



# CORY DECARBONISATION PROJECT

DECARBONISATION

**STATUTORY CONSULTATION BROCHURE**

**OCTOBER 2023**

# AN INTRODUCTION TO CORY'S DECARBONISATION PROJECT

## ABOUT CORY

Cory is one of the UK's leading recycling and waste management companies. We help to ensure that London and the South East have a safe, clean and sustainable way of managing recyclable and non-recyclable waste.

We're proud to deliver an important service for our local communities by providing reliable and efficient waste management services and diverting from landfill.

However, we know that we need to reduce our carbon impact and get to net zero.



Artist impression of the proposed carbon capture scheme

## PROJECT OVERVIEW

We're proposing to install carbon capture technology at Riverside 1 and Riverside 2, our energy from waste facilities used to process non-recyclable waste to produce partially renewable baseload electricity. The carbon dioxide (CO<sub>2</sub>) which is captured would then be stored permanently and safely under the North Sea in depleted oil and gas fields.

As well as being an important part of reaching our target of being net zero by 2040, the project will also contribute to the UK's net zero emissions target by delivering negative carbon emissions.

In addition to the planned carbon capture facilities, we're engaging with key stakeholders such as the Friends of Crossness Nature Reserve, Thames Water and Peabody to improve green spaces in the local area and provide positive outcomes for nature and the local community.

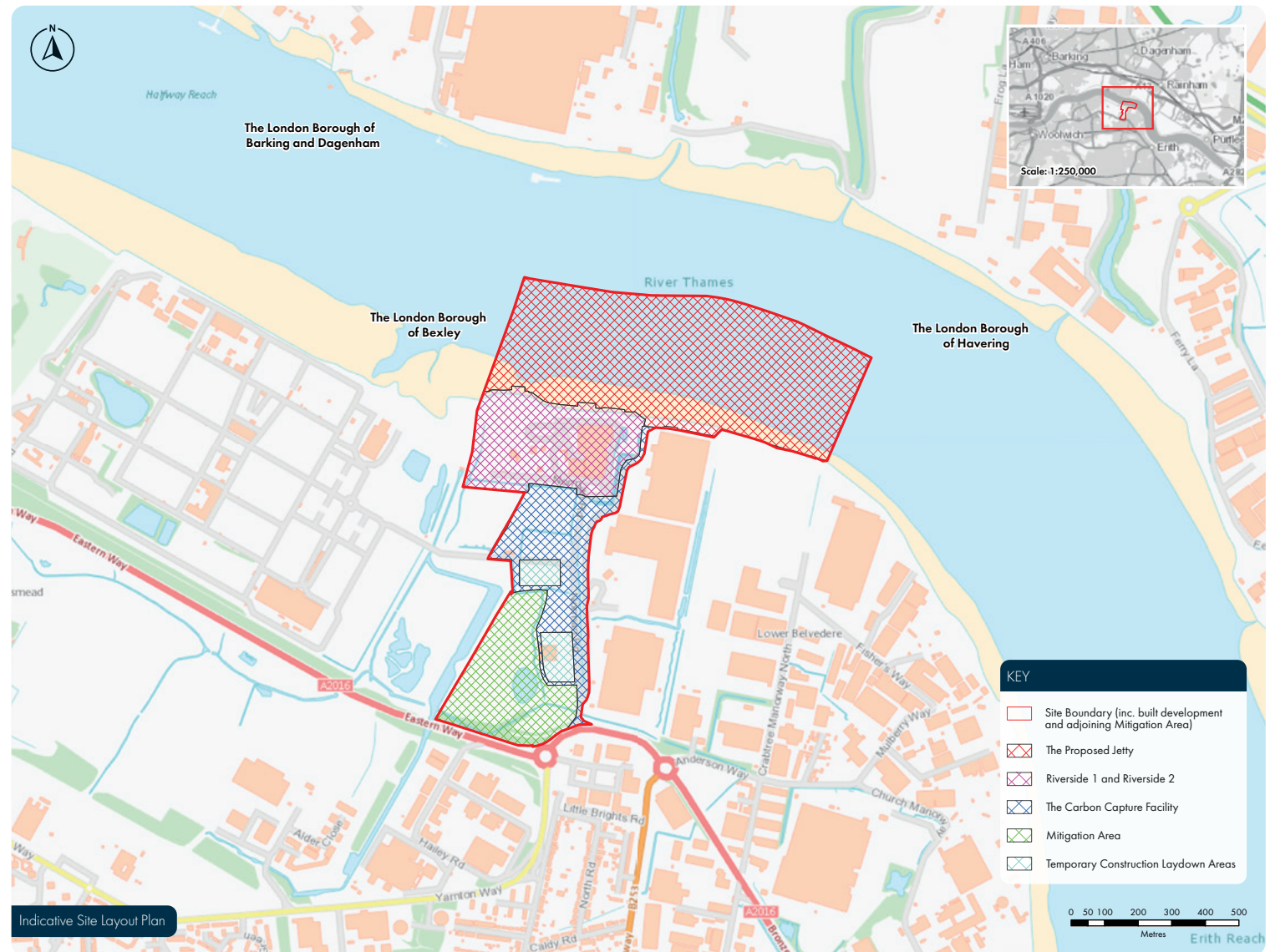
The project would likely comprise two carbon capture plants (one per EfW facility) each with compression, conditioning and liquefaction plants and liquefied CO<sub>2</sub> storage tanks. An alternative single carbon capture plant configuration is being considered too. A new export jetty is also proposed, which would allow the captured liquefied CO<sub>2</sub> to be transported by ship along the River Thames to a safe storage site in the North Sea.



