissions

likely to arise in producing the 450 million litres of milk (some 4.5% of the national milk supply) expected to be required by the factory each year. But the Board found that the milk would come from existing sources and thus was going to be produced in any event. It followed that there would be no significant net increase in GHG emissions as a result of the construction and operation of the factory: see para 108 of the court's judgment.

Even so, the Supreme Court accepted that establishing a new factory which would take 4.5% of the national milk supply may have some wider economic effects by increasing the overall demand for milk. This increase in overall demand might in turn stimulate an increase in milk production, with implications for the size of the national herd and therefore GHG emissions: see paras 75-78. The key question was whether these implications for general milk production and GHG emissions were "indirect significant effects of a project" within the meaning of article 3(1) of the EIA Directive which the EIA for the project was therefore required to identify and assess: para 79. The court answered this question in the negative.

The court's judgment, given by Gerard Hogan J, was handed down after the judgment of Holgate J but before the judgment of the Court of Appeal in this case. Two possible interpretations of article 3(1) were considered. The first was to say that article 3(1) "should be read in an open-ended fashion": para 87. The second was to adopt the approach of Holgate J in this case and say that, to fall within article 3(1), indirect effects must be "'effects which the development itself has on the environment'": para 102.

Hogan J rejected the "open-ended" interpretation because he considered that it would lead to the imposition of obligations in carrying out EIAs which were impossibly onerous and unworkable: paras 100, 103-105. He endorsed Holgate J's approach, subject to the caveat that "there may well … be special and unusual cases where the causal connection between certain off-site activities and the operation and construction of the project itself is demonstrably strong and unbreakable." In such cases the significant indirect environmental effects of these off-site activities would need to be assessed: para 102.

This caveat is material since, if applied here, it would lead to the opposite result from that which Holgate J reached. The causal connection between the operation of the well site and the use of the oil produced as fuel is, by any standard, "demonstrably strong and unbreakable", as there are no realistic circumstances in which extraction of the oil will not lead to its use as fuel. Neither will occur without the other. Cause and end-result are inextricably linked so that, on the approach of the Irish Supreme Court, the environmental effects of combustion of the oil would need to be assessed.

I would, however, for the reasons already given, reject Holgate J's approach altogether. Where I respectfully differ from the Irish Supreme Court is that I think it is a false dilemma to assume that the only alternative approach is one that is entirely open-ended. I have explained why the EIA Directive does not, as I interpret it, impose obligations which are impossibly onerous and unworkable. In particular, only effects which evidence shows are likely to occur and which are capable of meaningful assessment

must be assessed. In an important passage of the judgment, at para 110, the Irish Supreme Court gave a compelling justification for its decision which implicitly adopted these criteria. After observing that any future increase in total milk production "is likely not to be entirely independent of the operation of the factory", Hogan J said:

> "Beyond this, however, proof of causality such would satisfy the requirements of the EIA in respect of 'direct and or indirect significant environmental effects' remains entirely elusive, contingent and speculative. Its very elusiveness means that it is incapable of measurement or assessment and, hence, cannot be the sort of significant indirect environment effect which article 3(1) of the EIA Directive must be taken necessarily to contemplate."

In my view, this reasoning clearly articulates the relevant distinction between that case and the present case.

Greenpeace Nordic

Since the oral hearing of this appeal, a court in Norway has decided the same issue that we must decide. The Norwegian case is a sequel to proceedings brought to challenge the grant of licences by the Norwegian government for petroleum production. One issue in the earlier Norwegian proceedings was whether, before the relevant area of the South Barents Sea had been opened for petroleum exploration and production, an EIA should have been carried out which assessed the possible combustion emissions if production licences were awarded and development consent given for plans for the development and operation of particular fields. That earlier case reached the Supreme Court of Norway which, by a majority of 11 to 4, rejected the challenge: see *Nature and Youth*

Norway v The State of Norway (represented by the Ministry of Petroleum and Energy), judgment dated 22 December 2020, HR-2020-2472-P (Case No 20-051052SIV-HRET).

The majority judgment explained that, at the time of the decision to open the relevant area, it was highly uncertain whether petroleum would be found and, if found, whether in amounts sufficient to make extraction commercially viable. The majority also emphasised that a production licence did not give an unconditional right to extraction even if profitable discoveries should be made. Extraction would require development consent. Before this was granted, an EIA would normally be required, which would need to assess GHG emissions: see paras 216-223. Relevantly for the subsequent proceedings, the majority judgment also pointed out that, when assessing GHG emissions as part of the climate impact of a measure or project, it is irrelevant where geographically the GHG emissions occur, as the environmental effect of GHG emissions is in principle the same irrespective of where on earth the emissions take place: see para 225.

The later case was brought after development consent had been granted for three projects. All three projects involved the extraction of petroleum in quantities which made an EIA mandatory before consent could be granted. The EIAs carried out did not assess the combustion emissions from the oil and gas to be produced. On 18 January 2024 the Oslo District Court ruled that there was a legal requirement to assess the combustion emissions under both the EIA Directive and the Norwegian regulations which implement the EIA Directive. As such an assessment had not been made, the

consents granted for the development and operation of the three oil fields were declared to be invalid: see *Greenpeace Nordic v The State of Norway (represented by the Ministry of Petroleum and Energy)*, Case No 23-099330TVI-TOSL/05.

In interpreting the EIA Directive, the court thought it clear, in particular from article 3(1) and Annex IV, para 5, that not only direct local environmental impacts resulting from the development and production are covered, and that all relevant climate impacts resulting from the project must be taken into account. The express requirement to assess "indirect" effects shows that "it cannot be decisive that the combustion emissions do not occur on site in connection with production, and that instead they occur later via one or more intermediate steps as combustion emissions elsewhere": p 52. In rejecting the Government's argument that combustion emissions are not effects of the project for the purpose of the EIA Directive, the court held, at pp53-54, that:

> "combustion emissions from petroleum extraction are such a significant and particularly characteristic consequence of these kinds of projects that they must clearly be considered indirect climate effects within the meaning of the EIA Directive. The whole purpose of petroleum extraction is to make geologically stored carbon available in the form of oil or gas. Greenhouse gas emissions from the carbon are thus both an inevitable and intentional effect from the project. … If combustion emissions are not included, this will mean that the provisions of the EIA Directive on the assessment of indirect climate impacts from petroleum operations will in practice have no real content."

As a judgment of a foreign court, although on the very question in issue before us, this decision only has authority in so far as its reasoning is persuasive. I do find the

reasoning of the Oslo court persuasive and agree with it. It entirely accords with what I consider to be the proper interpretation of the EIA Directive.

15. Conclusion

The council's decision to grant planning permission for this project to extract petroleum was unlawful because (i) the EIA for the project failed to assess the effect on climate of the combustion of the oil to be produced, and (ii) the reasons for disregarding this effect were flawed. I would therefore allow the appeal.

LORD SALES (dissenting, with whom Lord Richards agrees):

This appeal is concerned with the obligation to carry out an environmental impact assessment ("EIA") in relation to a development to drill for oil. The question is whether the public authority with responsibility to carry out the EIA before granting planning consent for such development is required to assess the impact of greenhouse gas emissions resulting not just from the drilling operation itself but also from the eventual use of the oil as fuel, once it has been refined elsewhere. This depends on the proper construction of Directive 2011/92 EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment ("the EIA Directive") and the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ("the EIA Regulations") which implement that Directive. These downstream emissions were referred to at the hearing by counsel for the appellant as scope 3 greenhouse gas emissions, drawing on the

terminology used in the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard developed under the auspices of the World Resources Institute and the World Business Council for Sustainable Development ("the GHG Protocol").

The parties are agreed that the EIA Regulations accurately transpose the EIA Directive into national law, so it is appropriate to focus on the Directive, which is the basic source for the relevant rules, rather than the Regulations. The detail regarding the corresponding provisions in the EIA Regulations is set out in the judgment of Holgate J at first instance, [2020] EWHC 3566 (Admin); [2021] PTSR 1160, at paras 33-45 and it is not necessary to repeat it here. Article 3(1) of the EIA Directive provides that an EIA of a project should identify, describe and assess "the direct and indirect significant effects of a project" on various factors, including "land, soil, water, air and climate". Put shortly, the question which arises is whether, on proper interpretation of the EIA Directive, the downstream greenhouse gas emissions at issue are "indirect significant effects" on the climate "of [the] project" in this case, namely the drilling to extract crude oil to be refined elsewhere and then used by consumers.

The first respondent ("the Council") is the local planning authority for its area. On 27 September 2019 it granted planning permission for development of an oil well at the Horse Hill Well Site ("the Site"), near Horley in Surrey. The second respondent ("HHDL") is the developer. It wishes to drill at the Site for crude oil which has been discovered there.

The appellant represents the Weald Action Group which objects to drilling at the Site. She has brought these judicial review proceedings to challenge the grant of planning permission.

The third respondent ("the Secretary of State") opposes the appeal. The first intervener, Friends of the Earth, made written submissions in support of the appellant's case, as they did below. Greenpeace Ltd was given permission to intervene in the appeal to make written submissions. It supports the appellant's case. The Office for Environmental Protection, an independent non-departmental public body established under section 22 of the Environment Act 2021, was also given permission to intervene in the appeal to make written submissions. It too supports the appellant's case. West Cumbria Mining Ltd has an interest in a similar mineral extraction development elsewhere and was also given permission to intervene in the appeal to make written submissions. It supports the submissions made by HHDL and the Secretary of State.

After the hearing, the court asked for additional submissions in writing to explain the background to amendments which were incorporated into the EIA Directive by Directive 2014/52/EU ("the 2014 Directive").

Scope 1, scope 2 and scope 3 greenhouse gas emissions

The appellant's counsel framed their submissions with reference to the concept of scope 3 greenhouse gas emissions. This calls for some explanation. The terminology of scope 1, scope 2 and scope 3 greenhouse gas emissions is taken from the GHG Protocol

developed to assist companies to understand and report on their greenhouse gas emissions. The first edition of the GHG Protocol was issued in 2001. It defined three "scopes" of greenhouse gas emissions for accounting and reporting purposes. Scope 1 is direct emissions from sources that are owned or controlled by the company, for example emissions from combustion in owned or controlled boilers, furnaces, vehicles etc. Scope 2 is "electricity indirect [greenhouse gas] emissions" from the generation of purchased electricity consumed by the company within the organisational boundary, for which the company should account even though the emissions physically occur at the facility where the electricity is generated. Scope 3 is all other indirect greenhouse gas emissions, an optional reporting category under the GHG Protocol that covers emissions which are a consequence of the activities of the company but occur from sources not owned or controlled by the company. This is a very wide category which covers both emissions which are "upstream" from the company's own activities but to which those activities give rise and emissions which are "downstream" from the company's activities.

Reference to scope 3 greenhouse gas emissions can be a useful shorthand and was treated as such in the course of argument. However, the EIA Directive does not refer to the GHG Protocol and does not employ the concepts or the scope 1, scope 2 and scope 3 framework set out in it. None of the authorities from the Court of Justice of the European Union (formerly the European Court of Justice – I refer to them both as "the CJEU") or domestic or other courts explains the scope and application of the EIA Directive in terms of the concepts used in the GHG Protocol.

Factual background

The extraction of hydrocarbons for exploration or production is a type of minerals development which requires planning permission to be granted by the local planning authority. Other regulatory approvals may be required as well, including environmental permits. Applications for planning permission for fossil fuel development relate both to the works on the site (such as well construction) and to the process of extraction of the fuel from the ground which follows. Planning permission for such development is not concerned with the refinement or processing of the extracted oil at other places.

On 16 January 2012 the Council granted planning permission for the construction of an exploratory well and for short-term testing for oil at the Site. When oil was discovered, HHDL applied for planning permission to drill and test an appraisal well and a sidetrack well, which was granted on 1 November 2017. Following further work, HHDL decided that the extraction of oil at the Site was commercially viable.

On 20 December 2018 HHDL applied for planning permission to drill a well at the Site and to operate it for commercial extraction of the oil ("the development"). The development would take place over a total period of about 25 years, allowing for a first stage of drilling and commissioning of the well, oil production lasting about 20 years, and then decommissioning and site restoration works.

The amount of crude oil to be extracted over the lifetime of the development could be as much as about 3.3 million tonnes. Once extracted, it would be taken by tankers to

refineries elsewhere for processing. Once refined, it would become useable as fuel. The refined product is likely to be used predominantly for transportation, with some used also for heat, manufacturing and petrochemicals. It is not possible to say at this stage whether the refining would take place in the UK or overseas, nor whether the refined product would be used in the UK or overseas.

The development is EIA development within the meaning of the EIA Directive and the EIA Regulations, and so required an EIA to be carried out before the grant of planning permission, because it is a project for the "extraction of petroleum … for commercial purposes where the amount extracted exceeds 500 tonnes/day": see article 4(1) of the EIA Directive and point 14 of Annex I to the EIA Directive ("Annex I") and regulation 2 of the EIA Regulations and para 14 of Schedule 1 to those Regulations.

Where an EIA is required, the developer has to submit an environmental statement to provide relevant environmental information to the local planning authority. The developer can ask the local planning authority for a scoping opinion to ascertain what matters should be covered in its environmental statement, and HHDL duly asked the Council for such an opinion.

On 25 October 2018 the Council issued its scoping opinion ("the Scoping Opinion"), which stated (para 3.9):

> "[The Council] is of the opinion that the primary focus for the EIA should be the potential effects of the scheme on population and human health (regulation 4(2)(a) [of the EIA

> Regulations]), on the water environment (regulation 4(2)(c) [of the EIA Regulations]) and on the global climate (regulation 4(2)(c) [of the EIA Regulations]).”

The Scoping Opinion observed that direct emissions of greenhouse gases associated with the construction and operation of the well site, and the consumption of fuel by vehicle, plant and equipment associated with the well site, would be likely to be small in scale “and whilst contributing to increased concentrations of greenhouse gases in the atmosphere could not be classed as significant in their own right” (para 3.12). On the other hand, the Scoping Opinion said “the indirect effects associated with the production and sale of fossil fuels which would likely be used in the generation of heat or power, consequently giving rise to carbon emissions, cannot be dismissed as insignificant”, but continued “[i]t is acknowledged that the contribution of the proposed development would be modest when considered in a national or regional context” (para 3.13). The Scoping Opinion set out the Council’s recommendation, at para 3.14, that the environmental statement “should consider, in particular, the global warming potential of the oil and gas that would be produced by the proposed well site.”

In December 2018 HHDL submitted its environmental statement (“the Environmental Statement”). This dealt with a wide range of matters relevant to the development. Chapter 6 of the statement addressed greenhouse gas emissions. It stated that the scope of the assessment it contained on that topic was “confined to the direct releases of greenhouse gases from within the well site boundary resulting from the site’s construction, production, decommissioning and subsequent restoration over the lifetime of the proposed development.” The emissions assessed were those from the combustion

of diesel fuel in the process of construction and by heavy goods vehicles servicing the development and by on-site engines and generators used in the development, and from the combustion of natural gas in flares in the course of the operation of the development. The Environmental Statement did not contain an assessment of the scope 3 greenhouse gas emissions associated with the downstream refining of the oil and use of the refined fuel away from the Site.

HHDL justified this by saying that "[t]he essential character of the proposed development is the extraction and production of hydrocarbons and does not extend to their subsequent use by facilities and process[es] beyond the planning application boundary and outwith the control of the site operators." It referred to national planning policy and guidance which indicated that decision-makers should focus on whether development is an acceptable use of land rather than on control of downstream emissions from hydrocarbons, which is the subject of regulation under regimes apart from planning law.

It is common ground, and indeed obvious, that it is inevitable that oil produced from the Site will be refined and that the refined end product will eventually undergo combustion which will produce greenhouse gas emissions. The refining process and eventual combustion of the refined oil will take place at locations other than the Site. It is agreed that it is scientifically possible to calculate the likely level of greenhouse gas emissions from the combustion of a given quantity of hydrocarbons using a methodology set out in guidance issued by the Institute of Environmental Management and Assessment.

In June 2019 the Council's designated officer, Dr Jessica Salder, carried out a review of the Environmental Statement ("the ES Review"). She concluded that the Environmental Statement responded "in an appropriate and proportionate manner" to regulation 4(2) and the relevant parts of Schedule 4 to the EIA Regulations (which correspond to article 1(g) and Annex IIA to the EIA Directive) and contained sufficient information to comply with the EIA Regulations and the EIA Directive. She stated that the Council accepted the justification given by HHDL for excluding consideration of the global warming potential of the hydrocarbons produced from the development from the scope of the EIA process.

The Council's Planning and Regulatory Committee ("the Council Committee") considered HHDL's planning application at a meeting on 11 September 2019, with the benefit of an officers' report ("the Officers' Report") which recommended the grant of planning permission for the development, subject to conditions. The report summarised the EIA process, which had included three consultation exercises. In all, 1,658 written representations had been received, of which about 921 supported the development and 717 objected to it. The issue of climate change was identified as one of about 30 main points of public concern. The report summarised the Environmental Statement on that topic. It stated that the Council had concluded that the development would not give rise to significant impacts on the climate as a result of emissions of greenhouse gases directly attributable to its implementation and operation. The officers were not thereby indicating that they had ignored the reference to "indirect" effects of the project contained in article 3(1) of the EIA Directive (they had already referred to the relevant

legislation), but rather that they took the view that the downstream greenhouse gas emissions at issue in this case did not fall within the scope of that provision.

The Officers' Report set out the European Union and national policy context, including in relation to climate change. So far as concerns national policy guidance in relation to the grant of planning permission for mineral extraction, para 205 of the National Planning Policy Framework ("NPPF") states that great weight should be given to its benefits, including to the economy. Relevant national policy in relation to energy was set out in the UK's 2007 Energy White Paper, "Meeting the Energy Challenge" (Cm 7124), which included as policy goals reduction of CO2 emissions by some 60% by 2050 and maintenance of the reliability of energy supplies. The policy in the White Paper was reflected in a number of statutes, including the Climate Change Act 2008 and the Energy Act 2008. The Officers' Report explained that the Climate Change Act 2008 introduced a target for reduction of the UK's greenhouse gas emissions by 2050, with a system of national carbon budgets for five-year periods to drive progress towards that objective (in June 2019, the target set out in the Climate Change Act 2008 was amended to the current net zero target by the Climate Change Act 2008 (2050 Target Amendment) Order 2019, SI 2019/1056) . In addition, the UK had signed up to the EU Renewable Energy Directive 2009/28/EC which set individual targets for each member state. The Government produces Annual Energy Statements which reflect the policy adumbrated in the 2007 Energy White Paper and recognise the need for investment in oil and gas production as a component of the transition towards a low carbon economy.

