



PROJECT BENEFITS REPORT: 5.4

DECARBONISATION

Cory Decarbonisation Project

PINS Reference: EN010128

March 2024

Revision A

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INTRODUCTION

The Applicant

The Applicant, Cory, is a leading resource management company with extensive river logistics, having operated on the River Thames since the 1800s. The company serves a vital public service recycling and disposing of commercial and household waste on behalf of numerous private businesses and several London Boroughs. What cannot be recycled is transported via barges along the Thames to Riverside, where it is processed through incineration with energy recovery.

The Applicant intends to construct and operate the Proposed Scheme, the objective of which is to capture carbon dioxide emissions from the existing and consented energy from waste (EfW) facilities in Belvedere, London, known as Riverside 1 and 2.

Cory has a demonstrated history of delivering large-scale, strategic, sustainable infrastructure projects in this locality. Riverside 1 has been in operation since 2011 and Riverside 2 is under construction. Together, these facilities can manage up to 1.5 million tonnes of residual waste each year, in the process generating partially renewable power and having the potential to supply steam to a local district heating scheme. The operation of Riverside 1 and 2 will be materially enhanced through the proposed carbon capture technology, delivering the critical national priority infrastructure currently sought by government to meet priority objectives to address climate change.

Proposed Scheme Description

The Proposed Scheme confirmed to be a project of national significance in February 2024, comprises the following main components:

- a Carbon Capture Facility, comprising up to two plants designed to capture some 1.6 million tonnes (1.6Mt) of carbon dioxide (CO₂) per annum;
- a proposed new Jetty, extending into the Thames to facilitate the onward transfer of the captured CO₂;
- the Mitigation and Enhancement Area, designed both to enhance biodiversity and to improve public access to outdoor space;
- three temporary construction compounds; and
- connections to utilities and provision of site access works.

The Carbon Capture Facility will separate CO₂ from the flue gas emissions of Riverside 1 and 2. Assuming a nominal assumed throughput, this is equivalent to approximately 1.3Mt CO₂ per year. Table 13-10 of Chapter 13: Greenhouse Gases (Document Reference 6.1.13) demonstrates that based on the fully consented throughput of Riverside 1 and Riverside 2, the Proposed Scheme would result in net operational emissions savings of 1,620,603 tCO₂e, annually, relative to future baseline.

It is then compressed and liquified on site, to be transported by ship for permanent sequestration under North Sea. On 5 December 2023, Cory announced an exclusive commercial relationship with Viking CCS to collaborate on the transport and storage of shipped CO₂ captured from Riverside. Whilst this element does not form part of the application for development consent, it does enable the Applicant to demonstrate how the Proposed Scheme fits within a credible carbon capture cluster that has gained government support.

Project Benefits Report

This Report has been prepared to set out the need for the Proposed Scheme and to demonstrate its associated benefits.

PROJECT NEED

The context for the Proposed Scheme is set by rapidly escalating global concern about climate change, the long-term shift in the Earth's average temperatures and weather conditions. The Intergovernmental Panel on Climate Change (IPCC) is the leading international body for the assessment of climate change. It noted in its 'Sixth Assessment Report' (AR6) published in 2023:

'Climate change is a threat to human well-being and planetary health (very high confidence). There is a rapidly closing window of opportunity to secure a liveable and sustainable future for all (very high confidence).'¹

The Financial Times² reported (8 February 2024) that the threat from climate change has never been greater, with the European Union's Earth Observation Programme finding that the 12 month average global temperature from February 2023 to January 2024 was 1.52°C above pre-industrial levels, ie in excess of the Paris Agreement target to pursue efforts *'to limit the temperature increase to 1.5°C above pre-industrial levels'*, and in the zone (1.5 to 2 degrees) in which the IPCC has warned *'some impacts may be long lasting or irreversible, such as the loss of some eco-systems'*³

The current policy background reflects this urgency. The UK became the first major economy to legislate for a 2050 net zero GHG target (in 2019) and in 2021 it targeted a reduction in greenhouse gas (GHG) emissions of at least 78 percent relative to 1990 levels by 2035, bringing the previous target forward by 15 years.

The removal of carbon dioxide, through both nature based and engineered options, is now critical. The Climate Change Committee, an independent body established to provide evidence based advice to the UK and devolved Governments, has described carbon capture and storage (CCS⁴) as a *'necessity, not an option'*⁵ for the transition to net zero. This is a position shared by the IPCC as well as the International Energy Agency which has concluded that *'reaching net-zero will be virtually impossible without CCUS'*⁶

Consequently, there is significant UK government policy support for decarbonised energy infrastructure, and *'an urgent need for new CCUS infrastructure to support the transition to a net zero economy'* (NPS EN-1⁷, para 3.5.1). Paragraph 4.2.4 confirms:

'Government has therefore concluded that there is a critical national priority (CNP) for the provision of nationally significant low carbon infrastructure.'

Waste management processes such as those at Riverside are not excluded from this priority; the Government's CCUS Vision⁸ recognises that:

'CCUS is also needed to reduce emissions from our residual waste sector... energy generation and the application of CCUS to capture the carbon that would otherwise be emitted into the atmosphere are ways to reduce the impact of managing and utilising the waste we do produce.'
(page 12)

The Draft Energy Policy 2024⁹ reconfirms Government's commitment to delivering carbon capture technology and heat networks, in achieving its goals for net zero. It is also clear that it expects private investment, through projects such as the Proposed Scheme, to deliver these goals. *'As set out in the Net Zero Growth Plan, investment is the key to delivering our energy security and carbon targets, and seizing the economic benefits of the transition to net zero.'*
(page 18)

PROJECT BENEFITS

The Proposed Scheme provides substantial benefits across policy, environment, society and economy priorities.

Policy

The Proposed Scheme responds to global commitments, national and development plan policy by delivering decarbonisation. In 2022, 99% of Cory's CO₂ emissions were emitted from Riverside 1. CCS is the leading technological approach that EfW facilities can use to significantly reduce CO₂ emissions from the residual waste management service they perform. The Proposed Scheme will capture at least 95% of CO₂ Riverside emissions, enabling the permanent geological sequestration of some 1.6Mt of CO₂ a year, of which approximately half will be biogenic (capturing and storing these biogenic or organic based emissions will be a carbon removal).

The whole life emissions for the Proposed Scheme (accounting for construction and operation phases), represent an overall saving in GHG emissions of -85,223,660 tCO₂e relative to the future baseline (averaging 1.55Mt CO₂e annually). The Proposed Scheme contributes to a reduction of: 0.8% for the UK Sixth Carbon Budget; 18% of Power Sector emissions for the Sixth Carbon Budget; and 17% for the London 2028 to 2032 Carbon Budget. All this achieved with a carbon payback period, the time taken for carbon emissions from construction and operation to be offset by carbon emissions savings from the Proposed Scheme, of five weeks.

Environmental

There is a paucity of alternatives at which to develop the Carbon Capture Facility and the selected location is demonstrated to be an appropriate location when all impacts are balanced, including the direct loss of land designated under biodiversity, open space and green infrastructure policy. The selected location presents an appropriate location when all impacts are balanced and the Proposed Scheme brings the opportunity to improve the local

environment, deliver BNG and provide appropriate resources to ensure their long term management.

Locally, environmental proposals are underpinned by three key elements:

- expansion of the existing Crossness Local Nature Reserve (LNR) into the land immediately south and west of the Carbon Capture Facility providing a gain of 5 to 6ha of land for joined up management;
- improvement to the distinctiveness and condition of existing floodplain grazing marsh and reedbed habitats, achieving both direct mitigation for the physical losses and enhancement; and
- delivering some off-site biodiversity net gain (BNG), to achieve at least 10%.

The key element of the Mitigation and Enhancement Area is the proposed, expanded Crossness LNR through the inclusion of Norman Road Field to provide compensation for loss of habitat along with enhancement and resilience. In addition, should the Belvedere Power Station Jetty (disused) be retained, it too could provide environmental benefit through modifications designed to attract birds.

Across the Proposed Scheme, good design is reflected in both design process as well as design outcome. The Design Principles and Design Code frame how the Proposed Scheme will fulfil the expectations of 'good design' set out in NPS EN-1, align with the National Infrastructure Commission's guidance and supports the use of design principles outlined in the Bexley Growth Strategy. The opportunity to develop critical national priority infrastructure as one, cohesive development, underpinned by good design, is brought to reality through the Proposed Scheme.

Society

The Proposed Scheme delivers societal benefits through reduced carbon emissions, through the direct provision of services and through local employment and engagement. Societal well-being is underpinned by good infrastructure, including sanitary waste management and an affordable, dispatchable, secure and resilient energy supply. The Proposed Scheme takes the existing infrastructure to the next level, through delivering low carbon waste management and energy supply, and through optimising the Riverside Heat Network. The Proposed Scheme will ensure a sustainable future for the treatment of London's residual waste and brings the opportunity to use the waste heat generated by the Carbon Capture Facility to optimise the Riverside Heat Network, enabling the Proposed Scheme to provide over 100MW of low carbon additional heat for local homes and businesses.

In keeping with Cory's ethos, the Proposed Scheme will achieve more than just offering 27 job contracts. Cory Group employees benefit from a broad range of training, development programmes and employment benefits, including apprenticeship programmes and trade union membership.

Cory is already engaged in its local communities; the company's 2022 Sustainability Report estimates the value generated to society by the company beyond standard profit and income measures at £84 million. Approval of the Proposed Scheme will allow Cory to deliver strongly on specific social initiatives, and to strengthen and augment existing community initiatives.

New configured space for residents and visitors, with access across enhanced areas of Accessible Open Land and connections with the Thames Path are proposed. These options give visitors an improved outdoor space and offer greater diversity of habitat on well-designed pathways, achieving societal benefit and a renewed sense of place.

Economic

Lower carbon emissions bring policy, environmental and societal benefits, but their value can be estimated in quantitative terms and expressed monetarily too. The economic effect is different to the financial effect, because the financial effect describes the direct financial consequence of the project for stakeholders, while the economic effect considers the impact on the whole of society, not just those who are spending or receiving money.

To demonstrate the economic value that the Proposed Scheme would bring from lower carbon impacts, a high level economic analysis was prepared. The estimate is indicative, because it depends on several assumptions, but it is instructive to reveal that for a typical 1.6Mt per annum carbon abatement scheme, using the government's midpoint carbon values and a relatively generous cost allowance, the likely benefits to wider society from the carbon savings alone would be around £1.7 billion (Net Present Value, 2023 prices).

In addition to these very substantive carbon benefits, the Proposed Scheme would contribute to the economy through investment, supply chain and employment impacts. As noted in 'CCUS Supply Chains: A Roadmap to Maximise the UK's Potential (Department for Business, Energy and Industrial Strategy, May 2021):

'CCUS will be essential to that green economy, tackling climate change and meeting the UK's target to reach net zero emissions by 2050. It also has the potential to deliver a stronger, greener UK by levelling up our industrial heartlands, supporting clean growth and providing new economic opportunities for UK-based companies across the world.'

The UK has many strengths that are likely to be favourable to CCUS development including market share and comparative advantages in associated technologies and one of the largest potential CO₂ storage capacities in Europe. By becoming a first, or early, mover for CCUS products and services, the UK will be able to position itself to benefit from emerging economic opportunities.

Use of ships to export the liquified CO₂ builds upon the Applicant's established riparian location and substantially avoids new traffic on the public highway, helping demonstrate that the non-pipeline transport sought by government in the CCUS Vision is deliverable.

During 2022, Cory Group spent £114.5 million on 828 suppliers, of which 95 percent were UK based. Cory's Supplier Code of Conduct defines the standards expected of suppliers which include specific actions such as maximising energy efficiency, minimising waste and reducing carbon footprint. The Proposed Scheme will have a likely budget in the region of £1 billion pounds, significantly increasing the size of Cory's overall supply chain, and creating a powerful boost in economic activity for the existing and new suppliers servicing the plant.

CONCLUSIONS

CO₂ emissions represent a global challenge requiring local solutions. The Carbon Capture Facility will capture at least 95% of the CO₂ emissions from Riverside 1 and Riverside 2; the capture (and consequent sequestration) of 1.6Mt of CO₂ materially contributes to the achievement of policy targets. The Proposed Scheme encapsulates the type of investment sought by the Draft Energy Policy 2024 and with a payback period of little more than a month.

The riparian location of the Scheme and its proposed jetty maximises the potential for sustainable shipping and a downstream link with Viking CCS, a project that has government support, secures a safe and long term transport and storage solution.

The Proposed Scheme will deliver CNP Infrastructure within the indicative boundary of the Riverside Opportunity Area and substantially uses land allocated as Strategic Industrial Location. The Carbon Capture Facility includes the technology necessary to optimise district heating and is underpinned by a cohesive design framework and enhancement strategy across the Mitigation and Enhancement Area to deliver improved local access and societal benefit.

Cory's waste management operations at Riverside provide a wider societal benefit; safely processing London's residual waste into energy. The addition of the Carbon Capture Facility will be a step change to those operations, contributing to the achievement of net zero and improving societal well-being at multiple geographical levels.

Indicative analysis indicates a typical scheme of this size and type could achieve economic benefits in the order of £1.7 billion from carbon savings alone. In addition, the Proposed Scheme would contribute to the economy through investment, supply chain and employment impacts, driving growth in the UK CCUS sector – a very promising economic arena, given the UK's existing intrinsic advantages in this nascent but potentially huge global market.

The Proposed Scheme provides a positive local response, within an acknowledged sensitive local environment, to the globally important environmental challenge that faces us. The Carbon Capture Facility is CNP Infrastructure that the government is seeking to deliver through its latest policy statement, Draft Energy Policy 2024, and is necessary to address local, regional, national and global climate change priorities.

Cory has its own aspiration to get to net zero by 2040 and to have carbon capture operational by 2030. By this submission, the Applicant has demonstrated its position as an early promoter of CCS. The Proposed Scheme's implementation would materially contribute towards the UK Net Zero Strategy ambition to deploy '*at least 5 MtCO₂/year of engineered [GHG] removals by 2030*' and make an important and relevant contribution to meeting national policy driven targets of achieving net zero by 2050.

1. INTRODUCTION

1.1. INTRODUCTION

- 1.1.1. Cory Environmental Holdings Limited (hereafter referred to as Cory or the Applicant) is part of the Cory Group, one of the UK's leading resource management companies, with an extensive river logistics network in London underpinned by a long history and deep connection to the city stretching back to the late 1700s.
- 1.1.2. This **Project Benefits Report (PBR) (Document Reference 5.4)** has been prepared on behalf of the Cory as part of the application for development consent for the Cory Decarbonisation Project to be located at Norman Road, Belvedere in the London Borough of Bexley (LBB) (National Grid Reference/NGR 549572, 180512).
- 1.1.3. The following figures are available in the Environmental Statement (ES):
- **Figure 1-1: Site Boundary Location Plan (Volume 2) of the ES (Document Reference 6.2);** and
 - **Figure 1-2: Satellite Imagery of the Site Boundary Plan (Volume 2) of the ES (Document Reference 6.2).**
- 1.1.4. The Applicant intends to construct, commission, operate, maintain and decommission the Proposed Scheme to be linked with the River Thames. It comprises of the following key components, which are described below, and further detail is provided within **Chapter 2: Site and Proposed Scheme Description** of the **Environmental Statement (Document Reference 6.1)**:
- The Carbon Capture Facility (including its associated Supporting Plant and Ancillary Infrastructure): the construction of infrastructure to capture a minimum of 95% of carbon dioxide (CO₂) emissions from Riverside 1 and 95% of CO₂ emissions from Riverside 2 once operational. The Carbon Capture Facility will be one of the largest carbon capture projects in the UK.
 - The Proposed Jetty: a new and dedicated export structure within the River Thames as required to export the CO₂ captured as part of the Carbon Capture Facility.
 - The Mitigation and Enhancement Area: land identified as part of the **Outline Landscape, Biodiversity, Access and Recreation Delivery Strategy (LaBARDS) (Document Reference 7.9)** to provide improved access to open land, habitat mitigation, compensation and enhancement (including forming part of the drainage system and Biodiversity Net Gain delivery proposed for the Proposed Scheme) and planting. The Mitigation and Enhancement Area provides the opportunity to improve access to outdoor space and to extend the area managed as the Crossness Local Nature Reserve (LNR).
 - Temporary Construction Compounds: areas to be used during the construction phases for activities including, but not limited to office space, warehouses, workshops, open air storage and car parking, as shown on the **Works Plans (Document Reference 2.3)**. These include the core Temporary Construction

Compound, the western Temporary Construction Compound and the Proposed Jetty Temporary Construction Compound.

- Utilities Connections and Site Access Works: The undergrounding of utilities required for the Proposed Scheme in Norman Road and the creation of new, or the improvement of existing, access points to the Carbon Capture Facility from Norman Road.

1.1.5. Together, the Carbon Capture Facility (including its associated Supporting Plant and Ancillary Infrastructure), the Proposed Jetty, the Mitigation and Enhancement Area, the Temporary Construction Compounds and the Utilities Connections and Site Access Works are referred to as the 'Proposed Scheme'. The land upon which the Proposed Scheme is to be located is referred to as the 'Site' and the edge of this land referred to as the 'Site Boundary'. The Site Boundary represents the Order Limits for the Proposed Scheme as shown on the **Works Plans (Document Reference 2.3)**.

1.2. PURPOSE OF THE PROJECT BENEFITS REPORT (PBR)

- 1.2.1. This PBR has been prepared both to define the need for the Proposed Scheme, which is globally urgent and nationally critical, and to demonstrate the benefits of the Proposed Scheme, which are locally relevant, important and substantial.
- 1.2.2. Need for the Proposed Scheme will be defined through consideration of the global framework, national commitments and local policy that all drive activities to reduce carbon emissions and positively address climate change.
- 1.2.3. Further definition will also be given in relation to the Applicant's operations at Riverside and its own corporate decarbonisation strategy.
- 1.2.4. The overarching benefit of the Proposed Scheme is its delivery of negative carbon emissions and contribution to national net zero objectives. In addition, the project's consequent economic, environmental and societal gains will be demonstrated, rooting the Proposed Scheme in its locality.
- 1.2.5. This is not the Planning Statement; it is performing a different role. It is focussed on how the Proposed Scheme delivers globally driven and nationally set carbon commitments, with locally significant gains. Set within the most recent context of relevant policy, it demonstrates the environmental, economic and societal benefits that will be delivered through this project of national significance.

1.3. STRUCTURE OF THE PROJECT BENEFITS REPORT

- 1.3.1. This Project Benefits Report is structured as follows:
- an Executive Summary is provided at the beginning of this document;
 - Section 1: Introduction;
 - Section 2: Context for the Proposed Development, describing the urgent need for critical national priority infrastructure to achieve decarbonisation and how the Applicant already responds to this;

- Section 3: Global and National Commitment to Decarbonisation, introducing international and national commitments to address climate change;
- Section 4: Policy Driven Decarbonisation, introducing national and development plan policy drivers for addressing climate change;
- Section 5: Delivering the Global and Local Benefits of Decarbonisation, setting out how the Proposed Scheme delivers the policy driven need for decarbonisation; and
- Section 6: Conclusion, presenting an overview of the project benefits.

1.3.2. This Report should be read in conjunction with other documents submitted with the Application, in particular:

- Site Location Plan (Document Reference 2.1);
- Draft DCO (Document Reference 3.1);
- Planning Statement (Document Reference 5.2);
- Design Approach Document (Document Reference 5.6);
- Design Principles and Design Code (Document Reference 5.7);
- Environmental Statement (Document Reference 6.1);
- Terrestrial Site Alternatives Report (Document Reference 7.5); and
- Outline Landscape, Biodiversity, Access and Recreation Delivery Strategy (Document Reference 7.9).

2. CONTEXT FOR THE PROPOSED SCHEME

- 2.1.1. The context for the Proposed Scheme is set by increasing global concern about climate change, the long-term shift in the Earth's average temperatures and weather conditions. Climate warming is currently happening at a rate not seen in the past 10,000 years. The Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change, confirms that:
- 'Since systematic scientific assessments began in the 1970s, the influence of human activity on the warming of the climate system has evolved from theory to established fact'.¹⁰*
- 2.1.2. Starkly, according to the IPCC's Headline Statements from its 'Sixth Assessment Report' (AR6) published in 2023:
- 'Continued greenhouse gas emissions will lead to increasing global warming, with the best estimate of reaching 1.5°C in the near term in considered scenarios and modelled pathways'.*
- 'Limiting human-caused global warming requires net zero CO₂ emissions'.*
- and
- 'Climate change is a threat to human well-being and planetary health (very high confidence). There is a rapidly closing window of opportunity to secure a liveable and sustainable future for all (very high confidence).'¹¹*
- 2.1.3. These Headline Statements (and others) are the overarching conclusions of the approved Summary for Policymakers; they are intended to summarise the IPCC's position.
- 2.1.4. The Financial Times¹² reported (8 February 2024) that the threat from climate change has never been greater – at least not in recorded history. Copernicus, the European Union's Earth Observation Programme, reported that the average global temperature has for the first time breached the critical benchmark of 1.5C above pre-industrial levels over a 12-month period. Findings show that the 12 month average global temperature from February 2023 to January 2024 was 1.52C above pre-industrial levels.

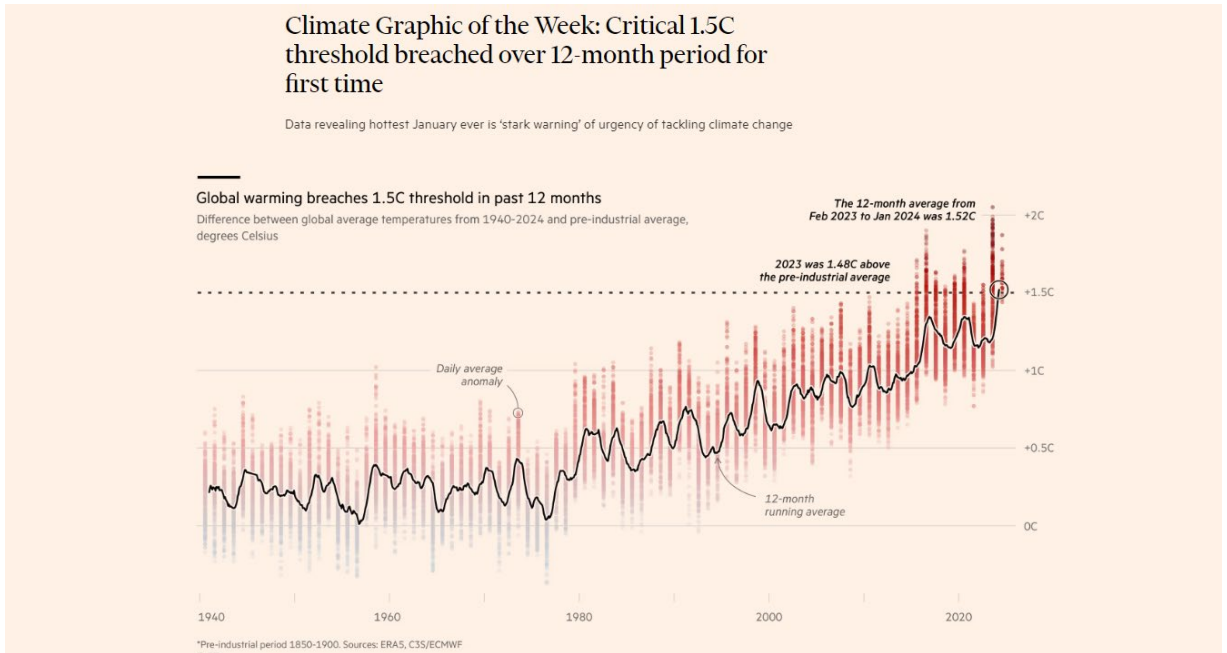


Figure 1: Climate Graphic of the Week: Critical 1.5C threshold breached over 12-month period for first time (reproduced from the Financial Times, 08.02.2024³)

2.1.5. The overall context of climate change shapes the Proposed Scheme and indeed, a whole raft of both UK Government and international policy and commitment responses, as well as individual and corporate actions. The rest of this section, and sections 3 and 4 which follow, summarise that commitment and present policy relevant to the context of the Proposed Scheme.

2.2. THE CRITICAL NATIONAL PRIORITY FOR LOW CARBON INFRASTRUCTURE

2.2.1. On 17 January 2024, Government designated the revised suite of energy National Policy Statements (NPS) with those of relevance to the Proposed Scheme being: Overarching National Policy Statement for energy (NPS EN-1) and National Policy Statement for renewable energy infrastructure (NPS EN-3).

2.2.2. At paragraph 2.2.1, NPS EN-1 advises that:

'In June 2019, the UK became the first major economy to legislate for a 2050 net zero Greenhouse Gases ('GHG') emissions target through the Climate Change Act 2008 (2050 Target Amendment) Order 2019. In December 2020, the UK communicated its Nationally Determined Contributions to reduce GHG emissions by at least 68 per cent from 1990 levels by 2030.²³ In April 2021, the government legislated for the sixth carbon budget (CB6), which requires the UK to reduce GHG emissions by 78 per cent by 2035 compared to 1990 levels.'

2.2.3. Paragraph 2.3.3 confirms the importance of secure, affordable and reliable low carbon energy and the step change required to deliver it:

Our objectives for the energy system are to ensure our supply of energy always remains secure, reliable, affordable, and consistent with meeting our target to cut GHG emissions to net zero by 2050, including through delivery of our carbon budgets and Nationally Determined Contribution. This will require a step change in the decarbonisation of our energy system.’ (NPS EN-1, paragraphs 2.3.1 to 2.3.3)

2.2.4. Paragraph 2.5.1 confirms the Government’s position: *‘Given the vital role of energy to economic prosperity and social well-being, it is important that our supplies of energy remain secure, reliable and affordable.’*

2.2.5. Paragraph 4.2.1 makes clear that *‘Government has committed to fully decarbonising the power system by 2035, subject to security of supply, to underpin its 2050 net zero ambitions.’*

2.2.6. A substantial increase in electrical supply will be a key component to delivery, with the UK’s strategy to increase supply of low carbon energy *‘dependent on deployment of renewable and nuclear power generation, alongside hydrogen and CCUS [Carbon Capture, Usage and Storage]. Our energy security and net zero ambitions will only be delivered if we can enable the development of new low carbon energy sources of energy at speed and scale.’ (NPS EN-1, paragraph 4.2.2)*

‘Government has therefore concluded that there is a critical national priority (CNP) for the provision of nationally significant low carbon infrastructure.’ (NPS EN-1, paragraph 4.2.4)

2.2.7. By way of letter dated 6th October 2022, the Secretary of State made a Direction, under Section 35(1) of the Planning Act 2008, that the Proposed Scheme should be treated as development for which development consent under the Planning Act 2008 (as amended) is required and therefore a Project of National Significance.

2.2.8. The Secretary of State was satisfied that:

‘The Proposed Project is in the field of energy and development and will be wholly within England;

The Proposed Project does not currently fall within the existing definition of a “nationally significant infrastructure project” and therefore it is appropriate to consider use of the power in section 35(1) of the Planning Act 2008; and

Cory’s request constitutes a “qualifying request” in accordance with section 35ZA(11) of the Planning Act 2008.

In coming to this conclusion, the Secretary of State notes that the Proposed Project relates to the construction of post combustion carbon capture, storage, and transfer equipment; and the construction of hydrogen facilities and thus sits within one of qualifying infrastructure fields listed in section 35(2)(a)(i) – energy - of the Planning Act.’

2.2.9. One of the reasons given for by the Secretary of State for the Direction confirming the Proposed Scheme as a Project of National Significance, is that:

‘The carbon capture element of the Proposed Project would provide and support the decarbonisation of energy from waste derived CO₂ emissions in the UK, delivering over a million tonnes of CO₂ savings per annum, and supporting the achievement of a fully de-carbonised district heating network that crosses local authority areas.’

2.2.10. Consequently, the Carbon Capture Facility, proposed to support Riverside 1 and Riverside 2 is critical national priority infrastructure (CNP Infrastructure) as confirmed by NPS EN-1 at paragraph 3.5.8.

2.3. LOW CARBON INFRASTRUCTURE FROM CORY

2.3.1. Cory, the Applicant, is a leading resource management company with extensive river logistics; only the company headquarters are based within the city, at Dominion Street. It has been operating on the River Thames since the 1800s, evolving from a coal distribution company to exporting 565GWh of electricity in 2022, enough to power 195,000 homes¹³

2.3.2. Cory serves a vital public function, helping to make London cleaner and safer. In addition to its commercial customers, Cory is a trusted partner for several local authorities in London (serving a combined population of approximately 3 million people). It operates essential infrastructure that London relies heavily upon on a day-to-day basis.

2.3.3. Figure 2 presents the Applicant’s operational sites along the River Thames, from start to finish. Recyclable materials are sorted and segregated at the river based transfer stations and recycling facilities. What cannot be recycled, is transported by tug drawn barges along the Thames to Riverside, where it is processed through incineration with energy recovery. At Tilbury, metals are extracted from the incinerator bottom ash, which is processed for use as a replacement aggregate, ensuring that there is negligible residual waste from the ongoing waste processing.

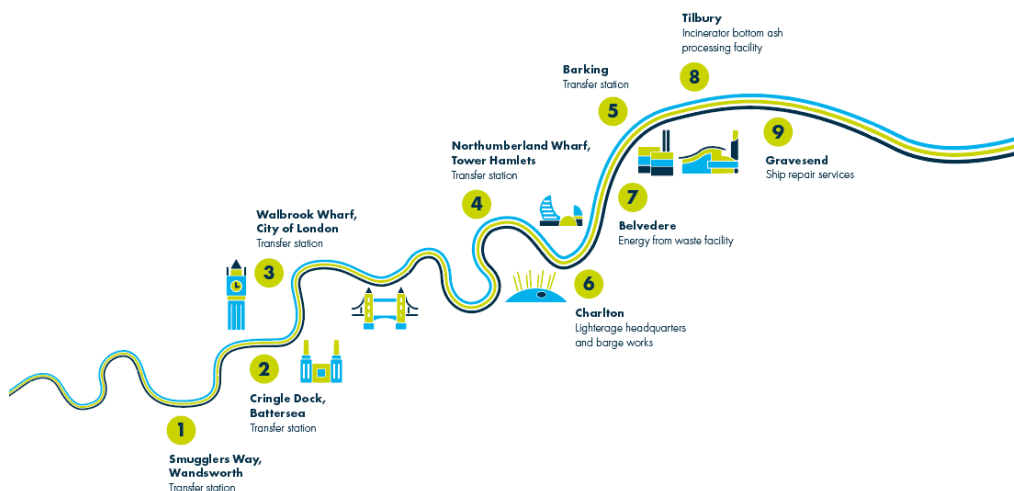


Figure 2: Cory Group, Operational Sites along the River Thames

RIVERSIDE

- 2.3.4. Riverside is the name given to the campus site located in Belvedere, at the northern end of Norman Road and on the southern bank of the River Thames. It is Cory's largest land holding, accommodating the Applicant's energy from waste (EfW) facilities Riverside 1 and Riverside 2 (under construction).
- 2.3.5. Both facilities are consented, and their operation is not a matter for deliberation within determination of Cory Decarbonisation Scheme DCO Application. Rather, they underpin the development such that their history and role is materially relevant to the context of the Proposed Scheme.
- 2.3.6. Riverside 1 gained consent under the section 36 of Electricity Act 1989 in June 2006. This has been amended several times, with the extant section 36 consent and deemed planning permission dated 21 December 2021.
- 2.3.7. The facility has been operating since 2011 and is located on the eastern side of the Riverside Campus. It can accept up to 850,000 tonnes per annum (tpa) of residual waste to generate up to 80.5 megawatts (MW) of electricity. In 2022, Riverside 1 processed 789,000 tonnes of residual waste and generated 565 gigawatt hours of electricity (sufficient to power 195,000 homes).
- 2.3.8. Riverside 2 gained consent through the Riverside Energy Park Order 2020, made by the Secretary of State on 9th April 2020. This has been amended by the Riverside Energy Park (Correction) Order 2021 which came into force on 10 March 2021 and the Riverside Energy Park (Amendment) Order 2023, which came into force on 17 February 2023. The facility is currently under construction and due to be operational in 2026, providing a typical annual throughput of 665,000 tonnes of residual waste and 1.3 rated electrical output of 76MW¹⁴
- 2.3.9. Together, Riverside 1 and Riverside 2 provide some 50% of all residual waste management capacity in London, with a total permitted capacity of 1,655,290tpa. In addition, there are three further energy recovery facilities within Greater London, which together provide some 1.54 million tonnes of capacity each year:
- Beddington ERF, Viridor, 350,000tpa;
 - South East London CHP, Veolia, 488,000tpa; and
 - North London Heat and Power Project, North London Waste Authority, 700,000tpa.
- 2.3.10. There is, approximately, a further 500,000 tonnes of biological treatment capacity for residual waste management located in London. These facilities use biological treatment to process the waste, generally creating a refuse derived fuel. This material requires further treatment to divert it from landfill.
- 2.3.11. The online tool, WasteDataInterrogator¹⁵, is held and maintained by the Environment Agency providing data for waste accepted and removed from sites with environmental permits for waste management activities. Reference to the WasteDataInterrogator confirms that 2,040,480 tonnes of waste were treated at energy from waste facilities

located in London in 2022 (the latest full year for which information is available). In that year, Riverside 1 accepted 789,295 tonnes, 39% of the total.

- 2.3.12. When Riverside 2 is operational, the EfW capacity provided by Cory will represent some 50% of all residual waste management capacity located in London. It is strategically important infrastructure.

SUSTAINABLE WASTE MANAGEMENT

- 2.3.13. Riverside 1 is operational, with Riverside 2 due to be operational in 2026. These energy recovery facilities treat residual waste; non-recyclable waste that remains after recycling or which cannot readily be recycled. Recovering energy from this residual waste means that disposal to landfill is avoided and it is instead used to generate a dispatchable, secure, affordable, partially renewable electricity.
- 2.3.14. In determining the applications for both Riverside 1 and Riverside 2, the contemporaneous Secretary of State had to conclude on whether the energy recovery facility delivered capacity at the right level of the waste hierarchy, as defined within the Waste Framework Directive (the 'WFD'). The WFD came into force on 12 December 2008, whilst it has been subsequently amended, the key principles of the overarching framework for the management of waste that it established across the European Union remain. It brought together existing elements of waste legislation and introduced a new approach to waste management that focused more strongly on the prevention of waste.
- 2.3.15. To this aim, Article 4(1) of the WFD introduced a new five point waste hierarchy, based on the priority order of:
- prevention (preferred option);
 - preparing for reuse;
 - recycling;
 - other recovery (e.g. energy recovery); and
 - disposal (i.e. landfilling or incineration without energy recovery).
- 2.3.16. Anyone who produces, imports, keeps, stores, transports, treats or disposes of waste must take all reasonable steps to ensure that the waste is managed appropriately and in line with the waste hierarchy. This duty of care is imposed under section 34 of the Environmental Protection Act 1990 and applies to anyone who acts as a broker and has control of waste. A separate duty of care applies to householders, although this is limited to taking all reasonable action to ensure their waste is transferred only to an authorised person. In England, the regulator for the duty of care is the Environment Agency.
- 2.3.17. Whilst Cory is one of the UK's leading resource management and energy recovery companies, it does not collect waste from waste producers. Residual waste is brought to it, under contract, by other companies that may either collect directly from the producer or handle waste that has been collected by another entity. It is also brought by local authorities, including LBB, which have collected waste from within their respective administrative areas. Most of this waste is delivered to the

Applicant's waste transfer facilities and then transported by river to Riverside.

Recyclate is taken to Cory's materials recycling facilities (MRF) in Wandsworth, where it is sorted and then sent to third parties for reprocessing into new products.

- 2.3.18. Riverside 1 and Riverside 2 are, under the terms of the WFD, 'recovery' operations, not disposal. They do not provide landfill capacity and incineration is undertaken with energy recovery. As defined at section 15(2) of the Planning Act 2008, Riverside 1 and 2 are generating stations, each with a generating capacity of more than 50MW electricity. Their fuel is residual waste, that which cannot practicably be reused or recycled, i.e. managed higher in the waste hierarchy.
- 2.3.19. That both facilities have gained the necessary consents to operate demonstrates that they are provided at the right level of the waste hierarchy, delivering national and local policy. The recognised benefits of EfW facilities such as Riverside 1 and 2 are that they divert waste from landfill and provide a baseload supply of partially renewable energy.
- 2.3.20. Methane is a highly potent greenhouse gas that is emitted from the decomposition of biodegradable waste disposed of to landfill. Methane emissions have reduced significantly as a result of the Landfill Tax (introduced 1996) reducing the amount of biodegradable waste being sent for disposal in landfill and of improved methane capture rates at landfill facilities.
- 2.3.21. However, emissions remain substantial, and the Global Methane Pledge makes clear the priority drive to further reduce emissions of this greenhouse gas. By diverting waste from disposal to landfill and avoiding the consequent release of methane, Riverside 1 and Riverside 2 reduce the contribution of the UK's waste management processes to exacerbating global climate change.
- 2.3.22. Consequently, EfW provides a carbon benefit to society due to the emissions it offsets or avoids in other sectors, for example:
- reducing methane emissions from landfill;
 - displacing emissions from energy that would be generated by fossil fuel power stations;
 - avoids the need to quarry virgin materials for aggregate that can be produced from incinerator bottom ash (IBA) and air pollution control residues; and
 - avoids the need to mine and process new metals by recovering metals from IBA.
- 2.3.23. Cory's Sustainability Report 2022 'Energising Futures'¹⁶ (provided at Appendix A) confirms (on page 46) that by '*diverting 790,000 tonnes of waste from landfill in 2022, we saved 258,000 tonnes of CO₂e.*' On page 12 the Report confirms that avoided CO₂e from other sources is also significant, including:
- 109,000 tonnes from power generation offset (for export use only, excludes power used on site);
 - 920 tonnes from the recovery of raw materials from IBA and Air Pollution Control residues, which substitute for construction aggregates; and

- 97,000 tonnes from the recovery of metals, offsetting new production.

SUSTAINABLE ENERGY SUPPLY

- 2.3.24. Both Riverside 1 and (from 2026) Riverside 2 are properly described as sources of partially renewable, dispatchable energy. NPS EN-3, the technology specific policy for renewable energy infrastructure, expressly includes energy from waste; the facilities are recognised in national policy as partially renewable energy generating stations, and consequently as achieving a positive carbon outcome in comparison to disposing waste to landfill.
- 2.3.25. Together, Riverside 1 and 2 will recover enough electricity equivalent to the needs of 371,000 homes; comparable to providing the electricity required by all the households in the London Boroughs of Bexley, Bromley and Greenwich (345,000).
- 2.3.26. To date, the focus on energy from Riverside 1 and Riverside 2 has been on electricity supply. However, the energy recovery facilities at Riverside are also intended as the baseload for a district heating network in the UK, primarily to homes in the London Borough of Bexley and Royal Borough of Greenwich (the Riverside Heat Network).
- 2.3.27. The role of heat networks as *'a crucial technology for decarbonising the UK's heating, particularly in dense urban areas'* (paragraph 3.4.27) is also made clear in NPS EN-1. *'They are uniquely able to unlock otherwise inaccessible sources of larger scale renewable and recovered heat such as waste heat and heat from waterway and mines. By using recovered heat from industry, geothermal energy and power generation, and accessing sources of ambient heat, heat networks can reduce overall production requirements for gas, as well as offering a way of storing and balancing energy needs overall. In parts of the UK, heat networks will represent a lower cost route to decarbonisation than alternatives such as repurposing the gas network for low carbon hydrogen.'* (paragraph 3.4.26)
- 2.3.28. CHP will play a key part of Cory's future sustainability actions. Both Riverside 1 and 2 are designed to be CHP Ready; they have the necessary equipment within the plant, simply requiring connection to a network. In its current design, the Riverside Heat Network is capable of diverting up to 28.6MWth of heat from Riverside 1, benefitting up to 25,000 homes and businesses. In July 2022, Vattenfall gained a hybrid consent (with both full and outline details approved, reference 22/00728/FUL) for a phased development to enable the district heat network pipeline to be installed.
- 2.3.29. Heat exchange is also an integral element of the Proposed Scheme – taking waste heat from the carbon capture process to integrate with that from Riverside 1 and Riverside 2 to optimise the Riverside Heat Network. The Riverside Heat is capable of scaling significantly and could utilise further heat from Riverside 2 and the Proposed Scheme. The Proposed Scheme has the potential to provide over 100MWth of additional heat, benefitting an even greater number of homes and businesses.

CONNECTION TO THE RIVER THAMES

- 2.3.30. Cory as a company is deeply rooted to the River Thames.

- 2.3.31. In 1896, William Cory and Son Ltd was formed, an amalgamation of eight companies in the coal trade. Most of the coal at this time was for industrial use although some was for households. With the outbreak of World War 1 in 1914, Cory staff formed a complete regiment of soldiers. This was the D Company, 6th Battalion of The Buffs, who were commonly known as Cory's Unit. Through the middle of the century, Cory modernised its coal and oil distribution operations, distributing 216 million gallons of oil annually by the early 1970s. A decade later, Cory sold its coal and oil distribution business and created Cory Waste Management.
- 2.3.32. In 1983, Cory Waste Management won a tender to transport and dispose of half a million tonnes of waste a year for the Greater London Council. This saw the launch of the containerised waste transport which thrives today. In 1996, work started on rebuilding the City of London's transfer station at Wallbrook Wharf. In 2002, Cory signed a 30-year contract with the Western Riverside Waste Authority securing the river operations. This included the funding of a five-year £5 million waste minimisation and awareness campaign and development of an 84,000 tonnes-per-annum Materials Recycling Facility. This contract continues today.
- 2.3.33. In 2006, following one of the longest public inquiry processes for a waste management facility in the country, permission was given for Riverside 1, which has been operational since 2011. In 2012, the Princess Royal opened Riverside 1 and Cory's four new tugs led the working boats section of the Queen's Diamond Jubilee Pageant.
- 2.3.34. In 2017, the London Borough of Tower Hamlets awarded Cory a contract to process up to 110,000 tonnes of waste from the Borough each year. This year also saw structural change in the company, having sold its collections, waste brokerage and landfill businesses, to focus on sustainable waste management and energy recovery on the Thames. The following year, Cory acquired Thames Ship Repair Services, an established shipping maintenance company, based in Gravesend, Kent. This acquisition allows Cory to maintain its fleet, as well as continuing to provide this service to third parties.
- 2.3.35. In January 2022, Cory acquired a new Waste Transfer Station and Materials Recycling Facility in Barking, expanding the company's riverside recycling and reprocessing capacity. In February 2024, Cory gained consent from London Borough of Barking (reference 23/0558/FULL) to modernise this asset including the demolition and replacement of Rippleway Wharf, involving upgrades to the existing river wall as well as dredging in order to facilitate the transfer of waste by barge via the River Roding. This river linked waste transfer station and MRF will be a key part of the support infrastructure delivering residual waste to Riverside 2.
- 2.3.36. Uniquely within the UK, residual waste delivered to Riverside is predominantly transported by river, removing at least 100,000 truck movements from the road each year. Middleton Jetty was purpose built alongside Riverside 1 and has sufficient capacity to operate with Riverside 2. Approximately 75% of throughput is brought to the Riverside Campus from the river-based waste transfer stations and recycling facilities located at Smugglers Way in Wandsworth, Cringle Dock in Battersea,

Walbrook Wharf in the City of London, Northumberland Wharf in Tower Hamlets and Debden Wharves in Barking. In 2022, Cory processed over 70,000 tonnes of recyclate.