Work has been ongoing to consider development area options for the project, with the preferred location at the top of Norman Road, immediately south of Riverside 1 and Riverside 2. This location uses paddocks that form part of the Crossness Nature Reserve and is designated as Metropolitan Open Land. Our project also includes the opportunity to create a net increase to the area covered by the Crossness Nature Reserve. This could see the total area covered by the reserve increase by six hectares – growing from the current 25 hectares to a new total of 31 hectares shown on the green hatched area (opposite), which will be retained as open green space.

Construction is targeted to begin in 2026, with two programmes being considered; either to build both sets of carbon capture plant at the same time (or in a single plant configuration), or to phase them where two are built. Both Carbon Capture Facilities are intended to be fully operational by 2030. More information can be found in Chapter 2 of the PEIR: Site and Proposed Scheme Description (Volume 1) of the PEIR.

We are currently preparing a Development Consent Order application that will be submitted to the Secretary of State for Energy Security and Net Zero early next year. This phase of consultation is an important step in that process as we finalise our proposed scheme.



## HAVE YOUR SAY

Thank you for your interest in our project and taking the time to learn more about our project. Your comments will be considered as we develop our final plans.

You can provide feedback by filling out one of our printed feedback forms, or freepost cards at one of our consultation events (listed opposite), or by using any of the following channels:



**Online feedback form available at:**  
[corydecarbonisation.co.uk](https://corydecarbonisation.co.uk)



**By email:**  
[decarbonisation@corygroup.co.uk](mailto:decarbonisation@corygroup.co.uk)



**By post:**  
**FREEPOST CORY CCS**

(This is free of charge. You don't need a stamp)

If you have any further questions on the project, please get in touch with the project team:



**Phone:**

**0330 838 4254**

Thank you for taking the time to participate in our consultation.

**THE DEADLINE FOR FEEDBACK  
IS 23:59 ON WEDNESDAY  
29 NOVEMBER 2023**



## PROGRAMME OF CONSULTATION EVENTS

DATE	TIME	VENUE
Friday 10 November 2023	09.00-12.00	B&Q Belvedere, Station Road, off Lower Road, Belvedere, DA17 6DF
Friday 10 November 2023	15.00-19.00	Belvedere Community Centre, Mitchell Close, Belvedere, DA17 6AA
Saturday 11 November 2023	09.00-12.00	

## ONLINE EVENT

We will also be hosting a webinar from 6pm to 7pm on Wednesday 15 November 2023.