The Officers' Report referred to objections that the development would be incompatible with international and national objectives on climate change. The authors concluded that "given the production function of the development, it is not in conflict with the Government's policy and climate change agenda" and that on the basis of Government policy guidance "there is a national need for the development", subject to it satisfying other national policies and policies in the development plan. This view was repeated in an update prepared for the meeting of the Council Committee, which took account of the effect of a successful legal challenge to part of the Government's policy guidance in the NPPF. There is no challenge in this appeal to this assessment that the development is supported by national policy in relation to energy production and climate change.

However, the appellant says that there is an inconsistency in the analysis of material planning considerations in the Officers' Report, as adopted by the Council in its decision ("the inconsistency point"). The Council did not take quantified downstream greenhouse gas emissions into account in its EIA in relation to its decision to grant planning permission, but it did take into account as a material consideration the Government's relevant policies relating to climate change, which had regard to the use to which the refined oil would ultimately be put as fuel for combustion. This is said to demonstrate unlawfulness on the part of the Council, in that the need for the oil which was to be extracted weighed in favour of the proposed development, but the Council omitted to weigh in the balance the negative impact that downstream greenhouse gas emissions would have on climate change. The inconsistency point was not one of the

grounds of challenge in the appellant's pleaded claim in the High Court, but was introduced by way of reply submissions for the appellant in the Court of Appeal.

The Officers' Report also explained that in addition to planning permission, the operation of the Site would require other consents including an environmental permit issued by the Environment Agency and licences for drilling and flaring issued by the Oil and Gas Authority. It explained that the Government licenses the exploration, appraisal and production of hydrocarbons.

At its meeting on 11 September 2019 the Council Committee approved the grant of planning permission for the development.

The legal challenge

On 8 November 2019 the appellant commenced her judicial review challenge to the Council's decision to grant planning permission for the development. Permission to apply for judicial review was initially refused by Lang J. However, upon renewal of the application in the Court of Appeal Lewison LJ granted the appellant permission to apply for judicial review of the Council's decision on the grounds that (1) the Council failed to comply with its EIA obligations under the EIA Directive and the EIA Regulations by (a) failing to assess the indirect downstream greenhouse gas emissions in relation to the development arising from the combustion of the oil it will produce and/or (b) failing to take into account the environmental protection objectives established by the UK which are relevant to the project, namely the urgent need to address the climate crisis and the

requirement to reduce greenhouse gas emissions by at least 100% below the 1990 baseline; (2) the Council misinterpreted provisions of the NPPF and the Minerals section of the national Planning Policy Guidance ("nPPG") as permitting downstream greenhouse gas emissions to be excluded from assessment, in breach of the EIA Directive and the EIA Regulations; and (a new ground which Lewison LJ directed should be added to the claim) (3) the NPPF and the nPPG fail to conform with the EIA Directive and the EIA Regulations. As a result of the addition of ground (3), the Secretary of State was added as a party to the proceedings. The inconsistency point was not a part of the grounds of challenge.

Holgate J dismissed the claim on all grounds. In his view, the downstream greenhouse gas emissions were not effects, direct or indirect, "of [the] project" comprised in the development and so did not fall within article 3(1) of the EIA Directive. On its proper interpretation, the EIA Directive required there to be a closer connection between any direct and indirect effects relied upon and the project in question. He pointed out the wide-ranging effect of the appellant's submissions in relation to ground (1)(a), which was the main issue in the claim. The Environmental Statement and the Council's EIA assessed the greenhouse gases that would be produced from the operation of the development itself, but the appellant contended that the EIA should have assessed the greenhouse gases which would be emitted when the crude oil produced from the Site is refined elsewhere and then used by consumers. It was agreed that once the crude oil was transported off-site it enters, in effect, an international market, and the refined product could be used anywhere in the world. Moreover, if correct, the appellant's submissions

would have ramifications for a range of other production processes. For example, the production of metals, then their use to manufacture components and then motor vehicles or aircraft, all at different locations where the processes will result in greenhouse gas emissions, will also lead to greenhouse gas emissions from their use by consumers and airlines. Holgate J also gave the example of the successive stages involved in the handling of waste, recycling, recovery and disposal to landfill, each one of which can generate greenhouse gases.

Holgate J set out the statutory and national policy framework and reviewed the facts in detail. As to ground (1)(a), he emphasised that the formula used in the EIA Directive is that an EIA is required of the effects (direct and indirect) "of the project" (the corresponding formula in the EIA Regulations used the word "development" in place of "project", in order to integrate the EIA Directive into the UK planning system through use of the relevant national terminology). Holgate J rejected the suggestion that it is sufficient if the environmental effects of consuming an end product will flow inevitably from the use of a raw material in making that product, and held instead that "the true legal test is whether an effect on the environment is an effect of the development for which planning permission is sought"; he observed that "[a]n inevitable consequence may occur after a raw material extracted on the relevant site has passed through one or more developments elsewhere which are not the subject of the application for planning permission and which do not form part of the same 'project'": para 101. His conclusion from a review of domestic and European case law on the EIA Directive was that, as a matter of law, on the proper interpretation of the Directive, an "EIA must address the

environmental effects, both direct and indirect, of the development for which planning permission is sought ... but there is no requirement to assess matters which are not environmental effects of the development or project": para 126. He noted that an obligation could arise to carry out an EIA of any larger project of which the development forms part, but it was not suggested that the development was part of any such larger project.

Although not critical for his decision, Holgate J also pointed out that there are other measures in place within the UK for assessing and reducing greenhouse gas emissions from the combustion of oil products in motor vehicles, including the net zero target in the Climate Change Act 2008 and the statutory carbon budgets on a national level issued pursuant to that Act. In addition, the estimation of greenhouse gas emissions from downstream combustion of oil and control through the statutory carbon budgets is carried out at a national level annually and emissions of greenhouse gases from road transport are the subject of national policy designed to reduce them as part of the steps being taken to achieve the 2050 net zero target. As part of the national policy response to the need to reduce greenhouse gas emissions, a national Emissions Trading Scheme has been introduced by the Greenhouse Gas Emissions Trading Scheme Regulations 2012 (SI 2012 No 3038).

Holgate J held that ground (1)(b) lived with ground (1)(a) and fell away with it. He considered grounds (2) and (3) together and rejected them because of his conclusion on

ground (1)(a). In any event, the NPPF and the nPPG did not purport to limit the scope of EIA obligations arising under the EIA Directive and the EIA Regulations.

With permission granted by Lewison LJ, the appellant appealed to the Court of Appeal in relation to ground (1)(a). The Court of Appeal, by a majority (Sir Keith Lindblom, Senior President of Tribunals, and Lewison LJ, Moylan LJ dissenting), dismissed the appeal: [2022] EWCA Civ 187; [2022] PTSR 958. Sir Keith Lindblom reviewed the legislative regime and caselaw on that regime of the CJEU. Like Holgate J, Sir Keith Lindblom held that an EIA was required of the direct and indirect environmental effects "of the proposed development" itself (that is, of the construction and operation of the oil well at the Site) not of end products far-removed from that project: paras 31 and 38-39. The extraction of crude oil for commercial purposes was "the essential content and character of the proposed development": "[t]hat was the project", and neither the subsequent refinement of the crude oil nor the ultimate use of the products generated by that refinement were part of that project: para 33.

However, departing from Holgate J's approach, Sir Keith Lindblom considered that whether the degree of connection required between a development and its putative effects was sufficiently close for them to count as "indirect" effects of a project within the meaning of the EIA Directive and the EIA Regulations is a matter for evaluative assessment by the Council as the planning authority: paras 41-43. In his view, therefore, the outcome of the appeal turned not on a hard-edged question of law, but on the lawfulness of the decision of the Council to decide that the scope 3 greenhouse gas

emissions were not “indirect significant effects” of the proposed development or project (see article 3(1) of EIA Directive). This was a matter of fact and evaluative judgment for the Council, challengeable only on *Wednesbury* rationality grounds (*Associated Provincial Picture Houses Ltd v Wednesbury Corpn* [1948] 1 KB 223): para 57. The Council’s assessment could not be said to be irrational: para 61. It was relevant to this conclusion that there were many intermediate steps to be gone through before the crude oil from the Site could be combusted as fuel, including that it had to be refined, yet it had not been suggested that the environmental impacts resulting from the intermediate process of refinement ought to have been subject to an EIA in the context of the development: paras 65-66.

Partly as a response to this analysis, the appellant introduced the inconsistency point in her submissions in the Court of Appeal. No objection seems to have been taken to this and it is agreed by the parties to be an issue for determination in the appeal to this court. Sir Keith Lindblom dismissed the challenge based on the inconsistency point: paras 90-92. He held that it was proper for the Council to take into account as material considerations that the development would “in a general sense” help to meet a continuing national need for identified reserves of on-shore hydrocarbons to be husbanded and the relevant Government policies relating to climate change. It was not incumbent on the Council to estimate the precise contribution which the oil produced at the Site might make to meeting the continuing national need for hydrocarbons, nor the particular impacts, positive or negative, of using the refined products of that oil.

Lewison LJ delivered a short concurring judgment. He agreed that the real question was not that posed by Holgate J, as to the proper interpretation of the EIA Directive, but the degree of connection needed to link a "project" and a putative effect. This was a question of fact or evaluative judgment for the Council as the planning authority, which could only be impugned for irrationality or on other public law grounds. He considered that the Council had not ignored the downstream global warming effect of the development and that it was lawfully entitled to decide that this was not an indirect effect of the project for the purposes of the EIA Directive.

Moylan LJ agreed with much of the judgment of Sir Keith Lindblom, but dissented on the basis that the Council's assessment regarding the lack of connection between the project and the downstream greenhouse gas emissions was legally flawed. He focused on point 14 in Annex I to the EIA Directive. Annex I sets out cases where an EIA is mandatory, without the need for any screening assessment. Point 14 is the provision of Annex I applicable in this case, which meant that an EIA of the development was required. Point 14 stipulates that an EIA is required in the case of a project of this description:

> "(14) Extraction of petroleum and natural gas *for commercial purposes* where the amount extracted exceeds 500 tonnes/day in the case of petroleum and 500,000 cubic metres/day in the case of gas." (emphasis added)

In Moylan LJ's view, the language of the provision indicates that it is the extraction of petroleum "for commercial purposes", and not the surface installations or the deep drilling (matters covered in point 2 of Annex II to the EIA Directive, headed "Extractive

Industry", and in Schedule 2 to the EIA Regulations, as cases requiring a screening assessment) which caused the drafters of the EIA Directive to include this item in Annex I. He accepted the appellant's submission that since an EIA in relation to the development was required by point 14 of Annex I to the EIA Directive by virtue of the extraction of petroleum for commercial purposes, this showed that the downstream greenhouse gas emissions associated with it were impacts (and so indirect effects) of the project: paras 109-112 and 125-128. Moylan LJ referred in particular to the decision in *R (Squire) v Shropshire Council* [2019] EWCA Civ 888; [2019] Env LR 835 ("*Squire*") and the judgments of the CJEU in *Abraham v Wallonia* (Case C-2/07) [2008] Env LR 32 ("*Abraham*") and *Ecologistas en Acción-CODA v Ayuntamiento de Madrid* (Case C-142/07) [2009] PTSR 458 ("*Ecologistas*") and also called attention to amendments introduced into the EIA Directive by the 2014 Directive to provide for a specific and increased focus on climate change and greenhouse gas emissions. In his view cogent reasons would need to be given to justify exclusion of such emissions, which were an inevitable effect of the downstream use of the oil, from the EIA exercise, and those given by the Council were not sufficient.

The EIA legislative regime

The 1985 Directive

The requirement to undertake an EIA before granting planning consent for certain projects was first introduced into European law by Council Directive 85/337/EEC ("the 1985 Directive"). The essential elements of the regime were the same as those under the

EIA Directive in its present form. In outline, by virtue of article 4(1) an EIA was required for projects listed in Annex I (the list being shorter than it now is in the EIA Directive) whereas, by virtue of article 4(2), for projects listed in Annex II a screening assessment would be required in order to determine whether they should be made subject to an EIA. Article 3 provided that an EIA should identify, describe and assess "the direct and indirect effects of a project on", among other factors, "soil, water, air, climate and the landscape". Article 2(2) provided that the EIA process could "be integrated into the existing procedures for consent to projects in the Member States"; so in the UK, by regulations to implement the 1985 Directive, it was made part of the procedure leading to the grant of planning permission. Article 1(5) provided that the 1985 Directive did not apply to "projects the details of which are adopted by a specific act of national legislation, since the objectives of this Directive, including that of supplying information, are achieved through the legislative process."

The language used in article 3(1) of the EIA Directive which is central to this appeal, requiring an EIA to cover "significant indirect effects" of a project, is taken from the 1985 Directive, which was consolidated into the EIA Directive. The appellant relies on the similarity of that language with the way in which scope 3 emissions are defined in the GHG Protocol to refer to "indirect" greenhouse gas emissions in order to suggest that the EIA Directive requires an EIA for a project to cover all of the scope 3 emissions associated with that project.

However, the language of the EIA Directive, as derived from the 1985 Directive, was adopted by the EU legislator well before the GHG Protocol was drafted and does not refer to the concepts set out in that protocol. Moreover, the concepts in the GHG Protocol have been developed for a different purpose from the purposes pursued by the 1985 Directive and the EIA Directive: in the former case to provide a standardised approach to accounting for and reporting on the activities of corporate entities; in the latter, to ensure consideration of the effects of particular projects for which planning permission is sought. The 1985 Directive and the EIA Directive which replaced it have their own scheme and conditions of application and I do not consider that one can infer any intention on the part of the EU legislator that the indirect effects of a project to which the Directives refer should be taken to include the full ambit of scope 3 emissions as referred to in the GHG Protocol.

The EIA Directive

The 1985 Directive was amended several times. The EIA Directive was enacted in "in the interests of clarity and rationality" to codify the 1985 Directive as amended: recital (1) to the EIA Directive. It was intended to harmonise "the principles of the assessment of environmental effects", including the main obligations of developers and the content of the assessment: recital (3) (which also notes that Member States could lay down stricter rules to protect the environment). Recital (6) states that general principles for the assessment of environmental effects should be laid down with a view to supplementing

and coordinating development consent procedures. Other relevant provisions of the EIA Directive are as follows.

Recital (7) provides:

> "Development consent for public and private projects which are likely to have significant effects on the environment should be granted only after an assessment of the likely significant environmental effects of those projects has been carried out. That assessment should be conducted on the basis of the appropriate information supplied by the developer, which may be supplemented by the authorities and by the public likely to be concerned by the project in question."

Recital (8) states that projects of certain types "have significant effects on the environment" and so should generally be subject to an EIA (ie Annex I projects), while recital (9) says that projects of other types may not have such effects in every case but should be subject to an EIA where Member States "consider that they are likely to have significant effects on the environment" (ie Annex II projects, which are to be screened to determine whether they should be subject to an EIA). Recital (10) states that Member States may set thresholds or criteria for screening purposes.

Recitals (22) and (24) provide:

> "(22) However, this Directive should not be applied to projects the details of which are adopted by a specific act of national legislation, since the objectives of this Directive, including that of supplying information, are achieved through the legislative process.

…

> (24) Since the objectives of this Directive cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale and effects of the action, be better achieved at Union level, the Union may adopt measures in accordance with the principle of subsidiarity as set out in article 5 of the Treaty on European Union. In accordance with the principle of proportionality, as set out in that article, this Directive does not go beyond what is necessary in order to achieve those objectives."

The EIA Directive post-dates the GHG Protocol but the recitals make no reference to it. The EIA Directive does not refer to or seek to employ the scope 1, scope 2 and scope 3 concepts set out in the protocol. Instead, it is made clear that the EIA Directive re-enacts the scheme of the 1985 Directive and uses the same basic concepts and terms as had been employed in that Directive.

Article 1(1) of the EIA Directive provides that the Directive "shall apply to the assessment of the environmental effects of those public and private projects which are likely to have significant effects on the environment."

Article 1(2) sets out certain definitions. "Project" is defined in sub-para (a) to mean "the execution of construction works or of other installations or schemes" and "other interventions in the natural surroundings and landscape including those involving the extraction of mineral resources". "Public concerned" is defined in sub-para (e) to mean "the public affected or likely to be affected by, or having an interest in, the environmental decision-making procedures referred to in article 2(2)", with an

extension to deem certain non-governmental organisations promoting environmental protection as having an interest. EIA is defined in sub-para (g) to mean:

> "a process consisting of:
>
> (i) the preparation of an environmental impact assessment report by the developer, as referred to in article 5(1) and (2);
>
> (ii) the carrying out of consultations as referred to in article 6 and, where relevant, article 7;
>
> (iii) the examination by the competent authority of the information presented in the environmental impact assessment report and any supplementary information provided, where necessary, by the developer in accordance with article 5(3), and any relevant information received through the consultations under articles 6 and 7;
>
> (iv) the reasoned conclusion by the competent authority on the significant effects of the project on the environment, taking into account the results of the examination referred to in point (iii) and, where appropriate, its own supplementary examination; and
>
> (v) the integration of the competent authority's reasoned conclusion into any of the decisions referred to in article 8a."

Article 2(1) stipulates that Members States shall adopt measures to ensure that before development consent is given "projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location" are made subject to a requirement for such consent and "an assessment with regard to their effects on the environment", such projects being defined in article 4. As in the 1985 Directive, article 2(2) provides that the EIA "may be integrated into the existing procedures for

development consent to projects in the Members States", which in the UK means the existing planning system in which decisions on planning permission are usually taken by local planning authorities. Throughout the EU the implementation of the EIA Directive tends to be decentralised, as it is often the case that regional and local authorities are responsible for its application: see para 235 below.

Following the equivalent provision in the 1985 Directive, article 3(1) provides in relevant part as follows:

> "The [EIA] shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:
>
> …
>
> (c) land, soil, water, air and climate …"

Article 4(1) provides that projects listed in Annex I shall be subject to an EIA. Article 4(2)-(4) provides that projects listed in Annex II should be screened to determine whether an EIA is required according to selection criteria set out in Annex III, and on the basis of information provided by the developer as specified in Annex IIA. As set out in Annex IIA, this information comprises a description of the project (point 1), "a description of the aspects of the environment likely to be significantly affected by the project" (point 2) and "a description of any likely significant effects … of the project on the environment resulting from: (a) the expected residues and emissions and the

production of waste, where relevant; (b) the use of natural resources, in particular soil, land, water and biodiversity" (point 3).

Annex III sets out the selection criteria applicable under article 4(3). These include the "characteristics of projects" (point 1), "with particular regard to", among other things, "cumulation with other existing and/or approved projects" (para (b)), "the use of natural resources, in particular land, soil, water and biodiversity" (para (c)), "the production of waste" (para (d)), "pollution and nuisances" (para (e)) and "the risk of major accidents and/or disasters which are relevant to the project concerned, including those caused by climate change …" (para (f)). They also include the "location of projects", meaning that "the environmental sensitivity of geographical areas likely to be affected by projects must be considered" (point 2); and the "type and characteristics of the potential impact" (point 3), meaning that "the likely significant effects of projects on the environment must be considered in relation to criteria set out in points 1 and 2 [of Annex III], with regard to the impact of the project on the factors specified in Article 3(1), taking into account" various matters including "the magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected)" (para (a)), "the transboundary nature of the impact" (para (c)) and "the cumulation of the impact with the impact of other existing and/or approved projects" (para (g)).