- 2.3.37. The River Thames underpins Cory's operations. In 2022, it was used to move approximately 800,000 tonnes of material (including incinerator bottom ash) on waste laden barges, with tugs powered on biofuels.
- 2.3.38. Confirming their role within circular economy, in 2022 incinerator bottom ash from Riverside 1 (170,000 tonnes) was transported, via the River Thames, to a processing facility at Tilbury Docks. The quantity will be increased when Riverside 2 begins operation. The incinerator bottom ash is processed to split out the ferrous and non-ferrous metals for recycling elsewhere. The ash is separated into different sizes (typically 0-10mm; 10-40mm; and 40-150mm) and then blended to create a recycled aggregate that is used in the construction sector; currently, primarily as a replacement Type 1 material so avoiding the extraction of aggregate minerals.
- 2.3.39. In addition, 90,000 tonnes of air pollution control residues are taken off site and turned into carbon negative secondary aggregates.

CORY'S FUTURE OPERATIONS

- 2.3.40. Whilst these operations meet current climate change targets (diverting waste from landfill, exporting partially renewable baseload energy, contributing to the circular economy and using the river to minimise road movements) a step change is required to deliver future net zero carbon priorities.
- 2.3.41. Post-combustion carbon capture is that step change.
- 2.3.42. By 2030, Riverside 1 and 2 will provide partially renewable baseload electricity sufficient to power the equivalent of 371,000 homes – roughly comparable to the number of households in London Boroughs of Bexley, Bromley and Greenwich. However, these energy recovery facilities will also represent 99% of Cory's total carbon footprint¹⁷.
- 2.3.43. Carbon capture is the preferred process to divert flue gas emissions from energy recovery facilities, separating out the carbon dioxide and capturing it so that it is not emitted into the atmosphere. Once captured, the CO₂ will be compressed and liquified on site to make it ready for transport, by ship, to storage under the North Sea that will safely seal the carbon dioxide deep underneath the seabed.
- 2.3.44. When Cory installs carbon capture technology to its energy recovery facilities, both fossil and biogenic carbon will be captured, as waste from households and businesses is composed of materials which contain biogenic carbon such as paper, cardboard, and wood, as well as fossil carbon from materials containing plastics. By capturing the fossil carbon (circa. 50%), Cory's operations will achieve net zero, i.e. no new carbon will be released into the atmosphere. By also capturing the carbon from biogenic materials, Cory's operations will be carbon negative, because carbon that is part of the natural carbon cycle will be captured and stored, and thus permanently removed from the atmosphere.

- 2.3.45. The Proposed Scheme is a substantial project that utilises approximately 2.5 hectares of land that is designated Metropolitan Open Land, a Site of Importance for Nature Conservation and as a local nature reserve. The area of land taken within these designations has been minimised and a broad mitigation and enhancement strategy developed both to improve the quality of habitats on (and off) site and to enhance the quality and accessibility of open space in the vicinity of the development. Supplemented with renewed investment and job opportunities, the Proposed Scheme will deliver environmental, economic and social benefit at a local level.
- 2.3.46. Cory has been operating on the River Thames since 1785 and is well-established at Riverside. The Applicant has a credible history of delivering large-scale, strategic, sustainable infrastructure projects in this locality. Most pertinently, Riverside 1 and 2, providing capacity to recover partially renewable, dispatchable power through processing residual waste – their contribution to meeting national priority goals will be materially enhanced through the proposed carbon capture technology. The Proposed Scheme is another example of the Applicant taking an active role to deliver critical national priority infrastructure balanced with local sensitivities.

3. GLOBAL AND NATIONAL COMMITMENT TO DECARBONISATION

3.1. INTRODUCTION

'The implication of this path is clear: the utmost focus is required from government over the next ten years. If policy is not scaled up across every sector; if business is not encouraged to invest, if the people of the UK are not engaged in this challenge – the UK will not deliver Net Zero by 2050. The 2020s must be the decisive decade of progress and action.' (Path to Net Zero¹⁸, page 5)

- 3.1.1. This section of the PBR presents the relevant policy framework for consideration of the Proposed Scheme's benefits, from intergovernmental commitments through to national priorities, development plan policy, whilst also considering Cory's corporate strategy on carbon reduction.

3.2. GLOBAL COMMITMENTS

- 3.2.1. The **UN Framework Convention on Climate Change (UNFCCC)** ratified in 1992 by 197 countries, was the first global treaty to explicitly address climate change. It established the Conference of the Parties, or COP; an annual forum for international discussions aimed at stabilizing the concentration of greenhouse gases in the atmosphere. This process produced the Kyoto Protocol and the Paris Agreement.
- 3.2.2. The **Kyoto Protocol**, coming into force in 2005 was the first legally binding climate treaty. It required developed countries to reduce emissions by an average of 5 percent below 1990 levels and established a system to monitor countries' progress.
- 3.2.3. A decade later, came the **Paris Agreement**. Ratified in 2015, it is widely regarded as the most significant global climate agreement to date and requires all countries to set emissions reduction pledges. The Paris Agreement contains the current key goals of preventing the global average temperature from rising 2°C above preindustrial levels and pursuing efforts to keep it below 1.5°C.
- 3.2.4. It also drives the achievement, in the second half of the century, of global net zero emissions. This is achieved when the amount of greenhouse gases emitted equals the amount removed from the atmosphere; also known as being climate neutral or carbon neutral.
- 3.2.5. The **Intergovernmental Panel on Climate Change (IPCC)** is the United Nations body for assessing the science related to climate change. It prepares comprehensive Assessment Reports about the state of scientific, technical and socio economic knowledge on climate change, its impacts and future risks, and options for reducing the rate at which climate change is taking place.
- 3.2.6. The IPCC Summary for Policymakers¹⁹ concludes that there is no option not to decarbonise, to do so is likely to result in evermore cumulative and irreversible impacts:

‘Continued emissions will further affect all major climate system components, and many changes will be irreversible on centennial to millennial time scales and become larger with increasing global warming. Without urgent, effective, and equitable mitigation and adaptation actions, climate change increasingly threatens ecosystems, biodiversity, and the livelihoods, health and wellbeing of current and future generations.’ (paragraph C.1.3)

- 3.2.7. The solutions presented are strategic, and local too, offering the potential to deliver intergenerational environmental, economic and social change. Carbon capture and storage (CCS²⁰) is one of the solutions presented. Footnote 47 (page 22) recognises that global rates of CCS deployment are currently ‘far below those in modelled pathways limiting global warming to 1.5°C to 2°C. Enabling conditions such as policy instruments, greater public support and technological innovation could reduce these barriers.’

3.3. NATIONAL COMMITMENTS

THE CLIMATE CHANGE ACT AND COMMITTEE ON CLIMATE CHANGE

- 3.3.1. The **Climate Change Act 2008** committed the UK to reducing its greenhouse gas emissions by 80 per cent by 2050, compared to 1990 levels. It represented the first global legally binding climate change mitigation target set by a country.
- 3.3.2. The Climate Change Act 2008 sought to manage these reductions through a system of five- year carbon budgets, to be monitored and reviewed by the CCC. The CCC is an independent body established under the Climate Change Act 2008 to provide evidence based advice to the UK Government and Parliament on the mandatory carbon budgets.
- 3.3.3. The CCC has reported that the first and second carbon budgets were met, and the UK is on track to meet the third (2018–22). These early successes have been made primarily through substantial changes to electricity generation. However, delay in delivering real change in other sectors, principally transport means that the UK is not on track to meet the fourth (2023–27) or fifth (2028–32) budgets.
- 3.3.4. The **Climate Change Act 2008 (2050 Target Amendment) Order 2019** made targets more ambitious, making the UK the first major economy to commit to a ‘net zero’ target. The new target requires the UK to bring all greenhouse gas emissions to net zero by 2050.
- 3.3.5. The CCC recommended the 2050 target date for reaching net zero, in its landmark report Net Zero: The UK’s contribution to stopping global warming, published in May 2019.

Sixth Carbon Budget: The UK’s Path to Net Zero

- 3.3.6. The CCC’s Sixth Carbon Budget: The UK’s Path to Net Zero (Path to Net Zero) was published in December 2020 and enacted by the Government in June 2021. It covers

the period 2033 to 2037 and is the first budget to reflect the net zero target. In the Forward, Path to Net Zero states:

‘This is the most comprehensive advice we have ever produced. It is a blueprint for a fully decarbonised UK. A rich depiction of the choices before us in reaching the goal of net-zero greenhouse gases by 2050 at the latest.

Our recommended pathway requires a 78% reduction in UK territorial emissions between 1990 and 2035. In effect, it brings forward the UK’s previous 80% target by nearly 15 years. There is no clearer indication of the increased ambition implied by the Net Zero target than this. Our pathway meets the Paris Agreement stipulation of ‘highest possible ambition’. It is challenging, but also hugely advantageous, creating new industrial opportunities and ensuring wider gains for the nation’s health and for nature.

Some of our most important work is on the costs of the transition. Low carbon investment must scale up to £50 billion each year to deliver Net Zero, supporting the UK’s economic recovery over the next decade. This investment generates substantial fuel savings, as cleaner, more-efficient technologies replace their fossil-fuelled predecessors. In time, these savings cancel out the investment costs entirely – a vital new insight that means our central estimate for costs is now below 1% of GDP throughout the next 30 years.’ (page 5)

3.3.7. At page 22, Path to Net Zero summarises the many benefits recognised to result from making the transition and achieving the target: considerable opportunities for job creation, in both new industries and old; reduced energy bills alongside decarbonised energy supply; health and environmental improvement; and all with limited overall impact on public finance.

3.3.8. **Chapter 13: Greenhouse Gases** of the **ES (Document Reference 6.1)** assesses the likely significant effects of the Proposed Scheme on greenhouse gases and includes reference to both national and London focussed carbon budgets. Table 13-4 of that chapter presents the UK Carbon Budgets for fourth, fifth and sixth budget periods, covering years 2023 to 2037, reproduced in Table 2.1 below:

Table 3-1: UK Carbon Budgets

Carbon Budget Period	UK Carbon Budget (MtCO _{2e})
Fourth: 2023-2027	1,950
Fifth: 2028-2032	1,725
Sixth: 2033-2037	965

Source: Table 13-4 of **Chapter 13: Greenhouse Gases, ES (Volume 1) (Document Reference 6.1)**

3.3.9. The removal of carbon dioxide, through both nature based and engineered options including CCS is a priority. In Box 2.4 (page 90) the CCC confirms that *‘All of the pathways explored in our Sixth Carbon Budget advice see the use of carbon capture*

and storage (CCS) as a critical and cost-effective means of meeting the UK's 2050 Net Zero target.' It recognises that all energy from waste plants would need to use CCS and concludes:

'... CCS is essential to achieving Net Zero, at lowest cost, in the UK. The importance of CCS globally further underscores the urgency of progressing CCS plans in the UK.' (page 91)

3.3.10. Waste management is considered in the CCC's Path to Net Zero in more detail at chapter 9, which forecasts that *'By 2050, 30% of sector abatement comes from retrofitting CCS to the UK's fleet of energy-from-waste facilities.'* (page 187) The Balanced Pathway assesses CCS retrofitted to EfW facilities from 2040. The Tailwinds scenario *'combines the highest waste prevention and recycling rates, the earliest landfill ban dates, and the highest technical improvements at landfill, compost and wastewater treatment sites. CCS also starts being installed on EfW plants much earlier, from the late 2020s. The result is emission fall further and much faster than in the other scenarios.'* (page 190) The Proposed Scheme will play a material role in delivering the CCC's priority for early action.

3.3.11. Page 191 of the Sixth Carbon Budget concludes that:

'Our sector categorisation and analysis has expanded to now include energy-from waste plants, as well as abatement in the composting and wastewater sub-sectors. While some of these sub-sectors have much higher costs of abatement, our new estimates still suggest that reducing waste sector emissions is achievable as part of a cost-effective scenario towards the Sixth Carbon Budget and the UK's Net Zero objectives.'

Annual Progress Reports to Parliament 2023

3.3.12. The UK Committee on Climate Change (the CCC) has been preparing annual progress reports to Parliament since 2009. The 2023 Report to Parliament has been published in two volumes: Progress in Adapting to Climate Change (March 2023); and Progress in Reducing Emissions (June 2023). Progress in Reducing Emissions advises that in 2021, the waste sector produced around 25 MtCO_{2e}, or 6% of UK emissions (page 298).

3.3.13. **Progress in Reducing Emissions** identifies that a beneficial decrease in the disposal of waste to landfill is being achieved; and that energy from waste is the preferred form of residual waste management albeit that it contributes to climate change through CO₂ releases. The continued growth in the use of EfW facilities is presented as a contributory factor *'undermining efforts to reduce emissions within the waste sector'*; essentially through the continued incineration of fossil fuel based plastics and stagnation of recycling rates.

3.3.14. However, the recognised solution is to apply carbon capture, not to abandon energy recovery. EfW with CCS, with increase reuse and recycling is presented as the appropriate strategy to be pursued. Whilst the CCC continues its call for a moratorium on new capacity until an assessment of future need has been completed,

it also promotes ‘a more strategic approach to decarbonising the fleet’ including through carbon capture technology. (page 299)

- 3.3.15. On page 308, Progress in Reducing Emissions identifies that a ‘*much more strategic approach to delivering decarbonisation for the waste sector, alongside meeting recycling and waste reduction aims is needed.*’ Figure 12.1 identifies EfW plants fitted with CCS by 2035 as a ‘*required outcome*’ of policy, with the intention to reduce CO₂ emissions from EfW by 8% by 2035.
- 3.3.16. Table 12.1 recommends that Government continues ‘*to progress work on the carbon capture business models at pace and continue to support EfW plants to participate in future phases (recommendation R2022-304).*’
- 3.3.17. This recommendation is seeking rapid delivery of a core element of the Sixth Carbon Budget; which at Table 3.9 consistently seeks CCS fitted to all EfW facilities. The only difference between the scenarios considered with the Sixth Carbon Budget is timing. The Proposed Scheme would contribute to the delivery of the most ambitious scenario, ‘Tailwinds’, offering the potential for carbon capture at Riverside to commence from the late 2020s.
- 3.3.18. The recommendations recognise the continuing role of energy from waste, with improvements in emissions management, part of which will be delivered through the inclusion of EfW facilities into the Emissions Trading Scheme, due to commence from 2028²¹.

THE SECOND NATIONAL INFRASTRUCTURE ASSESSMENT 2023²²

‘Government should send a signal that unabated energy from waste is not a viable option long term ... There should be a ban on future energy from waste plants which are not already in the local or national planning system, and which do not have plans for carbon capture’ (The Second National Infrastructure Assessment 2023, page 128).

- 3.3.19. Published in October 2023, the Second National Infrastructure Assessment (NIA 2023) is informed by the Commission's core objectives to support sustainable economic growth across all regions of the UK, improve competitiveness, improve quality of life, and support climate resilience and the transition to net zero carbon emissions by 2050. The NIA 2023 emphasises the importance of the waste hierarchy but is also clear on recognising the ongoing role for energy from waste capacity, because not all materials are suitable for recycling and energy recovery generates lower emissions per tonne than disposal to landfill. It notes that:

‘All new plants need to be carbon capture ready to hit net zero’, adding ‘The creation of new energy from waste capacity without carbon capture would be both unnecessary and harmful’. The authors observe that ‘Government should send a signal that unabated energy from waste is not a viable option long term... There should be a ban on future energy from waste plants which are not already in the local or national planning system, and which do not have plans for carbon capture’ (NIA 2023, page 128).

‘Energy from biogenic waste – waste which emits carbon dioxide – combined with carbon capture and storage can also deliver negative emissions. Government should support the transition of the energy from waste sector to carbon capture and storage through its industrial decarbonisation programme’ (NIA 2023, page 129)

3.3.20. At Recommendation 37, the NIA 2023 is clear in its advice for future waste management priorities:

‘Government should create stronger incentives for investment in the recycling infrastructure that will be needed in the future, by banning future energy from waste capacity that does not include carbon capture and storage. Government should increase the landfill tax to ensure it remains more expensive than energy from waste. It should also limit demand for existing unabated energy from waste:

- *with immediate effect, local authorities should not sign or renew long term contracts for waste services relying on energy from waste without credible plans for carbon capture and storage*
- *local authorities with existing long term contracts should transition away from unabated energy from waste at end of contract, or at break clauses, where possible*
- *government should deliver its commitment to bring energy from waste into the Emissions Trading Scheme in 2028.’ (NIA 2023, page 129).*

3.3.21. This future vision for energy recovery capacity is part of the whole solution presented in NIA 2023, set within strong promotion increased electricity generation, reduced transport emissions, increased use of river networks and delivery of biodiversity net gain.

NET ZERO STRATEGY

3.3.22. In **‘Net Zero Strategy: Build Back Greener’** (2021) the UK government makes clear its aim to be a leader in the new Green Industrial Revolution, recognising that acting early will drive down the costs of the latest clean technology, enabling consumers to reap the benefits sooner. The Ten Point Plan is introduced on page 16, including a ‘package of 18 deals worth £9.7 billion that will support green growth and create an estimated 30,000 UK jobs.’

3.3.23. Government recognises that the exact technology and energy mix in 2050 cannot be known now, so the path to net zero will need to respond to the innovation and adoption of new technologies over time, with recognition of the role for carbon capture to meet demand across sectors and to enable the UK economy to be low carbon. Page 18 advises *‘So this strategy sets out our plans for reducing emissions from each sector of our economy, while hoovering up any remaining emissions with greenhouse gas removals – either natural, like trees, or technological, using carbon capture.’*

3.3.24. Further, the Net Zero Strategy recognises that action is urgent, with the aim to *‘fully decarbonise our power system by 2035 ... The transformation of the power sector will bring high skill, high wage job opportunities right across the UK.’* (page 19).

- 3.3.25. 'Powering up Britain' was published in 2023, providing more detail on how carbon budgets will be achieved on a policy-by-policy basis, and presenting the Government's intentions to enhance the country's energy security and deliver the UK's net zero commitments.
- 3.3.26. Powering Up Britain includes:
- Net Zero Growth Plan;
 - Energy Security Plan;
 - Government's response to the Independent Review of Net Zero (the Skidmore Review);
 - Government's response to the Climate Change Committee's 2022 progress report; and
 - Carbon Budget Delivery Plan.
- 3.3.27. Powering up Britain 2023⁸ includes an ambition to deliver four carbon capture, usage and storage (CCUS) clusters, capturing 20-30 MtCO₂/year across the economy, including 6 MtCO₂/year of industrial emissions, per year by 2030.
- 3.3.28. Assuming a nominal assumed throughput, this is equivalent to approximately 1.3Mt CO₂ per year. **Table 13-10 of Chapter 13: Greenhouse Gases of the ES (Document Reference 6.1.13)** demonstrates that based on the fully consented throughput of Riverside 1 and Riverside 2, the Proposed Scheme would result in net operational emissions savings of 1,620,603 tCO₂e, annually, relative to future baseline. With the potential to capture some 1.6MtCO₂ each year, the Proposed Scheme would contribute 8% to 5% of the desired capacity.

THE CARBON BUDGET DELIVERY PLAN

- 3.3.29. The Carbon Budget Delivery Plan (CBDP) was presented to Parliament pursuant to details of the Climate Change Act (2008) Section 14 in March 2023. It sets out how the policies in the Net Zero Strategy and other Government policies are projected (noting that these are not targets) to enable the Carbon Budgets to be met, including in particular how the introduction of Carbon Capture, including at EfW facilities, will enable the power and industry sectors to deliver the required savings for net zero to be delivered by 2050. The CBDP confirms that the Net Zero Strategy remains the right approach and emphasises the centrality of carbon capture to its delivery.
- 3.3.30. Paragraph 21 of the CBDP states government's intention to take a '*market-led approach to developing and deploying the technological shifts required to meet net zero.*' The Plan confirms that it will be adaptive and respond to change, including consumer behaviour, throughout the carbon budgets. Paragraph 31 advises '*Whilst the savings deliverable from the proposals and policies are likely to exceed Carbon Budgets 4 and will substantially overdeliver against Carbon Budget 5, there is a judgement to be made whether the policies identified at this stage are sufficient to enable Carbon Budget 6 to be met. We are confident that Carbon Budget 6 can be met through a combination of the quantified and unquantified policies identified.*'

3.3.31. At Appendix B, the CBDP presents the tables of proposals and policies and projected emissions savings, with quantified proposals and policies set out in Table 5. Number 1 policy is targets for emissions savings associated with power sector decarbonisation, seeking average annual savings (expressed in MtCO₂e) across the Carbon Budgets: 2.7 in CB4; 6.7 in CB5; and 11.2 in CB6. Becoming operational by 2030 would mean that the Proposed Scheme would contribute to meeting those early targets.

BRITISH ENERGY SECURITY STRATEGY

3.3.32. In April 2022, the **British Energy Security Strategy** was published, accelerating the Government's ambition to support the deployment of low carbon energy generation to ensure the supply of energy always remains secure, reliable, affordable and consistent with the UK's net zero target.

'All of these steps will accelerate our progress towards Net Zero, which is fundamental to energy security. By 2030, 95 per cent of British electricity could be low-carbon; and by 2035, we will have decarbonised our electricity system, subject to security of supply. This is a transition which reduces our dependence on imported oil and gas and delivers a radical long-term shift in our energy with cleaner, cheaper power, lower energy bills and thousands of high wage, high skilled new jobs.'

(Introduction, final paragraph)

3.3.33. The Strategy also presents the commitment to planning reform including strengthening the renewable energy national policy statements to reflect the importance of energy security and net zero power, providing the key policy context for the Cory Decarbonisation Project.

THE UK EMISSIONS TRADING SCHEME

3.3.34. The UK Emissions Trading System (UK ETS) is a cap-and-trade system that caps the total level of greenhouse gas emissions, creating a carbon market with a carbon price signal to incentivise decarbonisation. The UK ETS replaced the UK's participation in the European Union Emissions Trading Scheme (EU ETS) and went live on 1 January 2021. From March to June 2022 the UK Government (comprising the UK Government, the Scottish Government, the Welsh Government and the Department of Agriculture, Environment and Rural Affairs for Northern Ireland) consulted on proposals to develop the UK ETS, to include EfW facilities²³. On 3 July 2023, UK Government confirmed that EfW facilities would be included in the UK ETS from 2028, albeit with many aspects still to be confirmed²⁴

3.3.35. The consultation noted that EfW facilities emitted 6.2 MtCO₂e in 2019, representing c.1% of UK emissions, and that the mixed black bag waste treated at EfW facilities is typically assumed to be 50% from biogenic material and 50% from fossil material. The starting proposition in the consultation is for the UK ETS to cover the incineration of fossil material only (biogenic material would be excluded). This would mean that UK ETS allowances would only need to be acquired and surrendered in respect of fossil material incinerated at EfW facilities.

- 3.3.36. The objective of including EfW facilities in the UK ETS is to gradually reduce the amount of carbon emitted from these plants. When the UK ETS is implemented, waste operators will either allow their plant to continue to emit carbon to the atmosphere, in exchange for buying a licence for every marginal tonne emitted (the price of which is likely to be determined by supply and demand), or reduce the quantity of carbon emitted to the atmosphere (by accepting less waste into operational plant). In this way, operators are incentivised to reduce emissions, leading to environmental benefits and helping to meet net zero challenges.
- 3.3.37. The Applicant's approach is to progress with the construction and operation of post-combustion carbon capture technology within a carefully considered development proposal. The proposed carbon capture infrastructure represents a substantial investment by Cory to ensure it remains at the forefront of sustainable waste management. This is in line with the CCC's priorities.

CARBON CAPTURE, USAGE AND STORAGE, A VISION TO ESTABLISH A COMPETITIVE MARKET

- 3.3.38. On 20 December 2023, the UK Government published 'Carbon Capture, Usage and Storage A Vision to Establish a Competitive Market' (its 'CCUS Vision') a plan that *'sets out how the UK will transition from early projects backed by government support to becoming a competitive market in this area by 2035, meaning UK companies will compete to build carbon capture facilities and sell their services to the world.'*
- 3.3.39. This is expected to boost the economy by £5 billion a year by 2050 – making the UK a pioneer in this technology while meeting its net zero commitments in a reasonable way that eases the financial burden on taxpayers.
- 3.3.40. The Ministerial Foreword identifies that:
'Carbon Capture, Usage and Storage (CCUS) will be a game-changer for the UK's energy transition. With capacity to safely store up to 78 billion tonnes of CO₂ under our seabed – one of the largest such capacities in the world – we plan to develop CCUS into a highly valuable national asset that will help us reach net zero and boost our economy by up to £5 billion per year by 2050.
We have already decarbonised more than any other major economy since 1990, reducing emissions by nearly half while growing our economy by two thirds. Over the past 13 years, for example, the amount of electricity coming from renewables has increased fivefold. But CCUS gives us new options, such as helping heavy industry to be part of our net zero future, and the UK offering CO₂ storage services to other countries. We have the unique geology, infrastructure and know-how to lead the world in capturing and permanently storing carbon. On top of the environmental benefits, we will capitalise on the economic opportunities of carbon capture and storage.'
- 3.3.41. Chapter 1 considers the opportunities of a new UK CCUS sector, concluding (page 11) that it could be worth £100 billion to local manufacturing employers. Beyond economic advantages, CCUS is recognised as critical to achieving net zero:

The Climate Change Committee (CCC), the UK's independent advisor on climate change, has said that CCUS is a 'necessity, not an option' for the transition to net zero.²⁵ In their latest progress report, the CCC said that CCUS will need to play a role in the decarbonisation of many sectors: notably industry, electricity generation and fuel supply.²⁶ Furthermore, the International Energy Authority (IEA) has said that CCUS is an essential component of a global transition to net zero, with an estimated 1 billion tonnes of storage capacity being required globally by 2030 for a net zero pathway consistent with 1.5 degrees.²⁷

CCUS is essential for industry to decarbonise. In the future net zero world, we will still need materials such as cement, steel, and chemicals. For many of these sectors, CCUS is currently the only viable route to decarbonise at the scale required for us to meet our targets.

CCUS is critical for energy security. By using CCUS, we can build more dispatchable gas-fired power plants and Bioenergy with CCUS power plants (power BECCS), complementing renewable generation to ensure energy security that aligns with our net zero ambitions.

...

CCUS is also needed to reduce emissions from our residual waste sector. There are government policies in place aimed at reducing waste by preventing waste from being produced in the first instance and by increasing recycling and reuse. For the remaining residual waste, energy generation and the application of CCUS to capture the carbon that would otherwise be emitted into the atmosphere are ways to reduce the impact of managing and utilising the waste we do produce.' (page 12)

- 3.3.42. Chapter 2 of CCUS Vision sets out how Government intends to deliver its vision, recognising that it will 'require close collaboration between government and the private sector to create a new UK CCUS sector.

Phase 1 – Market Creation: Getting to 20 to 30 megatonnes per annum (Mtpa) CO₂ by 2030

During Phase 1, government's role is to provide the leadership necessary to create an enabling environment for the sustainable long-term deployment of CCUS. The UK aims to have four CCUS clusters by 2030, each of which will contain projects spanning multiple capture sectors (subject to the successful conclusion of negotiations). This will put us on a course to meet our net zero targets and our sectoral decarbonisation ambitions. In this phase the government has selected or intends to select clusters and capture projects through the CCUS cluster sequencing process, with government funding allocated via bilateral negotiations. The cluster approach is intended to spread the cost, as well as making the transport infrastructure more cost efficient as it can be used by a larger number of industrial emitters.'

(page 20)

- 3.3.43. In addition to establishing carbon capture clusters (linking emitters and storage providers) the CCUS Vision also addresses the transport or capture CO₂. Page 41 of the CCUS Vision identifies that there 'will be a requirement for multiple forms of non-

pipeline CO₂ transport, which will enable flexible and open access CO₂ transport networks.’ Figure 6 provides shipping as one example of non-pipeline transport (NPT) recognised as ‘capable of carrying significant volumes of CO₂ over long distances’, though also requiring additional infrastructure.

3.3.44. Page 42 recognises that, to date, the government has focussed on pipeline transmission, but that:

‘as around half of industrial emissions are outside of the main industrial clusters, NPT options will be required to help decarbonise those emitters which are not able to use pipeline transportation (because they are in dispersed areas of the UK, or the cluster they are connected to does not have a nearby offshore storage site). NPT could also help improve store resilience and transport future international CO₂.’

3.3.45. The need to meet net zero carbon by 2050 is made clear in global, national, regional, and local policy as well as in Cory’s own policy statements. Climate change is the world’s greatest challenge, with the only solution being decisive, urgent and effective action.

DRAFT STRATEGY AND POLICY STATEMENT FOR ENERGY POLICY IN GREAT BRITAIN²⁸

3.3.46. In February 2024, DESNZ released the Draft Strategy and Policy Statement for Energy Policy in Great Britain (Draft Energy Policy 2024), presented to Parliament pursuant to section 135(8) of the Energy Act 2013. This is the first time this power has been used, which is a demonstration of the intent of government to deliver its strategic policies for energy supply.

3.3.47. Page 12 introduces the role of the NESO, the National Energy System Operator, ‘a central body that is able to weigh up and advise on the impacts and trade-offs across energy sectors and plan and co-ordinate our energy system from a more strategic, whole system perspective.’

3.3.48. On page 7, Draft Energy Policy 2024 states that government ‘expects private sector investment of around £100 billion in the energy sector in the period to 2030, with the expectation that this will support up to 480,000 jobs in 2030⁴. Through the effective pursuit of their statutory objectives, undertaken with reference to this SPS, Ofgem and NESO will help grow the economy, facilitate the net zero transition, and keep bills down for energy consumers, while maintaining a secure supply of energy.’

3.3.49. Having set out the roles and responsibilities for government and its regulators, Draft Energy Policy 2024 is focussed on three chapters; again, making clear government’s priorities for energy supply:

- Enabling Clean Energy and Net Zero Infrastructure
- Ensuring Energy Security and Protecting Consumers
- Ensuring the Energy System is Fit for the Future

3.3.50. Within the first of these chapters, Draft Energy Policy 2024 clearly states that ‘As set out in the Net Zero Growth Plan, investment is the key to delivering our energy

security and carbon targets, and seizing the economic benefits of the transition to net zero.’ (page 18)

- 3.3.51. On page 22, it identifies heat pumps and heat networks as *‘the primary means for decarbonising heating over the next decade and play a key role in all 2050 scenarios.*

...

Heat networks are a crucial aspect of the path towards decarbonising heat and reaching net zero by 2050. In the right circumstances, they can reduce bills, support local regeneration and be a cost-effective way of reducing carbon emissions from heating.’

- 3.3.52. On page 22, Draft Energy Policy 2024 also reference carbon capture usage and storage (CCUS), stating that:

‘Carbon dioxide transport and storage networks will be the enabling infrastructure for carbon capture from a range of potential sources, including power plants, industrial facilities, low carbon hydrogen production, carbon capture from energy from waste, carbon capture from bioenergy and potentially direct air capture.

Supporting the development and deployment of CCUS in the UK is a government priority and as such government is committed to supporting the deployment of four CCUS clusters by 2030. The Hynet Cluster and the East Coast Cluster were announced as Track 1 Clusters in October 2021. In July 2023, government announced that the Acorn and Viking carbon dioxide transport and storage systems were being taken forward in the Track 2 process. CCUS can play a key role in meeting the UK’s 2050 net zero target and supporting the low-carbon economic transformation of our industrial regions, creating new high value jobs and levelling up the economy. The Climate Change Committee have described CCUS as a ‘necessity, not an option’ for the transition to net zero.

...

Users of the carbon dioxide transport and storage networks are expected to include users from across the energy sector, but also other sectors, in particular industrial facilities. Given this broader scope, the Energy Act 2023 provides for a CCUS Strategy and Policy Statement to be designated by the Secretary of State, which must take into account any strategy and policy statement designated under section 131 of the Energy Act 2013 in respect of energy policy. Government will be publishing a CCUS Vision Statement by the end of 2023 setting out its view on the future development of CCUS.

- 3.3.53. It is clear that government is committed to delivering carbon capture technology and heat networks, in achieving its goals for net zero. It is also clear that it expects private investment to deliver these goals.

3.4. SUMMARY OF GLOBAL AND NATIONAL DECARBONISATION COMMITMENTS

- 3.4.1. The UK has a world-leading, national mandatory target to bring all greenhouse gas emissions to net zero by 2050.
- 3.4.2. At both the global and the national level, these are key priorities; they can only be achieved through rapid, deep, intergenerational solutions delivered strategically and by all. CCS provides the lowest cost solution to decarbonisation across the UK, achieving net zero by 2050 and delivering the environmental, economic and social outcomes sought in international and national commitments.
- 3.4.3. The NIA 2023 highlights the role of waste management in achieving these goals. Energy from waste, with CCS, is recognised as one part of the affordable infrastructure required to deliver net zero.
- 3.4.4. The Proposed Scheme is a project of national significance, contributing to the urgent step change that is necessary nationally and globally.

4. POLICY DRIVEN DECARBONISATION

4.1. INTRODUCTION

The implication of this path is clear: the utmost focus is required from government over the next ten years. If policy is not scaled up across every sector; if business is not encouraged to invest, if the people of the UK are not engaged in this challenge – the UK will not deliver Net Zero by 2050. The 2020s must be the decisive decade of progress and action. (Path to Net Zero, page 5).

- 4.1.1. The CCC is unambiguous in its advice to Government: that policy needs to drive private investment and social commitment to delivering decarbonisation in the UK.
- 4.1.2. As a project of national significance, there are four planning documents of principal relevance to the Proposed Scheme in terms of its focus on carbon emissions reduction and positive contribution to addressing the global climate challenge:
- Overarching National Policy Statement for Energy (EN-1), DESNZ, January 2024 (NPS EN-1);
 - National Policy Statement for Renewable Energy Infrastructure (EN-3), DESNZ, January 2024 (NPS EN-3);
 - London Plan, the Spatial Development Strategy for Greater London, March 2021 (the London Plan); and
 - Bexley Local Plan, April 2023 (the Bexley Local Plan).

4.2. NATIONAL POLICY STATEMENTS

INTRODUCTION

- 4.2.1. National Policy Statements are government documents that set out the objectives and criteria for the development of nationally significant infrastructure in different sectors. They undergo a democratic process of public consultation and parliamentary scrutiny before being designated. The NPS provide the framework within which Examining Authorities make their recommendations to the Secretary of State.
- 4.2.2. Along with others of relevance to energy infrastructure, the two NPS of relevance to the Proposed Scheme were designated in January 2024 and consequently are the most up to date expressions of Government policy for this sector, including that for EFW facilities.

OVERARCHING NATIONAL POLICY STATEMENT FOR ENERGY POLICY (EN-1) STATEMENT (NPS EN-1)

- 4.2.3. NPS EN-1 robustly reaffirms the Government's priority to deliver a secure, reliable and affordable energy system. These policy priorities from 2011 are augmented to include meeting the net zero emissions target by 2050. *'This energy NPS considers the large-scale infrastructure which will be required to ensure the UK can provide a secure, reliable, and affordable supply of energy, while also meeting our decarbonisation targets.'* (paragraph 2.1.6)

- 4.2.4. Paragraph 2.2.1 makes clear the Government’s commitments to date, recognising that in 2019, the UK became the first major economy to legislate for a 2050 net zero GHG emissions target. In April 2021, the government legislated for the sixth carbon budget (CB6), which requires the UK to reduce GHG emissions by 78 per cent by 2035 compared to 1990 levels.’
- 4.2.5. NPS EN-1 confirms that the combined objectives for the UK’s energy system (secure, reliable, affordable, consistent with net zero by 2050 target):
- ‘will require a step change in the decarbonisation of our energy system.’* (paragraph 2.3.3)
- and
- ‘the infrastructure needed to capture, transport and store carbon dioxide. The requirement for new energy infrastructure will present opportunities for the UK and contributes towards our ambition to support jobs in the UK’s clean energy industry and local supply chains.’* (paragraph 2.3.4)
- 4.2.6. The Cory Decarbonisation Project incorporates the very infrastructure necessary to capture, transport and store the carbon dioxide released by energy recovery at Riverside.
- 4.2.7. Part 2.4 of NPS EN-1 recognises that greenhouse gas emissions from the power sector have more than halved in the period 2011 to 2019; primarily as a result of the substantial increase in renewable generation (to which energy from waste facilities contribute) and consequent phasing out of coal.
- 4.2.8. A key mechanism for achieving increasing deployment of low carbon generation was through government financing mechanisms, notably Contract for Difference. Using a comparable model, Government is now developing business models to incentivise the deployment of carbon capture technology, including transport and storage networks *‘stimulating a pipeline of projects and building a UK supply chain.’* (paragraph 2.4.5) Paragraph 2.4.7 references the Industrial Carbon Capture Business Model, for users, such as energy from waste facilities, for which there is no other option to deep decarbonisation.
- 4.2.9. A secure, reliable, affordable and decarbonised energy system is important as one element of sustainable development, *‘because the way energy infrastructure is deployed affects the well-being of the environment, society and economy, for both current and future generations.’* (paragraph 2.6.2)
- 4.2.10. Critically, in terms of decision making for the Cory Decarbonisation Project:
- ‘Whatever incentives, rules or other signals developers are responding to, the government believes that the NPSs set out planning policies which both respect the principles of sustainable development and can facilitate, for the foreseeable future, the consenting of energy infrastructure on the scale and of the kinds necessary to help us maintain safe, secure, affordable and low carbon supplies of energy.’* (paragraph 2.6.5)

- 4.2.11. At Part 3, the NPS confirms, again, the significant and urgent need for a range of new energy infrastructure, and for this infrastructure to ensure secure, reliable, affordable and decarbonised energy supply. (paragraphs 3.2.1 and 3.2.2) It is also clear that industry and private investment is expected to bring forward such projects, within the strategic framework set by government. Consequently, there is no limit set on different technologies. (paragraph 3.2.3)
- 4.2.12. In determining all applications for development consent, EN-1 notes that the Secretary of State should recognise: *that the need for the infrastructure is both demonstrated and urgent; that substantial weight should be given to this recognised need; and that there is no requirement to separately assess the contribution made to meeting this need by each individual project.* (paragraphs 3.2.5 to 3.2.7)
- 4.2.13. Riverside 1 and Riverside 2 are energy generating stations that have already gained consent to contribute to secure, reliable, affordable and decarbonised energy supply. The Proposed Scheme is the carbon capture plant being brought forward to decarbonise those energy generating stations, making an early contribution to government's ambition to capture 20-30Mt of CO₂ per year by 2030.
- 4.2.14. From paragraph 3.3.13, NPS EN-1 focusses on the delivery of fair and affordable decarbonised energy infrastructure. This policy imperative is aligned to the CCC's Path to Net Zero which recognises CCS as the low cost solution to energy supply. Applying CCS to energy recovery at Riverside is delivering policy. Paragraph 3.3.19 recognises the diverse mix of energy supply that will be required, and from paragraph 3.3.37 policy is made explicit to energy from waste facilities; demonstrating that facilities such as Riverside 1 and 2 remain a part of the infrastructure sought.
- 4.2.15. The role of energy recovery, treating residual waste to divert it from landfill and generating energy is set out at paragraph 3.3.41. Avoiding landfill results in a lower greenhouse gas impact, whilst the recovered energy is partially renewable. The policy also recognises that there is fossil-based carbon within the residual waste, alongside the biogenic carbon, and CCS provides the technology to address this. Paragraph 3.3.59 confirms that energy from waste, addressed within the NPS; is one part of the required solution.

'All the generating technologies mentioned above are urgently needed to meet the government's energy objectives by:

- *providing security of supply (by reducing reliance on imported oil and gas, avoiding concentration risk and not relying on one fuel or generation type)*
- *providing an affordable, reliable system (through the deployment of technologies with complementary characteristics)*
- *ensuring the system is net zero consistent (by remaining in line with our carbon budgets and maintaining the options required to deliver for a wide range of demand, decarbonisation and technology scenarios, including where there are difficulties with delivering any technology).'* (paragraph 3.3.59)

- 4.2.16. So too is the need for CCS demonstrated and urgent:

‘There is an urgent need for new carbon capture and storage (CCS) infrastructure to support the transition to a net zero economy.’ (paragraph 3.5.1)

‘The Committee on Climate Change Committee states CCS is a necessity not an option. ...’ (paragraph 3.5.2)

‘To support the urgent need for new CCS infrastructure, CCS technologies, pipelines and storage infrastructure are considered to be CNP infrastructure.’ (paragraph 3.5.8)

4.2.17. Paragraph 3.5.9 states that the *‘alternatives to new CCS infrastructure to deliver net zero by 2050 are limited.’* It goes on to recognise the benefits that can be gained from low carbon hydrogen production, improving energy efficiency and electrification of heat. *‘However, these alternatives are limited as many emissions are process emission. CCS therefore has an essential role to play, either on its own or in combination with measures such as electrification and fuel switching.’*

4.2.18. This position is made clear at paragraph 4.1.3:

‘Given the level and urgency of need for infrastructure of the types covered by the energy NPSs set out in Part 3 of this NPS, the Secretary of State will start with a presumption in favour of granting consent to applications for energy NSIPs. That presumption applies unless any more specific and relevant policies set out in the relevant NPSs clearly indicate that consent should be refused.’

4.2.19. NPS EN-1 paragraph 4.1.5 sets out the particular criteria that the Secretary of State should take into account when weighing any adverse impacts against a project’s benefits:

- *its potential benefits including its contribution to meeting the need for energy infrastructure, job creation, reduction of geographical disparities, environmental enhancements, and any long-term or wider benefits*
- *its potential adverse impacts, including on the environment, and including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce, mitigate or compensate for any adverse impacts, following the mitigation hierarchy.*

4.2.20. Paragraph 4.1.6 advises that the Secretary of State should take into account environmental, social and economic benefits and adverse impacts, at national, regional and local levels, which may be identified in the relevant NPS or elsewhere. Paragraph 4.1.7 references the advice for applicants *‘to mitigate a particular impact as far as possible’* but where the Secretary of State considers any residual adverse impact remains, this effect should be weighed against the benefits of the proposed development.