To register, please visit our website at: [corydecarbonisation.co.uk](https://corydecarbonisation.co.uk)

## INSPECTION VENUES FOR CONSULTATION DOCUMENTS

The SoCC, consultation brochure and feedback form will be available for inspection at the locations in the table below. Hard copies will also be available at our consultation events and can be provided for free on request.

VENUE AND ADDRESS	OPENING TIMES	
<b>Upper Belvedere Community Library</b> Woolwich Road Upper Belvedere DA17 5EQ	Monday	09.30-17.30
	Tuesday	09.30-17.30
	Wednesday	CLOSED
	Thursday	CLOSED
	Friday	09.30-17.30
	Saturday	09.30-17.30
	Sunday	CLOSED
<b>London Borough of Bexley Civic Offices</b> 2 Watling Street Bexleyheath Kent DA6 7AT	Monday	09.00-17.00
	Tuesday	09.00-17.00
	Wednesday	09.00-17.00
	Thursday	09.00-17.00
	Friday	09.00-17.00
	Saturday	CLOSED
	Sunday	CLOSED
<b>Belvedere Community Centre</b> Mitchell Close Belvedere DA17 6AA	Monday	08.00-21.00
	Tuesday	08.00-21.00
	Wednesday	08.00-21.00
	Thursday	08.00-21.00
	Friday	09.00-15.00
	Saturday	09.00-15.00
	Sunday	CLOSED

Opening times at these venues are subject to change and we recommend checking with the venue via telephone, email or online in advance of visiting.

## THE STORY SO FAR

Riverside 1 has been operational since 2011; alongside it, we're currently constructing a second energy from waste (EfW) facility, Riverside 2.

Together both EfW facilities will be able to process more than 1.5 million tonnes of non-recyclable (also known as residual) waste a year, providing enough partially renewable baseload electricity to power 371,000 homes.

Cory is also working in partnership with the energy company Vattenfall to deliver a district heating network (Riverside Heat Network) that will provide heat to local homes and businesses.

A heat transfer station is the interface between the Proposed Scheme and the Riverside Heat Network, consisting of the main operating plant and water treatment equipment to support the heat system, thermal storage and potentially back up heat generating plant in the event of outages.



## RIVERSIDE 1

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Riverside 1 is one of the **largest EfW facilities in the UK** and the only one with river infrastructure for transporting and receiving waste.

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Today, Riverside 1 processes up to **850,000 tonnes** of residual waste a year – enough to fill St Paul’s Cathedral 12 times.

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It also produces enough partially renewable baseload electricity to power the equivalent of **195,000 homes**.

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The incinerator bottom ash, a byproduct of the EfW process, is transported by river to a site at Tilbury Docks to be recycled into construction aggregate.

## RIVERSIDE 2

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Riverside 2 is under construction and due to become **operational by 2026**.

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It will help ensure that more of the residual waste generated within London and the South East of England will not end up in landfill or be exported overseas.

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It will be one of the largest and most efficient EfW facilities in the UK, processing around **650,000 tonnes** of residual waste and recovering enough partially renewable baseload electricity to power **176,000 homes** each year.

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The facility will use well-established moving grate incineration technology, which is being successfully used across many operational EfW facilities in the UK, including Riverside 1, and globally.

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The incinerator bottom ash will also be transported by river and processed at Tilbury Docks for use as a construction aggregate.