Article 5(1) provides that where an EIA is required the developer shall prepare an EIA report (that is, in the present case, the Environmental Statement) which shall include:

> "(a) a description of the project comprising information on the site, design, size and other relevant features of the project;
>
> (b) a description of the likely significant effects of the project on the environment;
>
> (c) a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;
>
> (d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;
>
> (e) a non-technical summary of the information referred to in points (a) to (d); and
>
> (f) any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.
>
> Where an opinion is issued pursuant to paragraph 2, the [EIA] report shall be based on that opinion, and include the information that may reasonably be required for reaching a reasoned conclusion on the significant effects of the project on the environment …"

Article 5(2) provides for the developer to be able to request an opinion from the authority which is competent to issue a development consent on the scope and level of detail of the information to be provided for the EIA. This was the procedure followed in this case: see paras 189-190 above. Article 5(3) provides that where necessary the authority should seek supplementary information from the developer "in accordance

with Annex IV, which is directly relevant to reaching the reasoned conclusion on the significant effects of the project on the environment."

Annex IV sets out the information required for the EIA report (it reflects points previously set out in less detail in Annex III to the 1985 Directive). The information includes the following listed items:

(1) Point 1 is "Description of the project", including "a description of the main characteristics of the operational phase of the project … for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used" (para (c)) and "an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation) and quantities and types of waste produced …" (para (d)).

(2) Point 2 is "a description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer … and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects".

(3) Point 3 is "a description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed …".

(4) Point 4 is "a description of the factors specified in Article 3(1) likely to be significantly affected by the project: population, human health, biodiversity …, soil …, water …, air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage … and landscape".

(5) Point 5 is "a description of the likely significant effects of the project on the environment resulting from, inter alia: (a) the construction and existence of the project …; (b) the use of natural resources, in particular land, soil, water and biodiversity …; (c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste; (d) the risks to … the environment (for example due to accidents or disasters): (e) the cumulation of effects with other existing and/or approved projects …; (f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change; …". It continues:

> "The description of the likely significant effects on the factors specified in article 3(1) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the project. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project."

(6) Point 7 is "a description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the

environment and, where appropriate, of any proposed monitoring arrangements …".

(7) Point 8 is "a description of the expected significant adverse effects of the project on the environment deriving from the vulnerability of the project to risks of major accidents and/or disasters which are relevant to the project concerned …".

Recitals (16) and (17) refer to public participation in the taking of decisions. Recitals (18) to (21) refer to the UN/ECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters ("the Aarhus Convention"), to which the European Community was a party. These recitals introduce article 6. Article 6(1) provides in relevant part that "Member States shall take the measures necessary to ensure that the authorities likely to be concerned by the project by reason of their specific environmental responsibilities or local and regional competences are given an opportunity to express their opinion on the information supplied by the developer and on the request for development consent …". Article 6(2) provides in relevant part that "[i]n order to ensure the effective participation of the public concerned in the decision-making procedures, the public shall be informed electronically and by public notices or by other appropriate means, of [various matters relating to EIA of the project] early in the environmental decision-making procedures referred to in Article 2(2) and, at the latest, as soon as information can reasonably be provided." Article 6(4) provides that "[t]he public concerned shall be given early and

effective opportunities to participate in the environmental decision-making procedures referred to in Article 2(2) …".

Recital (15) refers to EIA in a transboundary context. This introduces article 7. The relevant part of article 7 provides that "[w]here a Member State is aware that a project is likely to have significant effects on the environment in another Member State or where a Member State likely to be significantly affected so requests", the first Member State shall send a description of the project and give the affected Member State an opportunity to participate in the decision-making procedures referred to in article 2(2). In addition, information should be provided to the public concerned in the territory of the affected Member State so that they have an opportunity to participate in the consultation process. Article 7(4) provides that the Member States concerned "shall enter into consultations regarding … the potential transboundary effects of the project and the measures envisaged to reduce or eliminate such effects and shall agree on a reasonable time-frame for the duration of the consultation period. …".

Article 8 provides that the results of the consultations and information gathered pursuant to articles 5 to 7 "shall be duly taken into account in the development consent procedure". Article 8a(1) provides that the decision to grant development consent shall incorporate (a) the authority's reasoned conclusion referred to in article 1(2)(g)(iv) and (b) "any environmental conditions attached to the decision, a description of any features of the project and/or measures envisaged to avoid, prevent or reduce and, if possible, offset significant adverse effects on the environment as well as, where appropriate,

monitoring measures." Member States shall ensure that any such features of the project and measures "are implemented by the developer" and shall determine monitoring procedures; and "[t]he type of parameters to be monitored and the duration of the monitoring shall be proportionate to the nature, location and size of the project and the significance of its effects on the environment": article 8a(4). The main reasons for a refusal of development consent should be stated: article 8a(2).

Article 11(1) requires Member States to ensure that "members of the public concerned: (a) having a sufficient interest, or alternatively; (b) maintaining the impairment of a right, where administrative procedural law of a Member State requires this as a precondition" have access to a review procedure before a court of law or equivalent body "to challenge the substantive or procedural legality of decisions, acts or omissions subject to the public participation provisions of this Directive".

Annex I sets out the projects referred to in article 4(1) for which an EIA is mandatory. These include "crude-oil refineries … and installations for the gasification and liquefaction of 500 tonnes or more of coal or bituminous shale per day" (point 1); "thermal power stations and other combustion installations with a heat output of 300 megawatts or more" and nuclear power stations and reactors "except research installations" whose output is below a certain level (point 2); "integrated works for the initial smelting of cast iron and steel" and certain "installations for the production of non-ferrous crude metals from ore, concentrates or secondary raw materials" (point 4); installations for extraction and processing of asbestos and products containing asbestos,

and “for asbestos-cement products, with an annual production of more than 20,000 tonnes of finished products, for friction material, with an annual production of more than 50 tonnes of finished products …” (point 5); construction of “airports with a basic runway length of 2,100 m or more” and of roads of four or more lanes which are 10 km or more in length (point 7); waterways and ports for vessels of over 1,350 tonnes (point 8); waste disposal installations for the incineration of non-hazardous waste with a capacity exceeding 100 tonnes per day (point 10); certain projects for the extraction of petroleum and natural gas (point 14, set out at para 210 above); industrial plants for the production of paper and board with a production capacity exceeding 200 tonnes per day” (point 18); “Quarries and open-cast mining where the surface of the site exceeds 25 hectares, or peat extraction, where the surface of the site exceeds 150 hectares” (point 19); and “installations for storage of petroleum, petrochemical, or chemical products with a capacity of 200,000 tonnes or more” (point 21). Points 1, 2, 4, 5, 7 and 8 replicated in whole, or in substantial part, items listed in Annex I to the 1985 Directive as requiring an EIA.

Annex II sets out the projects referred to in article 4(2) for which a screening opinion is required. These include under point 2, “Extractive Industry”, “quarries, open-cast mining and peat extraction” so far as not covered by Annex I (para (a)); “underground mining” (para (b)); “deep drillings”, “with the exception of drillings for investigating the stability of the soil” (para (d)); and “surface industrial installations for the extraction of coal, petroleum, natural gas and ores, as well as bituminous shale” (para (e)). They also include under point 3, “Energy Industry”, “industrial installations for the

production of electricity, steam and hot water", so far as not covered by Annex I (para (a)); and under point 4, "Production and Processing of Metals", the "manufacture and assembly of motor vehicles and manufacture of motor-vehicle engines" (para (f)); "shipyards" (para (g)); "installations for the construction and repair of aircraft" (para (h)); and "manufacture of railway equipment" (para (i)). Other projects are listed in relation to the mineral industry (point 5), the chemical industry (point 6), the food industry (point 7), infrastructure projects (point 10) and so forth. In large part these repeat items in Annex II to the 1985 Directive. Certain items listed there were omitted from Annex II to the current EIA Directive, including under point 2 (extractive industry) "extraction of petroleum" (para (f)) and "extraction of natural gas" (para (g)).

The 2014 Directive

The text of the EIA Directive in its current form had been amended by the 2014 Directive. Among other changes, this introduced references to "climate change" and to "greenhouse gases". The highpoint of the appellant's case focuses upon this language and these changes, so it is appropriate to consider the object and purpose of the 2014 Directive in amending the EIA Directive. Again, although the 2014 Directive post-dates the GHG Protocol it does not refer to the protocol; nor does it seek to make use of the concepts of scope 1, scope 2 and scope 3 emissions set out in the protocol.

The 2014 Directive originated in a proposal by the European Commission ("the Commission") dated 26 October 2012 ("the 2012 Proposal"). The 2012 Proposal was accompanied by a lengthy Impact Assessment ("the 2012 Impact Assessment") which

identified certain shortcomings in relation to the implementation of the EIA regime regarding the screening procedure, the quality and analysis of the EIA and risks of inconsistencies within the process itself. The 2012 Impact Assessment noted that "[a]t present [ie in 2012], EIA reports do not look at the contributions from projects to the causes of global climate change (in terms of directly and indirectly inducing GHG [greenhouse gas] emissions)" (p 83). The shortcomings identified by the Commission did not relate to the absence of consideration of downstream or scope 3 greenhouse gas emissions from EIA of proposed projects. In the section of the 2012 Impact Assessment headed "Detailed description of the environmental impacts", the Commission proposed the integration of a "climate assessment" in EIA reports, for which the focus was on the direct and indirect emissions associated with a project subject to an EIA:

> "As part of the climate assessment, depending on the character of the project, in some cases not only direct greenhouse gas emissions (eg from on-site combustion of fossil fuels) would have to be assessed, but also indirect impacts of the projects on climate change. For example, for transport infrastructure this could include increased or avoided carbon emissions associated with energy use for the operation of the project …; for a commercial development this could include carbon emissions due consumer trips. Member States have legally binding greenhouse gas reduction targets and many Member States have also defined greenhouse gas reduction targets at the local level (main cities, regions etc), so the EIA could assess to what extent projects contribute to the achievement of these targets and could identify relevant mitigation and/or offsetting measures that would need to be implemented" (pp 138-139).

The Commission noted (p 9) that incorporation of climate change issues in EIA reports "could be a good opportunity to integrate environmental impacts into the project's

design thereby ensuring a more complete assessment of environmental and climate change impacts of projects and foreseeing appropriate mitigation measures". The relevant problem identified with the existing EIA regime was that "potential (environmental) impacts of projects to new environmental issues (eg climate, biodiversity) are not sufficiently covered by the EIA Directive"; the solution proposed was to "specify the content of the EIA report and of the final decision", "streamline environmental assessments" and "adjust the Directive to the new environmental issues" (p 21). The changes proposed in the 2012 Proposal and introduced by the 2014 Directive did not specify that downstream or scope 3 greenhouse gas emissions should be covered by the EIA report and the final decision.

In a summary review of issues identified in a consultation exercise in relation to the EIA regime, the 2012 Impact Assessment had earlier noted (p 79) that although article 3 of the EIA Directive refers to both direct and indirect effects of a project, "in practice the environmental impacts described in EIAs are mostly related to direct impacts …, while indirect impacts and life-cycle impacts are rarely covered in detail (eg depletion of natural resources due to the use of certain products and materials, greenhouse gas emissions from transportation activities induced by the project, environmental impacts of products manufactured or services provided)". In so far as this item refers to greenhouse gas emissions in terms, the focus is on those from transportation activities in relation to the project itself. This is the only reference in the 2012 Impact Assessment to the environmental impacts of products which have been manufactured, and in that regard it is imprecise, in that a distinction is drawn between indirect impacts and life-

cycle impacts. It was not reflected in the Commission's own assessment in the 2012 Impact Assessment of the problems then existing with the EIA regime nor in its proposed solution. This is a significant omission, since the proposed solution involved specifying in more detail what should be included in EIA reports and final decisions in order to ensure greater uniformity of approach across Member States. If the aim of the proposed changes to the EIA Directive had been to require competent authorities to assess all downstream or scope 3 greenhouse gas emissions, one would have expected this to be specified clearly.

The 2012 Proposal recommended that the first area of shortcomings referred to above should be addressed by clarifying the screening procedure by modifying the criteria in Annex III and specifying the content and justification of screening decisions; the second area by quality control of EIA information, specification of the EIA report (mandatory assessment of reasonable alternatives etc) and adaptation of the EIA to challenges (ie biodiversity, climate change, disaster risks, availability of natural resources); and the third area by specifying time-frames for the stages of EIA and coordination with other environmental assessments required under other EU legislation. The Commission noted that further guidance was necessary because "the implementation of the Directive is often highly decentralised, as the regional and local authorities are responsible for its application …". There was a review of the additional costs for developers and public authorities associated with the proposed changes and it was stated that the proposal for amendment complied with the proportionality principle.

In 2013, in advance of amendment of the legislation, the Commission published *Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment* ("the 2013 Guidance"). In the section entitled "Understanding key climate mitigation concerns" the Commission set out a table of "examples of key questions that could be asked when identifying key climate change mitigation concerns", comprising questions relating to direct greenhouse gas emissions, "indirect GHG [greenhouse gas emissions] due to an increased demand for energy" ("will the proposed project significantly influence demand for energy? Is it possible to use renewable energy sources?") and "indirect GHG caused by any supporting activities or infrastructure that is directly linked to the implementation of the proposed project (eg transport …)" ("Will the proposed project significantly increase or decrease personal travel? Will the proposed project significantly increase or decrease freight transport?"): see p 30. The focus of the proposed questions was an increase in greenhouse gases closely associated with the project itself, as would be involved in increased energy use or vehicular transportation to which the project would give rise.

The text of the amendment Directive as proposed by the Commission in the 2012 Proposal was slightly modified in the 2014 Directive, as adopted. However, it clearly continued to reflect the policy objectives specified in the 2012 Proposal and the 2012 Impact Assessment. Recital (7) referred to the greater prominence of certain environmental issues, including climate change, which had become more important in policy making and should constitute "important elements in assessment and decision-making processes". Recital (13) stated: "Climate change will continue to cause damage

to the environment and compromise economic development. In this regard, it is appropriate to assess the impact of projects on climate (for example greenhouse gas emissions) and their vulnerability to climate change". Neither the recitals to the 2014 Directive nor the text it introduced into the EIA Directive indicate that it was intended that all downstream or scope 3 greenhouse gas emissions should be included within the concept of "indirect effects" of projects for the purposes of the EIA Directive. As the 2012 Impact Assessment explained, authorities across Member States had not previously regarded them as "indirect effects" of projects "on … climate" within article 3(1) of the EIA Directive (according to the then version of the text of that provision, before the addition of the word "significant" by amendment by the 2014 Directive). The 2013 Guidance only referred to a limited class of emissions as "indirect effects" of projects. If it had been intended that the entirety of the very wide class of scope 3 emissions should also be so regarded, the amendments effected by the 2014 Directive would have made that clear. That would have been necessary in order to ensure a uniform and harmonised approach across Member States in relation to such a fundamental point. It would have constituted a major change of direction and focus for the EIA regime. Instead, as explained further below, the text of the EIA Directive as so amended focused on greenhouse gas emissions arising from the construction and operation of a project itself, together with possible measures for minimising and mitigating such emissions.

In 2017 the Commission issued new guidance entitled "Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact

Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU)". Under the heading "Legislative requirements and key considerations" the guidance states (p 38) that under Annex IV to the EIA Directive "the emphasis is placed on two distinct aspects of the climate change issue - climate change mitigation: this considers the impact the Project will have on climate change, through greenhouse gas emissions primarily, [and] climate change adaptation: this considers the vulnerability of the Project to future changes in the climate, and its capacity to adapt to the impacts of climate change, which may be uncertain". So far as the former is concerned, therefore, the emphasis is on what can be done in the course of the planning consent procedure to modify the project to mitigate its effects in terms of greenhouse gas emissions. In relation to this, under the heading "Climate change mitigation: project impacts on climate change", the guidance states (p 39) that the EIA should include an assessment of the direct greenhouse gas emissions of the project over its lifetime, "eg from on-site combustion of fossil fuels or energy use", and of emissions "generated or avoided as a result of other activities encouraged by the Project (indirect impacts) eg transport infrastructure: increased or avoided carbon emissions associated with energy use for the operation of the Project; [and] commercial development: carbon emissions due to consumer trips to the commercial zone where the Project is located." This confirms the Commission's understanding that the relevant "indirect effects" of a project in relation to greenhouse gas emissions are those relating to the operation of the project itself. There is no reference to all downstream or scope 3 emissions, as one would have expected in this guidance if the Commission regarded these as falling within the scope of the EIA Directive. Instead, at p 38, the guidance referred back to the 2013 Guidance,

which as noted above only referred to far more limited aspects of greenhouse gas emissions.

The Aarhus Convention

The Aarhus Convention, referred to in the recitals to the EIA Directive, is concerned, among other things, with promoting access to information and public participation in decision-making in environmental matters. This was followed by Directive 2003/35/EC which amended the previous version of the EIA Directive to align it with the provisions on public participation in the Convention (that is, well before the 2014 Directive). In fact, the relevant part of the Aarhus Convention followed the basic framework for EIA set out in the 1985 Directive. Article 6 of the Convention makes provision for participation by "the public concerned" in decisions on specific activities, which corresponds to an EIA in relation to the grant of planning consent for particular projects. "The public concerned" is defined in article 2(5) in terms similar to the definition of that term in article 1(2)(e) of the EIA Directive (para 219 above). The right to involvement pursuant to article 6 is for the public affected by a specific decision, not for anyone who might be affected by global warming. Article 6(6) of the Convention requires that the public concerned should be provided with, among other things, "a description of the significant effects of the proposed activity on the environment" (sub-para (b)). No further definition is provided. It is not stated that the significant effects "of the proposed activity" include all downstream or scope 3 greenhouse gas emissions and the practice of EU Member States in the period before the 2014 Directive referred to above indicates

that they did not regard these as covered by that provision. In like manner, *The Aarhus Convention: An Implementation Guide*, 2nd ed (2014) published by the United Nations Economic Commission for Europe does not suggest that all such emissions fall within article 6(6)(b) of the Convention (see, in particular, p 151).