4.2.21. Paragraph 4.1.7 concludes:

‘For projects which qualify as CNP Infrastructure, it is likely that the need case will outweigh the residual effects in all but the most exceptional cases. This presumption, however, does not apply to residual impacts which present an unacceptable risk to, or interference with, human health and public safety, defence, irreplaceable habitats or unacceptable risk to the achievement of net zero. Further, the same exception applies

to this presumption for residual impacts which present an unacceptable risk to, or unacceptable interference offshore to navigation, or onshore to flood and coastal erosion risk.'

- 4.2.22. Section 4.2 of NPS EN-1 establishes policy relevant to critical national priority infrastructure (CNP Infrastructure). Recognising the urgent and demonstrable need for such infrastructure, the Proposed Scheme is confirmed to be CNP Infrastructure and consequently the policy provisions of section 4.2 apply.
- 4.2.23. Paragraphs 4.2.10 and 4.2.11 make clear that this level of policy support does not negate the need to follow the requirements of the NPS, or any other relevant legal and regulatory requirements. In particular *'applicants must apply the mitigation hierarchy and demonstrate that it has been applied. ... Applicants should demonstrate that all residual impacts are those that cannot be avoided, reduced or mitigated.'*
- 4.2.24. Having followed this approach, paragraph 4.2.16 confirms that the starting point for the Secretary of State's decision making will be *'that such infrastructure is to be treated as if it has met any tests which are set out within the NPSs, or any other planning policy, which requires a clear outweighing of harm, exceptionality or very special circumstances.'*
- 4.2.25. This includes, as confirmed at paragraph 4.2.17, the starting point for the Secretary of State will be that the Proposed Scheme does provide the very special circumstances required to justify development in the Green Belt, which applies to the Metropolitan Open Land designation found within the Order Limits.
- 4.2.26. At section 4.9 NPS EN-1 addresses CCS, making clear that
- *'Carbon capture technologies offer the opportunity to decarbonise the electricity system whilst maintaining security of supply, providing reliable low carbon generation capacity.*
 - *The government has made its ambitions for CCS clear - committing to providing funding to support the establishment of CCS in at least four industrial clusters by 2030 and supporting, using consumer subsidies, at least one privately financed gas CCS power station in the mid-2020s. In October 2021, the government published its Net Zero Strategy which reaffirmed the importance of deploying CCUS to reaching our 2050 net zero target and also outlines our ambition to capture 20-30Mt of CO₂ per year by 2030.'* (paragraphs 4.9.4 and 4.9.5)
- 4.2.27. As set out in more detail at paragraph 5.2.15, the UK Government is already delivering on that commitment, providing updates on its CCUS Cluster Sequencing programme.
- 4.2.28. At part 5, NPS EN-1 presents the generic impacts that arise from development of all types of energy infrastructure, here they are not specific to any development type. However, compliance with these tests will be a key part of the Secretary of State's decision making. These are addressed, as relevant and in some detail, in the **Planning Statement (Document Reference 5.2)** and **Environmental Statement (Document Reference 6.1)**.

- 4.2.29. In summary, therefore, NPS EN-1 clearly sets out the need and benefits of new CCS infrastructure as a critical national priority.

NATIONAL POLICY STATEMENT FOR RENEWABLE ENERGY INFRASTRUCTURE (EN-3) (NPS EN-3)

- 4.2.30. NPS EN-3 opens with the repeated recognition that *‘there is an urgent need for new electricity generating capacity to our energy objectives.’* Paragraph 1.1.3 references the Net Zero Strategy to reconfirm the Government’s commitment to ensure that *‘by 2035, all our electricity will come from low carbon sources, subject to security of supply, whilst meeting a 40-60% increase in demand.’* The British Energy Security Strategy *‘accelerates this plan and sets out a series of bold commitments to deliver a more independent, more secure energy system and support consumers to manage their energy bills. More low-cost renewables on the system will reduce household electricity bills and help to increase security of supply through domestic energy production.’* (paragraph 1.1.4)
- 4.2.31. NPS EN-3 is relevant to the Proposed Infrastructure only so far as to demonstrate the continued, urgent, need for the energy generating infrastructure that the Proposed Scheme helps to support. Paragraphs 2.7.1 and 2.7.2 confirm:
- ‘The combustion of biomass for electricity generation plays an important role in meeting the UK’s energy needs and supports the decarbonisation of the sector. It also has a potentially significant role in supporting delivery towards the UK’s net zero target when combined with carbon capture and storage.’*
- In accordance with the waste hierarchy Energy from Waste (EfW) also plays an important role in meeting the UK’s energy needs. Furthermore, the recovery of energy from the combustion of waste forms an important element of waste management strategies in both England and Wales.’*
- 4.2.32. Both Riverside 1 and Riverside 2 are demonstrably the type of development sought by NPS EN-3; they both already benefit from the consents required for their construction and operation.
- 4.2.33. Paragraph 2.7.5 advises that biomass is material of recent biological origin derived from plant or animal matter. The third bullet confirms that this includes *‘biomass from biodegradable waste and other similar materials including sewage sludge, animal manure, waste wood from construction, the biodegradable fraction of mixed municipal waste, and food waste that would otherwise be disposed of in landfill.’*
- 4.2.34. The Proposed Scheme does not generate energy, but is specifically designed to address the carbon dioxide emissions that result from the operation of Riverside 1 and 2. This is the outcome being sought by NPS EN-3,
- 4.2.35. From paragraph 2.7.14, NPS EN-3 consider carbon capture readiness (CCR). It confirms, at paragraph 2.7.17, that *‘CCR is currently relevant to proposed biomass plant at or over 300MW of generating capacity, but not to EfW plants.’* Cory is taking a lead position in the waste management industry, proposing post-combustion carbon capture on its energy recovery facilities.

4.3. DEVELOPMENT PLAN POLICY, LOCAL STRATEGY AND ANALYSIS

INTRODUCTION

- 4.3.1. At paragraph 1.1.2. NPS EN-1 confirms that ‘this NPS, combined with any technology specific energy NPS where relevant, provides the primary policy for decisions by the Secretary of State.’ Paragraph 1.1.3 advises that the Secretary of State ‘*must also have regard to any local impact report submitted by a relevant local authority, any relevant matters prescribed in regulations, the Marine Policy Statement (MPS) and any applicable Marine Plan, and any other matters which the Secretary of State thinks are both important and relevant to the planning decision.*’
- 4.3.2. The Local Impact Report is considered likely to reflect upon the local development plan, relevant policies from which, are presented below. These focus on the matters of need as identified in the NPS.

THE LONDON PLAN

- 4.3.3. The Spatial Development Strategy for Greater London, the ‘London Plan’, was adopted in March 2021. It recognises the importance of climate change and delivering net zero development, but contains no policy specific to carbon capture projects.
- 4.3.4. Policy SI2 does present the policy priorities for minimising greenhouse gas emissions, requiring major development to be net zero carbon, including ‘*reducing greenhouse gas emissions in operation...*’. Paragraph 9.2.1 confirms that:
‘The Mayor is committed to London becoming a zero-carbon city. This will require reduction of all greenhouse gases, of which carbon dioxide is the most prominent. London’s homes and workplaces are responsible for producing approximately 78 per cent of its greenhouse gas emissions. If London is to achieve its objective of becoming a zero-carbon city by 2050, new development needs to meet the requirements of this policy. Development involving major refurbishment should also aim to meet this policy.’
- 4.3.5. Whilst paragraph 9.3.8 recognises the need for increasing the amount of renewable energy and confirms support for ‘*innovative low- and zero- carbon technologies ...*’. At paragraph 9.8.14, the London Plan places a specific carbon target on energy from waste facilities, such as Riverside 1 and Riverside 2. Both facilities have to date met, and exceeded, that target as relevant to the plant. The Proposed Scheme has the potential to enable those facilities to be negative carbon.
- 4.3.6. Policies GG2 and GG3 are interrelated as they make clear the priority for optimal land use that is connected in its purpose. The Cory Decarbonisation Project will ‘*intensify the use of land*’ at Riverside, ‘*promoting a higher density of development.*’ (policy GG2,A) It will also deliver ‘*improved access to and quality of green spaces*’ (policy GG3,G) so contributing positively to enhancing London’s open spaces, promoting urban greening and delivering biodiversity net gain (policy GG2,F) and to the creation of a healthy city (policy GG2).

- 4.3.7. The London Plan recognises that the right infrastructure is required to help business succeed across London, with investment focussed in the Opportunity Areas identified as important elements of growing a good economy in the capital. (paragraphs 1.5.3 and 1.5.4) The importance of Opportunity Areas is confirmed at paragraph 2.0.4:
- ‘... The London Plan has a clear focus on delivery – something that will require all stakeholders to work together to unlock sites and drive the right sort of development. Infrastructure is key to this delivery and will require major investment in transport, with Opportunity Areas clustered into growth corridors; and proper planning of utilities and communications capacity and the social infrastructure that supports the day-to-day lives of Londoners, well in advance of new development. ...’*
- 4.3.8. The Cory Decarbonisation Project is located in the Bexley Riverside Opportunity Area, in which *‘industrial and logistics uses will continue to play a significant role.’* (paragraph 2.1.56)
- 4.3.9. The importance of these industrial and logistics uses is set out at paragraph 6.4.1:
- ‘London depends on a wide range of industrial, logistics and related uses that are essential to the functioning of its economy and for servicing the needs of its growing population, as well as contributing towards employment opportunities for Londoners. This includes a diverse range of activities such as food and drink preparation, creative industry production and maker spaces, vehicle maintenance and repair, building trades, construction, waste management including recycling, transport functions, utilities infrastructure, emerging activities (such as data centres, renewable energy generation and clean technology) and an efficient storage and distribution system which can respond to business and consumer demands.’*
- 4.3.10. Policy GG5,H makes explicit the need, for all those involved in planning and development, to *‘recognise and promote the benefits of a transition to a low carbon circular economy to strengthen London’s economic success.’*
- 4.3.11. This theme is continued into the next section of the London Plan, noting (at paragraphs 1.6.1 and 1.6.2)
- ‘... A responsible city must limit its impact on climate change while adapting to the consequences of the environmental changes that human behaviour is already creating. ...’*
- All cities must face up to the reality of climate change and the need to limit their future contribution to this major global problem. This London Plan will require developments to contribute towards London’s ambitious target to become zero-carbon by 2050 by increasing energy efficiency, including through the use of smart technologies, and utilising low carbon energy sources.’*
- 4.3.12. Policy GG6 confirms London’s target to be *‘a zero-carbon city by 2050’*, recognising that this will take *‘an integrated and smart approach’* with all sectors working together. Policy E8,B expresses a single intention, that *‘London’s global leadership in tech across all sectors should be maximised.’*

- 4.3.13. The London Plan has overarching aim for London to be zero-carbon city by 2050. Paragraph 9.2.1 confirms:

‘The Mayor is committed to London becoming a zero-carbon city. This will require reduction of all greenhouse gases, of which carbon dioxide is the most prominent. London’s homes and workplaces are responsible for producing approximately 78 per cent of its greenhouse gas emissions. If London is to achieve its objective of becoming a zero-carbon city by 2050, new development needs to meet the requirements of this policy. ...’

- 4.3.14. Policy SI2 seeks to minimise greenhouse gas emissions, stating that all major development should be net zero carbon.

‘This means reducing greenhouse gas emissions in operation and minimising both annual and peak energy demand in accordance with the following energy hierarchy: 1) be lean: use less energy and manage demand during operation 2) be clean: exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly 3) be green: maximise opportunities for renewable energy by producing, storing and using renewable energy on-site 4) be seen: monitor, verify and report on energy performance.’

- 4.3.15. Policy SI8(E,3) seeks new waste management facilities to achieve a carbon intensity floor (CIF) threshold *‘a positive carbon outcome (i.e. re-using and recycling high carbon content materials) resulting in significant greenhouse gas savings – all facilities generating energy from waste will need to meet, or demonstrate that steps are in place to meet, a minimum performance of 400g of CO₂ equivalent per kilowatt hour of electricity produced.’*

- 4.3.16. Neither Riverside 1 nor Riverside 2 are new facilities, they have both been consented, are either operational or under construction, and both have been demonstrated to meet the London Plan CIF threshold. This performance will be enhanced, with the potential to deliver negative carbon, through the Proposed Scheme. They will exceed the stated aim of paragraph 9.8.14, *‘to support the shift towards a low-carbon circular economy, all facilities generating energy from waste should meet, or demonstrate that they can meet in future, a measure of minimum greenhouse gas performance known as the carbon intensity floor (CIF). ...’*

BEXLEY LOCAL PLAN

- 4.3.17. Adopted in April 2023, the Bexley Local Plan is an up to date development plan. Its principles of sustainable development recognise that:

Sustainable development is synonymous with good growth: ensure lasting places are created that work economically, socially, and environmentally in the long term to the lasting benefit of their residents and businesses.’ (Principles of Sustainable Development, page 9)

- 4.3.18. The Bexley Local Plan makes clear its contribution to delivering climate change priorities and that this has been a long standing commitment, noting (at paragraph

7.5) that the Council signed up to the Nottingham Declaration in 2001. Policy DP14, provides explicit support for zero carbon projects:

'1. The Council will actively pursue the delivery of sustainable development by:

a. supporting developments that achieve zero-carbon and demonstrate a commitment to drive down greenhouse gas emissions to net zero;'

- 4.3.19. The Proposed Scheme is demonstrably the sustainable development sought through this policy; it will deliver zero carbon energy and, through achieving negative carbon, will help the Borough to drive down greenhouse gas emissions in its hard to abate industries.
- 4.3.20. Policies SP1, SP3, SP5, SP8 seek economic growth and prosperity (including investment in a broadened mix of businesses and diversification of employment opportunities, particularly at Strategic Industrial Locations) underpinned by better connections (healthy streets and 'walk to' facilities - in the words of the Leader's foreword to the Bexley Growth Strategy) and access to good quality outdoor space, which can also deliver Metropolitan Open Land (MOL) and green infrastructure priorities.
- 4.3.21. These policies, and others relevant to the Proposed Scheme are considered elsewhere within this DCO Application, not least the **Planning Statement (Document Reference 5.2)**. Alongside delivering national, and local climate change priorities, the Proposed Development integrates proposals for the Mitigation and Enhancement Area addressing biodiversity, access and recreation (and secured through the **Outline LaBARDS (Document Reference 7.9)** and good design as set out in the **Design Approach Document (Document Reference 5.6)** and secured through the **Design Principles and Design Code (Document Reference 5.7)**. Section 5 of this document demonstrates the local environmental, social and economic benefits of the Proposed Development that will deliver across the priorities of the Bexley Local Plan.

'The link between human wellbeing and nature is well demonstrated. The wider network of green spaces that are included within social and community infrastructure provides benefits which contribute to the quality of life of residents. These areas balance the built environment and help enhance a sense of place, providing a focal point for healthy exercise, community interaction and food-growing. Key features of good design include walkable space, community space, and greenspace. These spaces increase physical activity, encourage social interaction, mitigate pollution and therefore support health and mental wellbeing.' (Bexley Local Plan, paragraph 5.5)

LONDON ENVIRONMENT STRATEGY AND NET ZERO ANALYSIS

London Environment Strategy

- 4.3.22. The London Environment Strategy (the LES) was published in May 2018, described as *'the most ambitious plan to reduce air pollution of any major global city, making sure the Greater London Authority and Transport for London lead by example.'* (Mayor's foreward, page 4)

- 4.3.23. Chapter 6 of the LES addresses climate change, mitigation and energy, opening with the aim that:
- ‘London will be a zero carbon city by 2050, with energy efficient buildings, clean transport and clean energy.’ (page 202)*
- 4.3.24. The introduction (page 202) to the chapter makes clear that:
- ‘If the world continues emitting greenhouse gases (GHGs) at today’s levels, average global temperatures could rise by up to five degrees Celsius by the end of this century. London, among other global cities, must play a leading role in helping to reduce these emissions.*
- The Mayor will re-establish London’s position as a leader in tackling climate change by setting an ambition for London to become zero carbon by 2050. Making London zero carbon will require economy-wide decarbonisation. This will involve changes to the way in which Londoners travel, work and live, including how energy is sourced and generated. ... ‘*
- 4.3.25. Page 205 of the LES advises that in *‘2015, London’s GHG emissions were estimated at around 34 MtCO₂e (million tonnes of carbon dioxide equivalent), around seven per cent of the UK’s total emissions.’* Further, that these emissions are dominated by buildings and transport: 36% from homes; 40% from workplaces; and 24% from transport.
- 4.3.26. In preparing the LES, scenarios were modelled to identify an appropriate strategy to achieve the necessary reduction in carbon to meet targets. This included the need to deliver the decarbonisation of energy grids, act at a UK level in accordance with the CCC’s advice and take increased action at a city level. In addition, the LES notes that *‘up to ten per cent of London’s residual emissions will need to be addressed through emissions offsetting or negative emissions technologies (such as carbon capture and storage). This will allow for emissions from energy grids, historic building stock, aviation and industry that cannot be reduced directly.’* (pages 207 and 208)
- 4.3.27. Addressing energy supply, page 211 identifies that *‘A key way to support decarbonisation of both electricity and gas grids in London is by increasing the proportion of renewable and local decentralised energy. Local energy generation and communal heating networks currently supply the equivalent of six per cent of London’s energy, with approximately a quarter of this from renewable generation including solar and wind power.’*
- 4.3.28. At page 216, the LES introduces the Mayor’s five-year carbon budgets, prepared to create an emissions pathway to 2050. Page 218 describes them as an *‘ambitious pathway to put London on track to achieving zero emissions by 2050.’* A 60% reduction is sought in the third budget period (2028-2032).
- 4.3.29. In Box 26 (page 220) the Mayor sets out five priorities to deliver energy for Londoners, which includes to:
- ‘decarbonise London’s energy supply by developing and delivering decentralised energy, renewable generation, especially solar, community energy programmes.’*

- 4.3.30. Policy 6.1.4 (page 253) includes a commitment *'to support the delivery of zero carbon development'*, presenting the energy hierarchy contained within London Plan policy SI2.
- 4.3.31. The Mayor's support for district heating, from decentralised energy source points, is set out from page 263. Proposal 6.2.1.a states a commitment to *'help implement large scale decentralised and low carbon energy projects, including stimulating demand from the GLA group.'*
- 4.3.32. Page 234 identifies that *'direct GHG emissions from London's waste activities represent 0.6 per cent of London's total emissions'* and confirms that these emissions are discrete from those identified for buildings and transport. The LES addresses waste in chapter 7, stating (on page 284) that:
- 'All energy from waste facilities will need to manage truly non-recyclable waste and operate in combined heat and power mode, meeting a maximum CO₂ emissions performance known as the carbon intensity floor (CIF).'*
- 4.3.33. Policy 7.3.2 seeks to reduce the climate change impact of waste activities. Diverting waste from landfill and meeting the carbon dioxide emissions limits set out in the LES means that Riverside 1 and 2 already achieve this policy.
- 4.3.34. As efficient energy recovery facilities, Riverside 1 and Riverside 2 both accord with the waste hierarchy, managing non-recyclable waste; they can both operate in combined heat and power mode and both meet (and can exceed) the CIF. This level of compliance has been demonstrated through the consents already gained for those facilities and they already meet LES expectations.
- 4.3.35. The addition of carbon capture technology means that Riverside 1 and Riverside 2 will deliver negative carbon outcomes, exceeding the expectations of the LES for waste management and helping to deliver London as a net zero city.
- 4.3.36. The LES Carbon Budget is 18MtCO₂ for the period 2028 to 2032. At paragraph 5.2.8 below, this document draws on **Chapter 13: Greenhouse Gases** of the **ES (Document Reference 6.1)** to confirm that the Proposed Scheme would make a material contribution, of some 38%, of the London target.

Zero Carbon London, A 1.5°C Compatible Plan

- 4.3.37. Zero Carbon London, A 1.5°C Compatible Plan (Zero Carbon London) was published in December 2018, stating, on the first page:
- 'The Mayor of London has some of the most ambitious plans to tackle climate change in the world.'*
- 4.3.38. Zero Carbon London assessed four decarbonisation scenarios over the period 2020 to 2050, to consider their impacts and cost implications. The third key message gained from this analysis is that:
- 'London's path towards zero carbon relies on continued grid decarbonisation and more ambitious national government action. Significant carbon reductions have and*

will be achieved by electricity sector decarbonisation. However, greater action is needed to reach our carbon targets.’ (page 18)

4.3.39. Page 18 repeats the recognition that there will be 10% residual emissions that will ‘need to be offset through negative emissions technologies such as carbon capture and storage or tree planting.’

4.3.40. The Proposed Scheme incorporates the carbon capture technology recognised by Zero Carbon London as necessary to meet the Mayor’s ambitious plans.

Analysis of a Net Zero 2030 Target for Greater London

4.3.41. Following publication of both the LES and Zero Carbon London, the Mayor sought to understand the pathways available to reach, and the implications of, an accelerated target to reach net zero carbon emission by 2030, relative to the former 2050 target. ‘Analysis of a Net Zero 2030 Target for Greater London’ was published by Element Energy in 2022 presenting the work undertaken to provide this insight.

4.3.42. The study includes

- Modelling a set of scenarios to indicate how the net zero target could be achieved in London and to represent the range of uncertainty in the pathway to carbon neutrality.
- Identifying the key challenges, implications, and opportunities of delivering those scenarios within the 2030 timeline, including mitigation measures, infrastructure requirements, investment costs and opportunities for job creation.
- Describing the likely policies to support delivery of the target, including the potential role of offsetting residual emissions. Moving the 2030 target forward will mean a higher level of offsetting is needed compared to the 2050 target, which will gradually reduce further after 2030.

4.3.43. Page 22/23 recognises the important role that EfW facilities have to play in supplying heat networks, and goes on to recognise that adding carbon capture delivers the ability ‘to generate electricity with net negative GHG emissions, which offers the opportunity to offset some of the remaining emissions from other sectors.’

4.3.44. Page 23 confirms that this aligns with the CCC’s sixth Carbon Budget ‘Balanced Pathway’.

‘The CCC’s 6th Carbon Budget Balanced Pathway requires all EfW plants to be fitted with CCUS by 2050. Achieving this technology deployment relies on CCUS infrastructure being rolled out across the UK. In London, this transition relies on local projects developing CCUS transport chains for London’s EfW plants to join with and therefore the timing of when CCUS could be a viable solution for EfW plants strongly depends on development of these projects. Project Cavendish is aiming to begin operation of hydrogen production with CCUS in the late 2020s, offering a potential opportunity for consolidation of CO₂ transport and storage supply chains if one or more of London’s EfW plants were to convert in the early 2030s. Without this project (or other opportunities for lower cost CO₂ transport and storage), it may be more likely

that conversion happens later, in the 2030s or early 2040s, as wider CCUS supply chains ramp up.

If CCUS could be in place at the largest EfW plants by 2030-2032, emissions from EfW could be net negative at -0.2 MtCO_{2e}. Recent UK-wide analysis placed London's EfW plants within a second phase of conversion that could occur between 2031-2040, meaning that this transition is technically feasible if London's plants could convert at the beginning of this phase.'

- 4.3.45. Page 48 recognises the opportunity for growth from the carbon capture sector, both within London and beyond.

The consideration of job creation in the above sectors is largely focused on direct jobs – those associated directly with deployment of the technology. However, indirect opportunities and jobs associated with supply chain building will also be generated within London and more widely across the UK including, for example, manufacture of technology, mining and transportation. As such, early decarbonisation and skills generation within London will provide positive benefits for the rest of the UK.

- 4.3.46. Section 4.1 presents the next steps necessary to achieve the Mayor's ambitious targets.

'London's 2030 net zero target represents a substantially accelerated timeline for emissions reduction relative to the UK Government's target of net zero by 2050. Meeting this target will require a wide range of ambitious actions that go beyond current policy and likely entail higher risk and cost in the short term. However, the transition to net zero also offers opportunities for London to deliver benefits outside the region by moving more quickly than the national ambition (such as job creation, flexibility through higher deployment of district heating) as well as opportunities to become a leader in decarbonisation across sectors.

The GLA, TfL, London Boroughs, regulated utilities, the private sector and other public bodies have a critical role in driving the net zero transition and will need to take a proactive role in both leading local change and in working to put London in a strong position to take advantage of national opportunities as they arise. It is important to note that:

- The Mayor can't deliver net zero emissions in London alone and many measures will rely on national-level decisions and coordinated action with relevant partner stakeholders.*

- All actors will require additional resource, funding and financing to deploy these policies and take crucial actions.'*

(Page 50, Analysis of a Net Zero 2030 Target for Greater London, Element Energy, 2022)

- 4.3.47. The Proposed Scheme is an example of the private sector showing leadership and direct investment in achieving the Mayor's targets for London to be net zero city. As is demonstrated in section 5 of this document, the Proposed Scheme, through both the Carbon Capture Facility and the Proposed Jetty, will deliver the suite of

environmental, social and economic benefits realised to be achievable through this study.

4.4. POLICY DRIVEN NEED FOR DECARBONISATION

- 4.4.1. The UK Government has very recently updated its suite of national policy statements to more closely reflect the urgent policy priority of achieving net zero by 2050. Low carbon infrastructure is designated as Critical National Priority infrastructure, for which the urgent need is established and *'will in general outweigh any other residual impacts not capable of being addressed by application of the mitigation hierarchy. Government strongly supports the delivery of CNP Infrastructure and it should be progressed as quickly as possible.'* (NPS EN-1, paragraph 3.3.63)
- 4.4.2. Regional and local policy does not address the specifics of carbon capture, but also recognises the environmental, economic and social imperatives of responding positively to the climate crisis. The London Plan also seeks to deliver net zero in the city by 2050, with the Mayor considering the potential to achieve this outcome by an aspirational 2030.
- 4.4.3. Climate change is recognised globally and locally as the world's greatest challenge, with the only solution being decisive, urgent and effective action.
- 4.4.4. Policy also recognises that this will require some difficult decisions to be made; achieving global aspirations at a local level will not be easy. The need to substantially cut carbon emissions is necessary to avoid adversely affecting global and local ecosystems and preserve local living conditions and individual livelihoods.

5. DELIVERING THE GLOBAL AND LOCAL BENEFITS OF DECARBONISATION

5.1. HOW THE PROPOSED SCHEME DELIVERS THE POLICY DRIVEN NEED FOR DECARBONISATION

INTRODUCTION

‘Energy underpins almost every aspect of our way of life. It enables us to heat and light our homes; to manufacture goods; to produce and transport food; and to travel to work and for leisure. Our businesses and jobs rely on the use of energy. Energy is essential for the critical services we rely on – from hospitals to traffic lights and mobile devices. It is difficult to overestimate the extent to which our quality of life is dependent on adequate energy supplies.

In October 2021 the government published the Net Zero Strategy. This set out our vision for transitioning to a net zero economy and the policies and proposals for decarbonising all sectors of the UK economy to meet our net zero target by 2050, making the most of new growth and employment opportunities across the UK.

(NPS EN-1, paragraphs 2.3.1 and 2.3.2)

- 5.1.1. The most recent expression of government policy on the urgency and priority of meeting net zero by 2050 makes plain the need for low carbon energy. This is designated as Critical National Priority Infrastructure in the policy statement and includes energy recovery facilities with carbon capture infrastructure.

Sustainable development is relevant not just in terms of addressing climate change, but because the way energy infrastructure is deployed affects the well-being of the environment, society and the economy, for both current and future generations.

(NPS EN-1, paragraph 2.6.2)

- 5.1.2. NPS EN-1 recognises that sustainable development is not delivered through a single focus; it requires consideration across a number of separate, but inter-related matters. On page 203, the LES recognises that the necessary change *‘will not be without its challenges’* and that the infrastructure and behaviours required were not in place at the time the LES was prepared. However, as with national policy, the LES recognises more energy infrastructure will be needed and that *‘this must be low carbon. National government, London boroughs, communities, and Londoners themselves must play a part in leading this change.’*

- 5.1.3. This section demonstrates how the Proposed Scheme responds to this challenge, delivering a sustainable development that will make a material contribution to achievement of the policy driven need for decarbonisation through:

- delivering net zero – meeting the global, national and local, legal and policy driven targets of achieving net zero by 2050;
- delivering carbon negative waste management and energy supply – making the step change for essential infrastructure;

- delivering environmental benefit – balancing a positive global response in a sensitive local environment;
- delivering social benefit – achieved through delivery of CNP Infrastructure, new job opportunities and community enhancement; and
- delivering economic benefit – demonstrating leadership investment in a new sector and providing the catalyst for sustainable growth across the UK and Bexley.

5.2. NET ZERO

NET EMISSIONS SAVINGS OF 1.6 MILLION TONNES OF CARBON DIOXIDE A YEAR

- 5.2.1. In 2022, Cory 'delivered an overall carbon benefit of 465,399 tonnes of CO₂e to the UK.' (Sustainability Report 2022, page 1, Appendix A)
- 5.2.2. Also in 2022, '99 per cent of Cory's CO₂ emissions were emitted from the stack at Riverside 1. Safe and reliable waste management is essential for a functioning society, yet as knowledge about anthropogenic climate change has evolved, so has our understanding of how waste management contributes to global warming. In the UK in 2018, the recycling and waste management sector contributed 8 per cent of total UK greenhouse gas emissions²⁹. CCS is the leading technological approach that EfW plants can utilise to significantly reduce the CO₂ emissions that are generated in the processing of waste. The UK Committee on Climate Change states that CCS technology needs to be fitted to EfW facilities from 2040, in line with their proposed ban on all waste to landfill.³⁰' (Sustainability Report 2022, page 9, Appendix A)
- 5.2.3. Whilst Cory is pursuing activities across its business to reduce its carbon footprint, the only method available to materially address the CO₂ emissions from residual waste management is through post-combustion carbon capture.
- 'Once the CCS technology is operational, our EfW operations will become 'carbon negative', i.e. removing more CO₂ from the atmosphere than is emitted due to the composition of waste, c.50 per cent of which is fossil carbon (derived from plastics) and 50 per cent biogenic (derived from wood, paper and cardboard). At full operation, Cory's CCS facility will capture and enable the permanent geological sequestration of c.1.3 million tonnes of CO₂ a year, of which approximately 50 per cent will be biogenic; capturing and storing these biogenic emissions will be a carbon removal.*
- By capturing both the fossil and biogenic carbon emitted by our operations, we have the potential to play a vital role in helping the UK to achieve net zero, given the possibility of supporting hard-to abate sectors, such as steel, cement and petrochemicals, reach net zero through the purchase of the negative emissions we generate.'* (Sustainability Report 2022, page 9, Appendix A)
- 5.2.4. The Proposed Scheme comprises CNP Infrastructure providing post-combustion carbon capture each year for permanent storage under the North Sea. As explained in section 13.8 of **Chapter 13: Greenhouse Gases** of the **ES (Document Reference 6.1)**, the construction, and operation, of the Proposed Scheme will have

some level of carbon burden, these activities will have greenhouse gas (GHG) emissions.

5.2.5. Table 13-10 demonstrates that carbon burdens of the Proposed Scheme are substantially outweighed by the benefits, with net operational emissions savings of 1,620,603 tCO₂e, annually, relative to future baseline. As confirmed at paragraph 13.8.9 *'This is the difference between the emissions that would otherwise be released to the atmosphere without the Proposed Scheme operating (858,370 tCO₂e/yr) in combination with the aggregate emissions that would be removed with the Proposed Scheme operating (-762,232 tCO₂e/yr).'*

5.2.6. The lifecycle impacts of the Proposed Scheme are demonstrated at **Table 13-11** of **Chapter 13: Greenhouse Gases** (reproduced in Table 5-1 below) which accounts for both construction and operation phases to represent *'an overall saving in GHG emissions of -85,223,660 tCO₂e relative to the future baseline.'* (paragraph 13.8.17)

Table 5-1: Proposed Scheme Total GHG Emissions

Phase	Data Period	Annual Emissions (tCO ₂ /yr)	Total Emissions (tCO ₂ /yr)
Future Baseline			
Future Baseline (Table 13-7)	2026-2080 (55 years)	858,370	47,210,373
Proposed Scheme			
Construction (Table 13-8)	2026-2030 (5 years)	19,666	98,332
Operation (Table 13-10)	2031-2080 (50 years)	-762,232	-38,111,620
Proposed Scheme Total Emissions	2026-2080 (55 years)	-691,151 (average over 55 years)	-38,013,287
Net Impact of Proposed Scheme relative to Future Baseline			
Net Emissions Savings	2026-2080 (55 years)	-1,549,521 (average over 55 years)	-85,223,660

Source: Table 13-11 of Chapter 13: Greenhouse Gases, ES (Volume 1) (Document Reference 6.1)

5.2.7. The capture of carbon dioxide from both fossil and biogenic sources represents the change in atmospheric GHG emissions attributable to the Proposed Scheme; these are therefore considered in combination when determining the relative emissions savings from the Proposed Scheme in the context of UK and London Carbon Budgets. **Table 13-12 of Chapter 13: Greenhouse Gases** (reproduced below, Table 5-2) concludes that the Proposed Scheme would contribute to the achievement of 0.8% of the national target in the sixth Carbon Budget; nearly 1% even after operation emissions are accounted for.

Table 5-2: Proposed Scheme GHG Emissions with UK Carbon Budgets

Carbon Budget Period	UK Carbon Budget tCO ₂ e	Proposed Scheme Emissions tCO ₂ e	Proportion of Carbon Budget (%)
Fourth: 2023-2027	1,950,000,000	39,333	0.002
Fifth: 2028-2032	1,725,000,000	-3,095,442	-0.179
Sixth: 2033-2037	965,000,000	-7,886,104	-0.810

Source: **Table 13-12 of Chapter 13: Greenhouse Gases, ES (Volume 1) (Document Reference 6.1)**

5.2.8. The LES Carbon Budget is 18MtCO₂ for the period 2028 to 2032. At **Table 13-13** (reproduced below, Table 5-3), **Chapter 13: Greenhouse Gases** of the ES concludes that the Proposed Scheme would make a material contribution, of some 17%, of the London target.

Table 5-3: Proposed Scheme GHG Emissions with London Carbon Budgets

Time Period	Carbon Budget tCO ₂ e	Proposed Scheme Emissions tCO ₂ e	Proportion of Carbon Budget (%)
2023-2027	22,400,000	39,333	0.176
2028-2032	18,000,000	-3,095,442	-17.197

Source: **Table 13-13 of Chapter 13: Greenhouse Gases, ES (Volume 1) (Document Reference 6.1)**

5.2.9. Chapter 13 of the ES also considers the contribution made to project Power Sector emissions, concluding (at paragraph 13.8.26) that the Proposed Scheme contributes to a 'reduction of 18.8% in projected Power Sector emissions for the sixth carbon budget.'

5.2.10. The CCC's annual progress reports are introduced from paragraph 3.3.12 of this Report. Progress in Reducing Emissions advises that in 2021, the waste sector produced around 25 MtCO₂e, or 6% of UK emissions (page 298) and sets an intention to reduce carbon dioxide emissions from EfW by 8% by 2035 (Figure 12.1).

5.2.11. The net emissions savings of 1.6 MtCO₂ to be realised through the Proposed Scheme (Table 13-10 of Chapter 13: Greenhouse Gases (Document Reference 6.1.13))

represents around 6% of these UK waste sector CO₂ emissions and a minimum of 95% of the Applicant's combined fossil and biogenic CO₂ emissions.

- 5.2.12. Paragraph 13.8.24 of **Chapter 13: Greenhouse Gases** confirms that the payback period, *'the time it would take for carbon emissions calculated for the construction and operation phases to be offset by the savings in carbon emissions from the Proposed Scheme'* is less than 5 weeks.
- 5.2.13. Cory has its own aspiration to get to net zero by 2040 and to have carbon capture operational by 2030. The Proposed Scheme would materially contribute towards the UK Net Zero Strategy ambition to deploy *'at least 5 MtCO₂/year of engineered [GHG] removals by 2030.'*
- 5.2.14. The Proposed Scheme will make an important and relevant contribution to meeting the global, national and local, legal and policy driven targets of achieving net zero by 2050. It will make a material contribution to meeting waste focussed carbon reduction targets and to meeting all carbon priorities early; government's aspirations in this regard can only be met by delivering net negative carbon projects and through the rapid deployment of CCS projects, at scale.

VIKING CCS³¹

- 5.2.15. The submitted DCO Application is relevant only to the Proposed Scheme, the construction and operation (including maintenance) of the Cory Decarbonisation Project within the Order Limits. However, it is not submitted as an incomplete concept.
- 5.2.16. On 5 December 2023, Cory announced an exclusive commercial relationship with Viking CCS to collaborate on the transport and storage of shipped CO₂ captured from the Riverside EfW facilities.³² In doing so, Cory joined existing Viking CCS Cluster consortium members including, Associated British Ports, electricity generators West Burton Energy and RWE, and refinery operators VPI and Phillips 66 Limited. The Viking CCS project is led by Harbour Energy, with non-operated partner bp. Harbour Energy is the largest UK-listed independent oil and gas company, bringing over 30 years of experience in building and operating the onshore terminal and offshore pipeline infrastructure associated with the original Viking gas fields.
- 5.2.17. Whilst this element does not form part of the DCO Application, through this the Applicant is able to demonstrate how the Proposed Scheme fits within a credible carbon capture cluster that has gained government support.
- 5.2.18. On 31 July 2023, the UK government announced that both Viking and Acorn CO₂ transport and storage schemes had been awarded Track 2 status as part of the UK Government's CCUS Cluster Sequencing process,^{33 34} which is identifying and sequencing CCUS clusters. These two initiatives propose to move CO₂ emissions from operational sites across the UK to permanent storage sites under the North Sea. Award of 'track 2' status by the government allowed project planners to move into front end engineering and design and discussions with the government over the terms of the economic licences, ahead of final investment decisions. On 15 September 2023, Harbour Energy announced that, under the first carbon storage licensing round,

it had been awarded carbon storage licences by the North Sea Transition Authority. Four were awarded; two each for Viking CCS and Acorn CCS.

- 5.2.19. On 20 December 2023, the UK government announced a Market Update to the CCUS Cluster Sequencing Track 2³⁵. This confirmed that the *'UK government is committed to further development of carbon capture, usage and storage (CCUS) through the Track-2 process which will establish 2 new clusters, contributing to our ambition to capture and store 20-30 megatonnes per annum (Mtpa) of CO₂ across the economy by 2030.'*
- 5.2.20. It also advises that Acorn and Viking will be requested to submit plans for an 'anchor phase' in early 2024, *'provisionally targeting deployment from 2028-2029, subject to technical feasibility, affordability, and value for money. ...'*
- 5.2.21. Viking CCS is strategically located in the Humber region, the most industrialised and largest CO₂-emitting region in the UK. The Viking CCS Project intends to transport compressed and conditioned CO₂ received at a facility near Immingham to store in depleted gas reservoirs in the Southern North Sea. CO₂ would be transferred from the Immingham area to the former Theddlethorpe gas terminal site via a new 55km onshore underground pipeline. From Theddlethorpe, the CO₂ would be transported via a 140km existing pipeline to then be stored in the depleted Viking reservoirs. Viking CCS is collaborating with Associated British Ports to explore the potential for a future expansion to the Viking CCS Project that would facilitate transfer of shipped CO₂ from the Port of Immingham to the Viking CCS pipeline.
- 5.2.22. The CO₂ will be stored inside the depleted gas reservoirs permanently. This will ensure it is removed from the atmosphere and stored safely and permanently, negating its impact on global warming. Depth of storage is a key part of what makes the reservoirs secure for storing the captured CO₂. The reservoirs (of which there are eight) are capped with layers of hard, impervious rock, several hundred metres thick; it is this cap which acts as a seal, forming a barrier through which the CO₂ cannot pass. The intention is to fill and seal each reservoir, and then move onto the next.
- 5.2.23. The natural reservoirs previously held gas reserves which were extracted and piped to the coast from the 1970s onwards. The same now vacant reservoirs and some of their related infrastructure (including the existing undersea pipeline) will now be used in a reverse process to store the CO₂ recovered from industrial processes. The Viking reservoirs provide a storage capacity for some 300m tonnes of CO₂ and the project plans to capture and store 10m tonnes of carbon emissions per annum by 2030.
- 5.2.24. The Proposed Scheme is demonstrated to be an example of the private sector, coming together to develop NPT options and credible projects for the capture and transport of carbon dioxide. The Viking CCS project is underway, demonstrating the future opportunity to accept the carbon dioxide captured at Riverside; the Proposed Scheme is demonstrated to be able to respond quickly to help realise government's early aspirations for carbon capture and storage.

'The government is encouraged to see that certain sections of the industry are coming together to develop potential NPT projects, which could act as the first

projects deploying NPT in the UK. These projects are bringing together the necessary expertise from across the private sector to refine their plans and create credible projects for the capture and transport of CO₂. (CCUS Vision, page 42)

CORY'S DRIVE FOR DECARBONISATION

- 5.2.25. In 2023, Cory launched its revised sustainability strategy, focused on three key pillars: achieving net zero goals by 2040, or sooner; maximising waste potential whilst minimising environmental impact; and inspiring positive change in the business and communities. The Sustainability Report 2022 (Appendix A) sets out how this strategy will be achieved going forward, and the initiatives already put in place.
- 5.2.26. Among the activities contributing towards this are moving the entire Lighterage Operation fleet onto renewable diesel, also known as hydrotreated vegetable oil in 2021. During 2022, Northumberland Wharf, Smugglers Way and Cringle Dock Waste Transfer Stations also switched to renewable diesel, so that annual CO₂ emissions from Cory's lighterage operations fell from 3,680 tonnes to 48 tonnes.
- 5.2.27. The fuel facilitating this reduction is produced from waste materials such as used cooking oil and waste fats, which do not release any new carbon dioxide into the atmosphere and reduces nitrous oxide and particulate matter emissions by 19% and 21% respectively (in tests undertaken on a Cory tug in 2021) when compared to marine gas oil. The renewable diesel used by Cory is verified at import by the International Sustainability and Carbon Certification, and through the Renewable Fuel Assurance. Therefore, the suppliers are able to provide a clear history and breakdown of derivation of raw material collection through to final delivery, ensuring no palm oil is present.
- 5.2.28. Energy consumption is managed through Cory's Environmental and Energy Policy which commits the company to reviewing energy performance regularly, and continually seeking improvement. This is monitored through incorporating the intent of ISO 50001 Energy Management in Cory's certified ISO14001 Environmental Management System. Energy efficiency is a key goal, with energy reviews undertaken each year with representatives of the operational sites to develop energy efficiency plans for each site.
- 5.2.29. Site Managers are sent their energy use intensity ratio quarterly. The intensity ratios are the calculation of energy used – electricity, fuel and gas (if applicable), to process one tonne of waste at a specific site. Improvements in on-site processes and equipment upgrades (for example, during 2022 the grab and container cranes at Cringle Dock WTS was upgraded and LED lighting was rolled out across all sites) energy use ratios have been reduced, as shown in the figure on page 11 of the Sustainability Report 2022.
- 5.2.30. Across its operational sites, Cory has implemented schemes to improve energy efficiency and reduce carbon impacts, including the provision of electric vehicle charging points. In 2024, Cory introduced a tax efficient programme for staff to lease electric cars, extending electric vehicle charging points across its operational sites and offering free charging for the first 12 months of the lease scheme.