# MEETING THE NET ZERO CHALLENGE

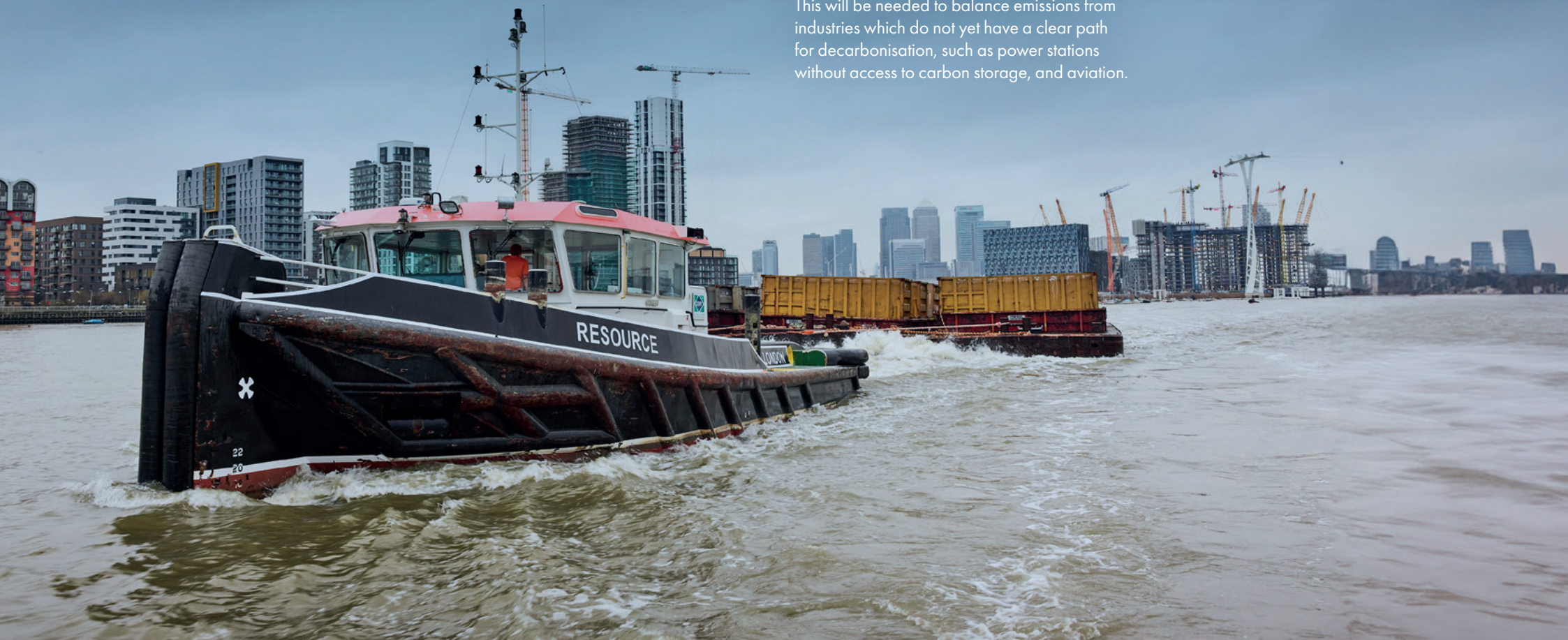
The UK Government has set a legally binding target for the country to reach net zero emissions by 2050 to avoid the worst impacts of climate change. To do this, all parts of the UK economy must work to decarbonise and reduce their carbon dioxide (CO<sub>2</sub>) emissions to as close to zero as possible.

Installing carbon capture technology is recognised as the most effective way for EFW facilities to reduce their CO<sub>2</sub> emissions.

The process captures CO<sub>2</sub> emissions at source, enabling it to be safely stored underground, rather than being released into the atmosphere.

To achieve the UK's net zero target by 2050, 100 million tonnes of CO<sub>2</sub> will need to be removed from the atmosphere each year. This will be needed to balance emissions from industries which do not yet have a clear path for decarbonisation, such as power stations without access to carbon storage, and aviation.

By capturing around 1.3 million tonnes of CO<sub>2</sub> a year, of which approximately 600,000 tonnes will be biogenic carbon (carbon dioxide absorbed by vegetation as it grows), Cory's decarbonisation project has the potential to significantly contribute to achieving the UK's net zero goal, as well as reaching our own target of being net zero by 2040.





## BECOMING CARBON NEGATIVE

Carbon is one of the most common elements on the planet, and can be found in the atmosphere, oceans, living things, soil and rocks.

The carbon cycle is the natural movement of carbon between these places. For example, living things can emit CO<sub>2</sub> into the atmosphere through breathing, decaying and burning, or they can absorb it, through photosynthesis. The ocean absorbs and emits CO<sub>2</sub> as it moves between soil and rocks, and the atmosphere through weathering and volcanic activity. This carbon is known as **biogenic carbon**.