National policies on climate change and planning

The UK's national climate objectives are set out in the Climate Change Act 2008. Under that Act the national government must account at the national level for all the UK's greenhouse gas emissions, including scope 3 type emissions within UK territory. Among other things, the Act sets a national carbon target (section 1) and requires the Government to establish carbon budgets for the UK (section 4). It contains mechanisms to adjust the national target and carbon budgets (in sections 2 and 5, respectively) in the light of new information. The national target is for reduction of greenhouse gas emissions by 2050 and the national system of periodic carbon budgets is directed to achieving that reduction. The statutory carbon budgets are not sub-divided by sector, but are expressed as a total number of tonnes of carbon dioxide equivalent. Under section 14(1), the Secretary of State must lay before Parliament a report setting out proposals and policies for meeting carbon budgets for the current and future budget periods. In December 2011 the Government presented to Parliament a report pursuant to this provision on how it proposed to meet the first four carbon budgets covering the period 2008 to 2027: "The Carbon Plan: Delivering our low carbon future". This policy document sub-divides greenhouse gas emissions by sector, by reference both

to sources and end users, notably power stations, industry, buildings, transport, agricultural and land use, waste and exports. Pursuant to section 16(2), the Secretary of State must submit to Parliament an annual statement of emissions in respect of each greenhouse gas, setting out the steps taken to calculate the net carbon account for the UK. The statement includes scope 3 type emissions (such as from road traffic) and shows whether the national carbon budgets are being met.

Emissions of greenhouse gases from road transport are the subject of national policy which is designed to reduce usage of vehicles using combustible carbon fuel as part of the steps taken to achieve the 2050 net zero target, including in particular the Government's "The Road to Zero" strategy published in 2018 for transition to zero emission road transport.

At a conference held pursuant to the United Nations Framework Convention on Climate Change (1992), on 12 December 2015 the text of the Paris Agreement on climate change was agreed and adopted ("the Paris Agreement"). The Paris Agreement set out certain obligations to reduce emissions of greenhouse gases with the object of seeking to reduce the rate of increase in global warming and to contain such increase to well below 2^{o}C above, and if possible to 1.5^{o}C, above pre-industrial levels. On 17 November 2016 the UK ratified the Paris Agreement. The obligations arising from the Paris Agreement directed to reduction of greenhouse gas emissions operate at a national level by reference to "nationally determined contributions": see the summary in *R (Friends of the Earth) v Secretary of State for Transport* [2020] UKSC 52; [2021] PTSR 190

("*Friends of the Earth*"), paras 70-71. It is through the national target and budgeting mechanisms set out in the Climate Change Act 2008 that the UK seeks to comply with its obligations under the Paris Agreement: see *Friends of the Earth*, paras 71 and 122-124.

In the EU, the Effort Sharing Regulation (EU) 2018/842 adopted in 2018 and revised in 2023 established for each Member State a national target for the reduction of greenhouse gas emissions by 2030 in specified sectors, including domestic transport. The same approach based on national targets had been adopted prior to the promulgation of the 2014 Directive and was referred to in the 2013 Guidance (p 20). On 13 February 2009 the EU Council issued a set of conclusions (17271/1/08) from a Council meeting in December 2008, Part III of which addressed an agreement reached in relation to "energy and climate change" regarding national reduction targets. Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020 laid down the minimum contributions of Member States to meeting those commitments "and rules on making these contributions and for the evaluation thereof" (article 1). The Decision provided for annual national emission allocations (see recitals (8)-(9) and article 3). The package of measures introduced at this time, and in place when the 2014 Directive was promulgated, set out what were known as "the 20-20-20 targets", including by 2020 to reduce by 20% the emissions of greenhouse gases compared to 1990 levels.

The Petroleum Act 1998 is the primary legislation under which oil and gas extraction is regulated in the UK through the grant of licences by the Oil and Gas Authority (now called the North Sea Transition Authority). The revised Oil and Gas Authority Strategy (2021), issued pursuant to the 1998 Act, imposes a "central obligation" on relevant persons in the exercise of licensed activities to take the steps necessary to "(a) secure that the maximum value of economically recoverable petroleum is recovered from the strata beneath relevant UK waters; and, in doing so, (b) take appropriate steps to assist the Secretary of State in meeting the net zero target, including by reducing as far as reasonable in the circumstances greenhouse gas emissions from sources such as flaring and venting and power generation, and supporting carbon capture and storage projects". There is no reference to responsibility in relation to scope 3 emissions.

In addition to these regimes, the Secretary of State operates the non-statutory Climate Compatibility Checkpoint ("the CC Checkpoint"), introduced in 2022 with the aim of ensuring the compatibility of future oil and gas licensing with the UK's climate objectives and energy requirements. The CC Checkpoint includes tests regarding reduction of operational greenhouse gas emissions from the UK oil and gas production sector against targets agreed as part of the North Sea Transition Deal in 2021, benchmarking of such emissions from the sector against international benchmarks and assessment of the UK's energy requirements. The Government consulted on the CC Checkpoint and the tests to be included and issued a response. The question of the inclusion of scope 3 greenhouse gas emissions in the CC Checkpoint tests was debated by consultees. In its response the Government explained why it decided against this:

> "The inclusion of Scope 3 emissions was mentioned throughout the consultation questionnaire by stakeholders. Many stakeholders opposed the measurement of international Scope 3 emissions as part of the checkpoint, given the difficulties and complexities associated with accurate measurement, existing consideration in the Carbon Budgets and Nationally Determined Contributions of consumers of UK-produced fuels, and the coverage of Scope 1 and Scope 2 emission reductions in other tests, which many responses suggested may be more relevant and controllable.
>
> …
>
> The government acknowledges that there are a range of methods for estimating scope 3 emissions and has reviewed the methods proposed. It is acknowledged that it would be possible to calculate an estimate, or range of estimates for UK scope 3 emissions. One approach would be to pick a calculation methodology that is already employed by the industry, another approach would be to produce a range of scope 3 estimates based on using a number of different approaches. However, given this information, it is not clear what action Ministers would take, as there is no agreed target for the reduction of scope 3 emissions.
>
> …
>
> … the government's view is that scope 3 emissions are not directly relevant to the decision on whether to endorse further licensing round[s]. Including any estimate of scope 3 emissions in the checkpoint would add little value, and it is not clear how Ministers would take such a number into account."

A key argument presented by some consultees why scope 3 emissions should not be included in the CC Checkpoint was that they "are covered by consuming nations' carbon accounts and therefore at a global level scope 3 emissions will be reduced through widespread demand reduction as sources of alternative energy come online"; the Government agreed with this submission (Designing a Climate Compatibility

Checpoint for Future Oil and Gas Licensing in the UK Continental Shelf: Government Response to the consultation (2022), pp27-28).

Chapter 17 of the NPPF published in February 2019 is entitled “Facilitating the sustainable use of minerals”. Para 205 provides that when determining planning applications, “great weight should be given to the benefits of mineral extraction, including to the economy”, and planning authorities should, among other things, “ensure that there are no unacceptable adverse impacts on the natural and historic environment, human health or aviation safety, and take into account the cumulative effect of multiple impacts from individual sites and/or from a number of sites in a locality”.

Chapter 14 of the NPPF addresses "the challenge of climate change". It states in general terms that the planning system should support the transition to a low carbon future. It should help to shape places in ways that contribute to radical reductions in greenhouse gas emissions and support renewable and low carbon energy infrastructure: para 148. New development should be planned for in ways that "can help to reduce greenhouse gas emissions, such as through its location, orientation and design": para 150.

Para 183 of the NPPF provides:

> “The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate

> effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities."

Para 12 of the Minerals section of the nPPG states that the planning and other regulatory regimes are "separate but complementary", with the former focusing on whether new development would be appropriate for the location proposed. It concludes:

> "….. the focus of the planning system should be on whether the development itself is an acceptable use of the land, and the impacts of those uses, rather than any control processes, health and safety issues or emissions themselves where these are subject to approval under regimes. Mineral planning authorities should assume that these non-planning regimes will operate effectively."

Para 112 of the Minerals section of the nPPG addresses the issue of what hydrocarbon issues can be left by mineral planning authorities to other regulatory regimes. In relevant part it states:

> "Some issues may be covered by other regulatory regimes but may be relevant to mineral planning authorities in specific circumstances. For example, the Environment Agency has responsibility for ensuring that risk to groundwater is appropriately identified and mitigated. Where an Environmental Statement is required, mineral planning authorities can and do play a role in preventing pollution of the water environment from hydrocarbon extraction, principally through controlling the methods of site construction and operation, robustness of storage facilities, and in tackling surface water drainage issues.
>
> There exist a number of issues which are covered by other regulatory regimes and mineral planning authorities should assume that these regimes will operate effectively. Whilst

> these issues may be put before mineral planning authorities, they should not need to carry out their own assessment as they can rely on the assessment of other regulatory bodies. However, before granting planning permission they will need to be satisfied that these issues can or will be adequately addressed by taking the advice from the relevant regulatory body…"

Analysis

(1) The purpose and scheme of the EIA Directive (as amended by the 2014 Directive)

The basic purpose of the EIA Directive is to ensure that relevant environmental issues in respect of a project are identified and taken into account in the procedure for the grant of planning consent for the project, in particular with a view to examining whether environmental impacts can be avoided or mitigated by measures taken in designing the project or by the imposition and then monitoring of conditions attached to such consent. The EIA Directive lays down harmonised rules and procedures with a view to ensuring that a common approach is adopted across all Member States.

The EIA Directive contemplates that decisions on the grant of planning consent will often be taken by local or regional authorities, rather than national authorities: see article 2(2) and the review in the 2012 Impact Assessment (paras 234-235 above). The procedures and rules laid down in the Directive are intended to be appropriate for decision-making at local or regional level by such authorities.

This is an important point. As explained above, scope 3 or downstream greenhouse gas emissions are addressed by central governments at the level of national policy. That is the general position for all Member States, and the UK. Decisions regarding the distribution of greenhouse gas emissions between different sectors of the economy, the striking of a balance between promotion of national economic objectives and reduction of greenhouse gas emissions in various sectors and the rate of transition sector by sector towards the achievement of the 2050 net zero target are all matters of national policy to be determined by central Government.

The same is true for debates with other states regarding the methodology for accounting for scope 3 greenhouse gas emissions, where these emissions may well occur in states other than the state where emissions which are closely associated with an originator activity arise (such as scope 1 and, typically, scope 2 emissions). For example, oil extracted at the Site may be transported to be refined in another state, and the fuel so produced may be transported to be used by motor vehicles in other states. Which states should have responsibility pursuant to the Paris Agreement and other international initiatives for accounting in terms of their national carbon figures for greenhouse gas emissions arising from the production chain running from extraction of minerals through refinement (in this case) or the manufacture of products, to the end use of the refined fuel or manufactured products, and the methodology to be used to identify and allocate such emissions, are matters for international discussion and agreement between states.

These are all “big picture” issues which a local planning authority such as the Council is simply not in a position to address in any sensible way.

Further, it would be constitutionally inappropriate for a local planning authority to assume practical decision-making authority based on its own views regarding scope 3 or downstream emissions and how these should be addressed in a manner which would potentially be in conflict with central Government decision-making and its ability to set national policy. This is true in relation to the UK and in relation to EU Member States as a whole, especially in light of the international and EU frameworks set out above according to which carbon budgets and carbon reduction policies are set at the national level. The EIA Directive as amended by the 2014 Directive was not intended to cut across this basic decision-making architecture in relation to meeting the challenge of climate change.

The information to be provided in the EIA process pursuant to the EIA Directive is intended to inform the decision whether to grant development consent for a project, and if so on what conditions, in a way that enables the decision-making authority - typically a local authority - to engage in practical decision-making within the remit of its own competence under existing procedures for development consent (see article 2(2) of the EIA Directive, para 220 above). In doing that it should decide whether a particular project is in accordance with national policy (for which purpose the NPPF and nPPG have been promulgated by the central Government) and consider whether there are appropriate adjustments which can be made to the project to mitigate its environmental

impacts, including to reduce the direct and indirect greenhouse gas emissions associated with it. The EIA process is intended to furnish information to enable the planning authority to exercise its judgment about such matters, not to create some general databank about possible downstream or scope 3 effects which could not bear on what the planning authority has to do. As was observed in the judgment of the CJEU in *Brussels Hoofdstedelijk Gewest v Vlaams Gewest* (Case C-275/09) [2011] Env LR 26 ("*Brussels Airport*") at para 25, article 2(1) of the 1985 Directive (now in the EIA Directive) "does not … require that any project likely to have a significant effect on the environment be made subject to the environmental impact assessment provided for in that Directive, but only those referred to in Annexes I and II to that Directive".

The fact that the EIA Directive is directed towards regulating practical decision-making in this way is generally apparent from the scheme of the Directive and the exercise of judgment by a planning authority which it contemplates, and is also clear from recital (22) (para 216 above) which explains that the Directive does not apply in relation to specific acts of national legislation because the objective of supplying information relevant to the decision is "achieved through the legislative process". It is no part of the object of the EIA Directive to generate information which does not have a direct and practical bearing on the matters to be decided by the decision-making authority. It is difficult to see what, in practical terms, a local planning authority is supposed to do with general information about downstream or scope 3 emissions other than to say that in its opinion they are so great that the project ought not to proceed at all and to refuse planning consent on that basis. But that would constitute unjustified disruption of the

proper decision-making hierarchy contemplated by the EIA Directive, since in effect it would involve the local planning authority second guessing or supplanting the decision-making authority of the national Government regarding the appropriate reaction to the existence of downstream or scope 3 greenhouse gas emissions.

Further, in promulgating the EIA Directive the EU institutions were obliged to comply with the principle of proportionality. Proportionality is a general principle of EU law: see T Tridimas, *The General Principles of EU Law*, 2nd ed (2006), chapters 3-5. As Tridimas points out (p 137) the principle permeates the whole of the EU legal system; and see Geiger, Khan and Kotzur (eds), *European Union Treaties: A Commentary* (2015), p 40: "The principle of proportionality is one of the general principles of Community law". Article 5(1) of the Treaty on European Union provides (among other things) that the use of EU competences is governed by the principle of proportionality and article 5(4) states that under that principle the content and form of Union action shall not exceed what is necessary to achieve the objectives of the EU Treaties. The EIA Directive falls to be interpreted in the light of this principle. Also, recital (24) to the EIA Directive (para 216 above) states that, in accordance with the principle of proportionality set out in article 5 of the Treaty on European Union, the Directive does not go beyond what is necessary to achieve its objectives, that is, including in relation to the supply of information to assist in decision-making (see recital (22), para 216 above). It would clearly impose disproportionate costs and burdens on both developers and national authorities if information about all downstream or scope 3 greenhouse gas emissions had to be gathered and presented by developers and had to be assessed by

planning authorities (in particular, at the local level) in circumstances where such information could not inform in any helpful or appropriate way the decisions to be taken by those authorities.

Accordingly, application of the principle of proportionality indicates that the appellant's proposed interpretation of the EIA Directive, arguing that all downstream or scope 3 emissions are to be regarded as "indirect effects of a project", is not correct. In fact, quite apart from the existence of the background principle of proportionality, in putting forward its 2012 Proposal for the amendment of the EIA Directive to take account of climate change issues the Commission positively asserted that the proposed amendments complied with the principle of proportionality, taking account of the burdens on developers and planning authorities: para 235 above. That statement was made in the context of amendments to the EIA process intended to ensure that greenhouse gas emissions closely associated with a project were taken into account in order to enable planning authorities to require mitigating measures to be taken in relation to matters such as the design of the project. It indicates that there was no intention for all downstream or scope 3 emissions to be taken into account in the EIA process, since information about that could have no proper bearing on actions to be taken by local planning authorities.

In addition to this, the general scheme of the EIA Directive indicates that the entirety of scope 3 or downstream greenhouse gas emissions do not qualify as "indirect effects of a project" within the meaning of the Directive. Oil extracted from the Site will have to be

refined before it is used. Construction of a refinery would constitute a project listed within Annex I to the EIA Directive (at point 1: para 230 above) for which an EIA would be required. Greenhouse gas emissions from the construction and operation of such a refinery would have to be assessed in the context of an EIA for that project. It would be disproportionate for them to have to be assessed twice, once in the context of an EIA for that project and also in the context of an EIA for the Site.

Also, to construe the EIA Directive as requiring this would lead to incoherence. The decision-making processes by authorities deciding on each separate project are not integrated, and so would have a tendency to cut across each other on a potentially determinative issue as is alleged to arise here if each authority made its own assessment of the extent and significance of the same set of greenhouse gas emissions for the project on which it had to decide; all the more so where the projects might be in different Member States. The authority carrying out an EIA in relation to the refinery project, which clearly has the authority under the EIA Directive to determine such matters, might decide that the direct and indirect greenhouse gas emissions of the refinery could be limited or mitigated in an acceptable way (including by having regard to whatever national policy was applicable in that Member State). But the authority carrying out an EIA in relation to the oil well might reach different conclusions about that (and might not give weight to the national policy of the different Member State of the refinery). The EIA Directive has no mechanism for resolving this sort of difference of view, nor for allocating decision-making authority in relation to such matters, other

than by maintaining a focus on the particular project in question and greenhouse gas emissions associated with that project.

On the other hand, the relevant refinery might already exist, so that no EIA obligation arises in relation to it under the EIA Directive. In such a case it is difficult to see why the EIA in relation to the oil well should extend to cover the greenhouse gas emissions associated with the operation of a refinery which is not subject to the EIA regime. It would be odd to construe the Directive as imposing indirectly, by the back door, an obligation on the authority considering an EIA for the oil well project (ie a different project, possibly in a different Member State) to assess the greenhouse gas emissions of a refinery outside the regime altogether as part of that authority's EIA responsibilities in respect of the oil well project.

Further, if the refinery in this example were located outside the EU, to construe the EIA Directive as requiring the local authority carrying out an EIA in relation to the oil well to assess the downstream greenhouse gas emissions of the refinery in a third state with a view to (possibly) reaching a decision which would prevent the construction of the oil well and so, to that extent, prevent the supply of oil to that refinery, would be to give the Directive exorbitant jurisdictional effect. That would potentially cut across the conduct of relations between the UK and the EU and its Member States with such third state at an international level in a way which cannot have been intended (at any rate without that being clearly indicated in the drafting of the EIA Directive, which is not the case). There is no indication of what methodology should be used in such an assessment

exercise, which one would have expected to see spelled out in a harmonising instrument like the EIA Directive if this had been intended.

The international regime in place before the promulgation of the 2014 Directive relied on a different mechanism for addressing cross-border effects in terms of greenhouse gas emissions, namely a scheme of national emissions targets designed to encourage policies for reductions in emissions at the place of use of carbon-based products (that is, to effect a reduction in demand), rather than by producing restrictions of output on the supply side. If it had been intended that the EIA Directive should promote a different mechanism of control, one would have expected that to be explained in the various documents setting out the policy underlying the EIA Directive and to be imposed by express drafting in the EIA Directive itself, which is not the case. These points apply with equal force in relation to control of greenhouse gas emissions from motor vehicles and so forth in other Member States and in third states, which are still more remote from the production of crude oil at the oil well at the Site and the decision-making responsibility of the Council. They are the same reasons why the CC Checkpoint was not drafted to include reference to scope 3 greenhouse gas emissions (see para 245 above).