- 5.2.31. Decarbonisation is a fundamental aspect of the corporate strategy being delivered across the Cory Group. This demonstrates that the Applicant has a robust corporate strategy for decarbonisation across the business; it is not limited to the Proposed Scheme, albeit this will play a significant role.

5.3. CARBON NEGATIVE WASTE MANAGEMENT AND ENERGY SUPPLY ON THE RIVER THAMES

CARBON NEGATIVE WASTE MANAGEMENT AND ENERGY SUPPLY

- 5.3.1. Unabated EfW helps to reduce carbon emissions from waste (compared to the alternative processing option, landfill). The future of energy recovery, operated with carbon capture, is fundamental in terms of waste management making its full contribution to achieving the UK's net zero target, not least through delivering the negative emissions essential to balance the hard to abate industries.
- 5.3.2. The carbon cycle is the natural movement of carbon through the Earth's various systems. For example, living things can emit CO₂ into the atmosphere through breathing, decaying and burning, or they can absorb it, through photosynthesis. The ocean absorbs and emits CO₂ as it moves between soil and rocks, and the atmosphere through weathering and volcanic activity. This carbon is known as biogenic carbon.
- 5.3.3. Fossil fuels such as coal, oil and gas are created by organisms dying and being buried deep underground over millions of years. Extracting and burning these fuels for energy releases new CO₂ into the atmosphere at much higher rates and much faster than the natural carbon cycle can absorb, and this is causing global temperatures to rise and changing our climate. This carbon is known as fossil carbon.
- 5.3.4. Waste from households and businesses is composed of materials which contain both biogenic carbon such as paper, cardboard, and wood, and fossil carbon from materials containing plastics. When this waste is processed in an EfW facility, both types of carbon are released into the atmosphere. When Cory installs the proposed carbon capture technology at Riverside 1 and Riverside 2, both types of carbon will be captured.
- 5.3.5. By capturing the fossil carbon (from plastic waste), Cory's operations will achieve 'net zero', i.e. no new carbon will be released into the atmosphere.
- 5.3.6. By also capturing the carbon from biogenic materials (paper, cardboard, and wood), the operations at Riverside will be carbon negative, because carbon that is part of the natural carbon cycle will also be permanently removed from the atmosphere.
- 5.3.7. Not only would society's residual waste processed at energy recovery facilities with carbon capture be decarbonised, but the energy and the byproducts recovered – in the form of electricity, heat and aggregates for the construction sector – would be decarbonised too, bringing the desired environmental, economic and social benefits.
- 5.3.8. Not least of those benefits will be realised through incorporating the essential infrastructure necessary to deliver the Riverside Heat Network into the Proposed

Scheme. Similar to the energy recovery technology within Riverside 1 and 2, the carbon capture process produces heat that is typically wasted. Instead, it is proposed to capture the excess heat created and redirect it to the Riverside Heat Network. The Proposed Scheme has the potential to provide over 100MW of additional heat which would benefit an even greater number of homes and businesses.

‘The Riverside Heat Network will revolutionise how a large part of the city is supplied with heating, displacing natural gas to reduce new fossil carbon emissions, while bringing air quality improvements for residents. It will accelerate London’s journey to net zero and will be the largest district heat project in the UK.’ (Sustainability Report 2022, page 13, Appendix A)

- 5.3.9. The Proposed Scheme will decarbonise the desired waste management and energy supply operations undertaken at Riverside and in doing so, it will help the achievement of net zero regionally and nationally, compensating for some of the activities taking place in industries which are hardest to decarbonise, such as steel, aviation and electricity generation.

CNP INFRASTRUCTURE ON THE RIVER THAMES

- 5.3.10. Energy recovery with carbon capture is the future for residual waste management. The residual waste processed at Riverside comes from the activities of people and businesses in and around London; it is not waste of Cory’s making; it is society’s cast off. It would be produced wherever the residual waste management capacity was provided.
- 5.3.11. Cory is the only waste management company in the UK to rely upon riparian waste management facilities, using barges to transport residual waste in and incinerator bottom ash (IBA) out of Riverside. Using Middleton Jetty (a Safeguarded Wharf) removes 100,000 HGV movements from London’s roads and delivers consequent environmental, economic and social benefit.
- 5.3.12. That Cory’s waste management services and energy recovery capacity are provided riverside means that shipping as the main transport mode is fundamental to the business. Use of shipping vessels to export the liquified CO₂ builds upon the established riparian location of Cory’s business.
- 5.3.13. This approach leads to fewer vehicles on the public highway, reduced land take, and economic benefits as the Proposed Scheme can act as a catalyst to growth of the UK shipping sector. The ability to demonstrate the viability of NPT options for carbon dioxide, making carbon capture more attractive to other CO₂ emitters who do not have access to pipelines is a benefit at the national level. Furthermore, the Proposed Scheme can act as a catalyst for growth to the UK shipping sector, opening up a whole new market.
- 5.3.14. The Proposed Scheme demonstrates that shipping at scale, a NPT option for carbon dioxide sought by government in the CCUS Vision, is deliverable.
- 5.3.15. In 2023, the Port of London Authority (PLA) launched a major masterplanning exercise to realise growth opportunities along the River Thames, named ‘Thames

Vision 2050³⁶. The Vision sets out future priorities for the river around three themes, including: Trading Thames – the No.1 Net Zero UK trading centre.

‘The masterplanning process will draw on forecasts and studies completed through the development of the Vision, together with bespoke work. These show that the river will be busier than ever in the future: up to 50% more cargo is expected to be moved than today; the scheduled passenger services network will grow; interest in the river for moving light freight and keeping white vans off the city streets is stronger than ever. There is a strong commitment to make watersports activity available to wider and more varied communities, through the Active Thames programme (<https://activethames.co.uk/>).’

- 5.3.16. Cory has engaged with the PLA’s masterplanning, recognising the Proposed Scheme as an opportunity to deliver its emerging priorities. The Proposed Scheme is an early demonstrator that shipping can be used at scale to deliver carbon capture priorities, serving to catalyst growth in this sector nationally and locally.

5.4. ENVIRONMENTAL BENEFIT

- 5.4.1. Climate change is the biggest single threat to the world’s environment and humanity. The Proposed Scheme makes a material contribution to the UK meeting its legal targets and global commitments.
- 5.4.2. In exchange for the benefits realised through the construction and operation of the Proposed Scheme, it is acknowledged that there will be a direct loss of land designated under a number of biodiversity, open space and green infrastructure policy. The environmental loss is described in full at **Chapter 7: Terrestrial Biodiversity** of the **ES (Document Reference 6.1)** along with the extensive mitigation and biodiversity net gain (BNG) measures proposed. Construction of the Carbon Capture Facility particularly affects East Paddock and Stable Paddock, both falling within the Erith Marshes Site of Importance for Conservation (SINC) and Crossness Local Nature Reserve (LNR).
- 5.4.3. The **Terrestrial Site Alternatives Report (Document Reference 7.5)** demonstrates the paucity of alternatives at which to develop the Carbon Capture Facility and that the selected location presents an appropriate location when all impacts are balanced.
- 5.4.4. Alongside addressing a global imperative, the Proposed Scheme also brings the opportunity to improve the local environment, deliver BNG and provide appropriate resources to ensure their long term management. This is all set out in the **Outline Landscape, Biodiversity, Access and Recreation Delivery Strategy (LaBARDS) (Document Reference 7.9)** which provides the mechanism to ensure the successful delivery, implementation and management of the Applicant’s environmental mitigation and enhancement proposals across the Mitigation and Enhancement Area and for BNG.
- 5.4.5. The Environmental Proposal (defined within the Outline LaBARDS) is underpinned by 3 main elements:

- One Nature Reserve – Expand the existing Crossness Local Nature Reserve into the land immediately south and west of the Carbon Capture Facility providing a gain of 5 to 6ha for land under CLNR management.
 - Diverse Grazing Marsh and Biodiversity – Improving the distinctiveness and condition of existing valued flood plain grazing marsh habitats, delivered by raising water table and managed grazing densities, delivering direct mitigation for the physical loss of grazing marsh habitat.
- 5.4.6. Offsite Compensation – Areas of habitat lost due to the development should be re provided for and delivery onsite. Thamesmead Golf Course has been identified as a possible opportunity to deliver Biodiversity Net Gain (BNG), offsetting commitments of 10%. The key element of the Mitigation and Enhancement Area is the proposed, expanded Crossness LNR, to provide compensation for loss of habitat and resilience for the LNR, following the proposed development of East and Stable Paddock for the Carbon Capture Facility. The proposals see the inclusion of Norman Road Field to provide an expanded Crossness LNR, provide mitigation for the loss of floodplain grazing marsh and ditch habitat and an opportunity to improve water levels in the LNR from improved ditch engineering, management and water levels arising from the Proposed Scheme. The expanded Crossness LNR would be defined to the east, by existing ditch habitat enhancement works that tie into the boundary planting proposals for the Carbon Capture Facility.
- 5.4.7. In addition, should the Belvedere Power Station Jetty (disused) be retained, it too could contribute to providing environmental benefit through modifications designed to attract birds.
- 5.4.8. Across the Proposed Scheme, good design is reflected in both design process as well as design outcome. The **Design Approach Document (Document Reference 5.6)** explains how the Project Principles, Optioneering Principles, Design Principles and Design Code have all been prepared as part of the Proposed Scheme evolution process and to drive good design outcomes to inform the design governance of the project at each stage of decision making.
- 5.4.9. The **Design Principles and Design Code (Document Reference 5.7)** frame how the Proposed Scheme will fulfil the expectations of ‘good design’ set out in NPS EN-1, align with the National Infrastructure Commission’s guidance and supports the use of design principles outlined in the Bexley Growth Strategy.
- 5.4.10. The Proposed Scheme falls within the indicative boundary of the Riverside Opportunity Area (Figure 4 of the Bexley Local Plan) and most of the land (some 70%) used to accommodate the Carbon Capture Facility is allocated as Strategic Industrial Location. The opportunity to develop critical national priority infrastructure as one, cohesive development, underpinned by good design, is brought to reality through the Proposed Scheme.
- 5.4.11. The Proposed Scheme provides a positive local response, within an acknowledged sensitive local environment, to the globally important environmental challenge that faces us all.

5.5. SOCIAL BENEFIT

- 5.5.1. Social value is the long-term, sustainable improvement for society that can be gained by promoting positive social, economic and environmental impacts. Cory builds social value into the operation of its business model, addressing its contribution to society through the way the company operates, employs people, engages with communities and plans purchasing and acquisitions from its supply chain.
- 5.5.2. In this way, Applicant's engagement with its local communities goes beyond commercial delivery. The Sustainability Report 2022 (Appendix A) quantified the social value generated from community engagement activities for the first time, estimating that £84 million of value was delivered to society beyond monetised profit and income measures. The figure encompasses the value for communities resulting from activities across the business, including supply chain spend and engagement, the company's apprenticeship programme, training opportunities for employees, diversion of waste from landfill, and engaging with and supporting community initiatives.
- 5.5.3. Cory's Community Fund supports activities that improve people's lives in the communities where it operates, with successful applicants receiving grants of up to £7,500, with a total of £25,000 awarded. This contributed towards funding family nature sessions, engagement in 38 sport and physical activity sessions, running family nature focused sessions (attended by 102 people) including planting, pruning and woodland management; and introducing a scheme in Crayford, Bexley to combat food wastage. Cory's other lead community initiatives are focussed on the:
- Bexley Eco-Fest, run by LBB and sponsored for the fourth year running in 2022;
 - Industrial Cadets, run by the Engineering Development Trust;
 - sponsorship of Children's University passports, participation in local extra-curricular activities and hosting educational site visits; and
 - Belvedere Community Forum, run by a Board of local residents who meet regularly to act as a focal point for issues of importance and concern to all the people of Belvedere.
- 5.5.4. Cory has joined the UN Global Compact, the world's largest corporate sustainability initiative, the objective of which is to encourage businesses to align strategies and operations with universal principles on human rights, labour, environment and anti-corruption, and take actions that advance societal goals. Membership of the Global Compact provides Cory with Best Practice references as well as tools, resources and training to maximise positive social impacts.
- 5.5.5. Cory's overall approach to community engagement includes improving the local environment in, often overlooked, small scale initiatives. Litter picking in 2022 is a recent example, when Cory's employees joined a collaborative initiative with environmental organisation Thames 21 to clean up litter from the Thames foreshore. Thames 21 works with communities across Greater London to improve rivers, canals, ponds and lakes for people and wildlife. These events were accompanied by litter-picking events at Riverside 1, Cory's Barge Yard at Charlton and Ship Repair Yard at

Gravesend, in which some 70 Cory employees were involved across all events. Litter picking is a small action, but it delivers social benefit, making places better and improving people's experience of them.

- 5.5.6. None of these business activities are obligatory, but they fit well with the company ethos and help contribute to its overall successful operation. Approval and subsequent installation of the proposed decarbonisation plant will allow Cory to deliver strongly on the specific environmental and economic benefits for its customers, stakeholders and communities, and it will also strengthen and augment the company's community initiatives such as those listed above.
- 5.5.7. Social well-being is underpinned by good infrastructure; including sanitary waste management and affordable, dispatchable, secure and resilient energy supply. Cory works with commercial and industrial customers and eight London boroughs to process over 70,000 tonnes of recyclate and 785,000 tonnes of non-recyclable black bag waste a year, an undertaking which is critical for social well-being. The Proposed Scheme takes existing infrastructure to the next level, both through delivering zero carbon waste management and energy supply, and through the optimisation of the Riverside Heat Network.
- 5.5.8. As explained in section 2.3 of this Report, both Riverside 1 and (from 2026) Riverside 2 are properly described as sources of partially renewable, dispatchable energy. Cory is working with partners to deliver the UK's largest district heat network, with homes in the Thames Estuary area a primary focus. The objective is to use the residual heat from the EfW process, cut waste and increase the benefit provided to the local community through the provision of heat to local homes and businesses. With the installation of the Carbon Capture Facility, this heat will be provided from a renewable, net zero source, a big improvement on the default option which largely comprises domestic gas boilers. In addition to which, waste heat from the carbon capture process would also be used to optimise the heat network.
- 5.5.9. The benefits of the Proposed Scheme can only reasonably be achieved through a direct loss of land designated under a number of biodiversity, open space and green infrastructure policy. The social impact through effects on amenity and visual openness are described in full at **Chapter 13: Population , Health and Land Use** and **Chapter 10: Townscape and Visual Impact** of the **ES (Document Reference 6.1)** along with the extensive mitigation and enhancement measures proposed.
- 5.5.10. Importantly, whilst construction of the Carbon Capture Facility does result in a net loss of MOL (considered in the **Planning Statement (Document Reference 5.2)**) there is no loss of Accessible Open Land (as defined in the **Glossary (Document Reference 1.7)**).
- 5.5.11. As explained in the **Design Approach Document (Document Reference 5.6)** pushing the development area required for the Carbon Capture Facility to the north of Norman Road brings operational advantages, but also the potential to open up access into and across the Accessible Open Land. Changing the entry point at the southern end of Norman Road from a constrained, poorly signed entrance, to be

accessible, informative and welcoming space, potentially with parking, will enhance user experience.

- 5.5.12. Building on Cory's established role in the local community, the Proposed Scheme delivers the opportunity to provide newly configured space for residents and visitors. The **Outline LaBARDS (Document Reference 7.9)** presents the proposals for access across the area of Accessible Open Land and connections with the Thames Path, suggested as part of a package of enhancements in this area that could be delivered; enabling visitors an improved outdoor space experience, offering greater diversity of habitat on well-designed pathways, therefore achieving social benefit.
- 5.5.13. The **Design Principles and Design Code (Document Reference 5.7)** will ensure delivery of a single, coherent, well-designed project that prioritises the use of available industrial land, limits the loss of designated MOL and presents a renewed sense of place. The Proposed Scheme acknowledges the local, limited loss and mitigates this through delivering good design, enhanced accessible open land and improved access to it.
- 5.5.14. Cory's waste management operations at Riverside provide a wider social benefit; safely processing London's residual waste into energy. The addition of the Carbon Capture Facility will be a step change to those operations, contributing to the achievement of net zero to bring social well-being at the national, and even global, level. The Carbon Capture Facility includes the technology necessary to optimise district heating and is underpinned by a cohesive design framework and an integrated strategy across the Mitigation and Enhancement Area to deliver locally focussed social benefit.

5.6. ECONOMIC BENEFIT

- 5.6.1. The UK has a responsibility to address climate change, given its historical role in emitting carbon emissions into the atmosphere. This is recognized by government through its wealth of policy and delivery strategy (not least as set out at Sections 3 and 4 of this Report) and has been legislated for by the Climate Change Act 2008, making the achievement of net zero by 2050 a legal requirement.
- 5.6.2. By definition, one of the most important economic impacts resulting from the Proposed Scheme will be to reduce carbon emissions, with consequent reduction of pressure on global warming, and help the UK achieve net zero objectives. This is an environmental and social benefit, and in absolute terms, the Proposed Scheme is designed to reduce carbon emissions by around 1.6 million tonnes a year. However this carbon reduction, as well as being perceived purely as 'tonnes of carbon captured', can also be perceived as an economic effect.
- 5.6.3. The economic impact is different to the financial impact of a project. The financial impact or cost is about bills – but in addition to these typical financial costs and charges, the economic cost is a way to quantify, ideally in monetary terms, the full impact of a project including that which would be felt beyond the relatively narrow financial measures. The economic impact is the effect on the whole of society, not just those who are spending or receiving money. It follows that environmental costs

are included in economic impacts or costs – but they are not often included in financial costs.

- 5.6.4. Nominal economic benefit of the carbon emissions captured by the Proposed Scheme has been considered, at a high level, in Appendix B to this Report, applying a monetised value for carbon to indicate the economic effect of the Proposed Scheme. The appendix considers two options (one with the project and the other without) with the costs and benefits of each being monetised so that a direct comparison between them could be made. The analysis is indicative, carried out using typical estimates of the cost per tonne of carbon capture, transport and storage, and ‘central’ estimates from government supplied scenarios for carbon values (which represent the monetary value that society places on one tonne of carbon dioxide equivalent). Carbon prices (which are separate and largely unrelated to carbon values, and merely show the observed price of carbon in the UK ETS) were also incorporated, to reflect the costs that would be incurred under a without-project scenario.
- 5.6.5. Recognising that the analysis depends on a variety of assumptions, it concludes that using the government’s midpoint carbon values, and a relatively high cost allowance, the likely benefits to wider society from the Proposed Scheme carbon savings alone, are in the region of £1.7 billion (Net Present Value, 2023 prices).
- 5.6.6. This includes allowances for the financial costs to the Applicant in the with-project scenario (using high typical cost per tonne figures for the industry) and the UK ETS costs that would accrue in the without project case. While the exact quantified economic benefits will not be known until figures of costs and benefits are certain, it is clear that the economic benefits of the scheme will be significant.
- 5.6.7. In addition to directly addressing the climate emergency, the Proposed Scheme would contribute to the economy through investment, supply chain and employment impacts. The CCUS sector is nascent in the UK, as in other countries, with strong, geographically centred supply chains yet to be firmly established. By becoming a first, or early mover, for products and services related to the net zero challenge, the UK will be able to position itself to benefit from the economic opportunities that the emerging ‘green economy’ will promote.
- 5.6.8. Carbon capture, usage and storage represents one such opportunity, as it is a sector that is expected to play a crucial role in meeting global climate targets. As noted in ‘CCUS Supply Chains: A Roadmap to Maximise the UK’s Potential (Department for Business, Energy and Industrial Strategy, May 2021):
- ‘CCUS will be essential to that green economy, tackling climate change and meeting the UK’s target to reach net zero emissions by 2050. It also has the potential to deliver a stronger, greener UK by levelling up our industrial heartlands, supporting clean growth and providing new economic opportunities for UK-based companies across the world.’*
- 5.6.9. The Applicant is demonstrating the type of investment sought by the Draft Energy Policy 2024. It is the first EfW post-combustion carbon capture scheme to be

submitted for consent in the UK and is the only one using shipping for transport. At the national level, the Proposed Scheme will help drive growth in the UK CCUS sector, but also, uniquely, in the shipping sector, as a specialist shipping fleet will be needed to transport the liquid CO₂ from the Site to its permanent sequestration location.

- 5.6.10. Cory is a member of the Carbon Capture and Storage Association (CCSA), *the lead European association accelerating the commercial deployment of carbon capture, utilisation and storage (CCUS) through advocacy and collaboration.*³⁷ In July 2023, the CCSA launched a new CCUS Supply Chain Strategy with the CCUS Council Supply Chain Working Group, chaired by Make UK Chairman Lord Hutton. The new Strategy was prepared to set out *'a number of actions to deliver a successful CCUS industry that has the potential to safeguard 77,000 existing jobs in heavy industries such as steel and cement, while creating 70,000 new jobs in the green economy.'*³⁸
- 5.6.11. The associated Guidance is aimed at supporting developers and contractors to build local supply chains by improving supply chain planning and engagement at an early stage and throughout the procurement process. It was prepared to provide the necessary confidence and ability to invest in building UK supply chains.
- 5.6.12. The Sustainability Report 2022 (Appendix A) demonstrates a Cory Group's business model to work with suppliers that share the company's vision for the future and which take pride and responsibility in their operations. During 2022, Cory Group spent £114.5 million on 828 suppliers, of which 95 per cent were based in the UK. The Group's Supplier Code of Conduct defines the standards to which Cory adheres and expects of its suppliers and business partners. The Code includes requirements relating to suppliers' environmental and climate impacts and requires them to undertake specific actions such as maximising energy efficiency, minimising waste and reducing carbon footprint.
- 5.6.13. The Proposed Scheme will have a likely project cost in the region of £1billion. This level of additional expenditure will provide a substantial step up in the size of Cory's overall supply chain, and an opportunity to realise significant benefits from Cory's existing suppliers and particularly from the larger, extended supply and logistics network that will be required to deliver the project to completion.
- 5.6.14. The Proposed Scheme will generate around 27 direct, new FTE positions, with additional indirect and induced employment, many of which will be positions requiring high level knowledge and skills, recompensed accordingly. With the objective of adding more value locally, the new positions will be advertised internally within the business and within the London Borough of Bexley. Should it be necessary, they will be advertised more widely.
- 5.6.15. In keeping with the company's ethos, the Proposed Scheme will achieve more than just offer job contracts. Cory Group offers an apprentice programme (7 FTE taken on in 2022), is a 'Mindful Employer' (i.e. signatory to a national initiative for employers taking a positive approach towards mental health at work), recognises and actively engages with trade unions (around 30 per cent of employees are members of UNITE or GMB, which helps effective communication on collective issues) and pursues

numerous initiatives to keep its staff happy and motivated – the latter being perceived within the Group’s leadership as not just ‘nice to have’ but also a necessity for the achievement of commercial success. A skills and employment strategy will be developed for the Proposed Scheme, as secured by the **Draft DCO (Document Reference 3.1)**.

- 5.6.16. The new staff taken on directly to facilitate the proposed decarbonisation project will be offered the same broad range of training, development programmes and employment benefits, ensuring that managers are equipped to be effective leaders, and other staff are encouraged and enabled to work competently in an inclusive and welcoming environment.
- 5.6.17. Cory Group is accredited as an Investor in People (IIP) (including at silver level for apprentices). IIP status is recognised as an important, independent assessment of what the company needs to do to help its employees to thrive. Confirmation of accreditation was achieved following a robust process including an all-employee survey, interviews with the CEO and over 25 one-to-one interviews with people from all areas of the business.
- 5.6.18. The Proposed Scheme will generate significant economic benefit through a variety of mechanisms. Global environmental and social benefit will be delivered through the capture of carbon dioxide emissions. Converting these into monetary values, and comparing them with what would have happened under the counterfactual, demonstrates that under a relatively cautious set of assumptions, the likely benefits to wider society from the carbon savings achieved by the Proposed Scheme are valued at £1.7 billion in net present value (2023) terms. This is a very substantial positive impact and takes into account the effects of capital, operating and storage costs as well as the scope of the UK ETS expanding to include the waste to energy sector.
- 5.6.19. Further economic benefits of the proposed scheme will be felt within the UK through project expenditure on capital and operating costs. Such spending will make a timely contribution – at a critical stage for this emerging sector – to a growing UK industry that has reasonable expectations of becoming an indispensable part of the economy sector in the run up to 2050. The expenditure generated by the Proposed Scheme will benefit the supply chain, supporting and creating investment and jobs, while the size and timing of the initiative will send a strong message of confidence to investors, decision makers and businesses. Positive knock-on effects will be felt regionally and nationally, and these will be strengthened through the structure of the supply chain and the Applicant’s own business practices, its supplier Code of Conduct and its spending patterns, skewed towards UK suppliers.
- 5.6.20. Economic effect will also be felt within the local supply chain and within Bexley, and through opportunities for good quality employment and career development and community engagement initiatives.

6. CONCLUSION

- 6.1.1. The Proposed Scheme is recognised by NPS EN-1 as CNP Infrastructure, with local deliverable benefits to be felt locally, nationally and globally.
- 6.1.2. Assuming a nominal assumed throughput, this is equivalent to approximately 1.3Mt CO₂ per year. Table 13-10 of Chapter 13: Greenhouse Gases (Document Reference 6.1.13) demonstrates that based on the fully consented throughput of Riverside 1 and Riverside 2, the Proposed Scheme would result in net operational emissions savings of 1,620,603 tCO₂e, annually, relative to future baseline.
- 6.1.3. CO₂ emissions are a global challenge that require local solutions. The Carbon Capture Facility will capture at least 95% of the CO₂ emissions from Riverside 1 and Riverside 2 to materially contribute to the achievement of global, national and local targets. The zero carbon energy made available as a result of the proposed Carbon Capture Facility can be used locally as power and to optimise the Riverside Heat Network. The Proposed Scheme encapsulates the type of investment sought by the Draft Energy Policy 2024.
- 6.1.4. The Proposed Jetty will enable the captured CO₂ to be transported by ship for permanent sequestration under the North Sea. An exclusive commercial relationship has been developed with Viking CCS to progress the transport and storage solution. In its masterplanning, the PLA foresees the River Thames having a lead role underpinning the No.1 Net Zero UK trading centre. This approach leads to fewer vehicles on the public highway, reduced land take, and economic benefits as the Proposed Scheme can act as a catalyst to growth of the UK shipping sector. The ability to demonstrate the viability of NPT options for carbon dioxide, making carbon capture more attractive to other CO₂ emitters who do not have access to pipelines is a benefit at the national level. Furthermore, the Proposed Scheme can act as a catalyst for growth to the UK shipping sector, opening up a whole new market.
- 6.1.5. The Proposed scheme demonstrates that shipping at scale, a NPT option for carbon dioxide sought by government in the CCUS Vision, is deliverable.
- 6.1.6. Cory Group's sustainable waste management business has grown from a long history using the River Thames and is rooted in its riverside locations. In order to decarbonise Riverside and Riverside 2, there is no other reasonable location for the Proposed Scheme; the location is fundamental to the Proposed Scheme.
- 6.1.7. Both NPS EN-1 and the London Plan recognise that balancing the global imperative of climate change with local sensitivity is not easy. However, the Proposed Scheme will deliver CNP Infrastructure within the indicative boundary of the Riverside Opportunity Area (Figure 4 of the Bexley Local Plan) and substantially uses land allocated as Strategic Industrial Location to accommodate the Carbon Capture Facility. The opportunity to develop critical national priority infrastructure as one, cohesive development, underpinned by good design, is brought to reality through the Proposed Scheme. Direct loss of land not allocated for development has been limited

and has been positively mitigated through an integrated proposal that will deliver environmental and social benefit.

- 6.1.8. The Applicant's waste management operations provide a wider social benefit; safely processing London's recyclable waste and processing residual waste into energy. The addition of the Carbon Capture Facility will be a step change to those operations, contributing to the achievement of net zero to bring social well-being at the national, and even global, level. The Carbon Capture Facility includes the technology necessary to optimise district heating and is underpinned by a cohesive design framework and an integrated strategy across the Mitigation and Enhancement Area to deliver locally focussed social benefit.
- 6.1.9. High level analysis indicates the Proposed Scheme will achieve economic benefit from the carbon savings along in the order of £1.7 billion (Net Present Value, 2023 prices) to wider society from the carbon savings. In addition to directly addressing the climate emergency, the Proposed Scheme would contribute to the economy through investment, supply chain and employment impacts.
- 6.1.10. The Applicant is demonstrating the type of investment sought by the Draft Energy Policy 2024. It is the first EfW post-combustion carbon capture scheme to be submitted for development consent in the UK and is the only one using shipping for transport. At the national level, the Proposed Scheme will help drive growth in the UK CCUS sector, but also, uniquely, in the shipping sector, as a specialist shipping fleet will be needed to transport the liquid CO₂ from the Site to its permanent sequestration location.
- 6.1.11. Locally, the Proposed Scheme will generate around 27 direct, new FTE positions, with additional indirect and induced employment, many of which will be positions requiring high level knowledge and skills, recompensed accordingly. In keeping with the company's ethos, the Proposed Scheme will achieve more than just offer job contracts – it will offer the same opportunities for personal growth, career achievement and job satisfaction already enjoyed by Cory's current employees.
- 6.1.12. The Proposed Scheme provides a positive local response, within an acknowledged sensitive local environment, to the globally important environmental challenge that faces us all. The Carbon Capture Facility is CNP Infrastructure that the government is seeking to deliver through its latest policy statements, NPS EN-1 in January 2024 and the Draft Energy Policy, published in February 2024.
- 6.1.13. The Proposed Scheme is necessary for global, national and local climate change priorities and will deliver global, national, regional and local benefit.

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Appendices

Appendix A_

2022_SUSTAINABILITY_REPORT

ENERGISING

FUTURES



Welcome to our 2022 Sustainability Report

POWERING CHANGE



Cory is one of the UK's leading recycling and waste management companies. We are a privately-owned limited company, headquartered in London and operating throughout Greater London and the South East of England.

This report focuses on our achievements in delivering our sustainability strategy during 2022, and plans moving forward.

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Our highlights

Net zero goals
with bolder ambitions

466,000

Delivered an overall carbon benefit of 465,399 tonnes CO₂e to the UK

565 GWh

Exported 565 GWh of electricity,
enough to power c.195,000 homes

170,000

Reprocessed 170,000 tonnes of Incinerator
Bottom Ash into construction aggregates

Progressed our decarbonisation project

Continued to progress our carbon capture and
storage project to achieve our net zero commitment

Maximising potential,
minimising impact

100,000

Saved 100,000 truck movements by moving
843,000 tonnes of waste on the Thames

3,600

Saved c.3,600 tonnes CO₂e by using renewable diesel
in our river operations and Waste Transfer Stations

77,000

Processed 77,000 tonnes of recyclate at our Materials
Recycling Facilities in Wandsworth and Barking

Accreditations

Maintained accreditations
to ISO 14001 Environmental
Management System,
ISO 9001 Quality and the
ISO 45001 Occupational
Health and Safety Standard

Silver

Maintained our Silver
status in the Port of
London Authority Thames
Green Scheme

Inspiring people,
enabling change

£84m

Delivered £84 million of social value to society
beyond profit and income

43

electric vehicle
chargepoints
across 7 sites

5

local community projects
supported by the Cory
Community Fund

Silver

Maintained Silver status for our apprenticeship
scheme with Investors in People

Employee volunteering litter-picking events

Held employee volunteering litter-picking
events along the Thames and across sites

At a glance

At Cory, we maximise recovery, reuse, and recycling to realise the full value of the waste we process.

What we do

What makes us unique

OUR USE OF THE THAMES

We are the largest commercial operator on the River Thames, which has been central to our business since the 1800s.

100k

truck movements saved a year

OUR HISTORY

Incorporated in 1896 but tracing our history back to at least the 18th century, we have a proud heritage of serving London and the South East.

250+

years

OUR PEOPLE

We are a people-powered business, with a thriving workforce, many of whom have been with us for their whole careers.

350+

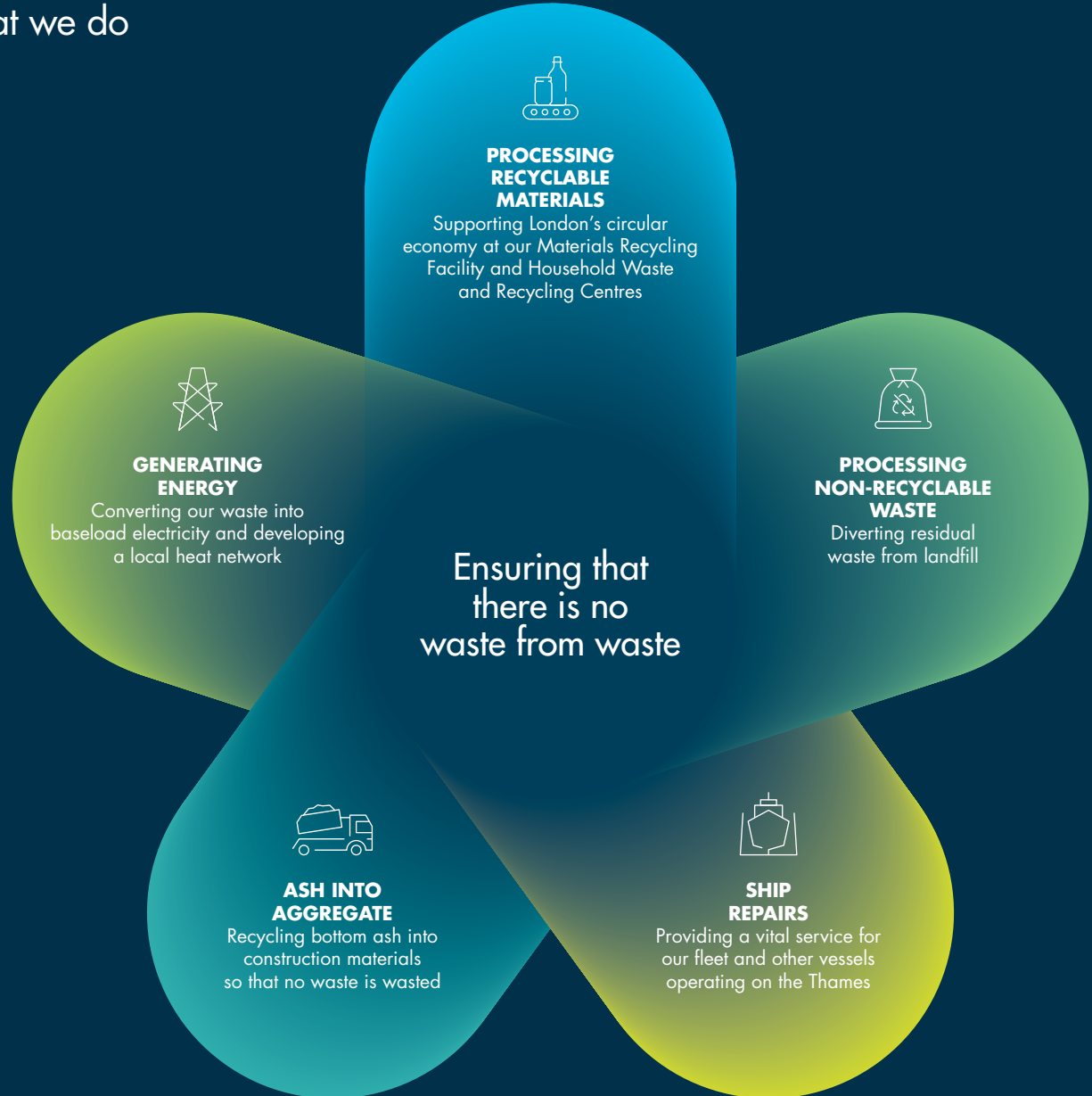
employees

OUR SCALE

We continue to invest in growth and innovation so that we can meet the needs of our communities and customers.

£900m

invested over the next five years



BUILDING A SUSTAINABLE FUTURE

Chief Executive Officer's statement

Dougie Sutherland

We can trace Cory's history back to at least the late 1700s. We have constantly adapted with advances in technology and responded to the needs of our communities. We have a proud history of 'stepping up' when our country has needed us, mobilising our fleet and people for the Crimean, and the First and Second World Wars.

Today, we face a climate crisis. This isn't 'tomorrow's problem', and we have a duty to find solutions to address global warming and support the UK's net zero commitments. Our plan is to create a decarbonisation hub at our Riverside site in the London Borough of Bexley to decarbonise up to 1.5 million tonnes of waste. We are advanced in developing our solution and expect to submit a planning application for our carbon capture project in 2024. We will

use the recovered decarbonised heat from the process to supply a major district heating network, and the decarbonised electricity will be sold to the national grid for use in homes, businesses and transportation. We will play our part in decarbonising the UK and, at the same time, differentiate ourselves from our competitors in London and the South East.

I am hugely proud of the progress we have made in the past year, and our refreshed sustainability strategy will be the driving force of our business as we look to the future.

Our sustainability commitments are underpinned by real action and investment in our river operations, in decarbonisation technologies, and in our employees and local communities. We will continue to respond to the challenges that face

the UK by providing the solutions and services that will be instrumental in achieving the country's decarbonisation goals and creating a sustainable future for all.

Prior to the publication of this Sustainability Report in June 2023, a tragic event took place at one of our sites. On 24th April, a team member sadly lost their life in an incident whilst working at our Materials Recycling Facility in Wandsworth. An HSE investigation is ongoing at the time of writing, and we are determined to use the findings to reinforce our uncompromising approach to ensuring the health and safety of all Cory employees and contractors.



SOME FURTHER HIGHLIGHTS FROM 2022

New sustainability strategy

Developed a new sustainability strategy to further improve our performance which is launched in this report

UN Global Compact

Joined the UN Global Compact providing us with access to best practice guidance, tools, resources and training to help us further improve our sustainability strategy

Sustainability training

70%

of our employees undertook sustainability training and made pledges for actions they would undertake at home and at work to be more sustainable

GRESB score

Achieved the highest rating in the GRESB Infrastructure Asset Assessment, being awarded:

5 stars

and scoring:

98/100

About this report

This report and its contents have been prepared on behalf of Cory Topco Limited and its subsidiaries (Cory Group).¹

This report relates to the activities, brands, products and services associated with Cory Group. Reference to the 'Company' or to 'Cory' means, as the context may require, all or some of the Cory Group entities. Cory Group assumes no responsibility to any other party in respect of, or arising out of, or in connection with this document and/or its contents or reliance thereon.

SCOPE AND BOUNDARIES

This report relates to the work undertaken in our last financial year, 1 January to 31 December 2022 and was published in June 2023. We first published a sustainability report in 2018 and have published an annual sustainability report since 2020; our reports on our 2018, 2020 and 2021 performance are available on our website (www.corygroup.co.uk).

We have used the financial control approach to define our organisational boundary and have reported on all operations fully consolidated in our financial statements. If you have any clarification questions, please email enquiries@corygroup.co.uk.

STRUCTURE AND MATERIALITY

Our report reflects how we manage our material sustainability issues. On page 5 we set out the results of the materiality assessment that we undertook in 2022 and used to shape our sustainability strategy. This provides the framework of how we manage the key material sustainability issues to our business.

REPORTING FRAMEWORKS

Cory has reported in accordance with the Global Reporting Initiative (GRI) Standards for the period 1 January – 31 December 2022. This report is reviewed and approved by our Chief Executive Officer.

Our greenhouse gas (GHG) emissions reporting methodology is in accordance with UK Government Environmental Reporting Guidelines

and the GHG Protocol Corporate Accounting and Reporting Standard. In line with guidance provided by the Environmental Services Association, we have used the Entreprises pour l'Environnement (EpE) 'Protocol for the quantification of GHG emissions from waste management activities' (2013) to calculate our carbon benefit to UK society.

The UN Sustainable Development Goals (SDGs) act as an international benchmark for global development. They provide us with a common language to help focus resources and measure the impact of our work. We have identified the goals we are supporting through our operations and delivery of our sustainability strategy.

PRECAUTIONARY PRINCIPLE

Cory applies the precautionary principle across all aspects of our operations. We do this through application of our Integrated Management System (IMS), which is certified to ISO 14001 Environmental Management System, ISO 9001 Quality and the ISO 45001 Occupational Health and Safety Standard. Delivery of the IMS is managed through our Health, Safety, Environment, Quality and Assurance (HSEQ) function.

REPORTING PRINCIPLES

This report has covered the topics, and their boundaries, identified as material by our internal and external stakeholders in our 2022 materiality assessment. The information included is considered to meet the GRI's Reporting

Principles for defining reporting quality as far as we are reasonably able.

ASSURANCE

Cory worked with ERCE Evolution (ERCE) to undertake an independent assurance review of our 2022 GHG emissions data. The assurance review was carried out for the period 1 January 2022 to 31 December 2022 and included all 2022 Scope 1, Scope 2 and Scope 3 emissions required by the Streamlined Energy Carbon Reporting requirements.

ERCE conducted its review to a limited level of assurance, in accordance with the procedures recommended in GHG Protocol entitled 'The GHG Protocol: A corporate reporting and accounting standard' (Revised edition, 30 Mar 2004) and the UK Government's Streamlined Energy and Carbon Reporting (SECR) and the principles of ISO 14064-3:2019, entitled 'Part 3: Specification with guidance for the verification and validation of greenhouse gas statement'. ERCE found no evidence to indicate that the data and information in our statement were not fairly stated.

ACTIVITIES, VALUE CHAIN AND OTHER BUSINESS RELATIONSHIPS

Cory primarily operates in the recycling, waste transfer, energy from waste and maritime sectors. We segregate and process recyclable materials for onwards reprocessing into new products and turn non-recyclable waste into electricity for the UK National Grid and by-products which can be

reprocessed into construction materials. We use the River Thames to transport waste on tug-drawn barges to our energy from waste (EfW) facility in Belvedere. In January 2022, we acquired a new Waste Transfer Station and Materials Recycling Facility in Barking, which is included in our reporting for this first time. At Barking we generate Solid Recovered Fuel (SRF) and Refuse Derived Fuel (RDF) for EfW facilities in the UK and Europe.

All Cory operating entities operate under the same management system and operating procedures. During 2022, our new operation in Barking was incorporated into Cory's Integrated Management System.