In fact, the EIA Directive does include provisions regarding its cross-border operation. These are far more limited in their effect than the interpretation proposed by the appellant would suggest. This provides a further indication that such an interpretation is incorrect.

Recital (15) of the EIA Directive (para 227 above) refers to the desirability of strengthening EIA in a transboundary context, having regard to the UN Convention on Environmental Impact Assessment in a Transboundary Context (1991) (also called the Espoo Convention). Article 1(vii) of that Convention defines "impact" to mean "any effect caused by a proposed activity on the environment including human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures …" and article 1(viii) defines "transboundary impact" to mean "any impact, not exclusively of a global nature, within an area under the jurisdiction of a Party caused by a proposed activity the physical origin of which is situated wholly or in part within the area under the jurisdiction of another Party". This excludes the impact of global warming (an impact of an exclusively global nature) and refers to effects caused by a proposed activity, and so does not cover downstream or scope 3 greenhouse gas emissions caused by other activities. Article 3 requires notification of a proposed activity "that is likely to cause a significant adverse transboundary impact" to the state which is affected, to allow consultation involving that state pursuant to article 5.

Article 7 of the EIA Directive (para 227 above) reflects the policy explained in recital (15). There is no adjustment in the EIA Directive in the definition of relevant effects of a project for the purposes of this provision. The inference is that none was required in order to align the operation of this part of the EIA Directive and the Espoo Convention because the full range of downstream or scope 3 greenhouse gas emissions is not covered by the concept of "indirect effects of a project" on which the EIA Directive is based. The information to be provided under article 7(1)(a) by way of notification to

another Member State ("a description of the project, together with any available information on its possible transboundary impact") is intended to be aligned with the requirements under the Espoo Convention, as is the provision pursuant to article 7(2) and (3) of the further information available for the purposes of public consultation under article 6 of the EIA Directive. Its focus is the effects of the project itself, not downstream effects. It is by virtue of that focus that a Member State subject to the obligation in article 7 is able to know which other Member States it is required to involve in its domestic consultation and decision-making procedure under article 2(2).

In addition, the appellant's interpretation of the EIA Directive would again produce disproportionate effects in terms of the operation of that decision-making procedure, by requiring the involvement of every other Member State in relation to projects associated with significant downstream greenhouse gas emissions. There is nothing in the practice of Member States of which the court has been made aware which suggests that any of them have done this. Nor is there any indication that the Commission, in its supervisory role under article 12 of the EIA Directive, has suggested that their failure to do so is in contravention of the requirements of the Directive.

The Commission's concern regarding the operation of the EIA Directive in relation to matters affecting climate change was directed elsewhere. As explained in the 2012 Impact Assessment (paras 233-234 above), prior to the promulgation of the 2014 Directive the general practice across all Member States was that there was no assessment at all of greenhouse gas emissions of projects, including those closely

associated with a project. In the 2012 Impact Assessment and the 2013 Guidance, the Commission indicated that the indirect effects of a project should be taken to include greenhouse gas emissions such as those associated with increased power consumption at the project and increased motor vehicle transportation to and from the project (paras 235-236 above). The object of the 2014 Directive was to tighten up procedures across the EU to produce a harmonised approach which ensured that both "direct effects" of projects in terms of their own generation of greenhouse gas emissions and "indirect effects" in terms of greenhouse gas emissions associated with the project such as from any increased power consumption and motor transportation it would involve were taken into account in the EIA for a project, whereas they had been omitted previously (para 237 above).

As explained above, neither the 2012 Proposal nor the 2012 Impact Assessment proposed that the EIA Directive should be changed so that, for the first time, in contrast to existing Member State practice, all scope 3 or downstream greenhouse gas emissions should be included within the concept of "indirect effects of a project" and brought within the EIA regime. This would have been a major change in the operation of the EIA regime and, if it had been intended, this would have been stipulated in clear terms in the amendments to the EIA Directive brought about by the 2014 Directive. As Holgate J rightly pointed out (paras 5 and 6), the effects of the interpretation urged by the appellant would be profound across many areas, not limited to the extraction of oil, since, for instance, the production of aircraft would involve the manufacture of components in a number of factories, leading to the construction of an aircraft in

another, and its eventual use for transportation, with greenhouse gas emissions produced at each stage. If it had been intended that the EIA for a factory project to produce components should include all the downstream emissions, this would have been set out clearly in the EIA Directive.

Further, if that had been intended, the 2014 amendments of the EIA Directive would have given clear guidance regarding the approach and methodology to be adopted in relation to the assessment of scope 3 or downstream impacts of a project. In the absence of such guidance, there would have been an obvious risk of capricious and arbitrary differences in approach and methodology arising as between local authorities within a particular Member State and also across Member States on a basic point of principle. This would have undermined a fundamental objective of the EIA Directive, which was to promote a harmonised and consistent approach to the conduct of EIA for projects.

(2) The text of the EIA Directive

Against the background of this discussion of the purpose and scheme of the EIA Directive, the points in relation to its text can be made quite shortly. In my view, they indicate clearly that the "indirect effects of a project" do not extend to the downstream or scope 3 greenhouse gas emissions of the kind which are in issue in this case. The relevant provisions are set out at paras 211-231 above.

"Project" is defined in article 1(2)(a) to mean "execution of construction works …" or "other interventions in the natural surroundings …". This definition focuses on a

specific set of physical works. As the CJEU observed in *Abraham* at para 23, "[i]t is apparent from the very wording of [what was then article 1(2) of the 1985 Directive] that the term 'project' refers to works or physical interventions"; see also *Brussels Airport*, paras 20-24.

The relevant environmental effects, both direct and indirect, of a project for EIA purposes are those "of the project". This is the formula used throughout the EIA Directive: see, for example, the Directive's title, recital (7), article 1(1), article 1(2)(g)(iv), article 3(1), article 5(1)(b) and the tailpiece of article 5(1), article 5(3)(c), para 3 of Annex IIA, para 3 of Annex III, and the introduction and tailpiece of para 5 of Annex IV. Article 3(1) (para 221 above) is of particular importance, because this sets out the basic obligation regarding what the EIA of a project should achieve.

Holgate J and Sir Keith Lindblom rightly emphasised the importance of this formula. It is difficult to read it as based on an expansive "but for" approach to causation of effects, ie that it is sufficient to say that but for the production of crude oil at the Site, greenhouse gas emissions would be lower. Very few legal rules to do with causation of effects operate according to a pure "but for" principle, and there is no reason to interpret the EIA Directive in this way. On the contrary, the formula used in the Directive indicates that, even in relation to "indirect" environmental effects, they still have to be effects "of the project". This imports the idea that the effects have to be relatively closely connected with the project and do not qualify if they are remote from it. On a natural reading of this phrase, downstream or scope 3 greenhouse gas emissions of the

kind in issue in this case could not be said to be "of the project". If it had been intended that they should be covered by the obligation in article 3(1), some wider formula would have been used. Furthermore, this interpretation allows for the coherent accommodation of the EIA regime under the EIA Directive and the general background approach to combating climate change based on policies and targets established at the national level.

An EIA is required before development consent is given for projects "likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location": article 2(1). The focus is on the impact of the project itself. An EIA is to be made part of existing development consent procedures, which are usually conducted by local authorities: article 2(2) and paras 220 and 235 above. There is to be consultation involving the public before development consent is given (article 6). The obligation under article 6 is to consult "the public concerned", which is defined in article 1(2)(e) to mean "the public affected or likely to be affected by, or having an interest in, the environmental decision-making procedures referred to in article 2(2) …". The focus is again on the impacts which the project itself has on the environment which may affect people in the locality, who should be given the opportunity to participate in the local decision-making procedure. There is no suggestion that the population of the whole world, who are affected by global climate change, qualify as "the public concerned" for these purposes.

An EIA of a project is required to take account of possible environmental effects deriving from the vulnerability "of the project" to risks of major accidents or disasters

"that are relevant to the project concerned": article 3(2). The focus is on the effects which may be produced by the project itself, if affected by an accident or environmental disaster.

An EIA may be integrated into existing procedures for development consent: article 2(2) and recital (6). As explained above, the EIA Directive contemplates that an EIA will be carried out by local authorities which have responsibility for granting development consent, and an EIA is directed to furnishing such bodies with information relevant to their own decision-making functions and in relation to matters over which they have practical control. Such local bodies are not responsible for national climate policy, do not have the legitimacy or authority to second-guess assessments of national bodies in relation to it, do not have powers to impose their own judgments regarding national or global climate change policy, are not equipped to make the relevant judgments about how the national or global economy should adjust to climate change, and are not provided with coherent criteria to make assessments regarding downstream effects of projects (whether in relation to climate change, or in relation to other environmental impacts of other projects likely to follow on from adoption of a particular project).

The scheme of the EIA Directive is that some projects are taken to have significant effects on the environment and so are automatically subject to an EIA (Annex I projects) and others (Annex II projects) may be subject to an EIA when screened: recitals (7)-(9) and article 4(1) and (2). In the case of both Annex I and Annex II, the

focus is on the specific project. The basis for inclusion in Annex I is the size of the project and its likely physical impacts on the local area, not its likely emissions of greenhouse gases. The fact that fossil fuel refining and burning projects (eg points 1, 2(a) and 4(a)) are listed separately from fossil fuel extraction projects (points 14 and 19) reinforces the project-focused nature of the Directive. The same point applies in relation to the projects listed in Annex II as potentially requiring a screening opinion.

Article 4(3) introduces Annex III, which sets out the criteria to determine whether an Annex II project should be selected for an EIA. These criteria are the "characteristics of projects" (point 1), the "location of projects" (point 2) and the "type and characteristics of the potential impact [sc of projects]" (point 3). See also recitals (9)-(11). In setting out guidance for the selection for projects to be subject to an EIA, Annex III provides an indication as to the purpose and focus of the EIA Directive.

In Annex III, point 1, para (b) ("cumulation with other existing and/or approved projects") is directed to identifying specific projects with a view to assessing their effects; it is not directed to identifying the cumulation of downstream greenhouse gas emissions from distinct projects or activities, such as motor transport, which do not constitute projects at all. Para (d) ("the production of waste") and para (e) ("pollution and nuisances") are listed as characteristics of the project itself. They are project-focused and do not refer to wider climate change effects. Para (f) ("risk of major accidents and/or disasters which are relevant to the project concerned, including those caused by climate change …") refers to climate change in the context of its contribution

to environmental risk posed by the project itself. Annex III, point 2, focuses specifically on the sensitivity of the immediate location of the project ("the environmental sensitivity of geographical areas likely to be affected by projects … with particular regard to" specific environmental features), not on general areas around the world affected by global climate change. Annex III, point 3, refers to "the likely significant effects *of projects* on the environment" in relation to the criteria in points 1 and 2, having "regard to the impact *of the project* on the factors specified in article 3(1), taking into account" a series of impacts referable to the project itself (emphasis added). These include "the transboundary nature of the impact" (para (c), which marries up with the point on transboundary effects under article 7 discussed above) and "the cumulation of the impact with the impact of other existing and/or approved projects" (para (g), which is focused on the cumulative effect of the project with specific existing and approved projects, and does not refer to cumulative effects of greenhouse gas emissions as a contributor to general climate change).

Article 4(4) introduces Annex IIA, which specifies the information a developer has to provide for screening of Annex II projects. This is all specific to the project itself and its immediate environment: a description of the project including the physical characteristics of the whole project and "a description of the location of the project, with particular regard to the environmental sensitivity of geographical areas likely to be affected" (not the impact on the whole planet from climate change) (point 1); "a description of the aspects of the environment likely to be significantly affected by the project" (point 2); and "a description of any likely significant effects … of the project

on the environment resulting from" use of natural resources and "the expected residues and emissions and the production of waste" (point 3), meaning residues, emissions and waste from the project, not from other projects or activities.

Article 1(2)(g) defines what is meant by an EIA. Article 5 specifies how the first stage of it is to be conducted (corresponding to recitals (12)-(14)), and introduces Annex IV, which specifies the information to be set out in the developer's EIA report (the "environmental statement", as it is called in the EIA Regulations). Article 5(1) sets out a series of matters all focused on the project itself. As well as a description "of the project" (sub-para (a)) and "of the likely significant effects of the project on the environment" (sub-para (b)), these include "a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce … likely significant adverse effects on the environment" (sub-para (c)), that is, to inform the relevant authority of steps taken in relation to the design of the project to reduce its effects; "a description of the reasonable alternatives studied by the developer" and an indication of the reasons for selecting the particular option chosen "taking into account the effects of the project on the environment" (sub-para (d)), that is, to inform the relevant authority of the reasoning process in relation to siting, design and so forth of the project to keep its effects on the environment to a minimum; and any additional information specified in Annex IV "relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected" (sub-para (f)), meaning by that particular project or type of project.

The significance of sub-paras (c) and (d), in particular, is that they refer to information which will allow the relevant authority to test in a practical way and in light of its own power of assessment for the purposes of giving development consent for the particular project or attaching conditions thereto, whether the project has been developed with a view to minimising its environmental impact and whether more could be done in terms of its siting or design to achieve that.

The purpose of the EIA process is to enable the relevant authority to make this assessment, to facilitate consultation relevant to that (articles 6 to 8), to enable the authority to give a reasoned conclusion to explain its actions (article 1(2)(g)(iv)) and then integrate that reasoned conclusion into the grant of development consent (article 1(2)(g)(v), read with article 8a), and to ensure enforcement of any minimisation measures (article 8a(1)(b) and (4)). The information required to be provided and assessed in an EIA is that directed to fulfilling that purpose.

Article 5(2) provides for a mechanism for the relevant authority to give guidance to the developer, taking into account the project-focused information already provided by it "on the specific characteristics of the project, including its location and technical capacity, and its likely impact on the environment", regarding any further detail required. The purpose of this part of the procedure is to enable the authority to ensure it is equipped with sufficient information to enable it to exercise its powers in relation to the grant of development consent in a practical way, not to acquire general information about the effect of greenhouse gas emissions on climate change, nor about downstream

or scope 3 effects generally. Article 5(3)(c) stipulates that where necessary the authority shall seek supplementary information in accordance with Annex IV "which is directly relevant to reaching the reasoned conclusion on the significant effects of the project on the environment" ("the reasoned conclusion" is that required by article 1(2)(g)(iv) and article 8a(1)(a)). The object of this is so that the authority can seek information relevant to the exercise of its own powers in relation to granting development consent.

Annex IV, referred to in article 5(1), specifies the information to be provided by the developer. Its focus is the project itself. Point 1 requires a "description of the project, including in particular" various project-focused information including a description of its location (para (a)), the physical characteristics of the whole project (para (b)), a description of "the main characteristics of the operational phase of the project" including energy demand and natural resources used (para (c)), and "an estimate … of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation) and quantities and types of waste produced during the construction and operation phases" (para (d)), which refers to emissions of various types physically associated with the project itself, not to downstream or scope 3 greenhouse gas emissions.

Annex IV, point 2, requires a "description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) … relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects". This

information is directed to informing the planning authority about matters relevant to steps it can practically take in exercise of its own powers in relation to the grant of development consent in order to minimise the environmental impact of the project itself, eg by requiring improvement of its design to limit emissions (including its own greenhouse gas emissions) by filters, carbon capture and so on.

Annex IV, point 3, requires a description of "the relevant aspects of the current state of the environment" and how it is likely to evolve "without implementation of the project", to provide a "baseline scenario". The object of this is to allow the planning authority to make an assessment of the impact of the implementation of the project on the environment in which it is located, with a view to enabling it to exercise its own powers in relation to the grant of development consent.

Annex IV, point 4, requires a description of the factors specified in article 3(1) likely to be significantly affected by the project. Article 3(1) refers to "climate", and has done so since the 1985 Directive. The predecessor of point 4 in the 1985 Directive listed "climatic factors" among a range of other factors. This was somewhat expanded by amendment pursuant to the 2014 Directive to refer to "climate (for example greenhouse gas emissions, impacts relevant to adaptation)", but this effect and the long list of other effects set out are project-focused and are only relevant if significantly affected "by the project".

Annex IV, point 5, requires a description "of the likely significant effects of the project on the environment resulting from, inter alia" a list of project-focused matters:

construction and existence of the project (para (a)); use of natural resources (that is, by the project) (para (b)); emission of pollutants, noise etc, the creation of nuisances, and the disposal and recovery of waste (para (c)), which does not include reference to downstream effects, for example on the climate; risks to human health, cultural heritage "or the environment (for example due to accidents or disasters)", that is, from accidents or disasters affecting the project itself which lead to impacts on the environment (para (d)), which does not include reference to downstream effects; "the cumulation of effects with other existing and/or approved projects …" (para (e)), which, like Annex III, point 3(g), is focused on the cumulative effect of the project with specific existing and approved projects, and does not refer to cumulative effects of greenhouse gases in relation to general climate change; "the impact *of the project* on climate (for example the nature and magnitude of greenhouse gas emissions [sc from the project]) and the vulnerability *of the project* to climate change' (para (f), emphasis added); and "the technologies and the substances used [sc in the project]" (para (g)). The tailpiece of point 5 (para 225 above) refers to the effects "of the project".

Annex IV, point 7, requires a description "of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements …". The object of this is to equip the planning authority with information relevant to the exercise of its powers, so as to ensure that the effects of the project itself on the environment are minimised.

Article 7(1) provides for enhanced, cross-border consultation where a Member State "is aware that a project is likely to have significant effects on the environment in another Member State", as explained above. The focus is on the environmental effects of the project itself, not downstream effects.

Articles 12 and 13 of the EIA Directive make provision for oversight of the EIA regime by the Commission. Their predecessors were articles 11 and 12 of the 1985 Directive. There is no indication in the materials before the court that the Commission has at any stage regarded the absence of assessment by planning authorities in Member States of downstream or scope 3 greenhouse gas emissions in relation to the grant of development consent for projects as involving infraction of the 1985 Directive or the EIA Directive. Nor is there any jurisprudence of the CJEU which indicates that the "indirect effects of a project" include downstream or scope 3 greenhouse gas emissions. Given the long period of time involved since the promulgation of the 1985 Directive, the EIA Directive and the 2014 Directive, the absence of such indications seems to me to be significant.

(3) Relevant case law

There is limited assistance to be derived from the jurisprudence of the CJEU and domestic caselaw. No judgment of the CJEU addresses the question whether scope 3 or downstream greenhouse gas emissions of the kind at issue in the present case qualify as "indirect effects of a project" within the meaning of the EIA Directive. The question has

to be addressed primarily by analysis of the purpose, scheme and text of the EIA Directive itself, as set out above.