Cory currently works with commercial and industrial customers and eight London Boroughs to process recyclable and non-recyclable waste on behalf of their residents including Hammersmith and Fulham, the Royal Borough of Kensington and Chelsea, Lambeth, Wandsworth (together forming the Western Riverside Waste Authority), Bexley, Tower Hamlets, Barking and Dagenham, and the City of London. A new contract with Hertfordshire County Council will commence in April 2024. The recycle we sort and segregate in Wandsworth and Barking is sent to off-takers operating within the Organisation for Economic Co-operation and Development (OECD) for onwards reprocessing into new materials, following extensive due diligence to ensure they will be managed in an environmentally responsible manner.

This report covers Cory operations taking place at:

- Riverside 1 energy from waste facility.
- Five Waste Transfer Stations (WTS) in Barking, Wandsworth, Battersea, Tower Hamlets, and the City of London.
- Two Materials Recycling Facilities (MRFs) in Barking and Wandsworth.
- Two Household Waste and Recycling Centres (HWRCs) in Wandsworth and Tower Hamlets.
- A Barge Yard in Charlton and a Ship Repair Yard in Gravesend.
- An Incinerator Bottom Ash transfer station at the Port of Tilbury.

¹ The Cory Group comprises Cory Topco Ltd; Cory Holdco Ltd; Denmark Topco Ltd; Denmark Holdco Ltd; Viking Consortium Acquisition Ltd; Cory Riverside Energy Finance Ltd; Cory Riverside Energy Holdings Ltd; Cory Riverside (Holdings) Ltd; Cory Environmental Holdings Ltd; Riverside Resource Recovery Ltd; Riverside (Thames) Ltd; Cory Environmental Ltd; Cory Ship Repair Services Ltd; RHIN Holdings Ltd; RHIN Developments Ltd; Riverside Energy Park Holdings Ltd from 28 July 2022; Riverside Energy Park Ltd; SAS Depot Ltd from 31 August 2021; Cory Barking Holdings Limited; Cory Barking Operations Limited and Cory Barking Property Limited from 18 January 2022.

Our material issues

During 2022, we worked with our internal and external stakeholders to identify the material sustainability impacts our business has and any future trends that could affect us.

The review was carried out in accordance with the Global Reporting Initiative (GRI) Standards which means that our material topics (i.e. the topics that are covered by our sustainability strategy and that we publicly report on) need to represent our most significant impacts on the economy, environment and people.

The process began with a review of impacts, risks and opportunities in our existing sustainability strategy; our enterprise risk management (ERM) process; topics that have arisen during our ongoing stakeholder engagement processes; the contents of external sustainability frameworks including the GRI Standards, the Sustainability Accounting Standards Board and the UN Sustainable Development Goals; as well as peer and industry association reports and communications, external stakeholder reports and media articles.

We then asked our internal and external stakeholders to tell us which issues they think represent Cory's most significant economic, environmental and social impacts in the delivery of the services we provide. The process included interviews with investors, local authority customers and regulators, as well as an online survey shared with employees and external stakeholders. We also asked our investors which existing or emerging sustainability issues they thought could have the greatest impact or potential impact on the performance, development and position of Cory. This reflects the concept of 'double-materiality', which encourages a company to judge materiality from two perspectives: 1) the external impacts of their activities on the economy, environment and people with an audience consisting of customers, external stakeholders, employees, and investors; and 2) the potential or actual impacts of environmental, social and governance-related risks/opportunities on the performance, development and position of the company with an investor perspective.

Once we had completed this process, the issues were collated and rated by their significance, based on their severity (scale, scope, irremediability) and likelihood (as per the GRI guidelines). Each received a score from 1 to 5, aligned with our ERM process. The outcomes and learnings from the process were presented to the Board in November 2022 and adapted into a refreshed sustainability strategy, which we are launching in this report.

Our materiality process found that many aspects of our sustainability performance are currently meeting stakeholder expectations. For example, we are considered well positioned with our commitment to net zero and decarbonisation plans, as well as our health and safety performance and reporting, air quality reporting, modern slavery programme and apprenticeship scheme. The gaps identified were the need to build a stronger position on the waste hierarchy and waste prevention, as well as progressing our social value strategy.

Once the rating process was complete, the issues below were identified as Cory's most significant sustainability topics which need to be reflected in our strategy and reported on annually.

OUR MOST MATERIAL ISSUES



CARBON AND CLIMATE CHANGE

How are we working to make our net zero by 2040 target a reality?

How can we optimise our waste management processes to further support the UK in its decarbonisation journey?



HEALTH, SAFETY AND WELLBEING

How do we ensure health and safety is at the centre of everything we do as a business?

How do we support the wellbeing of our employees?



WASTE AS A RESOURCE

How can we help our local communities and customers to move materials up the waste hierarchy?

How do we get plastics out of the waste stream?



EMPLOYMENT AND SKILLS

How do we engage meaningfully with our workforce to create a positive company culture?

How do we address the risk of modern slavery in our operations and supply chain?



AIR QUALITY

How do we ensure our air quality emissions are as low as possible?



SOCIAL VALUE AND COMMUNITY

How do we maximise the value our business contributes to our local communities?

Our revised sustainability strategy

We have restructured our sustainability strategy to enhance our focus on moving materials up the waste hierarchy and be clearer on our social value proposition.



By delivering negative emissions, we'll play our vital role in helping the UK to achieve net zero

Get to net zero by 2040 or sooner

Maximise the carbon benefit of our energy from waste process



[Read more on pg. 9](#)

NET ZERO GOALS WITH
BOLDER AMBITIONS

POWERING
POSITIVE CHANGE

MAXIMISING POTENTIAL,
MINIMISING IMPACT

INSPIRING PEOPLE,
ENABLING CHANGE



We'll maximise waste potential whilst minimising our environmental impact

Continually improve our environmental performance

Move materials up the waste hierarchy



[Read more on pg. 17](#)



We'll keep inspiring positive change in our business and communities

Put health, safety and wellbeing at the centre of everything we deliver as a business

Be an employer of choice

Support a thriving local community

Build a sustainable supply chain



[Read more on pg. 22](#)

Our vision

To be the first choice for sustainable waste management: climate positive, and constantly evolving to deliver innovative and affordable solutions.

Our purpose

Ensuring that there is no waste from waste.

Governance, advocacy and partnerships

Responsibility for Cory's sustainability impacts and performance is integrated and embedded into our existing governance structures.

Cory's Board of Directors is ultimately responsible for approving our sustainability strategy and overseeing its delivery, and is provided with a progress update at each quarterly board meeting. Our Independent Chair leads the Board and provides independent oversight and governance, for all material issues, including those related to sustainability impacts. Our Chief Executive Officer oversees delivery of the sustainability strategy at a business level, while our Executive Leadership Team (ELT) tracks accomplishment of the accompanying annual targets on an ongoing basis throughout the year.

Our Corporate Affairs Team leads on the day-to-day execution of our sustainability strategy, working across the business, including with Operations, HSEQ (Health, Safety, Environment and Quality) Assurance, Development, Finance, and the Legal Team, to deliver our annual goals and targets.

The HSEQ Assurance Team manages an internal auditing programme to maintain upkeep of Cory's Integrated Management System (IMS) – which is currently certified to ISO 14001 Environmental Management System, ISO 9001 Quality and the ISO 45001 Occupational Health and Safety Standard. The HSEQ Assurance Team also manages the collection and analysis of sustainability performance data.

In 2020, we established a cross-functional internal Sustainability Working Group with 12 members from across the business. The group began meeting bi-monthly during 2021 to share progress on delivering actions and meeting targets; explore opportunities to drive further progress in specific areas; discuss new projects, ideas and innovations; identify new and emerging risks and opportunities; and disseminate insights from external stakeholders and peer companies. Today, the Working Group is proving valuable in creating a network among employees and a means of sharing information throughout the Company.

OUR INDUSTRY ASSOCIATION MEMBERSHIPS

Association for
Decentralised Energy

Bacton Thames Net Zero
Steering Group

BusinessLDN

Carbon Capture and
Storage Association

CBI

Energy & Utility Skills

Environmental Services
Association

Norwegian – British
Chamber of Commerce
(NBCC) Advisory Board

Slave-Free Alliance

Thames Skills Academy

Waste Industry Safety
and Health Forum

Westminster Energy Forum

UN Global Compact

New for 2022

Bacton Thames Net
Zero Steering Group

WHY WE JOINED

This is an initiative seeking to support the decarbonisation of the South of England by developing an energy hub focused on carbon capture utilisation and storage (CCUS) and hydrogen production on the coast of Norfolk (with CO₂ storage offshore). Cory is a founding member of the initiative.

**Bacton
Thames
NetZero.**

[See more about BTNZ](#)

Norwegian – British
Chamber of Commerce
(NBCC) Advisory Board

WHY WE JOINED

The NBCC's mission is to promote trade and investment between Norway and the UK, and the purpose of Cory's involvement is to support the development of a CO₂ market between the two countries, increasing Cory's opportunity to find a CO₂ offtaker for our CCS project at an earlier date.

Norwegian - British
CHAMBER OF COMMERCE



[See more about NBCC](#)

UN Global Compact

WHY WE JOINED

Membership of the UN Global Compact provides us with access to best practice guidance, tools, resources and training to help us further develop and improve our sustainability strategy.



United Nations
Global Compact

[See more UN Global Compact](#)

NET ZERO GOALS

In this section

- 9 Get to net zero by 2040 or sooner
- 12 Maximising the carbon benefit of our EFW process
- 15 Actions and targets 2023



WITH BOLDER AMBITIONS

Net zero goals with bolder ambitions continued

By delivering negative emissions we'll play our vital role in helping the UK to achieve net zero.

Get to net zero by 2040 or sooner

ALIGNMENT TO UN SDGS



MATERIAL ISSUE

Carbon and climate change

Cory has a commitment to reach net zero carbon by 2040. For Cory, delivering our decarbonisation plans will mean that we will be removing more carbon from the atmosphere than we put in. Achieving this commitment is dependent upon successfully installing carbon capture and storage (CCS) technology at our existing EfW facility, Riverside 1, and future facility, Riverside 2, which is due to be operational in 2026. This technology will divert the emissions from our facilities, and then separate the CO₂ from other gases so that it is not emitted into the atmosphere. Once separated, this CO₂ will be compressed and liquified on site and then transferred by ship to storage sites under the

North Sea that will seal the CO₂ deep underneath the seabed.

In 2022, 99 per cent of Cory's CO₂ emissions were emitted from the stack at Riverside 1. Safe and reliable waste management is essential for a functioning society, yet as knowledge about anthropogenic climate change has evolved, so has our understanding of how waste management contributes to global warming. In the UK in 2018, the recycling and waste management sector contributed 8 per cent of total UK greenhouse gas emissions¹. CCS is the leading technological approach that EfW plants can utilise to significantly reduce the CO₂ emissions that are generated in the processing of waste. The UK Committee on Climate Change states that CCS technology needs to be fitted to EfW facilities from 2040, in line with their proposed ban on all waste to landfill².

Cory is committed to delivering decarbonised waste management for our customers and communities through CCS. Once the CCS technology is operational, our EfW operations will become 'carbon negative', i.e. removing more CO₂ from the atmosphere than is emitted due to the composition of waste, c.50 per cent of which is fossil carbon (derived from plastics) and 50 per cent biogenic (derived from wood, paper and cardboard). At full operation, Cory's CCS facility will capture and enable the permanent geological sequestration of c.1.3 million tonnes of CO₂ a year, of which approximately 50 per cent will be biogenic; capturing and storing these biogenic emissions will be a carbon removal.

By capturing both the fossil and biogenic carbon emitted by our operations, we have the potential to play a vital role in helping the UK to achieve net zero, given the possibility of supporting hard-to-abate sectors, such as steel, cement and petrochemicals, reach net zero through the purchase of the negative emissions we generate.

Back in 2021 we commissioned specialist engineering and technical consultants to assess the feasibility of CCS deployment at both Riverside 1 and Riverside 2. The first stage of the pre-front end engineering and design programme concluded that a full chain (CO₂ capture, marine transport and offshore storage) scheme for a two-phase EfW CCS project would be feasible.

Following the decision to continue to proceed with the project, engagement with regulators and technology providers and the maturation of the basis of design has enabled us to select a solvent-based post-combustion carbon capture technology, and during 2022 we shortlisted three qualified technology providers. The emerging scheme is differentiated by the use of an innovative CCS process heat recovery system to capture the otherwise wasted heat to increase the production capacity of our proposed Riverside Heat Network. The overall masterplan for the CCS project will also include electrolysers to enable us to provide low carbon hydrogen to the local marine and road-based haulage markets in London and the South East.

In 2022, the then Secretary of State for the Department of Business, Energy and Industrial Strategy (BEIS), directed that Cory's planned CCS and hydrogen projects qualify as nationally significant projects, acknowledging the vital role they will play in achieving the UK's net zero ambitions. An application for a Development Consent Order (DCO) seeking permission to build and operate the CCS and hydrogen projects is being prepared and will be submitted to the Department for Energy Security and Net Zero (formerly known as BEIS) for determination in the first half of 2024 (read more about applying for a DCO and what it means on page 10).



We have explored opportunities to ship CO₂ to Northern Lights' subsea carbon storage facilities in Norway, one of the most advanced CCS projects in the world, and we have also evaluated three developing subsea carbon storage opportunities in UK waters. The availability of non-pipeline transport (NPT) solutions, particularly shipping, will be key acceptance criteria for potential Track-2 CCS projects and we therefore expect to participate in the next UK Government Cluster Sequencing Competition, as we are the only EfW operator with existing river operations.

Our objective is to achieve 'CCS readiness' (consents in place, front-end engineering and design (FEED) completed, T&S provider identified) by 2026 and subject to a favourable financial investment decision, be in a position to be fully operational by 2028.

The key challenges we face to achieving this are not technical, but rather policy and commercial in nature. Therefore we also maintain several memberships with groups working to progress CCS in the UK and beyond, including the Carbon Capture and Storage Association, the Bacton Thames Net Zero consortium and the Environmental Services Association. Furthermore, Cory is participating in the development of regulatory and economic support systems for CCS by participating in the Greenhouse Gas Reduction Business Model, Waste Industrial Carbon Capture Business Model and Industrial Carbon Capture Expert Groups, now run by the Department for Energy Security and Net Zero.

1 Environmental Services Association, "A net zero greenhouse gas emissions strategy for the recycling and waste management sector in the UK" (June 2021)

2 <https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Waste.pdf>

Net zero goals with bolder ambitions continued

We talked to Richard Wilkinson about the Development Consent Order process.

WORKING SMARTER,



Richard Wilkinson
DCO Project Director

Q What is a Development Consent Order?

A Previously in the UK there was a problem with delivering big infrastructure; for example, it took Cory around a decade to get planning consent for Riverside 1. To combat the problem, the UK Government introduced the Planning Act 2008, which was designed to speed up and streamline the process for delivering the infrastructure necessary to support economic growth in the UK.

Under the Planning Act, the largest infrastructure projects deemed as 'Nationally Significant', such as airports, road schemes, large energy generation installations and the biggest EFW facilities, have a way of applying for planning consent that is vastly quicker than the previous system in place.

Q Why is applying for a DCO such a big deal?

A The way the DCO system was set up is that developers must do a huge amount of upfront consultation, which naturally involves a significant amount of expense. Therefore, only developers who are very serious about project delivery will embark on the process. The benefit you receive as a developer is that you have a clear timescale for a planning decision which facilitates financing and, ultimately, delivery of the project.

Q What is the timescale for the process?

A We intend to apply in the first half of 2024, with a decision targeted in around mid-2025. This means by early-2024 we will have completed a full suite of the 'up front' planning, environmental and legal documents needed to support our DCO application.

DEVELOPING FASTER

Net zero goals with bolder ambitions continued

PLASTICS IN
RESIDUAL WASTE

In 2022, we undertook an enhanced composition analysis of the waste entering Riverside 1 to find out more about the types of materials in the waste stream. We found that plastics, while only representing 16 per cent of the residual waste by weight, contribute a whopping 65 per cent of the fossil carbon emissions from our EFW process.

The analysis showed that plastic film – particularly packaging film – punches well above its weight in its contribution to residual waste. Despite being a light material, it still makes the top ten by weight in terms of the materials processed at Riverside 1. Currently only a small proportion of plastic film is recycled, due to challenges with its collection, sorting and recycling as well as end markets. Flexible plastics are set to be introduced to kerbside collections by 2027, and some supermarkets now collect this material directly. Where there are few alternatives to plastic film used as packaging, efforts to make its recycling more commonplace are essential and we look forward to seeing the impact of the kerbside collections and hope to see use of supermarket collections growing in the meantime.

65%
of fossil carbon emissions
from our EFW process
are from plastics



Expanded polystyrene also represents an unacceptably large proportion of the residual waste stream. While some expanded polystyrene can be recycled, it is time to reduce the production and consumption of this material. Rather than continuing to rely on polystyrene, particularly in packaging, schemes such as the UK Government’s proposed Extended Producer Responsibility regime should aim to disincentivise the use of it altogether.

While we believe that consumers have an important role to play in ensuring that less plastics are used and more plastics are recycled, the most significant changes can be made at a policy and business level to limit the production of plastics altogether and to create the correct conditions for plastic reprocessing in the UK.

ENERGY USE
AND EFFICIENCY

Cory uses electricity from the UK Grid to power our waste processing and recycle sorting operations. In 2022, we purchased renewable energy across our sites, excluding a small amount of electricity procured from the Port of Tilbury and our newly acquired WTS and MRF in Barking. The renewable energy we procure meets the quality criteria of the GHG Protocol (2015) for reporting zero carbon emissions and has been independently assured by Carbon Clear.

We also provide electricity to the UK Grid from our EFW process. The electricity we provide is c.50 per cent renewable due to the composition of waste being 50 per cent fossil carbon (i.e. plastics) and 50 per cent biogenic (i.e. paper, cardboard, wood).

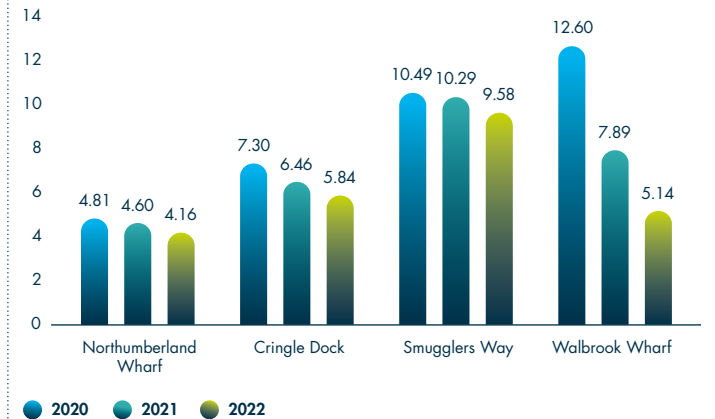
We use gas oil in the auxiliary burner at Riverside 1, to power some waste processing equipment, and in mobile plant and site vehicles at our Waste Transfer Stations.

In June 2021, our Lighterage Operation moved entirely onto renewable diesel, also known as hydrotreated vegetable oil (HVO). During 2022, our Northumberland Wharf, Smugglers Way and Cringle Dock Waste Transfer Stations also switched to renewable diesel, reducing our CO₂ emissions from 3,680 tonnes to 48. This fuel is produced from waste materials such as used cooking oil and waste fats, which do not release any new carbon dioxide into the atmosphere and reduces nitrous oxide and particulate matter emissions by 19 per cent and 21 per cent respectively (in tests undertaken on a Cory tug in 2021) when compared to marine gas oil. The renewable diesel we use is verified at import by the International Sustainability and Carbon Certification (ISCC), and through the Renewable Fuel Assurance (RFAS) run by Zemo. Therefore the suppliers are able to provide a clear history and breakdown of derivation of raw material collection through to final delivery, ensuring no palm oil is present.

[See more about ISCC](#)

[See more about RFAS](#)

CORY WASTE TRANSFER STATION AVERAGE KWH OF ENERGY USED PER TONNE OF WASTE PROCESSED 2020-2022



Energy consumption is managed through our Environmental and Energy Policy which commits us to reviewing our energy performance regularly, while continually improving. We do this by incorporating the intent of ISO 50001 Energy Management in our certified ISO 14001 Environmental Management System.

We know the cleanest energy is the energy that we do not use, so maximising our energy efficiency is a key goal. Every year we undertake energy reviews with representatives at Riverside 1, our Waste Transfer Stations (WTS), Barge Yard and Ship Repair Yard to develop energy efficiency plans for each site.

Site Managers are sent their energy use intensity ratio quarterly. The intensity ratios are the calculation of energy used – electricity, fuel and gas (if applicable), to process one tonne of waste at a specific site.

Through this process we can see that the energy use ratios have reduced year-on-year across our WTS, this is due to improvements in our processes and equipment upgrades; for example, during 2022 we upgraded the grab and container cranes at Cringle Dock WTS and continued our LED lighting programme across all sites.

Engaging employees on energy use is key to our plans; during 2022, we issued a new toolbox talk on energy efficiency covering heating/cooling, electricity and fuel use in site vehicles.

Net zero goals with bolder ambitions continued

Maximising the carbon benefit of our EfW process

OUR CARBON BENEFIT 2022

ALIGNMENT TO UN SDGS



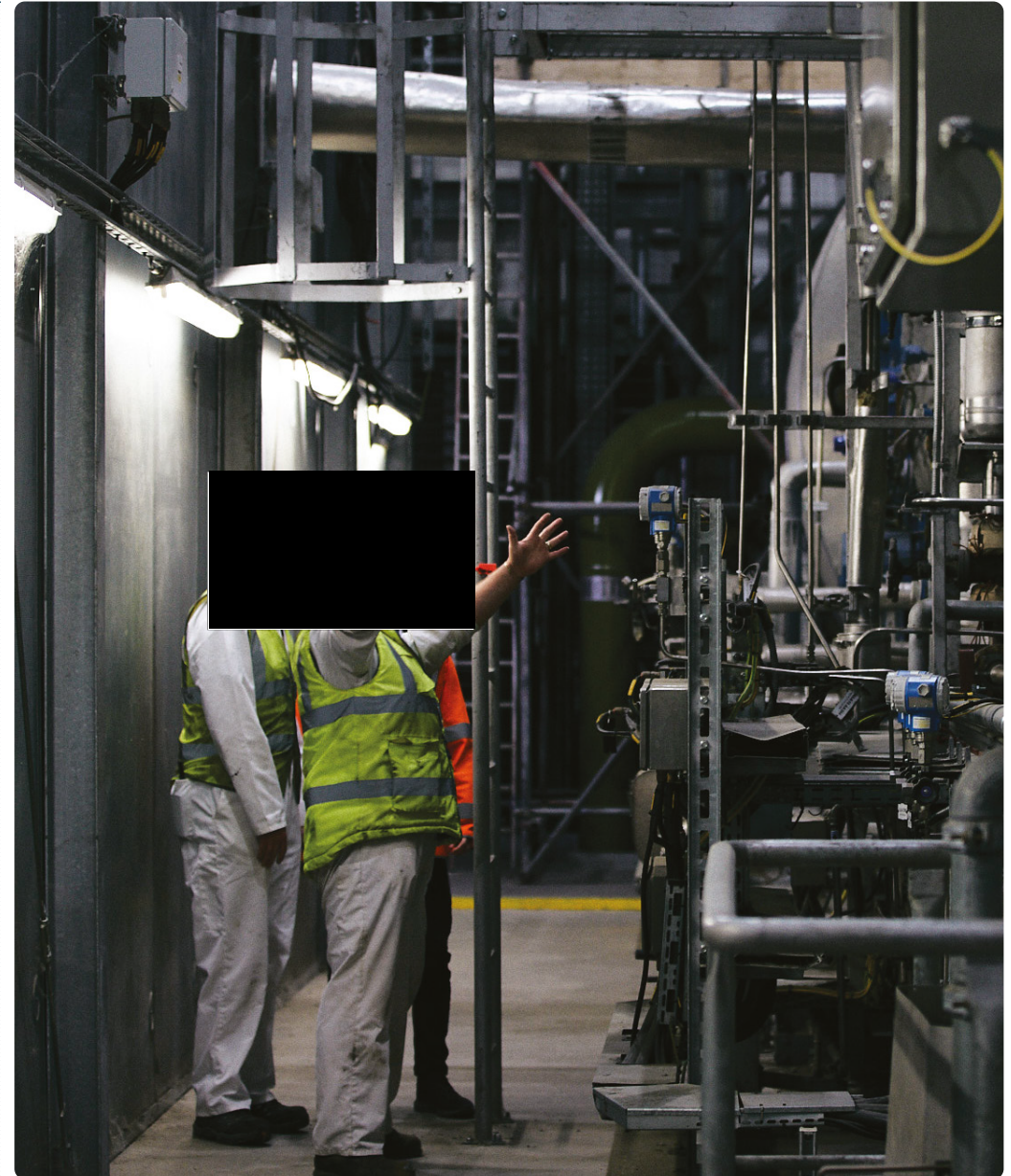
The primary purpose of energy from waste is to provide the most efficient process to treat residual waste. At Riverside 1, the energy embedded in residual waste is recovered and used to generate electricity for the UK Grid. Metals are extracted and recycled and the by-products – IBA and APCr – are reprocessed for use as road and building materials. This ensures there is no waste from waste.

EfW provides a carbon benefit to society due to the emissions it offsets or avoids in other sectors, for example:

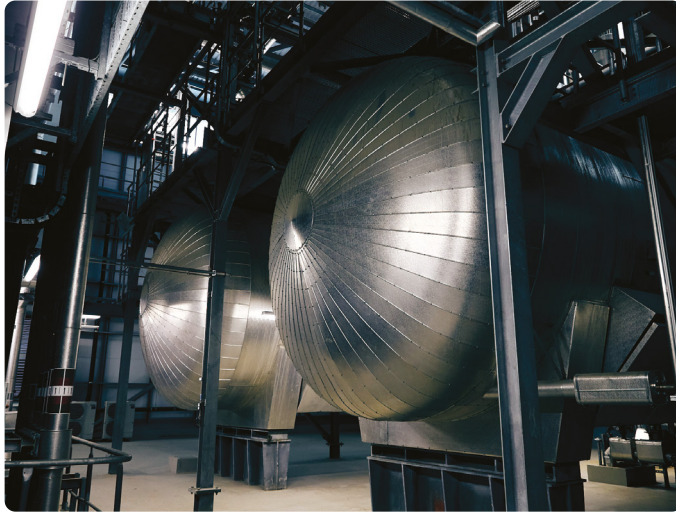
- 1 Reducing methane emissions from landfill
- 2 Displacing emissions from energy that would be generated by fossil fuel power stations
- 3 Avoiding the need to quarry virgin materials for aggregate that can be produced from IBA and APCr
- 4 Avoiding mining for new metals by recovering metals from IBA

Process	Cory's carbon benefit 2022 in tonnes of carbon dioxide equivalent (tCO ₂ e)*
Power generation offset (export only)	109,248
Recovery of by products – IBA and APCr	920
Metals from EfW	97,142
Landfill offset	258,284
Total	465,594

* We have developed a bespoke methodology to calculate the carbon benefit of our EfW process over landfill using the Entreprises pour l'Environnement (EpE) tool 'Protocol for the quantification of GHG emissions from waste management activities' (2013), the ESA publication 'Quantification of greenhouse gas emissions from recycling and waste management activities in the UK' (2021), the Scottish Carbon Metrics, Defra's 'Energy recovery for residual waste: A carbon based modelling approach' (2014) and the UK Government's GHG conversion factors for 2022. For 2022, we calculated the carbon saving of our EfW process versus landfill as 327kg of CO₂e per tonne of waste processed.



Net zero goals with bolder ambitions continued



Maximising the carbon benefit of our EfW process continued

650k

Tonnes of non-recyclable waste processed per year at Riverside 2

176k

Electricity generated to power equivalent number of homes

RIVERSIDE 2

ALIGNMENT TO UN SDGs



In December 2022, we reached financial close for our second EfW facility, Riverside 2, with construction beginning in January 2023. The facility will process 650,000 tonnes of non-recyclable waste per year, generating enough electricity to power 176,000 homes¹. Riverside 2 will represent a huge step forward in meeting London and the South East's waste needs; currently nearly 3 million tonnes of waste in the region is either landfilled or sent overseas for treatment.

¹ Ofgem estimates the typical household in Britain uses 2,900 kWh of electricity in a year, Riverside 2 is anticipated to generate 509,696,000 kWh of electricity a year from processing 650,000 tonnes of waste – <https://www.ofgem.gov.uk/information-consumers/energy-advice-households/average-gas-and-electricity-use-explained>



EFFICIENCY OF RIVERSIDE 1

ALIGNMENT TO UN SDGs



We continue to focus on the efficiency of Riverside 1, and during 2022 delivered the following projects:

- Initiated a performance monitoring study on the compressed air generated system, looking at how much is generated and where it is used in accordance to the service air system and instrumentation air system. A capacity issue was identified in the instrumentation air system which requires upgraded air dryers. In 2023,

we intend to upgrade the air dryers to a vacuum pump which has the potential to save up to 50 per cent of energy in the instrumentation air system, forming part of the overall compressed air system. Moving forward, we also intend to introduce an ongoing monitoring system to improve asset monitoring from a whole system perspective.

- Improved the efficiency of electricity generation by enhancing the sliding bleeds control of the turbine. During 2023, we will undertake further borescope inspection to determine the long-term impact to the steam turbine.



THE RIVERSIDE HEAT NETWORK

Working with Vattenfall, Local Authorities and developers, we are developing a district heat network to provide affordable and low carbon heating to more than 21,000 homes in the London Borough of Bexley and the Royal Borough of Greenwich from Riverside 1 and Riverside 2.

The Riverside Heat Network will revolutionise how a large part of the city is supplied with heating, displacing natural gas to reduce new fossil carbon emissions, while bringing air quality improvements for residents. It will accelerate London's journey to net zero and will be the largest district heat project in the UK.

During 2022, we continued to progress commercial discussions with our partner Vattenfall, who will be delivering the project.

Net zero goals with bolder ambitions continued

Maximising the carbon benefit of our EfW process continued

MAXIMISING RECYCLING OF BY-PRODUCTS FROM OUR EFW PROCESS

The EfW process produces both Incinerator Bottom Ash (IBA) and air pollution control residue (APCr). Cory monitors the rate of IBA and APCr production daily and have optimised process techniques to maintain levels of approximately 23 per cent and 2.8 per cent respectively for the wastes. Maintaining these levels indicates that Riverside 1 is operating effectively as per plant design.

In order to maximise the benefit of these by-products, we work with third parties who reprocess the materials into new products or render them inert. Cory's Sustainable Procurement Policy commits us to ensuring that our procurement practices and supply chain activities are carried out in a safe, ethical and cost-effective manner and deliver sustainable outcomes. Waste management activities in the UK are highly regulated, and we work closely with the Environment Agency and our suppliers to ensure that all our permitted sites remain in compliance with their permits. Suppliers are selected because of their ability to manage the waste materials effectively and in line with regulatory requirements, and we engage on an ongoing basis to ensure that the contracts are working effectively for both parties.



Incinerator Bottom Ash

Once residual waste has been through our EfW process and the energy recovered to produce electricity, approximately 23 per cent becomes IBA. IBA contains combusted products such as ash and slag as well as glass, brick, rubble, sand, grit, metal, stone, concrete, ceramics and fused clinker.

In 2022, 170,000 tonnes of IBA from Riverside 1 was sent via river to a processing facility at the Port of Tilbury. We monitor the production of IBA by mapping the ash bunker and using weighbridge data for deliveries to Tilbury.

At Tilbury, the mineral fraction is extracted and the ferrous metals and non-ferrous metals are recovered. The metals then go to a specialist refinery to produce a high-quality metal product which is sent to smelters for reuse into a range of different applications. The effective removal of the metals allows the IBA minerals to be transformed into a sustainable source of aggregates, such as road paving and low-grade concrete, which can be used in construction and civil engineering projects as a replacement for primary material. Cory is working with the ESA to support the recognition of IBA Aggregates as an 'end of waste' product, by the Environment Agency.



Cory is working with ESA to support the recognition of IBA Aggregates as an 'end of waste' product, by the Environment Agency.

Air Pollution Control Residue

Burning the waste in our EfW facility's combustion chamber releases a mix of hot gases. These gases heat up the water in the boiler into super-heated steam. This steam drives the turbine that is attached to the generator, producing electricity. To control flue gases we inject ammonia, hydrated lime, powdered activated carbon and water into the swirling gas flow. This helps to neutralise acids and capture heavy metal particles. The gas is then filtered, and the residue captured. This is known as air pollution control residue (APCr).

APCr accounts for approximately 2.3 per cent of the plant's output. We use silo weights to measure quantities, and for deliveries offsite we use weighbridge data. We currently recycle about 50 per cent of the APCr through a third party who turn it into carbon negative secondary aggregates used by the building trade. Until September 2022, the other 50 per cent was placed in long-term storage in the worked-out areas of a rock salt mine, which is considered an alternative to landfill. From September 2022, it began to be processed at an ash treatment facility, where the inherent cementitious properties of the APCr is used to help to treat and process other waste streams and enable safe and compliant disposal of the resultant stabilised waste. This use of APCr avoids the use of other cementitious materials, such as virgin lime and cement products, providing environmental benefits and carbon savings.

During 2023, we are undertaking testing to assess whether we could undertake APCr reprocessing on-site into construction materials. This would enable us to maximise the volume that goes to reuse and reduce transportation emissions from sending it to a third party for reprocessing.

170,000
tonnes of IBA sent for reprocessing

9,000
tonnes of APCr turned into carbon negative secondary aggregates

EXPLORING THE OPPORTUNITY TO GENERATE HYDROGEN FROM OUR EFW PROCESS

The overall masterplan for our CCS project includes the opportunity to produce low carbon hydrogen from the decarbonised electricity we produce. Once the CCS technology is operational, the electricity will be used to power electrolyzers which convert water into hydrogen, providing a carbon-free fuel source for local road and river transport – such as the refuse vehicles and tugs which transport waste to the facility. The combination of energy recovery supported by CCS and the use of electrolysis will render the resulting hydrogen carbon negative.

Net zero goals with bolder ambitions continued

Actions and targets 2023

Aims	Objectives	2023 Targets
Get to net zero by 2040 or sooner	Install carbon capture technology in our EfW facilities to provide net zero waste management services for our customers	<ul style="list-style-type: none"> Undertake all preparations required to submit DCO application for CCS project in the first half of 2024 Progress discussions with commercial counterparties to identify solvent-based post-combustion technology provider Apply for Track-2 Phase-1 government support
	Work to reduce the volume of plastics in residual waste to reduce fossil carbon emissions from our EfW process	<ul style="list-style-type: none"> Continue to collect dense plastics at Wandsworth HWRC and promote awareness to local community Communicate the need to remove plastics from residual waste to our local communities Support industry campaigns which promote plastics recycling, e.g. ESA/British Plastic Foundation's joint campaign Engage with policy development that seeks to eliminate problematic plastics and improve recycling rates in the UK
	Get to operational net zero by maximising energy efficiency and phasing out use of fossil fuels	<ul style="list-style-type: none"> Use renewable diesel/HVO as a fossil fuel alternative (as far as availability allows) whilst monitoring developments in zero emissions plant and river vessels Engage with dock tractor manufacturer on development of electric dock tractors suitable for our operations Redevelop Barking Waste Transfer Station to maximise electrification of onsite processes and reduce reliance on fossil fuel Maximise efficiencies in heating, ventilation and air conditioning to reduce use of natural gas for heating, and explore electric heating options for site upgrades Invest in renewable energy through continued purchase of Renewable Energy Guarantees of Origin (REGOs) Continue engine idling programme on the tugs, monitoring idling time per tug and reporting back to crews Continue to implement maximum power on tugs at 80 per cent Deliver individual site energy efficiency plans

Aims	Objectives	2023 Targets
Get to net zero by 2040 or sooner continued	Reduce emissions from our value chain	<ul style="list-style-type: none"> Demonstrate engagement with key contractors and partners to show that opportunities to reduce embodied carbon in new-build products and employ low carbon construction techniques have been identified and prioritised Monitor use of consumables at Riverside 1 to ensure a robust KPI for consumption rate per tonne of waste processed and benchmark against other EfWs
Maximise the carbon benefit of our EfW process	Maintain investment in the efficiency of Riverside 1	<ul style="list-style-type: none"> Monitor plant efficiency so parasitic load per tonne of waste and power export per tonne of waste remain maximised and benchmark against other EfWs
	Deliver the Riverside Heat Network to make use of the waste heat from our EfW process	<ul style="list-style-type: none"> Continue to progress development of the Riverside Heat Network
	Maximise recycling of by-products from our EfW process	<ul style="list-style-type: none"> Develop proof of concept into opportunity to reprocess APCr onsite into building materials
	Support decarbonisation of heavy transport by exploring the opportunity to generate hydrogen from our EfW process	<ul style="list-style-type: none"> Undertake all preparations required to submit DCO application (hydrogen production included on CCS application) in the first half of 2024 Progress discussions with commercial counterparties

In this section

- 17 Continually improving our environmental performance
- 19 Cory on the river
- 19 The waste hierarchy
- 20 Actions and targets 2023



MAXIMISING POTENTIAL, MINIMISING IMPACT

Maximising potential, minimising impact continued

We'll maximise waste potential whilst minimising our environmental impact.

Continually improving our environmental performance

ALIGNMENT TO UN SDGS



As a recycling and waste management company, our operations contribute towards environmental protection by ensuring waste is disposed of in a way that reduces the risk of pollution and negative environmental impacts.

We are committed to further protecting the environment by reducing our primary resource consumption; adhering to the waste hierarchy; and monitoring and reducing, wherever reasonably practicable, emissions to air, water and land from our operations.

We identify and manage our potential environmental impacts through ongoing and robust risk assessment. We set clear environmental objectives and targets

on a site-by-site basis to manage, minimise and, where reasonably practicable, eliminate these risks.

We work to enhance our environmental performance using the ISO 14001 standard for environmental management systems as part of our Integrated Management System (IMS). ISO 14001 allows us to manage our environmental responsibilities in a systematic manner, meaning we can fulfil compliance requirements at the same time as achieving our environmental objectives. Compliance obligations are continually monitored using a variety of different processes, such as audits and site visits, document and/or record review, management review meetings, competency assessments and external assessment visits by regulators, customers and external certification bodies.

CORY'S INTEGRATED MANAGEMENT SYSTEM (IMS)

Our Integrated Management System (IMS) is certified by a recognised external body according to:

- ISO 9001 for Quality Management;
- ISO 14001 for Environmental Management;
- ISO 45001 for Occupational Health and Safety Management.

Our environmental permits require us to have a certified environmental management system. Our decision to implement and maintain an integrated management system to the ISO standard which covers safety and quality as well as environmental management exceed the legal requirements upon us, but we believe that by implementing an integrated management system there are synergies and efficiencies which improve our ability to operate safely.

Our IMS covers all operating sites and our head office and applies to all aspects of our operations and all workers, including agency workers and long-term contract workers who work on our sites or where we control the operation.

AIR QUALITY

MATERIAL ISSUE



We comply with stringent air quality emissions limits and our emissions are continuously and independently monitored. We are constantly exploring new technologies and methods to reduce our air quality emissions.

Our air quality emissions are monitored by our Continuous Emissions Monitoring System (CEMS) and our emissions data is published monthly on our website, as well as the Annual Performance Report that we submit to the Environment Agency. During 2022, the Environment Agency undertook an audit of our emissions reporting and identified no non-compliances.

We work with independent bodies, including the Environmental Research Group at Imperial College London (ICL), to monitor the impact our EFW facility has on local air quality. ICL independently monitors air quality around our EFW facility at eight different monitoring locations in the surrounding boroughs of Bexley, Barking and Dagenham, and Havering. The results from ICL's 2022 study will be received later in 2023, but we expect them to confirm once again that the UK Air Quality Strategy objectives have been met at all monitoring sites around the facility.

During 2022, we continued our enhancement project to optimise the selective non-catalytic reduction system at Riverside 1 and further reduce the NOx setpoint. We determined that the plant could

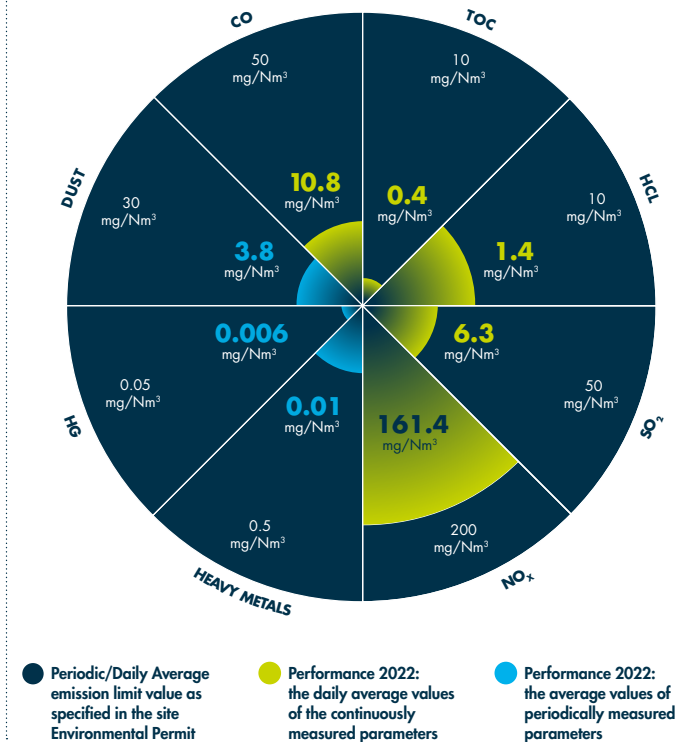
achieve 120mg/m³ across all lines but due to the reduced availability of ammonia, and increased pricing because of the rise in energy prices as a result of the war in Ukraine, it is not currently a maintainable target. However, since starting a furnace upgrade project, we have seen a reduction in ammonia consumption to achieve the set-point of 170mg/m³ due to the reduced temperatures observed by increasing the heat transfer within the furnace section of the boiler; therefore, we may be able to lower the set point on a long-term basis

with reduced volumes of ammonia. The project will conclude in 2023.

In 2022, we also upgraded our instrumentation to continuously monitor N₂O via our CEMS.

At Riverside 2, our second EFW facility which will become operational in 2026, we are investing in Selective Catalytic Reduction technology which will reduce our NOx to the lowest in the UK of any EFW facility.

AIR QUALITY EMISSIONS FROM RIVERSIDE 1 – 2022



Maximising potential, minimising impact continued

TRASH IS TREASURE

**Natalija
Lavinskaja**
Deputy Site Manager,
Smugglers Way

Natalija Lavinskaja talks about the realities of the recycling industry.

Q What are the biggest myths or misunderstandings about recycling?

A Two of the key areas are around the materials which can be recycled, as well as what happens to these materials once they've gone into our recycling bins. There's an assumption that all plastics are bad and shouldn't be sent to recycling facilities in case they end up being disposed of incorrectly.