In the UK, the leading decisions on this issue are those of Holgate J and the Court of Appeal in the present proceedings. In Scotland, the Court of Session (Inner House) in *Greenpeace Ltd v Advocate General* [2021] CSIH 53; 2021 SLT 1303 ("*Greenpeace*") followed and applied the analysis of Holgate J in the present case. Little assistance can be derived from other domestic authorities.

In *An Taisce – The National Trust for Ireland v An Bord Pleanála (Kilkenny Cheese Ltd, Notice Party)* [2022] IESC 8; [2022] 2 IR 173 ("*Kilkenny Cheese*") the Supreme Court of Ireland examined in detail the issue whether an EIA pursuant to the EIA Directive of a project involving the construction and operation of a large cheese factory should include assessment of upstream greenhouse gas emissions in relation to the project. Upstream emissions to which an activity gives rise qualify as scope 3 emissions within the scheme of the GHG Protocol. The Supreme Court endorsed the reasoning of Holgate J in the present case and concluded that assessment of those emissions was not required by the EIA Directive. The Council, the Secretary of State and HHDL seek to rely on *Kilkenny Cheese* as persuasive authority on the proper interpretation of the EIA Directive. The appellant seeks to rely on certain other authorities.

(a) EU caselaw

The appellant relies in particular on *Abraham*, para 210 above, which concerned the application of the 1985 Directive in the context of a project to expand an airport for commercial use. The claimants, who lived nearby, objected to the development on grounds of noise pollution. In the relevant part of its judgment (paras 41-46), the CJEU held that the competent authorities had "to take account of the projected increase in the activity of an airport when examining the environmental effect of modifications made to its infrastructure with a view to accommodating that increase in activity" when screening the project to see whether an EIA was required. The CJEU observed (para 42) that the scope of the 1985 Directive "is wide and its purpose very broad", and held (para 43) that it would be contrary to that approach to take account only of the direct effects of the works themselves, "and not of the environmental impact liable to result from the use and exploitation of the end product of those works" (that is, the increased infrastructure of the airport).

At point 31 of the opinion of Advocate General Kokott, she said "[t]he rules on the information to be provided by the developer under article 5(1) of the [1985] Directive show that the notion of indirect effects is to be construed broadly and in particular includes the effects of the operation of a project". At point 33 she said that "[i]n the case of an airport, the type and extent of the proposed air traffic and the resulting effects on the environment are relevant. The developer can also as a rule be expected to provide that information."

Therefore, the indirect environmental effects of the increase in activity which the CJEU and the Advocate General identified as relevant in this case were closely connected to the project in issue. The judgment does not support the appellant's claim in the present case that downstream or scope 3 greenhouse gas emissions which are remote from the operation of the project itself are properly to be regarded as "indirect … effects of the project" within the meaning of article 3(1) of the EIA Directive. It is consistent with the interpretation of the EIA Directive set out above that the indirect environmental effects of a project include increased greenhouse gas emissions in connection with the activities carried out in association with it after its construction as an addition to the direct environmental effects of the project itself. The careful language used by the CJEU in the judgment is not compatible with adoption of a simple "but for" test in relation to any environmental effects of a project however far removed downstream or upstream they might be. See also the judgment in *Ecologistas*, para 210 above, at paras 39-42.

Reference should also be made to *Brussels Airport*, para 257 above, in which *Abraham* was considered. The focus of *Abraham* was again taken to be on the indirect environmental effects closely associated with the operation of the airport. Advocate General Mengozzi said (point 30) that in the case of an airport project "the obligation to carry out an impact assessment will be triggered, and not only the immediate effects of the construction works, but also the indirect effects which may be caused to the environment due to the subsequent activity carried on at the airport, will have to be examined". He also observed (point 28) that "[even] though it is settled case law that the scope of [the 1985 Directive] is rather broad, a purposive interpretation of [the word

‘construction’ in Annex I] cannot disregard the clearly expressed intention of the legislator”. At para 29 of the judgment the CJEU expressly approved point 28 of the Advocate General’s opinion.

(b) UK caselaw

The principal domestic authority relied on by the appellant in this court is *Squire*, para 210 above. That concerned an application for planning permission to erect extensive buildings for rearing poultry, for which an EIA was required. A neighbour objected to this development on the grounds that the storage and spreading of manure from it would result in odour and dust. The environmental statement submitted by the developer simply relied on the fact that a permit for these operations would be required in due course from the Environment Agency, and did not include an assessment of the direct and indirect effects of the development in this regard. The grant of planning permission on the basis of this limited form of environmental statement was quashed by the Court of Appeal. The EIA by the local planning authority was deficient because it did not examine the environmental impacts of the storage and spreading of manure both on-site and off-site as an indirect effect of the proposed development. Lindblom LJ, giving the lead judgment for the court, referred in particular to *Abraham*. The environmental statement indicated that manure would be produced in such quantity that off-site disposal would be required (paras 64-65). It did not set out any meaningful assessment of the effects of odour and dust from its disposal on-site and off-site (para 66); nor assess the measures by which those harmful effects might be reduced (para 67). There

had been no proper EIA in relation to the effects of the poultry manure which would be generated by the operation of the development (para 73).

In my view, *Squire* does not assist the appellant in her argument in the present proceedings. As in *Abraham*, the indirect environmental effects from the disposal of manure were closely connected with the operation of the project in issue. Like *Abraham*, *Squire* does not support the appellant's claim in the present case that downstream or scope 3 greenhouse gas emissions which are remote from the operation of the project itself are properly to be regarded as "indirect effects of the project" within the meaning of article 3(1) of the EIA Directive. Holgate J was right to distinguish it (paras 119-120), as was Sir Keith Lindblom, the Senior President of Tribunals (as Lindblom LJ had become), in the Court of Appeal (paras 48-49). As Sir Keith Lindblom pointed out (para 48), "[t]he production of manure and its storage and spreading, with the concomitant impacts of odour and dust, was clearly an outcome of the proposed development itself and its use"; and "[t]he Court of Appeal [that is, in his own lead judgment in *Squire*] did not take itself to be explicating the general meaning of the term 'indirect significant effects'".

(c) *Kilkenny Cheese*

In *Kilkenny Cheese,* in the judgment of Hogan J with which the other members of the court agreed, the Supreme Court of Ireland addressed the interpretation of the EIA Directive, among other issues. The relevant question under the EIA Directive was whether the obligation on the respondent Board to assess the indirect environmental

impacts of the proposed cheese factory under article 2(1) of the EIA Directive included an assessment of the indirect environmental impact of the off-site production of milk which would be needed to supply the factory (para 17(a) of the judgment). This issue related to environmental effects upstream from the project subject to an EIA, in that the factory was so large that it was assessed that, by reason of the substantial increase in demand for milk which it would create, it would lead to a significant increase in the number of cattle kept on farms in Ireland. Those cattle would have a detrimental impact on the environment, including by substantial production of greenhouse gases.

A preliminary question for the court was whether there was in fact a causal relationship between the factory and enhanced milk production (para 53). While the court accepted that "the factory will not *in and of itself* create a demand for milk" (para 75, emphasis in original), because it could absorb existing production levels of milk, the court concluded on the evidence that "the existence of the factory is likely to reinforce and strengthen overall demand for milk" well above the demand which would exist if the factory were not constructed (paras 77-78). Accordingly, the court's analysis proceeded on the footing that there would be a significant increase in the number of cattle upstream from the project in order to meet the enhanced demand for milk associated with the project.

It was necessary first to determine the scope of the "project" which was required to be subject to the EIA, by reference to the definition of a "project" in article 1(2)(a) of the EIA Directive (para 81). It was accepted that off-site milk production was not part of the project itself, so the Supreme Court had to ask what the words "direct and indirect

significant effects of a project" in article 3(1) of the Directive meant, since they determined what was required to be assessed in the context of the project involving the operation of the cheese factory (para 86). There were two possibilities: that the phrase had an open-ended meaning in relation to indirect effects of a project to cover any effects associated with the project, or that the indirect effects must be those which the development itself has on the environment. After an extended discussion, the court concluded that the latter interpretation was correct. Therefore, the EIA in relation to the factory project was not required to assess the upstream environmental impacts associated with the increased off-site production of milk.

The Supreme Court reasoned that the difficulty with an open-ended interpretation of article 3(1) is that it places no limits on the range of indirect effects that would have to be assessed for EIA purposes (para 93). This cannot have been intended. The court cited with approval (paras 94-100) Holgate J's analysis on this issue in the present case and endorsed (paras 96 and 100) the "legal test" set out by him, namely that the indirect effects of a project must be effects which the project itself has on the environment (paras 101 and 112 of Holgate J's judgment). The Supreme Court entered one caveat (para 102), namely that there may "be special and unusual cases where the causal connection between certain off-site activities and the operation and construction of the project itself is demonstrably strong and unbreakable" such that the significant indirect environmental effects of those activities would be required to be subject to an EIA.

By this qualification, the Supreme Court was able to integrate into its analysis the decisions in the previous Irish cases of *An Taisce – National Trust for Ireland v An Bord Pleanála (Edenderry Power Ltd, Notice Party)* [2015] IEHC 633 (the environmental effects of extraction of peat for use in a thermal power plant had to be assessed in the EIA for the power plant project as indirect effects of that project within the meaning of article 3(1) of the EIA Directive) and *O Grianna v An Bord Pleanála* [2014] IEHC 632 (the connection of a wind turbine development with the national grid was fundamental to the project so that the cumulative effect of both should be assessed). In the *Edenderry* case, the judge held (para 66) that what could count as an indirect effect of a project was subject to a remoteness test, which was satisfied on the particular facts of the case, and the Supreme Court endorsed this analysis: paras 88-91. (I interpose that this indirect effect could be regarded as analogous to the inclusion of greenhouse gas emissions "caused by any supporting activities or infrastructure that is directly linked to the implementation of the proposed project" within the concept of "indirect effects of a project" as indicated by the Commission in the 2013 Guidance: para 236 above). By contrast, the environmental effects of an increase in cattle population were too remote from the cheese factory project to qualify as "indirect effects" of that project.

The Supreme Court justified its conclusion as follows: (i) the alternative open-ended interpretation of article 3(1) would mean that there were "hardly any limits but the sky" regarding the extent of indirect effects of a project which had to be brought into account in the EIA for that project (paras 100 and 104-105), which would be incompatible with

coherent decision-making by the relevant planning authorities by reference to determinate factors; (ii) the language of article 5(1) and in Annex IV, point 1, para (c) "strongly suggest[s] that the information to be supplied must be firmly tethered to the project itself, so that the indirect significant effects to be assessed must be intrinsic to the construction and operation of the project" (para 106); and (iii) the EIA Directive "was ultimately designed to assist in identifying and assessing the direct and indirect significant environmental effects of a specific project, including (post-2014) the climate change effects of such a project", and its scope "should not be artificially expanded beyond this remit" and it should not "be conscripted into the general fight against climate change by being made to do the work of other legislative measures …" (para 107).

Those measures included the Irish Climate Action and Low Carbon Development (Amendment) Act 2021 which, like the UK's Climate Change Act 2008, sets out the Irish Government's commitment at a national level to achieve the goal of carbon-neutrality by 2050. The Supreme Court pointed out that the wider indirect environmental consequences of milk production and the activities of the dairy sector should be the subject of national or sectoral measures, rather than being considered at the local level in relation to a decision on planning permission (para 107).

The Supreme Court's analysis regarding the interpretation of the EIA Directive is closely aligned with that set out above. I agree with it. The Supreme Court considered that its interpretation of the EIA Directive was acte clair and therefore no reference to

the CJEU was required: paras 155-157. The Commission has not brought infraction proceedings against Ireland for adopting that interpretation, which indicates that the EU institutions do not consider the Supreme Court was wrong.

(d) Other authorities

The appellant referred to several cases in other jurisdictions which concerned projects for extraction of hydrocarbons: *Vereniging Milieudefensie v Royal Dutch Shell Plc* (Case No C/09/571932) 26 May 2021 (decision of the Hague District Court); *Nature and Youth Norway v The State of Norway (represented by the Ministry of Petroleum and Energy)*, decision of the Norwegian Supreme Court, 22 December 2020, HR-2020-2472-P (Case No 20-051052SIV-HRET); *Gray v Minister for Planning* [2006] NSWLEC 720; (2006) 152 LGERA 258 (decision of the New South Wales Land and Environment Court); *Gloucester Resources Ltd v Minister for Planning* [2019] NSWLEC 7; (2019) 234 LGERA 257 (decision of the New South Wales Land and Environment Court); and, from the USA, *WildEarth Guardians v Zinke* 368 F Supp 3d 41, 73 (DDC 2019) (decision of the Federal District Court for the District of Columbia). The legal regimes applicable in these cases were different from the EIA Directive. As Sir Keith Lindblom pointed out in the Court of Appeal (paras 72-78), none of these authorities has any direct bearing on the legal issues in the present case, which are primarily concerned with the proper interpretation of the EIA Directive. It is not necessary to lengthen this judgment by referring to them in detail.

After the hearing, the appellant sent to the court a first instance authority from Norway: *Greenpeace Nordic v The State of Norway (represented by the Ministry of Petroleum and Energy)* (Case No 23-099330TVI-TOSL/05), judgment of the Oslo District Court of 18 January 2024. A similar comment applies. That case considered challenges to the grant of oil production licences for North Sea oil fields where there had not been an assessment of the downstream greenhouse gas emissions which would be produced by combustion of the oil extracted from those fields. The challenges were based on a number of legal regimes, including Norwegian statute law, the EIA Directive as applied in Norwegian law pursuant to the European Free Trade Agreement to which Norway is party, the European Convention on Human Rights and the Norwegian Constitution. The District Court held that the grant of the licences was invalid by reason of the omission of an assessment of the downstream emissions, relying primarily on Norwegian statute law as interpreted in light of the Norwegian Constitution. It then turned to consider the EIA Directive. As an addition, in part of its reasoning which was not critical for its decision, the District Court held that there had been a breach of the EIA Directive. The District Court was referred to the judgment of the Court of Appeal in the present case but declined to analyse it because "a comparative analysis of other countries' domestic law … has limited significance" (p 50 of the official translation). We have been informed that the District Court's decision is now under appeal to the Norwegian Supreme Court.

With all due respect, I do not consider that the judgment of the District Court can be regarded as a persuasive authority. The reasoning is relatively short. The judge did not

attempt to face up to the analysis set out by Holgate J and the Court of Appeal. She did not refer at all to the judgment of the Irish Supreme Court in *Kilkenny Cheese*, nor to the judgment of the Inner House of the Court of Session in *Greenpeace*. In my view the judge placed undue weight on the words "indirect significant effects" in article 3(1) read outside the context of the scheme of the EIA Directive and without regard to its drafting history. She seems to have assumed that simply by use of the word "indirect" the downstream emissions at issue were within the ambit of that provision, without considering the purpose and scheme of the EIA Directive in the detail in which they have been examined in these proceedings and in those other cases. The judge wrongly considered that *Abraham* supported her view (pp 49-50 of the official translation; contrast paras 299-301 above); she did not refer to *Brussels Airport*, which provides guidance regarding the proper interpretation of *Abraham* (see para 302 above); and she misquoted the judgment in *Abraham* at para 43 as referring to possible effects "from the use and exploitation of the end product" (which, in a case involving a project to extract oil, suggests a reference to the oil). In fact, in that passage the CJEU said only that it would be contrary to the purpose and scope of the 1985 Directive "to take account, when assessing the environmental impact of a project or its modification, only of the direct effects of the works envisaged themselves, and not of the environmental impact liable to result from the use and exploitation *of the end product of those works*" (emphasis added), meaning the physical works involved in the project itself (in that case, the building of an extended airport runway).

(4) The approach of Moylan LJ in the Court of Appeal

As noted above, Moylan LJ in his dissenting judgment in the Court of Appeal placed particular emphasis on point 14 in Annex I (para 210 above). With respect, I do not consider that this provision can bear the weight he places on it.

The provision was not included in Annex I to the 1985 Directive. It first appeared in Directive 97/11, which was the first Directive amending the 1985 Directive, in part to bring it into line with the Espoo Convention. In fact the Espoo Convention, in its original version, did not include this text. Instead, point 15 of Appendix I to the Convention referred to "Offshore hydrocarbon production". Directive 97/11 introduced significant revisions to Annex I to the 1985 Directive, including Annex I, point 14. Recital (6) of Directive 97/11 introduced the revisions in very broad terms, simply stating that "… it is appropriate to make additions to the list of projects which have significant effects on the environment and which must on that account as a rule be made subject to systematic assessment".

The Aarhus Convention was adopted in June 1998, after the promulgation of Directive 97/11. The Annex to the Aarhus Convention copied the revised form of Annex I to the 1985 Directive, including the text at point 14. Later, with effect from 2017, the Espoo Convention copied that Annex as well.

This history is significant. There was no indication when the text of Annex I, point 14 was adopted that it was intended to extend the concept of "indirect … effects of a

project" in article 3(1) of the 1985 Directive to cover scope 3 or downstream greenhouse gas emissions. Neither the Commission nor any Member State considered that it had that effect: see the discussion in the 2012 Impact Assessment and the 2013 Guidance (paras 233-236 above). Nor was it considered to have that effect in the Aarhus Convention (para 239 above). It was not a revision brought in by the 2014 Directive to address the issue of climate change.

Further, when one looks at Annex I, point 14 in the context of Annex I and the EIA Directive as a whole, there is no good reason to interpret it as being concerned with scope 3 or downstream greenhouse gas emissions. No other item in the list of Annex I projects for which an EIA is mandatory are singled out for such treatment on the basis of their downstream environmental effects, even though several of them are likely to be associated with such effects (eg point 1, crude-oil refineries; point 6, chemicals production; points 7 and 8, construction of certain roads, railways, waterways and ports; point 19, quarries and open-cast mining). Rather, where in Annex I projects are identified by reference to the volume of production, as in point 14, the reason is that this indicates that they are construction projects of such a substantial size as to warrant a mandatory EIA without the need for a screening opinion. The reference in point 14 to the relevant volume of production being for commercial purposes seems to me to be included simply in order to emphasise this, as that is likely to affect the extent of the construction involved by comparison to, say, a project for experimental drilling which might meet that volume level but only for a short period.

(5) The approach of the majority in the Court of Appeal

As noted above, the majority in the Court of Appeal considered that Holgate J was wrong to conclude that the answer to the question of the proper application of the EIA Directive could be determined as a matter of law by reference to the terms of the Directive. Instead, in their view, it was a matter for the evaluative assessment of the Council as local planning authority, subject to the requirement of *Wednesbury* rationality, whether the downstream environmental effects from the combustion of refined hydrocarbon fuel produced from the crude oil extracted from the Site should be brought into account in the EIA as indirect effects of the project or not.