First and foremost, we don't view plastic as waste – to us it's a commodity, and more types of plastic can be recycled than people often think. If manufacturers use the right kind of plastic in their packaging, it can be reused and recycled multiple times, and doesn't need to be destined for landfill or other forms of disposal.

It's also easy to be cynical about how effective the recycling process is. We do occasionally hear of rogue traders disposing of materials illegally, but there are also robust controls in place to stop this happening.

Q How has the recyclates market been this year and what have been the biggest surprises and challenges?

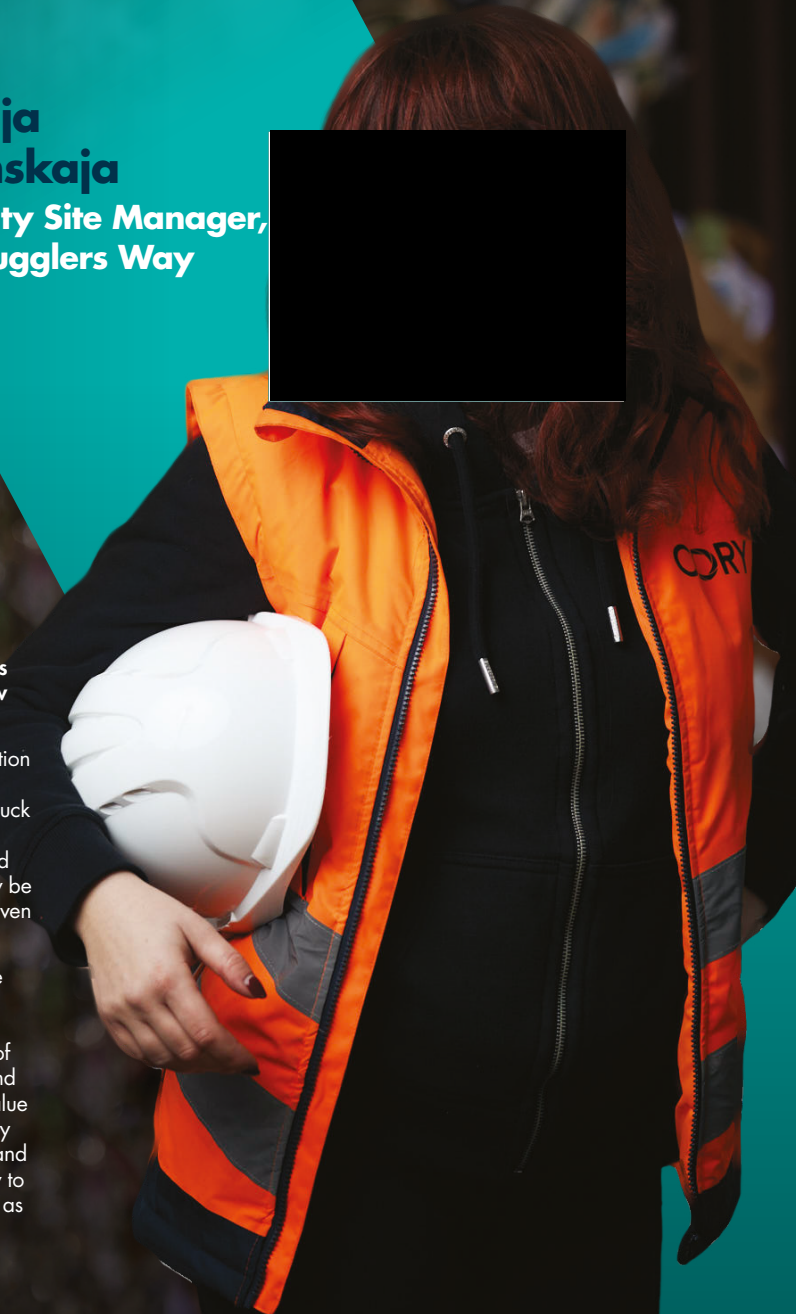
A In 2022, the recyclates market has been classically up and down. Plastics started the year slowly and then saw a massive acceleration in value when the Plastics Tax came into force on 1 April. By the end of the year, the cost-of-living crisis and energy prices saw plastics come back down in value to where they were before the tax came in. With virgin polymer cheaper than recycled alternatives, companies simply use the virgin material and then pay the tax, therefore bypassing contamination concerns and getting a better yield than they would using recycled materials.

We saw a similar trajectory for metals and fibres. Unfortunately, the war in Ukraine is having ramifications on the recycling market, and it is difficult to see markets recovering while it continues.

Q What changes do you see on the horizon for the input to the Materials Recycling Facility (MRF) with the new policy initiatives we have coming?

A A big one will be mandatory collection of plastic film. Films are a real challenge for the MRF as they get stuck to everything and contaminate all recycle streams. Ideally, film would be collected separately but this may be a particular challenge in London, given the limited space for separate bins.

We need a crystal ball to anticipate the impacts of the Deposit Return Scheme. Others in the industry are predicting that we could lose 50% of recyclables coming into the MRF, and these will be all the feedstocks of value – plastic bottles and cans; potentially leaving us with films, mixed paper and glass. In the future, it might be tricky to get the same value for our products as we do now.



Maximising potential, minimising impact continued

BIODIVERSITY

We are committed to limiting the environmental impacts of any unavoidable disturbances to ecosystems caused by our operations and promoting the conservation of biodiversity as far as possible.

In January 2022 our proposed biodiversity mitigation strategy for Riverside 2 was approved by the London Borough of Bexley (as the Local Planning Authority). Delivering the strategy involves implementing the mitigation measures required to safeguard protected species during the pre-commencement works, construction and operational phases of the project. Net positive biodiversity is part of the design philosophy, and the scheme provides for replacement mitigation habitat plus 10 per cent.

Five areas of open space within the Bexley area have been identified for improvement works and long-term management to achieve improved habitat and biodiversity net gain. Cory is funding the work through its delivery partner the Environment Bank, which is working with the London Borough of Bexley to deliver the biodiversity enhancements. Work is due to commence in September 2023 across all the sites.

Cory on the river

Cory has been operating on the Thames since at least 1785 – first transporting coal, then oil, and then aggregates and waste on the river. The river has always been central to our operations, and we continue to be one of the biggest commercial operators on the Thames, using a fleet of five tugs and over 50 barges to ship 800,000 tonnes of material a year, removing the equivalent of 100,000 lorry journeys from London’s roads. Once Riverside 2 is in operation, we will be transporting around 1.5 million tonnes of material a year on the river.

In 2022, we were once again awarded Silver level for outstanding environmental performance from the Port of London Authority (PLA) Thames Green Scheme. This is a scheme for inland waterways, commercial and services operators to demonstrate their environmental performance for elements including air quality, carbon, energy, water quality, litter, waste and nuisance management.

The waste hierarchy

ALIGNMENT TO UN SDGS



MATERIAL ISSUE

 Waste as a resource

In Cory’s sustainability impact assessment undertaken during 2022, stakeholders expressed a desire for Cory to take more action on waste reduction, reuse and maximising recycling.

We have now included a new aim on our sustainability strategy to “move materials up the waste hierarchy” with three objectives for 2023.

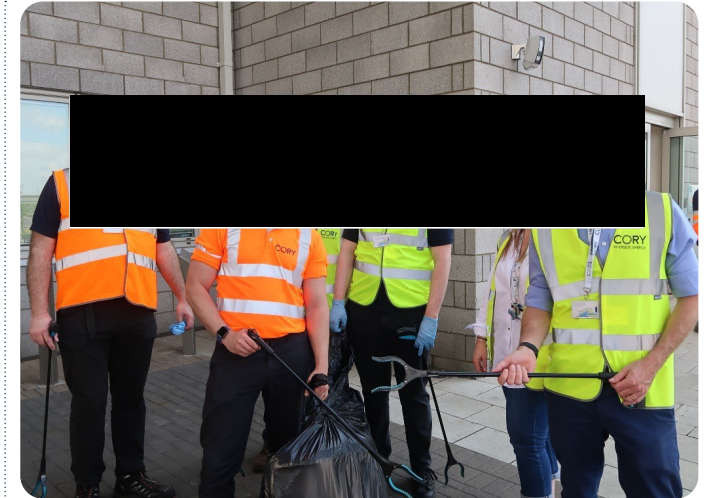
OBJECTIVES FOR 2023

- 1 Maximise recycling opportunities for local communities at our HWRCs
- 2 Support reuse initiatives in our local communities to move materials up the waste hierarchy
- 3 Support employees in their efforts to reduce their waste



We look forward to working on delivering these actions during 2023 and reporting on the outcomes in our next report.

During 2022, we continued our ongoing work to support reuse activities, which include providing free workshop space to ReWork – a Groundwork refurbish and reuse project based at the Household Waste and Recycling Centre (HWRC) that Cory operates on behalf of the Western Riverside Waste Authority (WRWA) in Wandsworth, where repairable goods are fixed up by trainees who are getting back into the workplace. Groundwork is an environmental and community regeneration charity with a mission to transform lives, places and communities in need in London.



ReWork, who have been successfully operating at the HWRC in Wandsworth for 13 years, examine items donated at the HWRC by community members and refurbish these for reuse where feasible, after which they are passed onto charity retailers and social enterprises for resale at affordable prices.

We also began collecting dense plastics at our Wandsworth HWRC initially as a trial, and now permanently. This means that local residents have a place to drop items such as buckets, laundry baskets, crates, storage boxes, wheelie bins, pallets, garden furniture, plant pots and car bumpers which would have previously entered the residual waste stream. If reusable, these can be dropped off as a donation or as waste if not. Items not fit for reuse go to a reprocessing plant in the UK where they are recycled into pellets for resale to manufacturers across Europe and Asia.

CARING FOR OUR LOCAL ENVIRONMENT

During 2022, Cory held two litter-picking events for employees to clean up litter from the Thames foreshore with environmental organisation Thames 21, who work with communities across Greater London to improve rivers, canals, ponds and lakes for people and wildlife.

A key goal was clearing floating and buried plastics to prevent these entering our rivers and oceans before they become ingested by animal life or break down into microplastics.

These were accompanied by litter-picking events at Riverside 1, Cory’s Barge Yard at Charlton and Ship Repair Yard at Gravesend. 70 employees were involved across all the events.

Maximising potential, minimising impact continued

Actions and targets 2023

Aims	Objectives	2023 Targets
Continually improve our environmental performance	Continually improve our Integrated Management System	<ul style="list-style-type: none"> Deliver accurate and timely capture of environmental data, reporting any exceedances, conducting internal audits, and supporting external audit, certification and verification programmes for 100 per cent of sites each year Investigate all non-conformances with root cause analysis, support sites in completing improvement plans, support insurance inspection regimes, share good practice and ensure compliance by applying the highest industry standards
	Improve local biodiversity and ecological management at our sites	<ul style="list-style-type: none"> Work with local stakeholders to implement approved biodiversity offset scheme for Riverside 2 development Deliver 10 per cent biodiversity net gain as part of Barking redevelopment
	Maximise resource efficiency	<ul style="list-style-type: none"> Use flow meters and site surveys to monitor compressed air usage at Riverside 1 (and identify potential leaks) Continue project to review flow meters to measure water consumption at Riverside 1 to match original design water balance diagrams Assess whether there are opportunities for efficiency in water use across sites and set targets in relation to reduced usage (rolled over from 2022)
	Ensure our air quality emissions are as low as possible	<p>Riverside 1:</p> <ul style="list-style-type: none"> Completion of NO_x reduction trials Perform biannual extractive testing of Persistent Organic Pollutants (POPs) for each operating line Install instrumentation to provide an accurate monthly measurement for biogenic and fossil CO₂ percentage split <p>Other sites:</p> <ul style="list-style-type: none"> Undertake workplace exposure monitoring at Barge Yard, Ship Repair Yard and tugs to ensure levels are well below workplace exposure limits Install electric vehicle (EV) chargepoints at our site in Barking to facilitate the move to cleaner vehicles for employees (completed January 2023) Continue to provide free EV charging for employees

Aims	Objectives	2023 Targets
Continually improve our environmental performance continued	Seek external assurance of our environmental management and performance	<ul style="list-style-type: none"> Continue to participate in GRESB and the PLA Thames Green Scheme
	Engage employees on environmental issues	<ul style="list-style-type: none"> Work with Thames 21 to provide habitat restoration and litter-picking opportunities for employees Hold litter-picking events at Charlton Barge Yard, Gravesend Ship Repair Yard and Riverside 1 Continue to engage employees on recycling and raise recycling rate at each site by 10 per cent
Move materials up the waste hierarchy	Maximise recycling opportunities for local communities at our Household Waste and Recycling Centres	<ul style="list-style-type: none"> Promote opportunity to deposit dense plastics at Wandsworth HWRC to residents Provide Waste Electrical and Electronic Equipment donated by local residents in Tower Hamlets to ReWork reuse workshop in Wandsworth
	Support reuse initiatives in our local communities to move materials up the waste hierarchy	<ul style="list-style-type: none"> Develop programme to identify reuse charity partner/s for long-term collaborative partnership
	Support employees in their efforts to reduce their personal waste	<ul style="list-style-type: none"> Run internal programme, with activities at least quarterly, to support Cory employees in personal waste reduction, reuse and recycling initiatives

INSPIRING PEOPLE,

In this section

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- 32 Actions and targets 2023



ENABLING CHANGE

Inspiring people, enabling change continued

We'll keep inspiring positive change in our business and communities.

Our social value

ALIGNMENT TO UN SDGS



MATERIAL ISSUE

 Social value and community

Social value is the long-term, sustainable improvement for society that can be gained by promoting positive social, economic and environmental impact. By considering social value in the decisions we take as a business including the way we operate, employ our people, engage with our local communities and buy products and services, we can cultivate a more sustainable, resilient and inclusive society.

In 2022, Cory quantified the social value we generate from our activities for the first time, calculating that we delivered £84 million of value to society beyond profit and income. The figure encompasses the value for communities resulting from activities across our business

including supply chain spend and engagement, our apprenticeship programme, training opportunities for employees, diverting waste from landfill, engaging with employees and local communities on environmental issues, and supporting local community initiatives.

To undertake the analysis, we used the Thrive Impact Evaluation Standard (IES). The IES is aligned with the latest methodology and standards developed by the UK Government, enabling users to robustly quantify the impact of their activities.

In 2022, we developed a new social value strategy to build on the work we already do in the delivery of our core business and sustainability strategy. We identified three areas where we felt we had the best opportunity to maximise the social value we are generating, and where we believe we can best build on our existing efforts to make a difference to our local communities in the near term.

These are:

- 1 Supporting employability skills in our local communities
- 2 Focusing on the physical and mental wellbeing of our employees
- 3 Growing the reuse economy in our areas of operation

These three areas will act as a lens through which all decisions regarding community engagement will take place and provide a clear framework for deciding where efforts and funding should be allocated, and action is focused.

Cory will use our ongoing participation in the Thrive Platform, and the process of calculating our impact, to measure the added benefit we are providing to local communities through delivery of our services and additional efforts.

£84m

of value delivered to society beyond profile and income

Putting health, safety and wellbeing at the centre of everything we deliver as a business

ALIGNMENT TO UN SDGS



MATERIAL ISSUE

 Health, safety and wellbeing

Enabling our employees to work safely is a fundamental value in our business. We measure our performance and share this information through weekly and monthly dashboards on key safety performance indicators, and we follow up with weekly calls between the leaders of the business. There are frequent site visits conducted by members of the Executive Leadership Team to review incidents and monitor the culture and morale of our workforce. This safety leadership is supported by robust systems, processes and equipment that have been designed to create safe, healthy and secure environments and work practices.

During 2022, we implemented three new incident forms in the Health, Safety, Environment and Quality Assurance (HSEQ) software that was introduced to the business in 2020. These forms captured Security incidents, Marine incidents and Outages or Loss of Production incidents. We also deployed several digitised safety inspection checklists and 2022 was the first full year of use for our integrated audit management module.

HSEQ PERFORMANCE IN 2021 AND 2022

2021	2022	
0	0	Fatal
5	3	RIDDOR/MAIB Including reportable LTIs
5	4	Lost time
1,863	2,907	Safety observations and hazard reports

Several positive trends first seen in 2021 continued into 2022. The ease and simplicity of mobile app-based reporting, coupled with continued management emphasis on supervisors using this tool, together with the instant feedback from the dashboards it generates – has continued to drive an increase in the total number of safety observations and hazard reports. We now believe we are at a sensible and sustainable level of reporting and have not set any targets to increase this further in 2023. The number of safety observations and hazard reports equates to approximately one per employee per month, which is a recognised benchmark for good practice. This figure can be favourably compared with the marked reduction in reported incidents, from 172 to 136, and the reduction in RIDDOR/MAIB reportable incidents from 5 to 3.

2022 saw the integration of the Barking site into our Integrated Management System and since February, our safety figures include incidents at Barking. For this reason, the comparison between 2022 and 2021 is of a substantially larger business today than it was at year end 2021. Our due diligence prior to the acquisition of the Barking site revealed several areas where work was needed to bring the site up to Cory's standards regarding Health and Safety, and it is not surprising that a disproportionate number of incidents that did occur during 2022 occurred at that site.

Inspiring people, enabling change continued

LOST TIME INJURIES

Aims	Cory Employees	Rate*	Contractors and agency workers	Rate
Number of workers	367		107	
Hours worked**	689,960		201,160	
Minor Injuries	28	8.1	27	24.2
RIDDORs	2	0.5	1	0.9
Fatalities	0	0	0	0

* Rate is calculated according to the Global Reporting Initiative – Occupational Health and Safety: Disclosure 403-9 Work-related injuries

** Estimate based on average working hours per year



Cory is committed to creating a supportive open culture, where colleagues are able to talk about their mental health.

Toby Warren
Director of HR

There were three RIDDOR/MAIB reportable incidents, one triggered by >7 days Lost Time, and one that was a specified reportable injury under the Marine Accident Investigation Branch reporting criteria which was below the threshold for RIDDOR reporting. The third RIDDOR was a third-party contractor who was injured on our site.

Prior to the publication of this Sustainability Report on our 2022 performance, on 24 April 2023 a team member tragically lost their life in an incident whilst working at our Materials Recycling Facility in Wandsworth. An HSE investigation is ongoing at the time of writing, and we are determined to use the findings to reinforce our uncompromising approach to ensuring the health and safety of all Cory employees and contractors. We will detail the findings in our 2023 reporting.

OTHER KEY ACTIVITIES DURING 2022 INCLUDE:

27 external and internal audits resulting in 216 findings; 85 minor non-conformances, 102 opportunities for improvement and 29 positive observations of good practice

Continuously reassessing risks and specifying the appropriate standards for controls to mitigate those risks

Regular training and toolbox talks – based on 12 ‘themes of the month’

Zero incidents reported via our whistleblowing hotline

Four Board meetings commenced with a safety moment, led by a Board Member

Recertification of our Integrated Management System (IMS) to ISO 9001, 14001 and 45001, and incorporation of Barking into our IMS

Weekly meetings between the CEO and operational directors to discuss health and safety matters.

Ten site engagement visits led by members of the Executive Leadership Team

Occupational health medicals delivered to 206 employees

45 site safety meetings

PRIORITISING MENTAL HEALTH

It is estimated that one in four people in the UK will seek help for mental health conditions during their lifetime. As a Mindful Employer, Cory is committed to creating a supportive and open culture, where colleagues are able to talk about their mental health. We are also committed to ensuring that our employees feel safe in disclosing any mental health conditions and confident that they will be properly supported and offered appropriate adjustments when required.

Following an industry-wide survey carried out by our trade body, the Environmental Services Association in 2022, we identified a need to focus our efforts on promoting the importance of good mental health across the business. This was backed up by a series of talks led by external speakers which highlighted the clear link between

poor mental health and bad safety decisions whilst at work. As a result, the Executive Leadership Team has made mental health a priority area for 2023, with planned activities including growing the number of Mental Health First Aiders in the business and offering free counselling to all team members.

Inspiring people, enabling change continued

Being an employer of choice

ALIGNMENT TO UN SDGS**MATERIAL ISSUE** Employment and skills

Cory employs just over 350 employees directly on our standard employment contracts, which are compliant with UK laws and regulations. We are proud to employ skilled people who are highly committed and passionate about what they do. Each month, Cory engages around 110 people via our trusted third party providers who work at three of our five Waste Transfer Stations, and at both MRFs.

Our success depends on keeping our people happy and motivated. We work to be an employer of choice, providing rewarding and fulfilling careers for a diverse range of people whilst ensuring excellence in performance. We do this by offering a broad range of training and development programmes, providing a wide range of benefits, ensuring that our managers are equipped to be effective leaders, and creating an inclusive and welcoming environment for all employees.

350+

employees directly on our
standard employment
agreements

We have many policies which provide clear guidance to employees on how we operate and reflect our values and vision. All our employment-related policies, forms and supporting information are available on the Company SharePoint, on which we have sections covering information for new joiners, induction, vacancies, healthcare, appraisals, payroll giving, childcare and mental health. Our HR Team handles matters such as recruitment, payroll, employment policies and some benefits, as well as clarifying company information such as annual leave and sick pay for our employees. All our sites have an employee handbook which provides information about Terms, Conditions and Benefits of employment at Cory, as well as details of general policies and procedures.

We ensure that our HR policies remain robust through regular review in line with evolving regulation and undertake updates as required. For example, during 2022 our maternity policy was updated to reflect changing legislation in relation to parental bereavement leave, as well to acknowledge more diverse family structures.

Benefits offered to our employees:

Life assurance

Parental leave and enhanced
maternity pay

Pension

Cycle to work scheme

Occupational health checks

Financial wellbeing advice

Interest-free season ticket loans

Electric vehicle leasing scheme

24-hour private GP

Employee Assistance
Programme (free, anonymous,
24-hour hotline)**PROFESSIONAL
DEVELOPMENT**

Employee development at all levels is fundamental to Cory's success. We have created training for every part of our business, from ensuring people have the required functional literacy and numerical skills to perform their roles, to the sponsoring of senior employees on MBAs and leadership training courses. Cory's Competence Management System (CMS) enables us to manage our sites safely and ensure ongoing training is delivered across our entire workforce. Our CMS is internally and externally audited and in 2022, we successfully gained recertification for the CMS from Lloyds Register.

[Read more on pg. 35](#)



In December 2022, I completed my apprenticeship for Level 5 CIPD Learning and Development Consultant and Business Partner. This has enabled me to grow my confidence and skills, to think strategically, and identify how learning and development can support wider business needs.

Carl Johnston
Supervisor at Smugglers Way

Our range of learning and development activities during 2022 ranged from a Corporate Safety Day that a third of our workforce from Operative to Senior Leadership level attended, to Lift training, Manual Handling training, Financial Advice webinars and Mental Health First Aider training. Following the success of our First Line Management Programme in 2021, a number of employees chose to continue their study to ILM Level 5.

Inspiring people, enabling change continued

SUSTAINABILITY TRAINING

In January 2022 we launched sustainability training for all employees, with the questions:

- If someone asked you what sustainability means, what would you say?
- Could you tell them why it's important?
- Could you tell them how you're playing your part?

The training covered:

- What sustainability means and why sustainable practices are so important in addressing the threats that our planet is facing.
- What Cory is doing to be sustainable in everything we do.
- What you can do to ensure that you're playing your part in protecting the future of our world.

Employees were asked to submit a pledge at the end of the training on how they plan to be more sustainable at work. We share a few of the pledges below:

I pledge

**to turn off lights
when not in use**

Carl Johnston
**TRANSFER STATION
SUPERVISOR**

I pledge

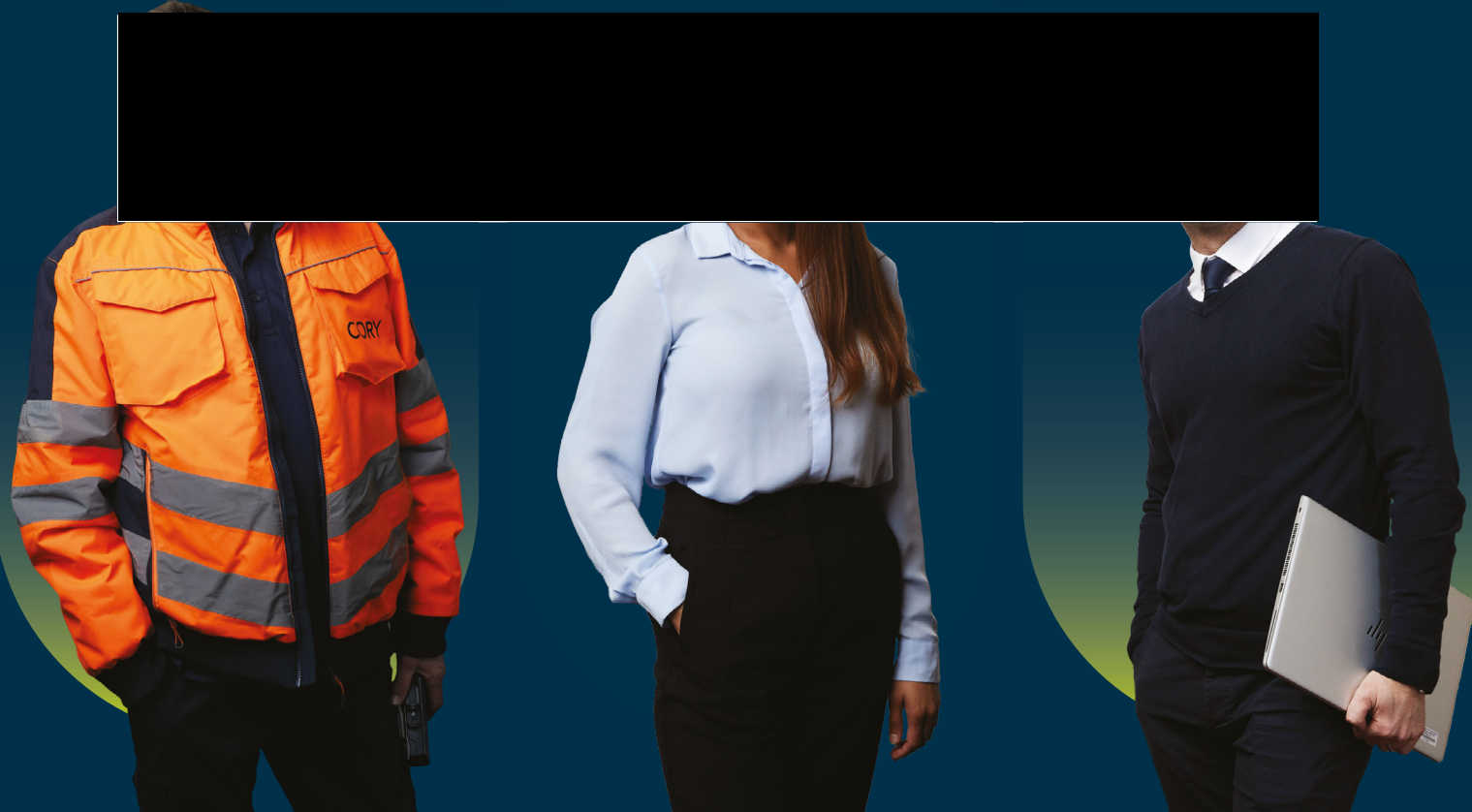
**to always
recycle correctly**

Sylvie Rozowana Roy
**ACCOUNTS PAYABLE
ASSISTANT**

I pledge

**to oversee site
improvements that
improve our sustainability
performance**

James Andrews
**HEAD OF
LIGHTERAGE**



Inspiring people, enabling change continued

I pledge

to encourage sites to set
improvement objectives to
reduce their resource
consumption

Catherine Blakesley

HEAD OF
HSEQ

I pledge

to promote and support
the use of digital
platforms to cut down
paper use

Cristian-Liviu Cristea

ASSISTANT PLANT
OPERATOR

I pledge

to choose suppliers
who embrace
sustainability

Sandra Scognamiglio

BUSINESS PERSONNEL
OFFICE ADMINISTRATOR

I pledge

to walk or cycle
to work as much
as possible

Sorin Gilmeanu

DATA COMPLIANCE
ADMINISTRATOR



Inspiring people, enabling change continued

I pledge

**to encourage recycling,
less printing, efficient
purchasing and following
the waste hierarchy**

Penny Edmondson
BUSINESS SERVICES
MANAGER

I pledge

**to ensure that all
machinery is used in
the most sustainable
way possible**

Maxim Yanuarev
MARINE TECHNICAL
MANAGER

I pledge

**to always turn off
my monitors at the
end of the day**

Charlotte Palmer
LEGAL
COUNSEL



Inspiring people, enabling change continued

Our apprentice programme offers a pathway to a fulfilling career without the need for university. It's a chance to gain invaluable experience and qualifications while earning a wage and setting the foundation for a successful future.

John Swallow

Apprentice Programme Manager

CORY APPRENTICE ACADEMY**ALIGNMENT TO UN SDGs**

Apprentices are deeply embedded in our business and a vital part of our past, present and future to ensure that skills pass from one generation to the next, addressing vital gaps in the employment market. We welcomed seven new apprentices to the business in 2022 across our Lighthouse, EfW and HSEQ functions.

To ensure the effective management and governance of the apprenticeship programme, Cory operates an Apprentice Academy overseen by a dedicated Manager who is responsible for ensuring that our apprentices have the best possible experience while they are on the programme, liaising with apprentice providers, managers and the apprentices themselves to ensure that each of them is on track to excel and complete their apprenticeship and ultimately progress into a long-term position with Cory.

The Apprentice Programme Manager acts as a mentor to each of the apprentices and meets with them regularly to ensure that any issues on and off the programme are addressed. In addition, they are a qualified Mental Health First Aider who can offer additional support where needed, which can be important when the apprentices are living and working away from home in their first jobs.

The Cory Engineering Programme for our engineers based at Riverside 1 is particularly innovative as the first 18 months is spent learning away from home at a leading Apprentice Training Provider in Humberside which specialises in Power Station training. This gives the apprentices a fully-funded student experience without the associated costs of going to university.

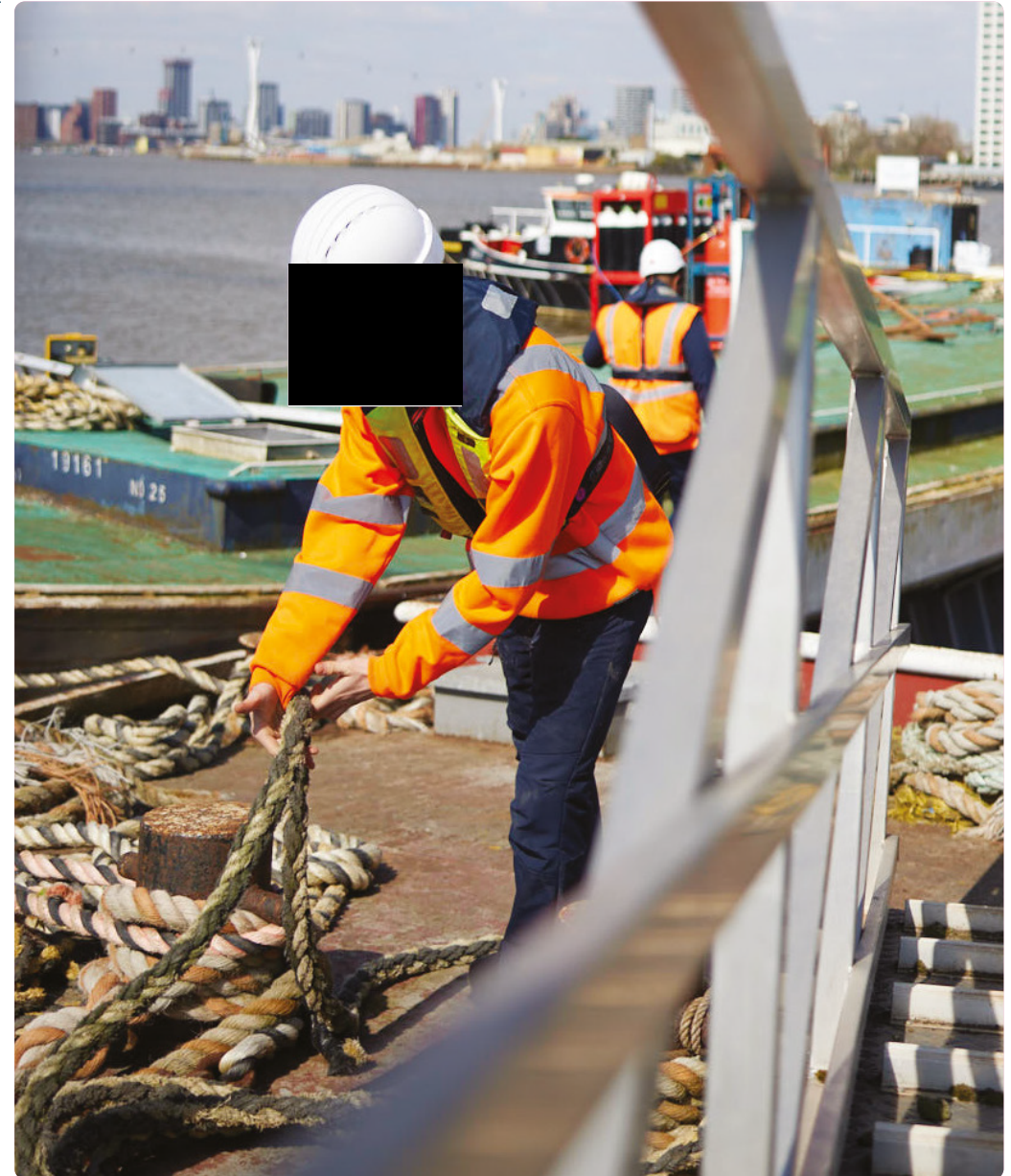
For 2023, Cory is recruiting additional engineers for Riverside 1 and a marine engineering fitter. Areas seeing apprentices for the first time include our Waste Transfer Stations and IT Department, with further upskilling opportunities identified across the business.

**ENGAGING WITH OUR
LOCAL COMMUNITY ON
APPRENTICESHIPS**

The Cory Apprentice Academy has continued to build its community relationships, with attendance at careers fairs in local areas to promote Cory as an employer of choice.

We work with The Ahoy Centre to support the development of careers on the river. The Ahoy Centre is a charity that helps disadvantaged children and people with disabilities get involved in water sports. In 2022, we delivered career presentations and employability sessions to Ahoy's apprentices, including help with preparing for interviews and assessment centres.

Through the Apprenticeship Levy, we can transfer some of our contribution each year to other organisations. We were proud to sponsor the entire new intake of apprentices at Ahoy in 2022 and look forward to working with them as they embark upon their careers; hopefully ensuring that they have a fulfilling experience working on the River Thames.



Inspiring people, enabling change continued

Keon Ste-Croix tells us about his experiences of working on the river.

Q What is a typical day on the river like for you?

A A typical day on the river would be to get to work at my order time, which can range from 6am to 9am. When we get underway, we follow our orders to pick up barges and transport them to different wharves which could be all the way in Wandsworth if we're going through London, or some days we may head down river to Tilbury Dock.

As well as revising for my exams, my role as an apprentice lighterman is to attach the barges to the tug, throw ropes and ensure the vessels are secured. I also get time on the wheel as we're going up and down river. A typical day would be 12 hours at work, three days a week.

Q What is your background in maritime, and what made you want to work on the river?

A My introduction to the maritime industry was at The Ahoy Centre, where I was working with children doing river-based activities such as sailing, rowing and power boating.

Working with The Ahoy Centre opened my eyes to working on the river. I have lived in London my whole life and never considered working on the river because I just didn't know it was an option. The more I worked on the river, the more I enjoyed it and I knew I wanted to continue and progress further.

Q How important do you think it is to have apprenticeships as a viable option for young people?

A I think it's very important. Everyone learns at different speeds and we all have different abilities – some people don't do well in a classroom environment. Apprenticeships provide a way for you to learn practically whilst also getting first-hand experience in your chosen trade. I think that by the end of it you have learned more than sitting in a classroom.

Keon Ste-Croix

**Apprentice
Lighterman,
Charlton**



INSPIRING CAREERS

Inspiring people, enabling change continued

Support a thriving local community

We strive to be an asset to the communities in which we operate. We work to build strong, long-term and mutually beneficial relationships with our local communities.

When awarding the grants, we focus on organisations whose values are consistent with our own. This can include making a positive impact on the local people in the community, protecting the local environment, supporting the circular economy, promoting social and community cohesion and improving science, technology, engineering and mathematical skills.

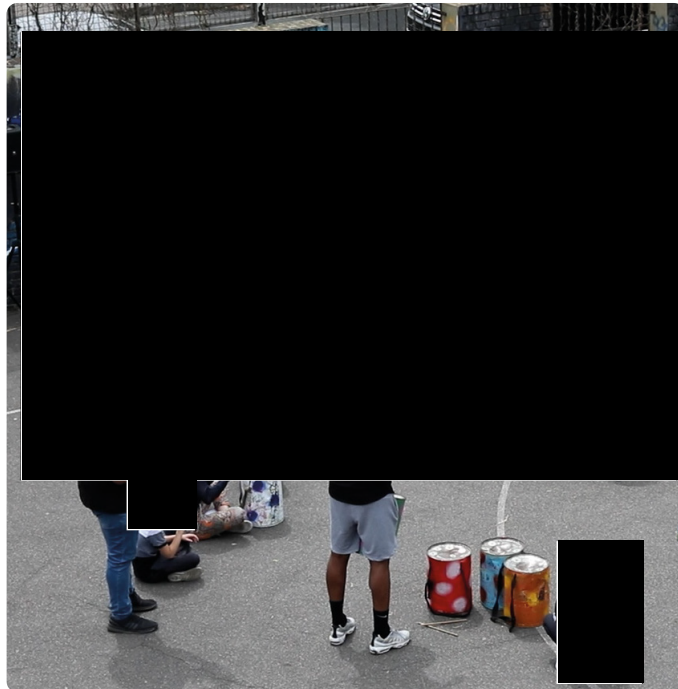
In 2022, Cory's Community Fund supported a range of initiatives that support our values:

Cory Community Fund

MATERIAL ISSUE

Community

Our Community Fund supports activities that improve people's lives in the communities where we operate, with successful applicants receiving grants of up to £7,500, with a total of £25,000 awarded.



Charity	Project	Outcomes
The School of Hard Knocks	Providing funding for the School of Hard Knocks to engage with Year 7 female pupils at the risk of exclusion from a secondary school in Southwark.	<ul style="list-style-type: none"> 90 Pupils completed 38 sessions, one per week, increasing their physical activity 43 per cent improved their wellbeing, on average, from the Stirling Wellbeing Scale for children 82 per cent improved their 5Cs (Commitment, Communication, Concentration, Control and Confidence) based on questionnaire responses
Nature Vibezz	Supporting a summer school and providing resources for nature-focussed projects in Knights Hill Wood in Lambeth.	<p>102 people were able to participate in activities, which included:</p> <ul style="list-style-type: none"> Planting native wildlife hedge Pruning woodland trees and shrubs Increasing site user safety through reducing blind spots Creation of a woodland habitat
London Youth Rowing	Funding rowing machines and coaching costs for schools in Kent.	<p>The participating schools logged 61 sessions in which they used the rowing machines, with a total of 1,491 person-sessions. Of those participating, 51 per cent were female, 26 per cent came from an ethnic minority and 30 per cent had special educational needs or a disability.</p> <p>At one school, 770 young people took part in the Kent Schools Virtual Rowing competition through physical education sessions.</p>
The Friends of Lesnes Abbey & Woods	Teaching traditional green woodworking craft skills and about local ecology in Lesnes Abbey Woods.	Cory's funding fully covered the project start-up costs for the first year of the initiative, which included purchasing tools and providing workshops on bushcraft skills, forestry, and tool sharpening and mallet making.
Crayford Community Fridge	Setting up a Community Fridge in Crayford, Bexley, where surplus food from local food businesses, producers and households can be shared.	The Community Fridge was officially opened in January 2023, stocked with both fresh and frozen food, as well as other items such as nappies and pet food. All the items are free for anyone who needs them.

Inspiring people, enabling change continued

Community engagement in 2022

BEXLEY ECO-FEST

In June 2022, we sponsored Bexley Eco-Fest for the fourth year running, organising the event with the London Borough of Bexley and London South East Colleges.

A face-to-face event took place in Thamesmead with over a 1000 people attending. Stalls included Bexley Council, The Wasteless Market, Community Fridge, Too Good to Go and many more. The event featured sessions focused on positive environmental impact, advice on health and wellbeing, information from local community groups, live entertainment and family fun activities.

INDUSTRIAL CADETS

Cory is a supporter of the Industrial Cadets scheme and sponsored two schools in Tower Hamlets and Bexley to undertake the Go 4 Set Project of Bronze Level and a Silver

Level work experience programme. This was undertaken in Summer 2022 and was run by the Engineering Development Trust.

THE CHILDREN'S UNIVERSITY PASSPORT SCHEME

In 2022, Cory sponsored 300 'passports' for primary aged children in the Bexley Area, as part of a scheme which encourages families to visit learning destinations across the Borough.

BELVEDERE COMMUNITY FORUM

During 2022, Cory continued its long-standing support for the Belvedere Community Forum, which promotes community cohesion and acts as the voice for the local community. The Forum is run by a Board of local residents who meet regularly to act as a focal point for issues of importance and concern to all the people of Belvedere.



Building a sustainable supply chain

The quality of our suppliers and business partners is integral to the success of our operations and the long-term sustainability of our business. We want to work with suppliers who share our vision for the future and who take pride and responsibility in their operations.

Cory's supply chain includes categories such as business services, consumables for our EFW process, mechanical services, third-party training, material handling, plant and vehicles, safety services and goods, electrical services, and utilities. During 2022, we spent £114.5 million on 828 suppliers, of which 95 per cent were based in the UK.

Our Supplier Code of Conduct defines the standards which Cory adheres to and which we expect to be equally held by our suppliers, business partners and representatives. The Code includes requirements relating to suppliers considering their environmental and climate impacts and undertaking specific actions such as maximising energy efficiency, minimising waste and reducing their carbon footprint.

95%

of suppliers based
in the UK

Our modern slavery prevention programme

Modern slavery is the illegal exploitation of people for personal or commercial gain and covers a wide range of abuse and exploitation including forced labour, bonded labour, sexual exploitation, domestic servitude and criminal exploitation. Modern slavery is an indefensible and unacceptable violation of a person's basic human rights.

Cory supports the elimination of all forms of modern slavery and takes steps to assess and address the risk of modern slavery and hidden labour exploitation in our business and supply chain.

We are a member of the Slave-Free Alliance, whose advisors help us to identify ways in which we can advance our modern slavery risk identification and prevention programme and keep us abreast of any developments in relation to the Modern Slavery Act. We participate in the joint Environmental Services Association (ESA)/ Slave-Free Alliance Waste Industry Working Group, which meets regularly to discuss the issue of modern slavery in the waste industry and gives us the opportunity to learn from other businesses in our sector.