In that regard, at paras 57-60, Sir Keith Lindblom cited a number of authorities, including *R (Blewett) v Derbyshire County Council* [2003] EWHC 2775 (Admin); [2004] Env LR 29; *Bowen-West v Secretary of State for Communities and Local Government* [2012] EWCA Civ 321; [2012] Env LR 22; and *Friends of the Earth*, paras 126-144 in the judgment of Lord Hodge and Lord Sales. Sir Keith Lindblom and Lewison LJ considered that the Council's assessment that the downstream greenhouse gas emissions from eventual use of the refined fuel were not indirect effects of the project within the meaning of article 3(1) of the EIA Directive could not be said to be irrational, and therefore was a lawful assessment according to this standard.

In my respectful opinion, however, that is not a satisfactory way of examining the issue regarding the application of the EIA Directive which arises in this case. If correct, it would mean that one local authority conducting an EIA for a project to drill for oil

could lawfully regard the downstream greenhouse gas emissions following on from that project as "indirect significant effects of the project" within the meaning of article 3(1) of the Directive, while another local authority conducting an EIA for the same kind of project could lawfully conclude that such emissions were not "indirect significant effects" of that project within the meaning of that provision. This would lead to inconsistent and unprincipled differences in result depending on the political and policy approach of the relevant decision-maker.

That cannot have been intended to be the effect of the EIA Directive in relation to such a fundamental issue of its interpretation which is common across a range of equivalent cases. The EIA Directive is intended to harmonise the approach to be adopted on common issues, not to authorise radically different approaches to identical common fundamental issues of this kind.

Accordingly, I consider that there is considerable merit in the approach of Holgate J at first instance in this case. The answer to be given on such a fundamental question affecting the application of the EIA Directive ought to be the same and should be taken to be determined one way or the other as a matter of principle according to the terms of the Directive, read in the light of the purpose and the scheme of the Directive.

This is not to doubt the guidance in the authorities referred to in para 322 above. In many cases, whether a particular environmental effect is sufficiently connected with a particular project so as to qualify as an "indirect effect of the project" will call for an evaluative assessment by the planning authority in the light of the scientific and other

evidence in the specific circumstances of that case. Where the application of the general test set out in the EIA Directive turns on the specific circumstances of an individual case, it is the rationality standard which applies. However, in some circumstances an issue concerning the application of that test may be so fundamental to the operation of the EIA Directive and so clearly framed in a common way across a range of cases that only one answer can lawfully and rationally be given regarding the application of that test. In my view, that is the position here.

(6) The approach of Holgate J: interpretation of the EIA Directive as a matter of law

It follows from the discussion above that I consider that Holgate J was right to approach the issue regarding the application of the EIA Directive in this case as a matter determined directly by a proper interpretation of the Directive as a matter of law, rather than as determined by an assessment of whether the Council was rational or not in deciding that the downstream greenhouse gas emissions relied on by the appellant were not "indirect effects" of the oil well project at the Site. If the Council had assessed, to the contrary, that they were "indirect effects" of that project, requiring consideration as part of the EIA, it would have erred in law. On a fundamental issue like this, there was only one proper answer that could lawfully and rationally be given when applying the EIA Directive according to its terms. This was the approach which Mr Richard Moules KC, for the Secretary of State, endorsed at the hearing in this court. I agree with his submission.

(7) The inconsistency point

The inconsistency point raised on the appeal is explained at para 198 above. In my judgment, in agreement with the Court of Appeal, there is no merit in it. In considering whether to grant planning permission, the Council was obliged to have regard to national policy promulgated by the Government regarding climate change and the extraction of oil. It did not err in doing so. National planning policy is a relevant material consideration when considering whether planning permission should be granted for a development. As I have explained above, the approach to be adopted when balancing the economic desirability of extraction of minerals, including oil, and security of energy supply against wider detrimental impacts from such activity, including their effect on climate change, is pre-eminently a matter for national policy, not local determination.

On the other hand, the application of the EIA Directive in relation to the proposed development was the responsibility of the Council, as local planning authority. The Council had to comply with its legal obligations under the EIA Directive. It did so.

There was no inconsistency involved in the Council's approach to these two matters. The EIA Directive leaves matters of general policy in relation to the extraction of oil and climate change open for determination at a national level, and the Council was right to take national policy on this point into account in the way it did.

Conclusion

For the reasons given above, which differ from those given by the majority in the Court of Appeal but accord with those given by Holgate J, by the Court of Session in *Greenpeace* and by the Supreme Court of Ireland in *Kilkenny Cheese*, I would dismiss this appeal.

In relation to the attempt in *Kilkenny Cheese* and in the present case to enlist the EIA Directive in the worthy cause of combating climate change, by seeking to press it into service in relation to requiring EIA in respect of downstream or scope 3 greenhouse gas emissions, it is relevant to bear in mind the cautionary words of Lord Bingham of Cornhill in *Brown v Stott* [2003] 1 AC 681, 703, quoting from *Hamlet* in relation to the European Convention on Human Rights:

> "The Convention is concerned with rights and freedoms which are of real importance in a modern democracy governed by the rule of law. It does not, as is sometimes mistakenly thought, offer relief from 'The heart-ache and the thousand natural shocks That flesh is heir to.'".

As Lord Bingham pointed out, that Convention had to be interpreted according to its terms, not in an effort to produce a remedy for every problem which might be identified in a particular situation. So, in the present context, the EIA Directive, interpreted according to its terms, has a valuable role to play in relation to mitigating greenhouse gas emissions associated with projects for which planning permission is sought, but it should not be given an artificially wide interpretation to bring all downstream and scope

3 emissions within its ambit as well. That has not been stipulated in the text of the EIA Directive, is not in line with its purpose and would distort its intended scheme.

In *Brussels Airport*, the CJEU observed (para 29) that "a purposive interpretation of the Directive [in that case the 1985 Directive, now the EIA Directive] cannot … disregard the clearly expressed intention of the legislature". In my view, in the present case both the clearly expressed intention in the text of the EIA Directive and a purposive interpretation of that Directive point to the same result.

Appendix 2

BRIEFING - JUNE 2024

Can living near an airport make you ill?

Aviation's health effects on populations near airports

Summary

Aviation emissions are a climate concern, and also have a serious impact on air quality. Yet, this issue has not received much attention from regulators or the aviation industry.

When jet fuel is burnt, it releases particulate matter (PM) of different sizes, including ultrafine particles (UFPs), tiny particles below the size of 100 nanometre in diameter - approximately 1000 times smaller than a human hair. Despite growing evidence that **UFP exposure can contribute to respiratory symptoms, heart rate variability, blood pressure problems and have long-term effects on mortality[1],** this pollutant remains largely under researched and unregulated. Transport & Environment's new piece of research explores the link between UFPs and health, for people living near airports.

The study **provides a first estimate of the health effects caused by aviation-related UFPs in Europe**, by summarizing the available scientific evidence, and extrapolating data from the Amsterdam Schiphol Airport area to the main European airports. The analysis estimates that **a total of 280,000 cases of high blood pressure, 330,000 cases of diabetes, and 18,000 cases of dementia may be linked to UFP emissions among the 51,5 million people living around the 32 busiest airports in Europe.**

The study also assesses the correlation between jet fuel quality, UFP emissions and health impact. **The amount of UFPs emitted from flights depends strongly on the composition of aviation fuel.** The study estimates that the use of a 100% hydrotreated jet fuel with very low sulphur and aromatics, which can reduce up to 70% of the number of UFP emissions, would also reduce the associated health impacts by 70%.

To reduce aviation's UFP emissions, and thus improve air quality and mitigate the adverse health impacts, T&E recommends the following measures:

- Address exponential increase in air traffic and air pollution by banning further expansion of airport infrastructure, introduction of flight caps, promoting shift to rail, reducing business travel and targeted taxation of the aviation sector.
- Install sampling points in and around airports in Member States to better quantify UFPs concentration levels with a view of introducing target values for UFP concentrations in next review of the Ambient Air Quality Directive.
- Create an EU jet fuel standard with a progressive reduction of aromatics and sulphur content which will prepare the ecosystem for 0-aromatic, 0-sulphur SAF.

[1] WHO. (

1. Introduction

Besides carbon dioxide (CO_2), planes also emit other gases, such as nitrogen oxides (NOx), oxidised sulphur species and water vapour, and particulate matter (PM)[2]. These "non-CO_2 emissions" have a warming impact on climate, at least as significant as CO_2[3].

Non-CO_2 emissions also impact people's health, especially those living or working in the vicinity of busy airports. Aviation emissions contain a large amount of ultrafine particles (UFPs), a subset of PM emissions which can have a detrimental impact on health different from larger PM emissions[4]. Yet, no comprehensive study has been conducted at the European level on the potential link between aviation's UFP emissions and the increased risk of certain diseases, or the worsening of existing medical problems.

To address this gap, this report provides a first order estimate of the health impact of aviation's UFP emissions in Europe. The report utilizes UFP concentration levels around Amsterdam Schiphol Airport and the associated health effects in that area by the National Institute for Public Health and the Environment of the Netherlands (RIVM)[5], and extrapolates them to the population living within 20 kilometres of the 32 busiest airports in Europe (ranked on flight activity in 2019).

Thereafter, the analysis quantifies the reduction of air pollution thanks to improved jet fuel quality, describes additional possible solutions to mitigate these adverse health effects, and provides policy recommendations to improve air quality around airports.

2. Aviation's impact on health

2.1 Overview

The World Health Organization (WHO) considers air pollution the greatest environmental risk to health in the world[6]. Aircraft contribute to air pollution through the emission of a wide range of pollutants, including particulate matter (PM), nitrogen oxides, carbon monoxides, hydrocarbons, volatile organic compounds, black carbon and

[2] Particulate matter (PM): small particles below 10 micrometres in diameter.
[3] EASA (2020), [redacted]
[4] Schraufnagel, D. E. et al. (2020). [redacted]
[5] RIVM (2022). [redacted]
[6] World Health Organization (2016). [redacted]

sulphur dioxide. These may be linked to conditions such as respiratory problems, certain types of cancer and cardiovascular diseases[7].

Out of all the different sources of air pollution, outdoor PM exposure alone is the fifth leading risk factor for death globally, accounting for 4.2 million deaths and over 103 million disability-adjusted life years lost[8].

Aviation is a primary source of PM pollution around airports. A significant share (14%) of aviation PM emissions occur during the relatively short landing and take-off cycle, and PM emitted by aircraft spread in a larger area surrounding airports[9] compared to road transport PM emissions.

Long term exposure to aviation PM emissions results in an estimated number of premature deaths between 14,000[10] and 21,200[11] every year, and may be related with cardiovascular issues and hospitalisation for asthma, respiratory, and heart conditions. Short term exposure can cause symptoms like coughing and difficulty breathing.

2.2 Focus on ultrafine particles

PM can be classified according to its size, which influences the particles' behaviour and their ability to penetrate human tissues: coarse particles (PM10), with a diameter between 2.5 and 10 microns; fine particles (PM2.5), between 100 nanometres and 2.5 microns; and ultrafine particles (UFP), with a diameter of less than 100 nanometres, or 1000 times smaller than the diameter of a human hair**.** UFPs, due to their smaller size, can penetrate deeper into the body, enter the bloodstream and reach internal organs, such as brain and placenta[12], posing unique health risks compared to larger PM.

The WHO and European legislation both recognise the significance of UFPs and the existing body of evidence on their effects on human health. The latest revision of the

[7] Moreno-Rios, A.L. et al (2022).
[8] Murray, C. J. L. et al. (2020).
[9] UFP concentrations from road transport tend to follow a “rapid decay” spatial pattern with a decrease in concentration by at least 50% over a distance of 150 m away from the major roadway, with a gradual decay to the background thereafter over a distance of 500 m.
Austin E. et al.(2021)
[10] Yim, S. H. L. et al. (2015).
[12]

EU's Ambient Air Quality Directive (AAQD)[13] requires the mandatory monitoring of UFPs, and airports are considered as air pollution hotspots, requiring careful attention by Member States. However, **no limits of UFP concentration are defined** neither by the WHO nor by the AAQD.

This study focuses on the health impact of ultrafine particles (UFPs) on people living near the 32 busiest European airports. Almost all PM emissions from aviation are UFPs, so studying their effects is essential to understand the health impact of the sector.[14]

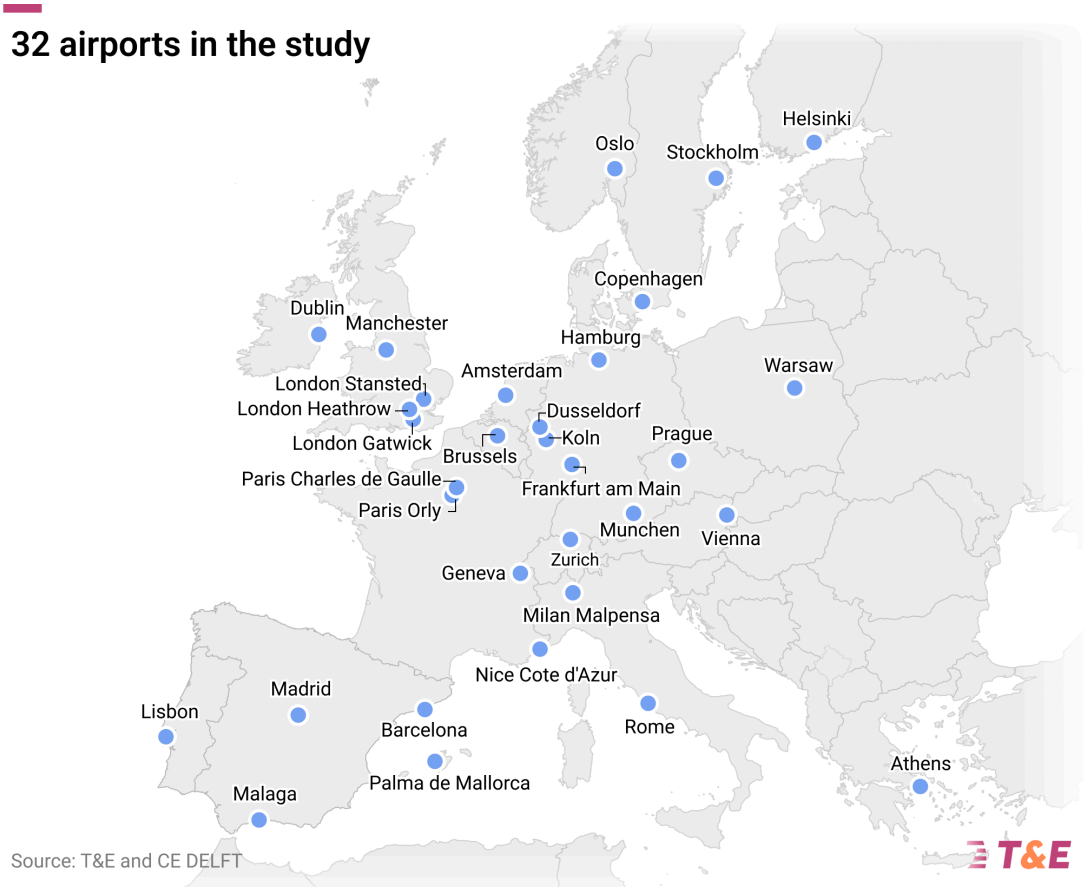

Figure 1. Map with the 32 airports in scope of the study

Although not covered by this study specifically, airport personnel working on the apron are some of the most exposed to these emissions, constituting an unquantified but serious risk to their health.

[13] Commission, 'Proposal for a Directive of the European Parliament and of the Council on ambient air quality and cleaner air for Europe', COM(2022) 542 final
[14] WHO. (2021). Ambient (outdoor) air quality and health

3. Methodology

This report gathers the results from the RIVM's UFP study around Amsterdam Schiphol Airport, and extrapolates them to the 32 busiest European airports to obtain a first level estimate of the health effects of UFP exposure around those airports. The extrapolation assumes that UFP pollution grows linearly with air traffic, and that this pollution is spread evenly around each airport[15].

3.1 UFP health impacts around Amsterdam Schiphol Airport

The RIVM study evaluated the possible correlation between exposure to UFP pollution from Amsterdam Schiphol Airport and respiratory, cardiovascular, neurological and metabolic effects, psychological problems, and pregnancy outcomes.

First, researchers performed a series of measurements around Schiphol Airport to find out the levels of UFP concentrations due to air traffic in the airport surroundings. They found concentrations between 4000 to 30000 particles/cm^3 within 5 kilometres of the airport, 3000 to 6000 particles/cm^3 between 5 and 10 kilometres, and 1000 to 4000 particles/cm^3 between 10 and 20 kilometres. These estimates are aligned with recent measurement campaigns around Paris Charles de Gaulle[16] and Copenhagen airports[17]. UFP concentrations in city centres, including road traffic and other sources, can range between 3000 and 12000 particles/cm^3, highlighting the important contribution of airports to UFP pollution[18].

The RIVM study found strong associations between long-term exposure to UFPs and self-reported cases of diabetes, and with self-reported medication use for high blood pressure and dementia. It also found possible associations with early birth and small for gestational age-born children, with mortality due to Alzheimer, and probable relation with congenital abnormalities. Short-term exposure was also found to worsen existing respiratory problems and to increase the use of asthma medication.

All associations were corrected for exposure to other pollutants, such as nitrous oxides, PM2.5 and soot. Long term effects were also corrected for exposure to noise pollution.

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[15] Prevalent wind patterns can have an impact on the distribution of UFPs around airports. By assuming even spread of UFPs, health effects may be overestimated for populations upwind from airports and underestimated for those downwind from airports.

[16] Airparif - [redacted])

[17] Danish National Center for the Environment and Energy - Large[redacted]

[18] Trechera, P. et al. (2023). [redacted]

3.2. Extrapolation to major European airports

To estimate the health conditions which may be linked to exposure to UFP from aviation, the UFP concentrations around the 32 airports in scope were estimated from the concentrations around Schiphol Airport. These concentrations were then overlapped with the population density around each airport, using population distribution data[19], to assess the amount of people exposed to different UFP concentration levels.

Subsequently, the increased health risks were estimated only for health effects that are strongly associated with UFP exposure according to the RIVM study: high blood pressure, dementia and diabetes (judging from self reports and medication use).

Finally, the number of people exposed to different UFP concentration levels was multiplied by the corresponding increased risks[20] of suffering the health conditions above. From this, the total number of cases for those health conditions was derived.

4. Health impacts of UFPs around major European airports

4.1. UFP emissions concentrations and exposed population

The study finds that 52 million people live within 20 kilometres of the 32 airports in scope, exposing them to increased health risks from UFPs. This population is then divided into three groups, depending on distance from the airport: 5 kilometres, 5-10 kilometres, and 10-20 kilometres.

The 3.8 million people living within 5 kilometres from the airports in scope are the most affected, with estimated average UFP concentrations of 5000 particles/cm^3, going up to 10.000 particles/cm^3 around airports like Paris Charles de Gaulle or London Heathrow.

In many cities, a correlation between people living near an airport and lower incomes can be found[21]. This shows once again that the most vulnerable in society are most affected by air pollution.

4.2. Increased health risks

The RIVM study quantified the increased risks of high blood pressure, diabetes and dementia due to exposure to aviation UFP pollution, compared to the average

[19] Schiavina et al. (2019). [redacted]

[20] The relative risks in the RIVM study for the population near Amsterdam Schiphol are assumed to be the same for any person exposed to the same level of UFP pollution around other airports.

[21] Simon et al. (2022). [redacted]

population. The figure below shows the increased risks of those health conditions for the population in scope of the study.

The risks of suffering from diabetes and dementia are estimated to be at least 20% higher for people living within 5 kilometres from the airports analysed, whereas high blood pressure risk goes up by 7%.

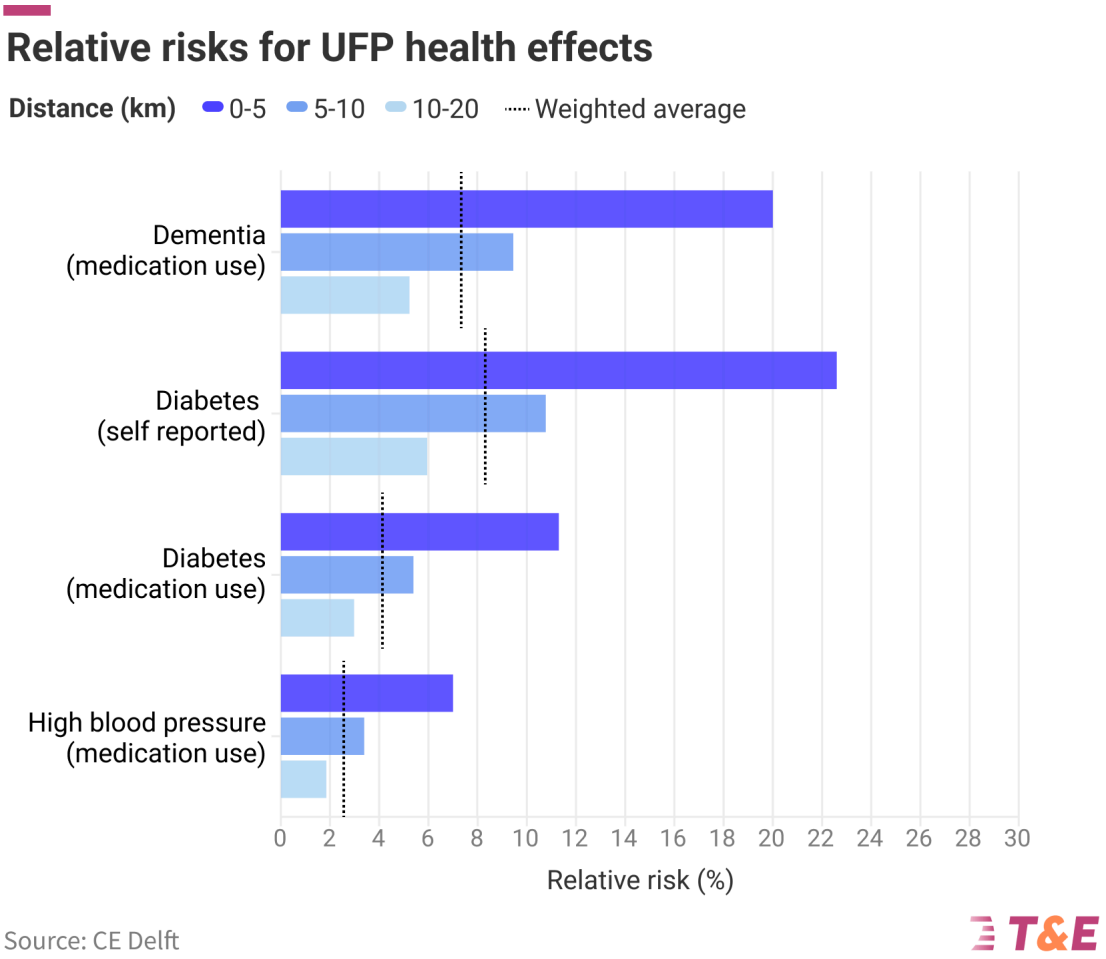

Figure 2. Increased risk of analysed health conditions due to UFP exposure

4.3. Health effects of UFPs around major European airports

The analysis estimates that **aviation UFPs may possibly be associated to 280,000 cases of high blood pressure, 330,000 cases of diabetes and 18,000 cases of dementia** around the 32 major European airports.

The two most important factors that influence the health impact of different airports are air traffic and population density around them. Paris Charles de Gaulle or London Heathrow are good examples of high estimated health impact due to a high volume of air traffic. Lisbon airport, on the other hand, also has a strong impact on the local population in spite of a relatively lower air traffic, due to its location, very close to Lisbon city centre and to other neighbouring populations. A more detailed breakdown of the results can be found in Annex 1.

Airport	**Aircraft movements (x1000)**	**Population (x1000) per airport distance**			
		0-5 km	**5-10 km**	**10-20 km**	**0-20 km**
Paris Orly	224	258	1181	4970	6410
Paris Charles de Gaulle	511	82	488	3425	3995
Madrid Adolfo Suarez	426	207	1082	2549	3837
London Heathrow	481	110	653	2732	3495
Barcelona El Prat	344	159	944	1656	2760
Lisbon	222	414	619	1181	2215
Warschaw Chopina	191	247	730	1163	2140
Brussels	223	112	579	1322	2013
Dusseldorf	226	169	452	1365	1986
Hamburg	155	208	592	1144	1945

Table 1. Population impacted for the top-10 most populous areas in the study. Full results can be found in Annex 1 (link)

It is important to note that only health conditions with a strong association with UFP exposure have been analysed. Conditions with possible or probable association with UFP exposure from the RIVM or other research, such as early birth or congenital abnormalities, are not considered in this study. This means that **the health impact of UFPs around major European airports is likely bigger than estimated by this analysis**.

The impact of other pollutants, and the effect on other exposed populations, particularly airport workers and populations around smaller airports, add as well to the health impact of aviation.

5. Mitigation of air pollution around airports through modified jet fuel composition

Aviation emissions depend upon a variety of factors, including jet fuel composition, engine and aircraft technology, engine thrust settings or ground operations. Out of those factors, the study analyzes the role of jet fuel composition on engine emissions, and how improvements in jet fuel quality can play an essential role in mitigating air pollution.

5.1 Impact of jet fuel composition on aviation emissions

Jet fuel consists of a mix of many different types of molecules, made mostly of carbon and hydrogen, plus some impurities. The composition of jet fuel is closely linked to the mass and number of PM emissions that an aircraft engine releases.

Aromatic compounds[22] are hydrocarbon molecules usually present in jet fuel. These compounds, especially polyaromatics (naphthalene), have poor combustion properties, so the aromatic content in jet fuel is related to non-volatile PM emissions.

The amount of sulphur in jet fuel also plays a critical role in aviation emissions, as it is directly related to the emissions of sulphur oxides and volatile PM.

5.1.1 Types and composition of different types of aviation fuels

Fossil jet fuel, produced from crude oil, represents more than 99% of aviation fuel used today. Jet fuel follows the ASTM D1655 specification, which sets maximum limits of 25% for aromatics, 3% for naphtahelene, and 3000 parts per million (ppm) for sulphur[23]. Its typical composition has an aromatics content ranging from 12 to 20%, naphthalene between 1 and 3%, and sulphur between 300 and 600 ppm.

Sustainable aviation fuels (SAFs) are produced from feedstocks which capture carbon from the atmosphere, reducing their carbon footprint. Most types of SAF are naturally low in aromatic compounds and sulphur, leading to a reduction in PM emissions, with positive effects on air quality. Although they are key to reducing the climate and air quality impacts of aviation. Nonetheless, they only represented 0.2% of jet fuel in 2023[24], and their production will take time to scale up - more than half of jet fuel in Europe may still be fossil well into the 2040s.

[22] Aromatics contain at least one aromatic (benzene) ring, with polyaromatics containing more than one.
[23] [redacted]
[24] IATA - [redacted]

Before the scale up of SAFs, the composition of fossil jet fuel can be improved to reduce its air quality impacts, thanks to a set of refinery processes called hydrotreatment, which have been used for decades to reduce sulphur from road transport and maritime fuels[25]. Hydrotreatment can reduce sulphur and aromatics from jet fuel at an estimated cost of less than 0.05€/litre, with a hydrogen use below 10 kilograms per ton of fuel[26]. This hydrogen should be green to maximise the climate benefits of the fuel.

Info box : increased transport fuel quality and the aviation anomaly

The link between fuel quality and air pollution has been known for decades. European standards for road transport fuels were improved to reduce the maximum sulphur content, from 2000 ppm (diesel) and 500 ppm (petrol) in 1997 down to 10 ppm in 2009[27]. Similarly, the maximum sulphur content in the international standard for maritime fuels was reduced from 4.5% in 2011 to 0.5% in 2020[28].

The impact of sulphur in aviation fuels has also been analysed in the past. A study commissioned by EASA and published in 2010[29] found that reducing sulphur in jet fuel could reduce health impacts, with an estimated monetised benefit between 130-430 M€/year in Europe. This study did not take into account the benefits of a reduction in aromatics, which would add up to those of sulphur reduction.

However, the publication of the study did not lead to specific measures to reduce sulphur content in jet fuel, leaving millions of people exposed to avoidable health risks.

5.2 Estimated benefits of hydrotreated jet fuels and SAF

Hydrotreated jet fuels, due to a lower content of aromatics and sulphur, would reduce the number of UFP emissions and their associated health effects.

Hydrotreatment processes reduce first sulphur, then polyaromatics (naphthalene), and subsequently monoaromatics. Since sulphur is reduced very quickly, and naphthalene is

[25] Kokayeff, P. et al. (2014). [redacted].
[26] MathPro (2023). [redacted]
[27] [redacted]
[29] EASA (2010). [redacted]

more linked to PM emissions than monoaromatics, even fuels which undergo a light hydrotreatment process can have important benefits in terms of PM reduction[30].

Due to limited data on combustion tests of hydrotreated fuels, this study estimates its benefits using test results from combustion tests using blends of SAF and fossil jet fuel, which also contain less aromatics and sulphur than regular fossil jet fuel. One study found that PM emissions were progressively decreased with higher SAF blends, reducing more than 75% in particle numbers and 90% in particle mass for 100% SAF compared to a fossil jet fuel baseline[31]. That study also confirmed that most PM emissions are smaller than 100 nanometers, falling within the UFP category.

Other ground based measurements of jet engine emissions showed similar results[32], confirming the emissions reductions of using SAF with low aromatics and sulphur.

It must be noted that, on top of jet fuel combustion, lubrication oils used in jet engines also contribute to PM emissions, with some studies estimating around 9% of particle mass coming from this source[33]. The analysis assumes that lubrication oils are also responsible for a 9% of particle numbers. The reduction in particle number emissions due to the use of SAF blends does not affect the PM emissions from lubrication oils. Consequently, the total reduction of PM emissions is of 70% for particle number and 80% of particle mass.

As health risks from UFPs are related to the number of particles emitted, **using fuels with lower sulphur and aromatics such as SAF blends or hydrotreated fuels can reduce UFP health risks by up to 70%.**

[30] CE Delft (2022). [redacted]
[31] Lobo, P. et al. (2015). [redacted]
[32] Schripp, t. Et al. (2022). [redacted]
[33] Ungeheuer, F. et al. (2022). [redacted]

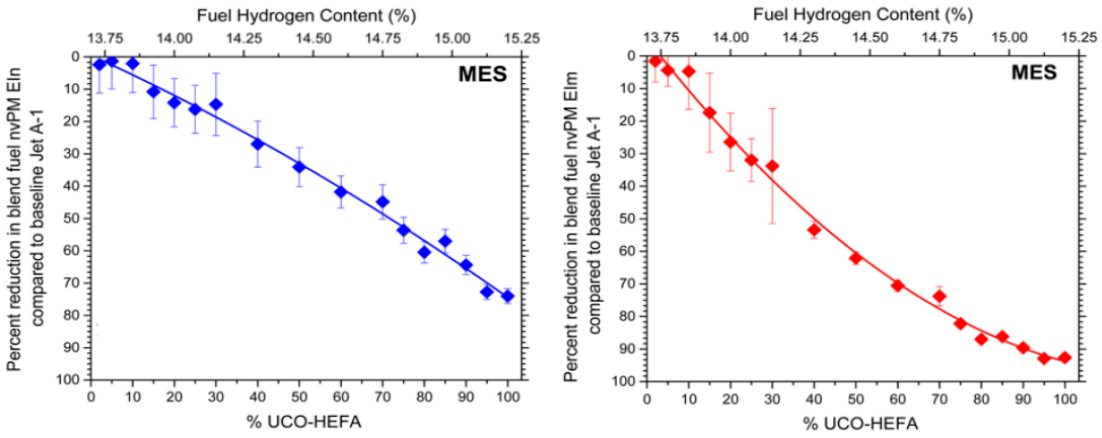

Figure 3. Non-volatile particulate matter emissions behaviour, in terms of number (left) and mass (right), for fuel blends with a varying proportion of SAF and jet fuel

6. Other measures to improve air quality around airports

On top of increased jet fuel quality, other measures can also be effective in tackling the air pollution in and around airports.

Due to a lack of systematic measurements and legal concentration level of UFPs, millions of people working at or living near airports are exposed to unknown levels of harmful air pollution. Measuring UFP levels at and around airports, and setting target values for this pollutant, are crucial to better understand and mitigate its health impact.

In the short term, limiting air traffic growth remains the most effective measure to curb aviation emissions and air pollution. Measures such as flight caps, or replacement of short haul flights by rail alternatives, can help keep air travel within reasonable limits. Stopping airport expansions is also key to make sure aviation does not keep growing its impact on climate and local populations.

Optimising airport ground operations[34] or more efficient jet engines can reduce emissions in and around airports, while future zero-emission aircraft may either reduce or almost eliminate aircraft tailpipe emissions[35].

[34] Optimisation of airport ground operations comprises measures such as reducing taxiing times, single engine taxiing, limiting APU use or electrifying ground equipment.

[35] Hydrogen combustion engines will eliminate non-volatile PM emissions, but will still emit nitrous oxides. Hydrogen fuel cell propulsion will eliminate both nvPM and nitrous oxides emissions, whereas electric propulsion has zero exhaust emissions. These aircraft may still emit VOCs and volatile PM, e.g. from lubrication oils, and also dust from brakes and tyres.

7. Conclusions and policy recommendations

This study highlights how aviation emissions of gases and particulate matter (PM) not only affect climate, but also air quality, focusing on the effects of ultrafine particles (UFPs). Tens of millions of Europeans are exposed to increased health risks due to aviation UFPs.

Fortunately, reducing air traffic and improving jet fuel quality can mitigate the problem in the short term, with additional climate benefits. SAF with low aromatics and sulphur and other technological solutions could further reduce emissions in the mid to long term.

To reduce aviation's UFP emissions, and thus improve air quality and mitigate the adverse health impacts, T&E recommends the following measures:

- Address exponential increase in air traffic and air pollution by banning further expansion of airport infrastructure, introduction of flight caps, promoting shift to rail, reducing business travel and via targeted taxation of the aviation sector.
- Install sampling points in and around airports in Member States to better quantify UFPs concentration levels with a view of introducing target values for UFP concentrations in next review of the Ambient Air Quality Directive.
- Create an EU jet fuel standard with progressive reduction of aromatics and sulphur content which will prepare the ecosystem for 0-aromatic, 0-sulphur SAF.

Further information

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Annex I. Population impacted per airport, and estimated number of health conditions per country

Airport	Aircraft movements (x1000)	Population (x1000) per airport distance			
		0-5 km	5-10 km	10-20 km	0-20 km
Paris Orly	224	258	1181	4970	6410
Paris Charles de Gaulle	511	82	488	3425	3995
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Warschaw Chopina	191	247	730	1163	2140
Brussels	223	112	579	1322	2013
Dusseldorf	226	169	452	1365	1986
Hamburg	155	208	592	1144	1945
Amsterdam Schiphol	509	88	487	1198	1773
Koln	143	99	310	1355	1764
Frankfurt am Main	508	135	449	1172	1757
Manchester	201	101	379	1255	1735
Athens Eleftheros Venizelos	220	18	93	1507	1617
Prague Ruzyne	144	86	264	1037	1388
Zurich	243	102	404	788	1294
Dublin	239	127	373	780	1280
Helsinki Vantaa	194	81	272	786	1139
Copenhagen Kastrup	263	76	223	827	1126
Vienna Schewchat	282	14	49	944	1006
Milan Malpensa	234	46	212	651	909
Malaga Costa Del Sol	144	244	359	293	896
Nice Cote d'Azur	178	143	308	399	850
Geneva	146	225	316	244	785
Roma Fiumicino	311	20	103	585	708
London Gatwick	284	81	125	438	644
Palma de Mallorca	217	130	250	177	557

Munchen	417	24	66	246	336
London Standsted	195	21	62	199	282
Stockholm Arlanda	232	14	21	131	166
Oslo Gardermoen	253	16	24	67	107

Table 2. Population impacted for the 32 airports in the study

Country	**Aircraft movements for in scope airports (x1000)**	**Population (x1000) per airport distance**				**High blood pressure (from self report)**	**Diabetes cases (from self report)**	**Dementia (from medication use)**
		0-5 km	**5-10 km**	**10-20 km**	**0-20 km**			
Belgium	223	112	579	1322	2013	7055	7526	492
Czechia	144	86	264	1037	1388	4507	4825	203
Denmark	263	76	223	827	1126	4920	4415	410
Germany	1449	635	1870	5283	7788	49587	52691	1975
Ireland	239	127	373	780	1280	3541	7814	594
Greece	220	18	93	1507	1617	4705	6145	934
Spain	1132	740	2635	4675	8050	52205	64918	5339
France	914	483	1977	8794	11255	46836	66309	1441
Italy	545	66	315	1236	1617	7140	7280	276
Netherlands	509	88	487	1198	1773	12786	14740	246
Austria	282	14	49	944	1006	4181	3682	270

Poland	191	247	730	1163	2140	11504	11252	673
Portugal	222	414	619	1181	2215	15473	18615	1837
Finland	194	81	272	786	1139	5475	6097	928
Sweden	232	14	21	131	166	611	677	39
Norway	253	16	24	67	107	436	415	24
Switzerland	389	327	720	1031	2078	9428	11122	266
United Kingdom	1160	313	1219	4623	6155	40846	44165	2209
Total	**8560**	**3858**	**12468**	**36588**	**52914**	**281234**	**332687**	**18157**

Table 3. Population impacted and number of health conditions for the 32 airports in the study, grouped per country