Our efforts, including our policies and procedures, due diligence processes and risk assessment, are detailed at length in our modern slavery statement which is issued in accordance with the Modern Slavery Act 2015 and available to download from our website. The statement shares the key actions we have taken to eliminate the risk of modern slavery and human trafficking in our business and supply chain during 2022, as well as the actions we intend to take in 2023 (which are also listed in the action section on page 33).

Inspiring people, enabling change continued

Actions and targets for 2023

Aims	Objectives	2023 Targets
Put health, safety and wellbeing at the centre of everything we deliver as a business	Achieve the highest safety standards	<ul style="list-style-type: none"> ➤ Install Artificial Intelligence CCTV analysis capability to all operational sites by the end of Q3 ➤ Ensure accurate and timely capture of data, conduct internal audits and support external audit certification programmes for 100 per cent of sites each year ➤ Investigate all safety incidences with root cause analysis, supporting sites in completing improvement plans, supporting insurance inspection regimes, sharing good practice and ensuring compliance ➤ Engage with industry bodies such as CIWM, ESA and the Thames Skills Academy to ensure that we continue to deliver a Health and Safety programme that is aligned with the highest industry standards ➤ Deliver monthly safety themes, supported with toolbox talks ➤ Create a suite of video toolbox talks on behavioural safety and safety culture ➤ All Executive Leadership Team members to conduct two safety site visits per year ➤ Provide occupational health monitoring to all employees
	Invest in the mental and physical wellbeing of our employees	<ul style="list-style-type: none"> ➤ Maintain Mindful Employer status and continue to provide Employee Assistance Programme ➤ Assess success of Mental Health First Aiders Programme to determine whether to expand in 2024 ➤ Provide access to counselling sessions for employees on self-referral basis and continue to deliver Wellness training ➤ Relaunch Managers toolbox talk on mental health and have mental health theme for Health and Safety 2023 engagement sessions ➤ Provide Financial Wellbeing training for all employees ➤ Provide annual medicals and seasonal flu vaccinations for all employees ➤ Provide access to health welfare support for all employees

Aims	Objectives	2023 Targets
Support a thriving local community	Support the work of local organisations that seek to make a positive impact for local people	<ul style="list-style-type: none"> ➤ Distribute funds for third round of Community Fund and initiate process for fourth round ➤ Engage in London Funders Forum to increase reach of our Community Fund
	Provide opportunities for local community members to learn about our sector and support engagement in STEM learning opportunities	<ul style="list-style-type: none"> ➤ Support primary schools in Bexley to achieve 'Eco School' Status ➤ Deliver a work experience project for up to 10 students accredited by the Engineering Development Trust ➤ Sponsor Children's University Passports for families and Special Educational Needs schools in Bexley and beyond to encourage engagement in education/learning initiatives
	Support young people into work, e.g., through mentoring, careers advice, cv guidance, etc.	<ul style="list-style-type: none"> ➤ Work in partnership with London South-East College for the development of work experience projects ➤ Support a local provider to help shape a Community Champion Programme
	Help our local communities and customers to move materials up the waste hierarchy	<ul style="list-style-type: none"> ➤ Deliver programme of activities for Bexley residents to engage in local opportunities to live more sustainably, for example an Easter fair for up to 300 residents which promotes sustainability practices e.g. bike repair/clothes swap, Earth Day student fashion show ➤ Develop a programme to identify a reuse charity partner/s to help grow the reuse economy in our areas of operation ➤ Donate 100 per cent of used laptops to Laptops for the Homeless charity

Inspiring people, enabling change continued**Actions and targets for 2023** continued

Aims	Objectives	2023 Targets
Be an employer of choice	Meaningfully engage with our workforce to create a positive company culture	<ul style="list-style-type: none"> ➤ Launch Cory Women's Network on International Women's Day ➤ Increase awareness of neurodiversity and provide learning and management tools for all employees ➤ Digitalise Cory's induction process ➤ Maintain Investors in People accreditation ➤ Hold annual all-employee engagement event ➤ Share consistent inclusivity communications including acknowledging different cultures and lifestyles
	Provide rewarding and fulfilling careers for a diverse range of people	<ul style="list-style-type: none"> ➤ Deliver individual learning plans for each site and each employee ➤ Launch Coaching and Mentoring programme and provide training for mentors
	Continue to invest in our apprentices and grow the number of apprentices in our business	<ul style="list-style-type: none"> ➤ Continue to expand our apprenticeship programme and provide ongoing support to apprentices once they have graduated ➤ Aim for Gold level in the Investors in People apprenticeship scheme ➤ Promote apprenticeship opportunities at local career events to increase applications from local residents

Aims	Objectives	2023 Targets
Be an employer of choice continued	Continually address the risk of modern slavery and labour exploitation in our business and supply chain	<ul style="list-style-type: none"> ➤ Deliver modern slavery awareness workshops to employees at our new site in Barking and redeliver workshops for managers and supervisors and those with a high level of interaction with higher risk suppliers. Include content on the details, outcomes, and lessons learned from the incident of modern slavery identified in our Wandsworth MRF in 2021 ➤ Publish a Modern Slavery and Labour Exploitation Policy to provide a roadmap for our day-to-day operations on our approach towards eliminating modern slavery from our business and supply chain ➤ Continue to work with Slave-Free Alliance and the ESA/ Slave-Free Alliance Waste and Resources Working Group to learn from our peers and ensure our prevention programme remains as robust as possible ➤ Continue to audit our suppliers who work in industries that are most exposed to the risk of modern slavery and human trafficking, aiming for four audits in 2023, in addition to our two labour providers
Improve sustainability within our supply chain	Work with suppliers who share our vision for the future and who take pride and responsibility in their operations	<ul style="list-style-type: none"> ➤ Examine the way we categorise suppliers and determine whether this could be reorganised to drive improvements in our procurement, supplier onboarding and auditing processes
Maximise the social value we deliver to UK society	Measure and increase our social value	<ul style="list-style-type: none"> ➤ Publish an annual quantification of our social value contribution to UK society ➤ Engage on social value across the business to increase the robustness of our data collection processes ➤ Seek to increase our social value through delivery of our new social value strategy and its three goals

Our reporting

This section includes content about our policies, procedures and processes that meets the requirements of the Global Reporting Initiative Standards.

POLICY COMMITMENTS

Cory's governance framework is designed to ensure the highest standards of business behaviour and accountability. Our policy commitments related to responsible business conduct include our Anti-Bribery and Corruption Policy, Anti-facilitation of Tax Evasion Policy, Delegated Authority Policy, Sustainable Procurement Policy, Confidential Reporting Policy, Environmental and Energy Policy and Health and Safety Policy. The policies are in line with UK regulatory requirements and set out actions that Cory expects its employees to undertake to ensure that we conduct business fairly, honestly, openly, safely and with minimal impacts on our local environment.

Cory's policies are approved by our Board of Directors, signed by our Chief Executive Officer, and are publicly available on our website, as well as internally through our SharePoint and on noticeboards throughout sites. The policies are applicable to all Cory's entities and operations and our supply chain as required and are intermittently reshared and communicated through training and other engagement opportunities.

EMBEDDING POLICY COMMITMENTS

Policy commitments are embedded in the organisation in different ways. For example, the Legal Team own the policy commitments related to business integrity and review these regularly to ensure they remain aligned with legal requirements, training is determined by the requirements of our Competence Management System (CMS) and training policy. Cory's policies and standards to manage health and safety risks are promoted by regular training and 'toolbox talks'.

Our Supplier Code of Conduct sets out the expectations of our policies for suppliers in terms of health and safety, sustainability, people, compliance with ethical business practice laws, confidentiality, data protection and prompt payment, and is shared with suppliers during the onboarding process. When completing our New Supplier Information Sheet, suppliers must confirm that they will comply with the Code of Conduct.

Training is determined by our training policy, personal development plans and the requirements of our CMS. New employees are invited to undertake training on Anti-Bribery and Corruption, Tax Evasion, Sustainability, Cyber Security and Manual Handling. A Modern Slavery toolbox talk is also shared. A Learning and Development brochure is shared annually with all employees allowing our people to submit training nomination forms for courses of interest, following line manager approval. Included in the brochure are training courses on Waste Management, Managing Personnel and Communications, IT, Health and Safety, Plant and Equipment, and Driver training.

PROCESSES TO REMEDIATE NEGATIVE IMPACTS

Cory has contact details for all sites on our corporate website, and a number and email for general enquiries. Complaints received from external parties are managed in accordance with the site-specific work instruction on how to deal with complaints. Details of the complaint are recorded on the relevant site record. Following notification of an external complain, the Site Manager/HSEQ Assurance Team will respond accordingly.

Where appropriate, concerns of serious wrongdoing, (e.g. fraud, corruption, endangerment of personal wellbeing, damage to the environment etc.) are managed according to Cory's Whistleblowing Procedures and Guidance.

Customer satisfaction is monitored and recorded in line with contract requirements. The process for monitoring this can be dependent on the nature of the contractual arrangements with individual customers, and is undertaken for example through surveys and feedback, including complaints and compliments.

MECHANISMS FOR SEEKING ADVICE AND RAISING CONCERNS

Our Confidential Reporting (Whistleblowing Policy), together with our internal Whistleblowing Procedures and Guidance, reinforce our culture of openness and transparency by encouraging employees and third parties to speak up if they have concerns about any serious risk or wrongdoing within Cory or within a Cory supplier or customer. If a person is not comfortable raising a matter within the business, they can contact the external, independent whistleblowing service SeeHearSpeakUp to raise a concern. Posters communicating the details of the service are displayed at all our sites in English, as well as Polish and Romanian, where these languages are spoken widely at site.

Cory has a grievance procedure which enables individuals to raise issues about their work, or about their employers, clients or fellow employees that affect them, with their immediate manager/supervisor. Most routine complaints and grievances are best resolved informally in discussion with the employee's immediate line manager/supervisor. Where a grievance cannot be resolved informally, it must be dealt with under the formal stages of the grievance procedure.

COMPLIANCE WITH LAWS AND REGULATIONS

There were no significant instances of non-compliance with laws and regulations during the reporting period.

Our reporting continued**TRAINING AND EDUCATION**

Cory operates all its environmental permitted and licensed sites to the Energy and Utility Skills Competence Management System (CMS) Standard.

The overall aim of the CMS is to ensure environmental protection and protect human health from the processes and occupational risks associated with our operations and certify compliance with the relevant permits. Cory ensures that the competence of relevant employees at each level of the Company, whose work affects this protection, is managed and suitable. Competency covers skills, knowledge, behaviour and demonstrated ability.

We have a Corporate Competency Matrix which identifies roles that have relevance for our permits, and a Roles, Responsibilities and Authorities summary which outlines the duties and responsibilities that particular roles have within the business; this is briefed regularly to employees, for example during inductions and when there have been changes. All employees have a "role profile", with objectives set in their annual appraisals and competency logs which are reviewed by line managers.

We believe that our CMS enables us to work in the most positive and proactive way to ensure that we are maximising the ability of all employees with continued training and development, carrying out effective succession planning, and continuing to improve the efficiency and sustainability of our operations. We work to exceed the expectations of the CMS in terms of Health and Safety and skills development, and use it as a framework to ensure that employees are aware of their responsibilities, particularly towards permits, environmental protection, and Health and Safety, and also that our contractors also operate to a similar high standard. We ensure that competency is effectively monitored and improved and can be actively demonstrated to our stakeholders including customers. Our CMS policy is shared on noticeboards to communicate the standards we operate to employees.

We undertake internal and external audits on the CMS. In 2022, we successfully gained recertification for the CMS from Lloyds Register, which provides a framework for identifying the skills and competencies required for key employees.

OUR MANAGEMENT APPROACH TO HEALTH AND SAFETY

We take an integrated approach to HSEQ which ensures that these topics are considered at every stage of our operations. Healthy and safe operations are achieved by assessing risks and specifying the appropriate standards for controls to mitigate those risks. The overall purpose is to reduce risk to a level as low as reasonably practicable and to ensure all activities are conducted within the overall risk appetite set by the Board. The Board takes seriously its responsibility to foster and encourage the behaviours and values that underpin safe operations at all levels. We publish our Health and Safety, Quality, Environmental and Energy, and Fire Safety Policy statements on our Company web page. Our policies and related standards for managing health, safety and environment matters are promoted by regular training and toolbox talks.

Every Board meeting includes a discussion of key health, safety and environment matters. Board members also undertake engagement visits to gain further insights into the business and to examine our health, safety and environmental performance.

Health and safety reports and statistics are compiled and circulated to the Executive Leadership Team (ELT) each month. Cory's Director of HSEQ Assurance is an ELT member and reports directly to the CEO. The ELT discuss health, safety and environmental matters monthly, and the Operational Leadership meets weekly to review progress and performance.

The ELT is responsible for the effective operation of policies, processes and controls designed to manage identified risks. The Group has an HSEQ Assurance Team that is independent from the operational business. The team is tasked with ensuring compliance with all relevant regulations and ensuring we meet the conditions of our environmental permits. This team gathers and shares good practice in the form of standardised work instructions for all risk-assessed tasks, and by mandating the training and communication of matters related to safety to all employees conducting work under our control. This covers topics such as traffic management, working at height, fire, etc.

We strive to prevent incidents and to continuously improve our performance, monitoring safety KPIs at monthly leadership meetings and intervening when required. Health and Safety is central to all decision-making, with targets and objectives aligned to the safe operation of our sites and the safe delivery of projects and improvement plans. We focus on positive actions such as increasing the number of safety observations,

hazard reports, successful audits and progress against improvement plans which we believe are highly correlated with enhanced safety. Where accidents do occur, we aim to investigate them promptly and to learn from each incident and make improvements so that the same factors will not result in a repetition of the same event.

We operate a whistleblowing system so that safety concerns might be raised by any person without fear of adverse reaction in the knowledge that they will be investigated independently of the operational management. The Company is a member of the Environmental Services Association (ESA) and participates in industry-wide initiatives and working groups to improve safety within the waste management industry. In 2022, Cory employees were active in supporting ESA projects aimed at improving risk assessment, vehicle & pedestrian interfaces, occupational health monitoring and mental health. Senior employees are active on key industry working groups and committees and can influence legislation, regulation and best working practices.

Compliance with our legal obligations, including Health & Safety Executive (HSE) regulations and Environmental Permit conditions forms a significant part of our license to operate. Our relationship with key customers, many of whom are Local Authorities and public bodies, as well as our reputation within the wider community is influenced by our ability to demonstrate our commitment transparently and credibly in

accordance with the highest safety and environmental standards, often exceeding the standards required by legal compliance alone.

The scope of our safety management system extends to all our operational sites and our head office. It covers employees anywhere they are engaged in work for the company, contractors and agency workers conducting work within our control whilst on site or onboard our vessels, and any visitors to our sites or vessels. Most of our safety incidents occur on site, in work areas where there is operational plant and equipment. Off-site incidents are rare, although they do occur and where they do, they are managed in the same way as incidents on site, and we coordinate other stakeholders as necessary; for example, in clean-up or root cause investigations.

OUR AUDIT PROGRAMME

Every site for which we are responsible participates in a rigorous internal and external audit programme, with at least one independent visit each year by an audit team able to competently assess and evaluate the safety management system, thereby providing assurance as to the overall effectiveness of the management approach. The HSEQ Assurance Team also carries out ad hoc audits and visits to assess the effective functioning of the processes and controls that have been implemented to prevent harm. These visits result in improvement plans which are monitored via annual management review meetings. We presently have 77 improvement plans in progress.

Our reporting continued**HAZARD IDENTIFICATION,
RISK ASSESSMENT AND
INCIDENT INVESTIGATION**

The ELT regularly reviews the company's risk register and discusses emerging risks. This focuses on enterprise-wide risks, and a report is made to the Board twice yearly on any changes in risk rating and progress against improvement plans to mitigate those risks.

Site management has day-to-day responsibility for evaluating and controlling operational risks. All tasks and areas where work is conducted are assessed through a formal risk assessment process, which is reviewed periodically by supervisors and managers in conjunction with specialists from the HSEQ Assurance Team. Risks may be reviewed more frequently, for example following any significant changes in operations or as the result of any safety incidents that may occur.

A digitised hazard observation and recording system is available to all supervisors and managers, via a mobile app and shared tablets at sites. This system enables any uncontrolled hazards to be recorded and actions created to ensure matters are rectified, as well as providing management with insights into the frequency and locations at which hazards manifest most often. This process facilitates proactive and early engagement to identify the opportunities for improvement that prevent recurrence of uncontrolled hazards. The same process is also used to record good practice, through safety observations. The focus of safety observations is to emphasise the positive as well as to identify areas for improvement.

All workers are trained and encouraged to participate in safety observations and hazard spotting. Each record that is created is reviewed by a nominated responsible person at each site to ensure an appropriate response for each hazard that is raised. Managers have targets for the number of observations logged at their sites, and visitors to sites are encouraged to make any observations during of their visit.

In the extremely unlikely event of a situation arising where workers face an immediate threat to their safety or health, they are empowered to cease work and remove themselves to a place of safety. This absolute guarantee is stated in our H&S policy and is reinforced in our management procedures and through training.

Where safety-related incidents do occur, or where a failure of controls results in a 'Near Hit', there is a formal procedure for investigation of the root causes of that incident, and for capturing learnings and following up on actions to prevent recurrence. This procedure uses the same digital software for making safety observations and hazard spotting previously described, and once again all employees are trained and able to use this system to record any incident that results in injury, environmental harm or property damage. Site management can assign an investigator and all the evidence is collated and reviewed before a conclusion is drawn as to the circumstances of the incident, and plans are made in conjunction with operational management for the most appropriate actions to drive improvement.

**OCCUPATIONAL HEALTH
SERVICES**

Occupational health surveillance is available to all employees. This is outsourced to a third party and takes the form of an annual medical evaluation performed at site, during working hours. The specific medical tests available to each employee are based on a risk assessment of the tasks they perform – for example, audiometry for those who are exposed to high noise environments and are required to wear hearing protection. If any anomalies are found during routine health surveillance, this may result in a referral to specialist healthcare provider. The company receives reports from the occupational health provider detailing the number of assessments performed and the number of referrals and identifying any omissions or gaps in the provision of service.

In addition to the health surveillance programme, there are additional programmes aimed at employee wellbeing and offered as part of the company's employee benefits package, such as free eye tests and discounts on glasses, and free access to a 24-hour online doctor.

**WORKER PARTICIPATION,
CONSULTATION AND
COMMUNICATION ON
OCCUPATIONAL HEALTH
AND SAFETY**

Each site has a safety committee, which meets at least four times per year. This committee consists of site management, participants from the HSEQ Assurance Team, and representatives of employees. The employees are free to elect their own representatives, and each participant at these meetings has equal standing. Issues that are discussed include recent incidents and the results of any investigations, safety-related KPIs, opportunities for improvement, and learnings or good practice from other sites. Proposals for future training, toolbox talks and feedback on the CAPEX programme are discussed at these meetings, the results of which are fed back to Senior Management.

The internal and external audit programme reviews the minutes from these meetings, as well as conducts interviews with employees to assess whether two-way communication is effective. Other communication channels that are available include the company's intranet, employee noticeboards, and email cascades and toolbox talks given by supervisors, all of which are used to share posters, flyers and other safety-related information.

**WORKER TRAINING ON
OCCUPATIONAL HEALTH
AND SAFETY**

We provide ongoing training to ensure that we maintain the highest standards and that awareness of key safety-related issues raised throughout the organisation. We enrol our people on external courses, and all personnel are assigned training on safety topics using our online learning platform called Safety Hub. In addition, personnel may be selected for training courses from the National Examination Board in Occupational Safety and Health (NEBOSH) and The Institution of Occupational Safety and Health (IOSH).

285 courses on occupational health and safety were completed on our dedicated Safety training hub during 2022. Training was conducted at all levels of the business from the ELT to the shop floor.

Our reporting continued

Delivery of 2022 targets

Ambition	Goals	2022 Actions and targets	Delivery in 2022
MOVING TO NET ZERO			
Achieve net zero carbon emissions across our operations by 2040	Progress policy and planning timeline to capture carbon from our existing and future EfW facilities	Commence Development Consent Order pre-application phase, including Environmental Impact Assessment scoping	<ul style="list-style-type: none"> Progressed the basis of design for the CCS and hydrogen projects and the pre-front-end engineering and design process and mechanical engineering deliverables for CCS Received Section 35 confirmation of a nationally significant project and approval of the Development Consent Order process Progressed site surveys and preparing for BEIS/Department for Energy Security and Net Zero Track-2 application ahead of funding window opening in 2023 Progressed commercial relationships on CCS (technology, transport & storage, carbon trading) and hydrogen (technology, offtake, market assessment) Became one of the founding members of Bacton Thames Net Zero cluster
		Commence next phase of stakeholder engagement – including local, political and regulatory stakeholders – and develop consultation strategy	Preparing stakeholder engagement programme to be conducted in conjunction with Riverside 2 stakeholder engagement
	Work to improve understanding of the plastic content of residual waste, and publicly communicate on the need to remove plastics from residual waste	Undertake enhanced waste composition sampling of waste entering Riverside 1 to better understand the types of plastic in residual waste	Completed January 2022 and used to determine plastics campaign content
		Deliver communications campaign on the results of the plastic content analysis and on the need to keep plastics out of residual waste	Launched press release and social media content in July 2022 Working to progress our position on plastics in 2023
		Identify a stable offtaker for recycling sacks coming into the Materials Recycling Facility	Completed as of April 2022
	Maximise energy efficiency across all sites and activities	Sites to deliver individual energy efficiency plans and increase focus on energy use and efficiency in day-to-day operations	Delivered with energy use ratio for kWh of energy used per tonne of waste processed improved at all Waste Transfer Stations
		Ensure meters are installed on all fuel storage tanks and usage is recorded	Still engaging with Operations at two sites to accurately record usage of fuel (instead of purchase figures)
		Continue LED lighting programme across all sites	In progress, all sites now at least 70 per cent LED
		Continue engine idling programme on the tugs, monitoring idling time per tug and reporting back to crews	All tug crews are following the instruction and idling has been reduced the minimum
		Continue to implement maximum power on tugs at 75 per cent and track fuel-saving results over the year	Programme has been ongoing since June 2021 and fuel savings have been maintained
	Upgrade optical sorters in the Materials Recycling Facility to improve energy efficiency and capture rate	Order was made in November 2022, with installation scheduled for early 2023	

Our reporting continued

Delivery of 2022 targets continued

Ambition	Goals	2022 Actions and targets	Delivery in 2022
Achieve net zero carbon emissions across our operations by 2040 continued	Invest in no new diesel site vehicles or heavy plant from 2030, and achieve total phase-out by 2040	Hire an electric dock tractor and establish the charging requirements and optimum location of chargepoints	Completed trial of an electric dock tractor in January 2022 and will undertake a long-term trial once a hydraulic wet pack (for tipping containers) has been developed by the manufacturer for the electric unit. Ordered two internal combustion engine dock tractors which can be retrofit to electric engines once the technology is available
	Phase out natural gas from all sites by 2030	Maximise efficiencies in heating, ventilation and air conditioning	Following improvement works across sites in 2021, gas use reduced by 115,000 kWh across the three sites which use it (a milder winter also contributed). Smugglers Way WTS installed new thermostats in the changing rooms facilities to better control temperatures for employees
	Continue to use HVO in our river fleet while undertaking R&D into zero emissions marine vessels (subject to availability)	Identify any next steps following feasibility study with BAE Systems and Wight Shipyards	Feasibility study identified that success factors could not be met at this time and Cory therefore did not progress with the next stage of the project which was a demonstration vessel
	Invest in renewable energy	Continued purchase of REGOs	REGOs purchased for all sites excluding Barking Waste Transfer Station and the Port of Tilbury
Maximise the carbon benefit of our process	Develop Riverside 2 to further divert waste from landfill	Achieve financial close on the Riverside 2 project and enter into key contracts required to implement the Riverside 2 project Commence enabling and then main works	Financial close reached in December 2022 – key commercial agreements will be linked to financial close with works on site commencing January 2023
	Maintain investment in the efficiency of Riverside 1	Deliver project to improve the sliding bleeds control of the turbine to improve the efficiency of electricity generation	The project was delivered with efficiency improvements achieved – during 2023, we will undertake further borescope inspection to determine the long-term impact to the steam turbine
	Make use of our waste heat by providing heat to a district heating network	<ul style="list-style-type: none"> Following on from the collaboration agreement between Cory and Vattenfall, enter into heat offtake agreement with Vattenfall for the supply of heat from Riverside 1 Confirm the heat pipeline route from Riverside Secure planning permission Continue to advance relationships with stakeholder authorities and prospective heat customers 	Negotiations on the heat offtake agreement continued throughout 2022
	Achieve complete circularity of our combustion process, which means maximising reuse of by-products	Select supplier/s for APCr processing for the next three-to-five-year period, ensuring that a full market analysis of all potential opportunities over the next ten years has been completed	Complete – 50 per cent of the APCr continues to be recycled through a third party who turn it into carbon negative secondary aggregates used by the building trade – from September 2023, the other 50 per cent is processed at an ash treatment facility where the inherent cementitious properties of the APCr is used to help to treat and process other waste streams and enable safe and compliant disposal of the resultant stabilised waste

Our reporting continued

Delivery of 2022 targets continued

Ambition	Goals	2022 Actions and targets	Delivery in 2022
Maximise the carbon benefit of our process continued	Engage with our supply chain on emissions reductions opportunities	Pilot and implement a methodology to factor CO ₂ into decision-making processes and investments	The methodology devised could not be applied as intended as our large procurements in 2022 were sole source. The reality is that it is very difficult to engage with Operations on reducing the CO ₂ impacts of large procurements which are technically specific and timebound. Our Sustainability Team will continue to explore avenues for how we can work with our Operational Teams and supply chain to reduce the associated CO ₂ emissions of our procurements
Explore opportunities for sustainable building design, and low-carbon construction and procurement for new build projects	Work with our contractors and partners to reduce embodied carbon in our new build projects by adopting new technologies, piloting new materials and specifying low-carbon energy and diesel alternatives where feasible	Demonstrate engagement with key contractors and partners to show that opportunities to reduce embodied carbon in new build products and employ low-carbon construction techniques have been identified and prioritised	As part of the planning approval for Riverside 2 project, the EPC contractor will deliver the project in accordance with the Construction Environmental Management Plan (CEMP), which contains several relevant provisions relation to low carbon, waste minimisation and the natural environment. The Administrative Block for the project has been specified by Cory to achieve a BREEAM Technical Standards level of 'Very Good'

EMISSIONS AND AIR QUALITY

Improve air quality across all sites	Continuously explore opportunities to reduce emissions from Riverside 1	Carry out enhancement project to understand actions required to optimise selective non-catalytic reduction system and further reduce NO _x setpoint	Trial completed with potential to achieve 120mg/m ³ – however, due to availability issues combined with increases in ammonia pricing, it is currently not a sustainable target - read more on page 17
	Improve air quality measurement across all sites and identify opportunities to make improvements	Undertake instrument upgrade to continuously monitor N ₂ O Standardise occupational health monitoring across all sites for fumes and dust, beyond regulatory requirements	<ul style="list-style-type: none"> • Calibrations functions to be applied to CEMS software • Riverside 1 completed the same health monitoring tests at the Waste Transfer Station in Summer 2022 • Lighterage have budgeted to carry out air quality testing at onshore locations and one tug in 2023
	Facilitate the move to cleaner vehicles for employees	Continue to offer electric vehicle leasing scheme and provide chargepoints for employees	Delivered

Our reporting continued

Delivery of 2022 targets continued

Ambition	Goals	2022 Actions and targets	Delivery in 2022
CARING FOR OUR LOCAL ENVIRONMENT			
Enhance our environmental performance through use of an effective and continually improving environmental management system	Continue to improve ISO 14001 Environmental Management System	Continued external certification and improvement of our ISO 14001 Environmental Management System through: <ul style="list-style-type: none"> • Improvement plans • Internal and external auditing • Staying abreast of legal requirements • Reviewing the impacts of our energy use • Adopting key elements of ISO 50001 within existing management system 	Delivered
	Participate in selected external schemes to seek assurance of our environmental management and performance	<ul style="list-style-type: none"> • Participate in PLA Thames Green Scheme to demonstrate Cory's commitment to a cleaner, healthier Thames • Continue annual participation in the GRESB Infrastructure Asset Assessment to seek an external benchmark of our ESG management and performance 	Completed – received PLA Thames Green Scheme Silver Award and 98/100 on GRESB
Maximise water efficiency	Monitor water use across all sites, identify opportunities to reduce consumption, and develop and implement efficiency programmes	<ul style="list-style-type: none"> • Explore options for improved water usage meterage at Riverside 1 • Include water use on site energy use dashboard • Identify sites with highest water usage and understand why • Assess whether there are opportunities for efficiency in water use and set targets in relation to reduced usage 	<ul style="list-style-type: none"> • Riverside 1 actions rolled to 2023 • Water included on energy use dashboard from Q2 • Some sites undertook a water check from Thames Water during the year and implemented improvement actions
Improve our understanding of local biodiversity issues and ecological management at our sites	Develop and implement a Biodiversity Action Plan for our site in Belvedere to identify opportunities to strengthen biodiversity and ecosystem services	Understand opportunities for enhanced biodiversity management at Riverside 1	<ul style="list-style-type: none"> • As part of the planning approval for the Riverside 2 project, the technical details of the biodiversity offset agreement have been agreed with the Local Planning Authority (the London Borough of Bexley) including a 10 per cent net gain • Cory has contracted the Environment Bank for delivery of the agreement

Our reporting continued

Delivery of 2022 targets continued

Ambition	Goals	2022 Actions and targets	Delivery in 2022
HEALTH, SAFETY AND WELLBEING			
Continually improve our Health and Safety performance and ensure that our employees, and those who may be affected by our activities and operations, are safe	Engage with employees to further promote a positive safety culture	<ul style="list-style-type: none"> • Increase the number of users reporting hazards, making safety observations and conducting risk assessments • Run several engagement sessions bringing the workforce together to hear external speakers and share ideas and examples of good practice and areas for improvement • Continue monthly safety themes 	<ul style="list-style-type: none"> • We increased to 2,996 Safety Observations and Hazard Reports in 2022 from 1,863 in 2021, the number of users who logged on to the system in 2022 was 157 • Completed • Completed
	Continue to demonstrate the importance of safety in everything we do	<ul style="list-style-type: none"> • Introduce further capabilities to H&S software reporting system, including hazard reporting by third parties (e.g. contractors and members of the public) • Continue Senior Leadership site safety visit programme 	<ul style="list-style-type: none"> • The third-party hazard reporting capability envisaged was not progressed – we have instead developed our existing reporting tool, with three new incident types (Marine, Security and Outage) developed • Senior Leadership site safety visit programme has continued as planned, with all 12 scheduled site visits now taken place
Promote the wellbeing of our employees	Create a positive work environment and support employees who experience mental health issues	Continue to be a signatory to the Mindful Employer Pledge which commits us to taking constructive steps to creating a positive work environment and supporting employees who experience poor mental health	Completed, with Mental Health the focus topic for 2023

Our reporting continued

Delivery of 2022 targets continued

Ambition	Goals	2022 Actions and targets	Delivery in 2022
EMPLOYER OF CHOICE			
Continue to be a leading employer in London, providing rewarding and fulfilling careers for a diverse range of people to ensure excellence in performance	Provide a broad range of training and development programmes for all employees	<ul style="list-style-type: none"> Continue to provide Leadership and Management training for first line managers to ensure they are equipped and skilled to perform Utilise a Learning Management System to ensure that each employee has a personalised development and training plan Continue to invest in our apprentices, increasing the number that we employ by up to 50 per cent in 2022 Develop six Waste Modules to be cascaded to employees who have Duty of Care responsibility Continued focus on cyber security awareness training at home and at work via Cory's bespoke training Aiming for average content completion rate for all teams of 70 per cent, no single team on less than 50 per cent completion, half of teams on 75 per cent or higher, phishing failure rate to drop from >20 per cent to <10 per cent, and to receive positive feedback when sampling employee sentiment Roll out of Cory bespoke sustainability e-learning to all employees with a goal of 70 per cent completion rate 	<ul style="list-style-type: none"> Management Course delivered in March 2022 Researched several systems and determined that optimum course of action was to hire a part-time Learning and Development resource in 2023 to assist with administration Delivered Delivered Delivered Delivered
	Ensure that our managers are empowered and equipped to be effective leaders	<ul style="list-style-type: none"> Develop and implement a Coaching and Mentoring programme 	This has been launched and will be continued during 2023
	Ensure that we create an inclusive and welcoming environment for all employees	<ul style="list-style-type: none"> Build on the Diversity and Inclusion workshops completed in 2021 to develop initiatives to ensure that Cory continues to be a welcoming environment with an engaged workforce Introduce a discretionary training fund for non-work-related training Amend the maternity policy and absence policy to cover pregnancy loss for women and their partners 	<ul style="list-style-type: none"> Completed and recommendations shared with ELT Awaiting internal feedback on submitted proposal Completed

Our reporting continued

Delivery of 2022 targets continued

Ambition	Goals	2022 Actions and targets	Delivery in 2022
SUPPLY CHAIN ENGAGEMENT			
Build a sustainable, safe and ethical supply chain	Engage with employees and suppliers on our expectations of supplier sustainability performance	<ul style="list-style-type: none"> Develop and deliver training on sustainable procurement for relevant members of the workforce Send Supplier Code of Conduct to all suppliers, publish externally and incorporate into all standard/template Terms and Conditions Roll out sustainable procurement guidance to business, including tendering guidelines 	<ul style="list-style-type: none"> Legal Team delivered training on general procurement principles for relevant members of the workforce Completed Completed
	Continue to identify and evaluate the risks of modern slavery and human trafficking within our business and supply chain	<ul style="list-style-type: none"> Publish Modern Slavery Statement and develop goals on its basis 	<ul style="list-style-type: none"> Completed
COMMUNITY INVESTMENT AND ENGAGEMENT			
Be a good neighbour to our local communities	Engage with our local communities and provide opportunities for them to learn about recycling and waste management	<ul style="list-style-type: none"> Deliver in-person Bexley Eco-Fest during summer 2022 Carry out school visits supported by Industrial Cadets and Children's University Accreditation 	<ul style="list-style-type: none"> Delivered Bexley Primary School Assemblies held in May and June to educate on recycling; organised with the Children's University
	Support engagement in science, technology, engineering and mathematics (STEM) subjects in our local communities	<ul style="list-style-type: none"> Continue work experience programmes accredited by Industrial Cadets Donate 100 per cent of used laptops to Laptops for the Homeless charity 	<ul style="list-style-type: none"> Done and continuing Completed and ongoing
	Continue to deliver our Community Fund to support organisations in the areas in which we operate	<ul style="list-style-type: none"> Distribute funds to second round of Community Fund organisations and provide additional support as required Initiate process for third round of Community Fund 	<ul style="list-style-type: none"> Completed and ongoing

Our stakeholders

By understanding our stakeholders, we can consider their needs and concerns as part of our Boardroom decision-making processes.

Our long-term strategy relies on positive, proactive relationships with our stakeholders.

POSITIVE, PROACTIVE RELATION- SHIPS

OUR APPROACH

Each stakeholder group requires a tailored engagement approach to foster effective and mutually beneficial relationships. This ensures we continue to provide sustainable waste management services for London and the South East. It means we'll continue to offer meaningful working lives for our people, make a positive contribution to our communities and the environment, and achieve long-term sustainable returns for our investors.



Shareholders

We owe fiduciary duties to our shareholders, who have invested significant capital with the intention of owning Cory for the long-term. Shareholders need the Group to generate dividends to distribute to their investors, many of whom are pension funds.

Each shareholder has representation on the Board of Directors and we provide them with regular financial and non-financial information, both at and between Board meetings, amounting to near-weekly communication. The main topics of 2022 are set out in Key Activities of the Board and its Committees on page 56 of our 2022 Annual Report. As a result of shareholder engagement, the Board made a number of material business decisions, including those set out in the Section 172 statement (Principal Decisions) on page 37 of our Annual Report.

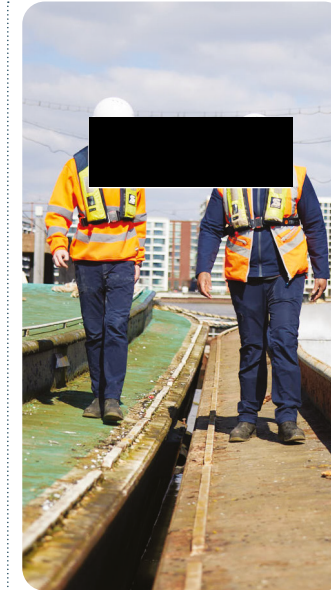


Employees

Our employees are key to the success of our Company. Their safety and wellbeing are our top priorities.

In 2022, we held a series of Health and Safety workshops across our sites with two external speakers who shared their thoughts and experience of why people sometimes make poor safety decisions. These sessions were attended by 120 people and the feedback was extremely positive, with many describing the workshops as "highly impactful".

One key message from the sessions, which is supported by wider industry evidence is that mental health is a significant contributor to many accidents at work. We are therefore making mental health a key HSEQ focus area for 2023 and reinforcing our commitment to supporting all team members. This focus also reflects the findings of a recent survey by the Environmental Services Association which indicated that operators including Cory need to do more to promote mental health in the same way that physical health is promoted.



We want to ensure that decisions taken by business Leadership are informed by our employees wherever possible. In Q3 2022, we undertook a review of our sustainability strategy which included engagement with our key stakeholders, including Cory team members who were asked to provide their input via online survey on which issues they think represent Cory's most significant economic, environmental, and social impacts in the delivery of the services we provide. The responses were collated and used to inform an updated sustainability strategy (see page 6 for more detail).



Trade Unions

Around 30 per cent of our employees are represented by trade unions (Unite and GMB), which helps us communicate effectively on collective issues with these colleagues.

We engage with our trade unions through regular discussions with local shop stewards and meetings with regional and national officials. The cost of living crisis facing the country in 2022, exacerbated by high inflation, was a key matter of concern for all our employees and the unions and, as a result 2022 saw extensive engagement with the trade unions on pay. The discussions were challenging at times, but successfully concluded with two multi-year deals being overwhelmingly accepted by the relevant employees.

Our stakeholders continued

Suppliers

Our suppliers provide us with essential goods and services, ensuring we can operate our business efficiently and effectively.

We are proud to have long-standing relationships with many of our suppliers, including Hitachi Zosen Inova (HZI), who we appointed as our Engineering, Procurement and Construction contractor for Riverside 2. Our existing facility was also built by HZI, and Riverside 2 will utilise the same moving-grate technology used at Riverside 1.

We communicate with suppliers through standard procurement and contract management processes which include credit checks, modern slavery audits, confirmation of compliance with necessary policies, contract negotiations and meetings.

Issues that mattered most to our suppliers in 2022 included the Ukraine war and continuing global supply chain issues impacting availability of resources (labour and materials) and contract pricing; our Riverside 2 development; and our net zero/decarbonisation plans.



In 2022, we signed contracts worth hundreds of millions of pounds (combined) with multiple major suppliers to enable the delivery of the Riverside 2 project, including UK-based businesses such as JSM and Harland & Wolff. The quality of our suppliers, business partners and representatives are integral to the success of our operations and the long-term sustainability of our business.

In addition to this, we want to work with suppliers who share our vision for the future and who take pride and responsibility in their operations. As such, we expect our supplier partners to adhere to a basic set of standards set out in a Code of Conduct and to replicate

the same standards within their own business and supply chain. In doing so, we hope to build long-lasting and efficient relationships that work for us, our suppliers and for the communities we work in. This Code was rolled out to suppliers in 2022.

We undertook modern slavery audits of 2 suppliers in 2022, the details and outcomes of which can be found in our 2022 Modern Slavery Statement at <https://www.corygroup.co.uk/modern-slavery-statement/>.



Customers

Our customers are at the centre of our business, providing the revenue we use to invest in our people and business and paying distributions to our investors.

We hold frequent executive-level meetings with local authority customers and ongoing regular meetings with commercial and industrial customers.

In 2022, we engaged extensively with potential new local authority customers through soft market testing and formal procurement processes. As an outcome, Cory was awarded a long-term 100,000 tonne waste disposal contract with Hertfordshire County Council to commence in 2024 and is in a strong position to bid for further contracts as they come to market. We also engaged with our local authority customers through interviews and an online survey conducted as part of a Sustainability Impact Assessment (see page 5 for further details). Through these engagements, it is evident that decarbonisation, removing plastics from residual

waste, increasing reuse, separate food waste collections and social value are important issues to our existing and to potential new customers. We are responding to this through our net zero by 2040 commitment, and specifically our plans to install carbon capture on our EFW facilities, as well as increasing the focus on the waste hierarchy and social value in our sustainability strategy, which was refreshed following the Impact Assessment.

We also engaged with our existing and potential customers on a range of other material matters that will affect them in the long-term including Cory's Riverside 2 development to meet the EFW treatment capacity gap and the proposed Riverside Heat Network that will ensure that heat from the process is used to heat homes and businesses. Our engagement demonstrated that customers are positive about our development plans as the projects ensure that London and the South East's critical waste infrastructure suits their needs and helps them to meet their own net zero goals.



Lenders

By providing long-term debt on good terms, our lenders ensure we have the means to invest in our operations both now and in the future.

Lenders receive semi-annual business performance reports and regular updates via the agent portal or through meetings with the CFO. In 2022, Cory engaged extensively with its existing lenders regarding interfaces with and consent to proceed with the Riverside 2 project, and engaged further with new lenders, resulting in the successful financing of the project on good terms in a very complex economic environment. More on this can be found in Principal Decisions on page 37 of 2022 our Annual Report.

Our stakeholders continued

Regulators and government

Our industry is regulated, particularly in relation to the environment and the River Thames.

It is therefore important that we maintain strong relationships with regulators as well as local and national government.

This is achieved through direct communications, consultations and through our normal compliance activities and requirements. 2022 was a particularly busy year in terms of engagement with government. Material issues that arose in 2022 included: the vital role of energy from waste in responsible waste management and achieving net zero carbon; funding for carbon capture projects, the UK Emissions Trading Scheme and the Government's industrial model for carbon capture; the impact of the Ukraine war and high inflation, the energy crisis and the cost-of-living crisis on the industry; Cory's Riverside 2 project; Cory's decarbonisation project; and HSE

reporting. As a result of considered engagement with the London Borough of Bexley, BEIS, the PLA and the EA and their associated planning and permitting regimes – Cory successfully discharged all of the pre-commencement planning conditions for the Riverside 2 project and obtained approval for a change to both its planning consent and environmental permit to increase throughput at the Riverside 1 EFW facility to 805,000 tonnes per annum.

These will enable greater EFW capacity to address the UK's waste treatment capacity gap. Further, the Secretary of State for Business confirmed that Cory's planned carbon capture and storage and hydrogen projects qualify as nationally important infrastructure, acknowledging the vital role they will play in achieving the UK's net zero ambitions. This will enable the business to continue in its plans to apply for a Development Consent Order for the project in early 2024.



Community

We operate several sites across London and serve numerous boroughs by managing their waste.

We strive to be an asset to the communities in which we operate, and work to build strong, long-term and mutually beneficial relationships with our local communities.

Through our community engagement programme, we provide opportunities for local communities to learn about recycling and waste management, and support engagement in science, technology, engineering, and mathematics (STEM) subjects. Through our Community Fund we support the work of local organisations that are aligned with our values and seek to make a positive impact for local people. Our local communities care about reliable waste management services, climate change, air quality and their local environment, and about community education, development and wellbeing. We are committed to providing safe, efficient and decarbonised waste management services and reducing our impacts on the environment to support our local communities for the better, long into the future. The results of our community engagement programme can be found on pages 30–31.



Environment

Our purpose is to manage London's waste sustainably.

By diverting 790,000 tonnes of waste from landfill in 2022, we saved 258,000 tonnes of CO₂e. While the overall impact of our operations is to reduce the carbon emissions from waste management, our processes emit carbon, as well as air quality emissions. We comply with stringent air quality emissions limits and are constantly exploring new technologies and methods to reduce our air quality emissions at Riverside 1. At Riverside 2, we are investing in Selective Catalytic Reduction technology which will reduce our NO_x to the lowest in the UK of any EFW facility. We will achieve net zero carbon using carbon capture and storage technology at Riverside 1 and 2.

The Riverside 1 EFW facility and future Riverside 2 development are next to a nature reserve, so we work to minimise our impact on biodiversity and natural habitats. We proposed a biodiversity mitigation strategy for Riverside 2 that was approved by the London Borough of Bexley as the Local Planning Authority in January 2022. Net positive biodiversity is part of the design philosophy, and the scheme provides for replacement mitigation habitat plus 10 per cent. Cory is funding the



work through its delivery partner the Environment Bank. The Environment Bank is working with the London Borough of Bexley to deliver biodiversity enhancements across four sites in the borough and Thames Water on a site under their control. Work is due to commence in September 2023 across all the sites. We look forward to reporting the outcomes of this process.

Further information about how we consider the environment in our business can be found on pages 17–19. Our Streamlined Energy and Carbon report is on page 46 of our 2022 Annual Report and our climate-related risks and opportunities report in line with the recommendations of the Task Force for Climate-related Disclosures statement is on page 38 of our Annual Report.

**POWERING
CHANGE**

See 2022 Annual Report

Data tables

For period 1 January – 31 December 2022

HEALTH AND SAFETY

Indicator	2020	2021	2022	GRI reference
Days lost to injury	143	106	171	ESA
Number of employees and contractors whose work and workplace is controlled by Cory's internally and externally audited occupational health and safety management system	373	375	460	GRI 403-8
Percentage of employees and contractors whose work and workplace is controlled by Cory's internally and externally audited occupational health and safety management system	100%	100%	100%	GRI 403-8
Number of high-consequence work-related injuries – employees	3	5	4	GRI 403-9
Rate of high-consequence work-related injuries – employees	0.44	0.74	0.48	GRI 403-9
Number of recordable work-related injuries – employees	31	35	29	GRI 403-9
Rate of recordable work-related injuries – employees	4.58	5.19	3.47	GRI 403-9
Number of hours worked – employees	677,266	673,920	689,960	GRI 403-9
Number of high-consequence work-related injuries – contractors	0	0	1	GRI 403-9
Rate of high-consequence work-related injuries – contractors	0	0	0.6	GRI 403-9
Number and rate of recordable work-related injuries – contractors	10	24	26	GRI 403-9
Rate of recordable work-related injuries – contractors	7.39	17.8	15.54	GRI 403-9
Number of hours worked – contractors	135,400	134,784	200,000	GRI 403-9
Number of cases of recordable work-related ill health for employees and contractors	0	0	0	GRI 403-10

All data has been compiled through our integrated management system. No workers have been excluded from our data.

Percentage has decreased due to increased head count from inclusion of workforce from our new site in Barking

WORKFORCE DATA

Indicator	2020	2021	2022	GRI reference
Permanent employees – male	279	292	324	GRI 2-7
Permanent employees – female	35	33	43	GRI 2-7
Temporary employees – male	0	0	1	GRI 2-7
Temporary employees – female	1	1	0	GRI 2-7
Full time employees – male	279	288	321	GRI 2-7
Full time employees – female	30	29	37	GRI 2-7
Part time employees – male	0	4	4	GRI 2-7
Part time employees – female	6	5	6	GRI 2-7
Contractors working in our Materials Recycling Facilities and WTS	68	71	93	GRI 2-8
Employees covered by collective bargaining agreements (percent)	c.42%	c.42%	c.30%	GRI 102-41
New employee hires – male	18	24	71	GRI 401-1
New employee hires – female	4	4	13	GRI 401-1
New employee hires – under 30	5	11	19	GRI 401-1
New employee hires – 30-50	13	12	41	GRI 401-1
New employee hires – 50+	4	5	24	GRI 401-1
Employee turnover – male	22	26	55	GRI 401-1
Employee turnover – female	4	9	10	GRI 401-1
Employee turnover – under 30	5	8	13	GRI 401-1
Employee turnover – 30-50	13	18	22	GRI 401-1
Employee turnover – 50+	8	9	30	GRI 401-1
Employee turnover rate (percentage)	8%	11%	16%	GRI 401-1
Employees who took parental leave – male	1	8	2	GRI 401-3
Employees who took parental leave – female	3	0	0	GRI 401-3
Employees who returned from parental leave – male	1	8	2	GRI 401-3
Employees who returned from parental leave – female	1	–	–	GRI 401-3
Retention rate of employees who returned from parental leave – male (percentage)	100%	100%	100%	GRI 401-3
Retention rate of employees who returned from parental leave – female (percentage)	67%	–	–	GRI 401-3

Data tables for period 1 January – 31 December 2022 continued

WORKFORCE DATA continued

Indicator	2020	2021	2022	GRI reference
Total number of incidents of discrimination	0	0	0	GRI 406-1
Percentage of Board – male	92%	100%	92%	GRI 2-9
Parentage of Board – over 50	30%	40%	40%	GRI 2-9
Percentage of Executive Leadership Team – female	22%	29%	22%	GRI 405-1
Percentage of Executive Leadership Team – 30–50 years	78%	86%	56%	GRI 405-1
Percentage of Executive Leadership Team – over 50	22%	14%	50%	GRI 405-1
Percentage of managers – female	21%	26%	26%	GRI 405-1
Percentage of supervisors – female	4%	0%	4%	GRI 405-1
Percentage of operational employees – female	5%	5%	4%	GRI 405-1
Percentage of support employees – female	50%	50%	47%	GRI 405-1
Percentage of managers under 30/30–50 years/ over 50	3%/58%/ 39%	5%/60%/ 36%	0%/56%/ 44%	GRI 405-1
Percentage of supervisors under 30/30–50 years/ over 50	0%/81%/ 19%	0%/72%/ 28%	0%/77%/ 23%	GRI 405-1
Percentage of operational employees under 30/30-50 years/over 50	15%/48%/ 36%	15%/51%/ 33%	15%/46%/ 39%	GRI 405-1
Percentage of support employees under 30/30–50 years/ over 50	17%/73%/ 10%	15%/73%/ 12%	15%/62%/ 23%	GRI 405-1
Ethnic origin – percentage of employees who are Asian	2%	1%	1%	GRI 405-1
Ethnic origin – percentage of employees who are Black	3%	3%	4%	GRI 405-1
Ethnic origin – percentage of employees who are Mixed	2%	3%	2%	GRI 405-1
Ethnic origin – percentage of employees who are White European	10%	10%	12%	GRI 405-1
Ethnic origin – percentage of employees who are White British	64%	66%	67%	GRI 405-1
Ethnic origin – percentage of employees who are Other/prefer not say	18%	17%	14%	GRI 405-1

Data compiled from payroll, diversity questionnaires to employee and internal records.

Training

Indicator	2020	2021	2022	GRI reference
Average hours of training employees have undertaken – male	18	28	28	GRI 404-1
Average hours of training employees have undertaken – female	16	28	28	GRI 404-1
Average hours of training undertaken by managers	32	35	35	GRI 404-1
Average hours of training undertaken by supervisors	32	35	35	GRI 404-1
Average hours of training – operational employees	16	28	35	GRI 404-1
Average hours of training – support employees	16	28	35	GRI 404-1
Percentage of total employees who received a regular performance and career development review during the reporting period – male	75	90	75	GRI 404-3
Percentage of total employees who received a regular performance and career development review during the reporting period – female	75	90	75	GRI 404-3
Percentage of total employees who received a regular performance and career development review during the reporting period – managers	80	90	80	GRI 404-3
Percentage of total employees who received a regular performance and career development review during the reporting period – supervisors	80	100	100	GRI 404-3
Percentage of total employees who received a regular performance and career development review during the reporting period – operational employees	75	90	80	GRI 404-3

Labour/management relations

Minimum number of weeks' notice typically provided to employees and their representatives prior to the implementation of significant operational changes that could substantially affect them	12 weeks	GRI 402-1
Whether the notice period and provisions for consultation and negotiation are specified in collective agreements.	There are agreed change management processes in the collective bargaining agreements	GRI 402-1

Data tables for period 1 January – 31 December 2022 continued

ENERGY AND ENVIRONMENTAL DATA

Indicator	Unit	2020	2021	2022	GRI reference
Gross direct (Scope 1) GHG emissions	Tonnes CO ₂ e	353,262	366,667	433,274	GRI 305-1
Biogenic CO ₂ emissions (Scope 1)	Tonnes CO ₂ e	391,367	407,010	405,177	GRI 305-1
Gross location-based energy indirect (Scope 2) GHG emissions	Tonnes CO ₂ e	1,906	1,709	1,663	GRI 305-2
Gross market-based energy indirect (Scope 2) GHG emissions	Tonnes CO ₂ e	13	10	823	GRI 305-2
Gross other indirect (Scope 3) GHG emissions ¹	Tonnes CO ₂ e	2,000	53,504	60,582	GRI 305-3
Purchased goods and services – EFW consumables – hydrochloric acid	Tonnes CO ₂ e		29,824	39,786	GRI 305-3
Purchased goods and services – EFW consumables – lime	Tonnes CO ₂ e		7,422	5,779	GRI 305-3
Purchased goods and services – EFW consumables – ammonia	Tonnes CO ₂ e		2,440	1,112	GRI 305-3
Purchased goods and services – EFW consumables – caustic soda	Tonnes CO ₂ e		73	96	GRI 305-3
Purchased goods and services – EFW consumables – activated carbon	Tonnes CO ₂ e		3	3	GRI 305-3
Fuel and energy related activities – use of fuels and natural gas	Tonnes CO ₂ e		1,480 ²	1,776	GRI 305-3
Fuel and energy related activities – electricity consumption	Tonnes CO ₂ e		151 ³	152	GRI 305-3
Fuel and energy related activities – water consumed in operations	Tonnes CO ₂ e		28 ⁴	28	GRI 305-3

1 We carried out an assessment of our Scope 3 emissions in 2021 from selected GHG Protocol Scope 3 categories and therefore have included more data and higher Scope 3 emissions for 2021 compared to 2020.

2 Calculated using the UK Government's GHG Emission Factors. Includes well-to-tank for diesel, gas oil, marine gas oil, hydrotreated vegetable oil and natural gas.

3 Calculated using the UK Government's GHG Emission Factors for transmission and distribution from UK electricity. This figure includes well-to-tank for company cars, well-to-tank for private vehicles on business and business travel in rental cars or employee-owned vehicles where Cory is responsible for purchasing the fuel.

4 Calculated using the UK Government's GHG Emission Factors for Scope 3 water supply and treatment emissions sources.

ENERGY AND ENVIRONMENTAL DATA continued

Indicator	Unit	2020	2021	2022	GRI reference
Upstream transportation and distribution – fleet energy use	Tonnes CO ₂ e		8,594 ⁵	8,697	GRI 305-3
Waste generated in operations – Incinerator Bottom Ash	Tonnes CO ₂ e		3,457 ⁶	3,339	GRI 305-3
Waste generated in operations – Air Pollution Control Residue sent for reprocessing	Tonnes CO ₂ e		9.52 ⁷	10	GRI 305-3
Waste generated in operations – Air Pollution Control Residue sent to long term storage	Tonnes CO ₂ e		17 ⁸	13	GRI 305-3
Waste generated in operations – water treatment ⁹		51	16	14	=
Business travel – company car and personal car use for business travel	Tonnes CO ₂ e	3	5	24	GRI 305-3
Scope 1, 2 and 3 GHG emissions intensity ratio (location based)	Tonnes CO ₂ e/ total waste and recyclate tonnage handled	0.43	0.50	0.46	GRI 305-4
GHG emissions reduced as a direct result of reduction initiatives ¹⁰	Tonnes CO ₂ e/		1,480	1,432	GRI 305-5
Oxides of Nitrogen	kg	844,817	829,325.2	861,967.8	GRI 305-7
Sulphur Dioxide	kg	23,824	30,145.6	33,855.4	GRI 305-7
Total Particulate Matter	Kg	9,223	18,366.5	16,831.7	GRI 305-7
Lead	Kg	23.99	17.1	8.86	GRI 305-7
Mercury	Kg	2.66	17.4	2.29	GRI 305-7

5 Very few customers were able to provide an estimate of fuel used to deliver waste to us, and therefore an emissions factor has been estimated based on data provided by the Western Riverside Waste Authority. This assumption was verified and compared with the WRATE model 10 benchmark values for waste transportation and collection and the figures were similar in value. These figures include both waste delivered by road into our Waste Transfer Stations (7,212 tCO₂e) and directly by road into Riverside 1 (1,382 tCO₂e).

6 Calculated using the benchmark values from energy consumption from the WRATE model on treatment process, including metal recovery but excluding transportation.

7 This figure is based entirely on transportation of the APCr to a third party. The APCr is not processed by Cory and is sent to the third party as a usable raw material for the manufactured limestone production process and therefore any 'burdens' associated with turning this raw material into a new product belong to the product itself and to the third party.

8 For this analysis, we assumed that the GHG emissions behaviour of APCr in a hazardous landfill will be low as much of its composition will be inert for at least 100 years. Further studies will have to be performed to understand the GHG emissions arising from APCr in hazardous landfills. This figure is based on the minimal energy consumption required to operate the mines where the APCr is stored.

9 Calculated using the UK Government's GHG Emission Factors for Scope 3 water supply and treatment emissions sources

10 Data provided is energy savings made by our Lighterage department because of moving to hydrotreated vegetable oil/renewable diesel from marine gas oil, and energy efficiency initiatives

Data tables for period 1 January – 31 December 2022 continued

ENERGY AND ENVIRONMENTAL DATA continued

Indicator	Unit	2020	2021	2022	GRI reference
Total fuel consumption from non-renewable sources ¹ (natural gas, diesel, gas oil, parasitic load of EfW plant)	MJ (000s)	6,997,350	7,525,082	3,955,388	GRI 302-1
Total fuel consumption from renewable source ¹ (biofuels, biogenic fraction of waste, and solar)	MJ (000s)	3,659,539	3,999,677	3,689,559	GRI 302-1
Total electricity consumption	MJ (000s)	29,430	28,975	30,959	GRI 302-1
Total electricity sold	MJ (000s)	1,803,132	1,915,247	2,033,787	GRI 302-1
Total energy consumption	MJ (000s)	5,223,882	5,638,967	5,642,155	GRI 302-1
Energy intensity ratio	MJ per tonne of waste handled	165	160	146	GRI 302-3
Reductions in energy consumption achieved as a direct result of conservation and efficiency initiatives ²	Megajoules (MJ)		5,270,130	46,648	GRI 302-4
A non-compliance that could have a major environmental impact	Number	0	0	0	GRI 307-1
A non-compliance that could have a significant environmental impact	Number	0	0	0	GRI 307-1
A non-compliance that could have a minor environmental impact	Number	1	1	3	GRI 307-1

WASTE DATA

Indicator	Unit	2020	2021	2022	GRI reference
Waste generated	Tonnes	1,014,008	1,043,824	1,232,064	GRI 06-3
Waste diverted from disposal	Tonnes	250,891	251,799	256,114	GRI 306-4
Waste directed to disposal	Tonnes	763,117	792,025	993,569	GRI 306-5

¹ HVO and the biogenic fraction of the waste have been removed from the non-renewable fuel sources and added the renewable fuels, while the fossil fraction of the waste remains in the non-renewable fuels. The total energy consumption for 2020 and 2021 have been recalculated accordingly.

² Data provided is energy savings made by our Lighterage department because of moving to hydrotreated vegetable oil from marine gas oil, and energy efficiency initiatives. We did not make this calculation for 2020 performance hence.

Explanatory notes for GRI 302 and 305:

- Scope 1 and Scope 2 emissions calculation comprises carbon dioxide, methane and nitrous oxide (and hydrofluorocarbons where applicable).
- The base year for the calculation is 2020, to align with Streamlined Energy and Carbon Reporting Requirements.
- UK Government GHG Conversion Factors for company reporting were used.
- For processed waste, throughout 2022, CO₂ emissions have been continuously monitored with the facility's Continuous Emissions Monitoring System which measured a CO₂ emitted to waste incinerated ratio of 1.015 to 1 tonne of waste in 2021 this ratio was 0.98. Prior to 2021 CO₂ emissions from Riverside 1 have been calculated using a locally agreed conversion factor with the Environment Agency. In 2020 the factor agreed was 1.008 tCO₂ to 1 tonne of waste. For processed waste an emissions factor agreed with the Environment Agency based on an average of the carbon content of the waste processed by Riverside EfW facility was used. The nitrous oxide component of the Scope 1 emissions from Riverside EfW facility was calculated using the Entreprises pour l'Environnement (EpE) "Protocol for the quantification of GHG emissions from waste management activities" (2013).
- For Scope 2, the Market-based emission factor was taken from AIB's European Residual Mix 2018, 2020 and 2021.
- Global Warming Potential rates are based on the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) over a 100-year period.
- We have reported using the financial control approach.
- For GHG emissions, our reporting methodology is in accordance with UK Government Environmental Reporting Guidelines and the GHG Protocol Corporate Accounting and Reporting Standard. The biogenic/fossil carbon content of the waste was determined by an UKAS accredited waste composition analysis methodology.
- For the intensity ratio, biogenic emissions have been excluded.
- For data provided for reporting GRI 305-7:
 - Emission factors: point source (main stack) emissions are the most significant emission source. Representative onsite monitoring data is used to generate site specific emission factors. The emission factor is the ratio of the measured pollutant emission to the flue gas flow rate and operating hours of the specific operating line. Site-specific emission factors are periodically verified to ensure their continued validity.
 - Methodologies used: emission factors are used to estimate an activity's emissions by the general equation:
 - (4) $E = A \times Op \text{ hours} \times EF$
 - Where: E = emission rate of pollutant in kg/yr
 - A = activity rate of process, t/hr or m³/hr
 - Op hours = operating hours per year of activity, hr/yr
 - EF = controlled emission factor of pollutant per activity, kg/t or kg/m³
 - Within Equation 4 it is important to note that EF is the emission factor for the pollutant released to atmosphere, that is, after the emission has been abated.
- Energy intensity ratio includes fuels and electricity consumption within the organisation and excludes energy from waste.
- We carried out an assessment of our Scope 3 emissions in 2021 from selected GHG Protocol Scope 3 categories and therefore have included more data and higher Scope 3 emissions for 2021 and 2022 compared to 2020.



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Appendix B

ECONOMIC EFFECTS OF PROPOSED SCHEME

Appendix B: Technical Note of the Economic Effects of the Proposed Scheme

Introduction

1. The economic impact of the Proposed Scheme is anticipated to be large and positive. The CCUS sector is emerging as a critical area for future economic activity, firstly because it is fundamental to the UK achieving its net zero objectives, and secondly because it can provide opportunities for sustainable development and low carbon growth at a time when arguably this is most needed. Positive economic impacts from the Proposed Scheme will be derived from several different sources, these include direct carbon benefits, direct stimulation of demand and investment in a specialist and emerging sector, the promotion of responsible business and good practice, creation of employment opportunities and benefits to the local area. Due to a variety of economic and natural factors the UK is very well placed to realise these potential benefits and the following paragraphs demonstrate why the UK is well positioned and what the Proposed Scheme's implementation could bring in terms of economic impacts.

Avoidance of Carbon Emissions

2. By definition, one of the most important economic impacts resulting from the Proposed Scheme will be the reduction of carbon emissions, which will help the UK achieve its Net Zero objectives and result in a reduction in pressures on global warming. This is a direct environmental and societal benefit, and in absolute terms, the Proposed Scheme is designed to capture carbon emissions of around 1.6 million tonnes a year. However, this carbon reduction, as well as being perceived purely as 'tonnes of carbon captured', can also be perceived as an economic impact.
3. Economic impacts, be they costs or benefits, are distinct from financial costs or benefits. Economic impacts encompass the costs and benefits for society as a whole, whereas financial impacts take the perspective of one particular stakeholder in the project, such as suppliers, investors or consumers. When we buy an item, we are usually asked to pay the financial cost, and not the full economic cost of the item. Consider the example of a t-shirt from a cut price store, which costs £3.50. The £3.50 is just the financial price required to cover financial costs (making the shirt, shipping the shirt, selling the shirt and profit margins). However the t-shirt also has an economic cost which is almost certainly higher than £3.50 and is borne, somehow, somewhere, by someone or something, regardless of the financial cost. This economic cost would include, for example, exploitation of child or other workers, carbon emissions from manufacture and transport, cost of disposal, pollution from the factory into the neighbouring river, difference between the living wage and the actual wage received by the person employed to sell the shirt in the store, etc. Because the price of £3.50 is cheap, it 'signals' to the consumer that this is an item which is affordable; consequently this item, and others like it, are bought extensively. But for every item sold where the financial cost is lower than the economic cost, someone gets exploited, the environment gets polluted, animals suffer on farms, the climate heats up, or other negative impacts (known as 'negative externalities') are experienced. Unless the economic cost is included in the financial cost, people are incentivised to buy goods and services which cause environmental, social and economic damage. The free market has many advantages, but if financial prices are lower than economic costs, it can easily work to encourage unsustainable production.
4. For projects approved by, or partially funded by the public sector, incorporating a 'value' for economic costs incurred as part of project or policy appraisal ensures proper account is

taken of economic costs – not just financial impacts. By comprehensively and systematically using carbon valuation across project appraisals in a consistent manner, government seeks out cost-effective opportunities for reducing emissions and by applying the same monetised carbon values on all projects, also provides transparency and consistency.¹ The intention is to ensure that in a decision making process, economic costs (borne by the whole of society) are assessed, and that decisions are not made on the basis of financial impacts alone.

5. A policy or project that increases or decreases greenhouse gas emissions domestically or internationally relative to a ‘business as usual’ scenario is required to quantify the change in emissions, and then apply the carbon values. This calculation feeds into the overall cost benefit analysis which is undertaken for publicly funded projects to be considered alongside other evidence when deciding whether to pursue an investment or make a policy change.
6. To demonstrate the indicative monetary value that the carbon savings from the Proposed Scheme will bring to society, a high level economic analysis has been prepared based on HM Treasury Green Book principles.² Essentially, this required the two options to be assessed, the ‘with-project’ scenario and the ‘without-project’ scenario, with the costs and benefits of each being monetised so that a direct comparison between them could be made. The analysis was indicative, carried out using four main inputs:
 - a. estimates of the cost per tonne of carbon capture, transport and storage;
 - b. estimates of the tonnes of carbon captured annually during the project’s operation;
 - c. government supplied scenarios for carbon values (which represent the monetary value that society places on one tonne of carbon dioxide equivalent); and
 - d. Department for Energy Security and Net Zero (DESNZ) sourced traded carbon values for modelling purposes (these are separate and largely unrelated to carbon values, and simply show the present price of carbon in the UK Emissions Trading Scheme (ETS) together with future projections).
7. The analysis depends on several assumptions and as such it is intended to produce an indicative rather than a precise result. The cost per tonne figure is not a bespoke cost estimated for this specific Scheme, but a typical cost estimate based on industry research for a tonne of carbon captured, transported and stored. This was assumed at a relatively generous £140, drawing on two separate analyses prepared for Viridor and the Climate Change Committee respectively.³ The net number of tonnes of CO₂ captured annually is consistent with the project estimate regardless of whether it is fossil or biogenic carbon, namely 1.6 million tonnes per annum.
8. The scenarios for carbon values (which indicate the monetary cost to society of a tonne of CO₂ emitted) are taken from the government’s website and endorsed by the DESNZ.⁴
9. However, while they have been applied in good faith and in the manner intended, the accompanying text reminds us that it is important to bear in mind the inherent uncertainty involved in estimating future abatement costs and unquantified costs and benefits. Three

¹ See <https://www.gov.uk/government/publications/valuing-greenhouse-gas-emissions-in-policy-appraisal/valuation-of-greenhouse-gas-emissions-for-policy-appraisal-and-evaluation#annex-1-carbon-values-in-2020-prices-per-tonne-of-co2>

² <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government/the-green-book-2020>

³ See ‘CCUS Development Pathway for the EfW Sector’, Eunomia/Viridor, Nov 2021, and ‘Deep Decarbonisation Pathways for UK Industry’, Element Energy/Climate Change Committee Nov 2020.

⁴ <https://www.gov.uk/government/publications/valuing-greenhouse-gas-emissions-in-policy-appraisal/valuation-of-greenhouse-gas-emissions-for-policy-appraisal-and-evaluation#annex-1-carbon-values-in-2020-prices-per-tonne-of-co2>

ranges are provided for this series – a high, central and low range - and the central range (reaching £378/tonne at 2050) has been adopted for this assessment.

10. Finally, the traded carbon values (intended to provide a project of potential UK ETS per tonne values in future) have been taken from DESNZ,⁵ and applied in the ‘without project’ case to avoid double counting. There are four separate ranges and again, the central scenario (reaching £138/tonne at 2050) has been used, which is consistent with a level of decarbonisation achieved through other policies to achieve net zero in 2050.
11. There are other factors to consider that are presently unknown but would affect overall benefit levels, depending on their outcome. For example, whilst it is yet to be confirmed, the UK ETS is expected to be applied to the waste to energy sector from 2028. Equally, such is the necessity for reducing carbon emissions, there is a possibility that the government will at some stage ban new (or even existing) waste to energy plants without CCUS. Doing so would result in much lower carbon output across the sector, but would also make benefits of the ‘with project’ options appear lower relative to the ‘without project’ options – because the reference case/business as usual option is now a much-improved ‘do-minimum’ alternative option that also uses decarbonisation. Also, UK traded carbon values are annual, and actual prices will vary within the year; the current predicted values themselves may also be the subject of revision within the appraisal timescale. As yet, these and other matters remain uncertain. The project timescale affects results too – for modelling, this has been conservatively set at 25 years, partly because forecasting gets less accurate the further we go into the future, and partly because discounting will reduce the stream of impacts accruing far into the future anyway.
12. The analysis demonstrates that using the government’s midpoint carbon values, and a relatively generous cost allowance, the likely benefits to wider society from the carbon savings achieved by the Proposed Scheme, of around £1.7 billion (Net Present Value, 2023 prices). This includes allowances for the financial costs to Cory in the with-project scenario (using typical cost per tonne figures for the industry) and the UK ETS costs that would accrue in the without project case.
13. The results, while relatively insensitive to changes in cost/tonne, are sensitive to carbon values, and though there appears little suggestion the central range is overvalued by 100% (ie the low range applies), using generous cost/tonne figures and with the lowest level of carbon values, project benefits are eroded quickly. Results are presented in Table 1 (at the end of this note).
14. To clarify, these figures are not specific to the Proposed Scheme, rather they use publicly available carbon values/ETS prices applied to a ‘generic’ scheme saving 1.6 million tonnes of carbon for specific years (in this case, 2030-2048). Costs are based on estimates for what is typical for the industry and are not bespoke to the plant. For this reason, the overall benefit to society figure estimated from the abatement of CO₂ on the Proposed Scheme should be considered a ‘snapshot’ estimate which would change under other circumstances or assumptions.
15. While the exact quantified economic impacts will not be known until figures of costs and benefits are certain and (most likely) the project is operational, it is clear that under the kind of scenarios that appear reasonable at the time of writing, the economic benefits of the carbon savings to be achieved by the Proposed Scheme are expected to be very significant.

⁵ <https://www.gov.uk/government/publications/traded-carbon-values-used-for-modelling-purposes-2023/traded-carbon-values-used-for-modelling-purposes-2023#background>

Building on Existing UK Strengths

16. As well as helping directly address the climate emergency and generating very significant environmental, economic and social benefits in doing so, the Proposed Scheme would facilitate sustainable economic growth through investment, supply chain and employment impacts. The CCUS sector is nascent in the UK, as in other countries, with strong, geographically centred supply chains yet to be firmly established. By becoming a first or early mover for products and services related to the net zero challenge, the UK will be able to position itself to benefit from the economic opportunities that the emerging 'green economy' will promote.
17. CCUS represents one such opportunity, as it is a sector which is expected to play a crucial role in meeting global climate targets. As noted in 'CCUS Supply Chains: A Roadmap to Maximise the UK's Potential (Department for Business, Energy and Industrial Strategy, May 2021):

'CCUS will be essential to that green economy, tackling climate change and meeting the UK's target to reach net zero emissions by 2050. It also has the potential to deliver a stronger, greener UK by levelling up our industrial heartlands, supporting clean growth and providing new economic opportunities for UK-based companies across the world.'

18. As in other sectors, such as nuclear and offshore wind, many UK companies may not be aware of the market opportunities associated with the green economy, and specifically from CCUS. However, work has been taking place within the UK's CCUS sector for several years to raise profile and nurture the sector, and the UK is currently taking forward four 'clusters' to facilitate the roll-out of large scale CCUS. Developments such as these help provide a solid foundation from which to further grow the sector.
19. In addition to the UK's cluster sequencing programme, when compared with competitor countries, the UK has many other strengths that are likely to be favourable to CCUS development. One such strength is in market share and comparative advantages in technologies associated with CCUS. Though these strengths are not uniform across the whole CCUS supply chain, weaknesses in some areas are compensated for by strengths in others. The UK is likely to be competitive relative to its size in several critical areas, such as capture and pollution control (solvents, air pollution control); and measuring, monitoring, and verification (MMV) instruments, having achieved a 7-8% EU market share and 3-8% rest of the world market share respectively in these markets today. More broadly, the UK has particular expertise in engineering, procurement, construction, and project management, all of which it currently successfully exports, and in related industries such as wind and ocean energy, physical and chemical separation, and liquification and solidification of gases. Strength in these markets suggests a foundation for international comparative advantage in CCUS is already established in the UK.
20. This is the first EfW supporting carbon capture scheme to be submitted for planning permission in the UK and is the only one using shipping for transport. At the national level, the Proposed Scheme will help drive growth in the UK CCUS sector, but also, uniquely, in the shipping sector, as a specialist shipping fleet will be needed to transport the liquid CO₂ to Immingham.

21. Because liquid CO₂ can only exist at a combination of low temperature and pressures exceeding atmospheric pressure, CO₂ cargo tanks need to be pressurised or semi-refrigerated. For different CCS shipping applications and levels of scale, CO₂ may need to be shipped at different pressure levels, requiring the development of high, medium and low-pressure solutions. The use of ships for transporting CO₂ is currently in a rudimentary stage, with only a handful of ships in use (mostly in the food and beverage sectors and from Korean, Chinese and Japanese shipyards). However CO₂ shipping is a market which is expected to grow very quickly (55 vessels reportedly required globally by 2030) and as the UK is a world leader in professional maritime services such as ship broking, insurance, maritime law, regulation, certification and training, with aspiration to convert this leadership into the emerging 'green shipping' and decarbonisation markets, the development of a 'home grown' CO₂ shipping operation would provide strong support in achieving this aspiration.
22. In innovation, the UK has an established global share of CCUS related activity, in particular in the North East, North West and South East of England, measured by the number of CCUS related patents registered. As in export performance (above), the UK's relative performance in innovation in particular CCUS related areas is not as good as in leading countries. However as competitors do not have uniform advantages, and the UK shows comparatively impressive performance in other areas, plenty of opportunity for both potential economic returns from private investment and public R&D investment remains. The regional strengths in innovation are notable, and a positive geographical correlation has been identified between CCUS innovation and areas that have in the past been active in developing oil and gas technology patents.⁶ The same source goes on to find:

'This suggests that places that have specialised in these technologies might be well placed to benefit from the transition to CCUS.'

23. Indeed, the UK's highly competitive engineering, oil and gas industries are well suited to lend their expertise and infrastructure to CCUS projects. The industry provides readily available infrastructure and a highly trained, re-deployable workforce. Reusing pipelines (as proposed in both the Acorn and Viking track 2 cluster projects) can save hundreds of millions of pounds; both of the Track 2 Sequencing projects (the Viking CCS project and the Acorn cluster in Scotland) will be operated using redundant undersea pipelines.
24. The UK's strong history of oil and gas production also provides a major competitive advantage through the availability of significant legacy natural storage assets, which together provide storage potential for CO₂ which is among the biggest in the world. CO₂ storage can only be considered at depths greater than 750-800 metres below sea-level. The natural decline in the North Sea oil and gas industry presents opportunities for CO₂ storage because many depleted oil and gas fields and saline aquifers can transition to CO₂ storage with relative ease. The UK Storage Appraisal Project identified an estimated 78 billion tonnes of theoretical CO₂ offshore storage capacity in the UK, largely from depleted oil and gas fields and aquifers. This represents one of the largest potential CO₂ storage capacities in Europe and, as many European countries have insufficient subsurface CO₂ storage capacity to meet

⁶ 'Seizing sustainable growth opportunities from carbon capture, usage and storage in the UK' (2021), The Centre for Climate Change Economics and Policy, Centre for Economic Performance, Programme on Innovation and Diffusion and Grantham Research Institute on Climate Change and the Environment.

their own decarbonisation targets⁷, it sets the scene for future commercial cross-border CO₂ storage arrangements.

Economic Impact of a Successful CCUS Programme

25. The government's ambition, which must be achieved if the above economic impacts are to be realised, is for innovative, efficient and competitive supply chains to develop in the CCUS sector, which are able to drive growth, take advantage of commercial opportunities, enhance productivity and promote high quality employment. However, in the UK there are currently no full chain, commercial scale CCUS projects in operation or under construction, and there remain significant market barriers to both innovation and private sector investment.
26. Private investment at this stage of market maturity is highly dependent on public sector support. This is taking place through the government's Cluster Sequencing programme, pump-primed by significant public sector funding, the establishment of CCUS business models (following a consultation programme), the setting up of an economic regulatory regime through the Energy Act of 2023, the introduction and operation of the UK Emissions Trading Scheme (expected to incorporate the Waste to Energy sector in 2028) and a raft of practical and policy interventions designed to facilitate CCUS and 'de-risk' CCUS investment. However as noted in 'CCUS Supply Chains: A Roadmap to Maximise the UK's Potential' (Department for Business, Energy and Industrial Strategy, May 2021):

'Government cannot itself create a UK CCUS supply chain. The development of resilient, efficient, and capable UK CCUS supply chains will be a strategic, collaborative endeavour.'

27. While the government must help provide a stable and predictable operating environment and a sound regulatory framework, the private sector must invest in commercial opportunities. With each positive investment decision, more confidence is established and new market entrants are attracted into the supply chain. The Applicant is now demonstrating investment leadership in progressing the Proposed Scheme at risk, funded by private capital. Large projects, such as the Proposed Scheme, create demand across numerous industrial sectors – measuring, monitoring and development, CO₂ storage components, carbon capture and pollution control, installation and construction services, operations and maintenance services, CO₂ transport components, and so on. Indeed, it is with this in mind that the Government is pursuing its cluster sequencing programme.
28. What would the economic impact of a successful national CCUS programme look like? The Government aspires for the UK to capture and store 20 to 30 Mt of CO₂ per year by 2030, which would require significant capital spend (in the order of £3-4.5 billion), much of which would be channelled through the UK supply chain.⁸ Very sizable GVA and jobs estimates have been developed, based on assumptions of economic activity in the CCUS sector from both domestic and export driven activity. One high profile study by Vivid Economics et al ('Energy Innovation Needs Assessment', 2019) is still quoted in up to date UK government

⁷ For example, France is expected to ship 17 million tpa of CO₂ in 2030, followed by Belgium at 13 million tpa. These countries do not have ample opportunities to store their CO₂ emissions domestically, so the chance to ship CO₂ to neighbouring European countries will help fast-track CCUS developments. Rystad Energy, 2023, <https://www.rystadenergy.com/news/co2-sets-sail-carbon-shipping-on-the-rise-as-emitters-search-for-large-scale-stor>

⁸ 'Carbon Capture, Usage and Storage - A Vision to Establish a Competitive Market', Dept for Energy Security and Net Zero, 2023

publications and estimated that export business could support some 62,000 jobs and £5.1 billion of GVA annually by the 2040s, falling off a little to 48,000 jobs and £4.3 billion of GVA by 2050. The largest contribution from the CCUS sector will be from exports (because the global market is much bigger than the domestic one) but even so, domestic economic activity supported by CCUS could add around £850m in GVA and support nearly 10,000 jobs per annum by 2040. These figures, though not all 'net additional (i.e. they are gross, rather than net) are still very significant.

Promoting Responsible Local Business and Employment

29. Turning towards more specific impacts on the Applicant's supply chain, Cory Group's business model is to work with suppliers which share the company's vision for the future and which take pride and responsibility in their operations. During 2022, the Group spent £114.5 million on 828 suppliers, of which 95 per cent were based in the UK. The Group's Supplier Code of Conduct defines the standards to which Cory adheres and expects of its suppliers and business partners. The Code includes requirements relating to suppliers' environmental and climate impacts and requires them to undertake specific actions such as maximising energy efficiency, minimising waste and reducing carbon footprint.
30. The Proposed Scheme will have a likely budget in the region of one billion pounds. This level of additional expenditure will provide a substantial step up in the size of the Applicant's overall supply chain, and an opportunity to realise significant benefits from Cory's existing suppliers and particularly from the larger, extended supply and logistics network that will be required to deliver the project to completion.
31. Looking at the economic impacts of direct operational employment, increased local employment falls under the headings of both societal and economic benefits. The proposed Carbon Capture Facility will generate around 27 direct, new FTE positions, and additional indirect and induced employment too, many of which will be positions requiring high level knowledge and skills, recompensed accordingly. With the objective of adding more value locally, the new positions will be advertised internally within the business and within the London Borough of Bexley. Should it be necessary, they will be advertised more widely.
32. In keeping with the company's ethos, Cory will aim to do more than just offer job contracts. The company offers an apprentice programme (7 FTE apprentices taken on in 2022), is a 'Mindful Employer' (i.e. signatory to a national initiative for employers taking a positive approach towards mental health at work), recognises and actively engages with trade unions (around 30 per cent of employees are members of UNITE or GMB, which helps effective communication on collective issues) and pursues numerous initiatives to keep its staff happy and motivated – the latter being perceived within the company's leadership as not just 'nice to have' but also a necessity for the achievement of commercial success.
33. The new staff taken on directly to facilitate the proposed decarbonisation project will be offered the same broad range of training, development programmes and employment benefits, ensuring that managers are equipped to be effective leaders, and other staff are encouraged and enabled to work competently in an inclusive and welcoming environment. In July 2021 Cory was re-accredited as an Investor in People (IIP) (including at silver level for apprentices). IIP accreditation is an ongoing process of re-evaluation with interim visits being made by the assessor, with formal re-certification taking place every three years. A renewal is taking place at the time of writing (February 2024). IIP status is recognised as an important, independent assessment of what the company needs to do to help its employees to thrive.

The last confirmation of accreditation was achieved following a robust process including an all-employee survey, interviews with the CEO and over 25 one-to-one interviews with people from all areas of the business. Across Cory's overall Riverside operations, Cory already offers a range of benefits to its staff, which can be expected to be extended to new joiners on the Carbon Capture Facility. Among these are life assurance, parental leave, enhanced maternity pay, pensions, cycle to work scheme, interest-free season ticket loans, electric vehicle leasing scheme, multiple training opportunities and a 24-hour private GP.

Conclusions

34. In summary, the Proposed Scheme will generate significant economic benefits through a variety of mechanisms. The project will reduce carbon emissions, the result of which will be both direct and very large environmental benefits. Converting these into indicative monetary values, and comparing them with what would have happened under the counterfactual, demonstrates that under a relatively cautious set of assumptions, the likely benefits to wider society from the carbon savings alone achieved by the project are valued at just under £1.7 billion in net present value (2023) terms. This is a very substantial positive impact and takes into account the effects of capital, operating and storage costs as well as the scope of the UK ETS expanding to include the waste to energy sector.
35. Further economic benefits of the proposed scheme will be felt within the UK through project expenditure on capital and operating costs. Such spending will make a timely contribution – at a critical stage for this emerging sector – to a growing UK industry that has reasonable expectations of becoming an indispensable part of the economy in the run up to 2050. The expenditure generated by the project will benefit the supply chain, supporting and creating investment and jobs, while the size and timing of the initiative will send a strong message of confidence to investors, decision makers and businesses. Positive knock-on effects will be felt regionally and nationally, and these will be strengthened through the structure of the supply chain and Cory's own business practices, its supplier Code of Conduct and its spending patterns, skewed towards UK suppliers. Knock on economic effects will also be felt within the local supply chain and within Bexley, and through opportunities for employment and community engagement initiatives. Taken together, the expected economic benefits of the project help to make a compelling case for supporting the proposed scheme and in doing so, facilitating a meaningful transition to a greener society.

Table 1 Indicative Estimate of the Economic Impact of Carbon Savings

Scenario	Net Present Value (£000s)	Derived from
Without project scenario	2,307,000	Annual Traded carbon values for modelling purposes, £/tCO ₂ e (real 2023 prices), multiplied by number of tonnes of carbon emitted per year, for each of the years 2030-2050). Trajectory used is the central 'Net Zero Strategy Aligned' scenario. Annual stream of impacts is then discounted back to the figure on the left at 3.5%
With project scenario	4,034,000	Annual carbon values per tonne under central series, 2023 prices (uplifted from 2020 prices), multiplied by number of tonnes of carbon saved from emission during the years 2030-2050. Series used is the Central Series. From these benefits, annual costs are subtracted, based on a typical 'cost per tonne' figure for CCUS including capital and operating cost elements. Annual stream of impacts is then discounted back to the figure on the left at 3.5%
Net economic impact	1,727,000	With project scenario NPV less without project scenario NPV
<p>Source: Bridge Economics estimate Notes: Project time scale assumed over 25 years, starting in 2024 and ending in 2048.</p>		