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 CO<sub>2</sub> 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**.

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.

By capturing the fossil carbon (from plastic waste), Cory's operations will achieve 'net zero', i.e. we will not be releasing new carbon into the atmosphere. By also capturing the carbon from biogenic materials (paper, cardboard, and wood), our operations will be **carbon negative**, because carbon that is part of the natural carbon cycle will also be permanently removed from the atmosphere.



## THE DCO PROCESS

Our decarbonisation project will be assessed through an application for a Development Consent Order (DCO) submitted under the Planning Act 2008. Following community and stakeholder engagement, the application will be decided by the Secretary of State for Energy Security and Net Zero.

Extensive local stakeholder and community consultation is part of the process to be undertaken prior to submitting the application for development consent, engaging with a wide range of community, technical and political stakeholders, including local residents and the local authority (London Borough of Bexley).

We are seeking to work with key stakeholders such as the Friends of Crossness Nature Reserve, Peabody and Thames Water to improve green spaces in the local area and provide positive outcomes for nature and the local community.

Our introductory consultation ran from 5 June to 14 July 2023. This initial consultation period marked the first opportunity for us to engage the local community and key stakeholders on our early plans and invite feedback to help shape our project.

We are now holding a further round of consultation, between Wednesday 18 October and Wednesday 29 November 2023. It marks a further opportunity to provide comments before we submit our DCO application to the Secretary of State. We will have regard to the comments received in finalising our application.

## KEY DATES

2011

Riverside 1 EfW facility opened

2023

Construction of Riverside 2 EfW starts

2023

Q4 Statutory consultation launches on decarbonisation project

2025

Target date for DCO approval

2020

Riverside 2 granted a Development Consent Order (DCO)

2023

Q2 Non-statutory consultation launches on decarbonisation project

2024

Q1 DCO submission for decarbonisation project

2026

Riverside 2 EfW facility construction target completion

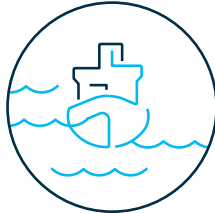


# KEY FACTS



**c.1.3M  
TONNES**

OUR PLANNED CCS PROJECT  
WILL BE ABLE TO CAPTURE  
C.1.3 MILLION TONNES  
OF CARBON DIOXIDE  
PER YEAR BY 2030



**OFFSHORE  
STORAGE**

CO<sub>2</sub> WILL BE SAFELY  
TRANSPORTED FOR  
STORAGE OFFSHORE



**SAFELY  
STORED**

CO<sub>2</sub> WILL BE SAFELY  
STORED >1KM  
BELOW THE SEABED



**2040**

CORY'S NET  
ZERO TARGET



**2050**

THE UK  
GOVERNMENT'S  
NET ZERO TARGET



**70%**

OF LOCAL AUTHORITIES  
ARE AIMING FOR NET ZERO  
BY 2040 OR EARLIER

**2026**

Construction  
begins on Carbon  
Capture Facilities

**2030**

Phase 2 of Carbon Capture  
Facility is operational  
(if brought forward  
separately from Phase 1)

**2028**

Phase 1 of Carbon  
Capture Facility is  
operational

# WHAT ARE WE CONSULTING ON?

This statutory phase of consultation is an important part of preparing our DCO application.

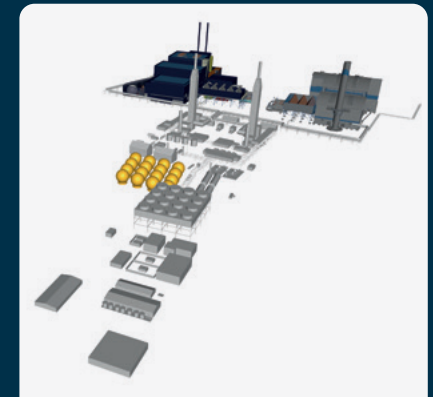
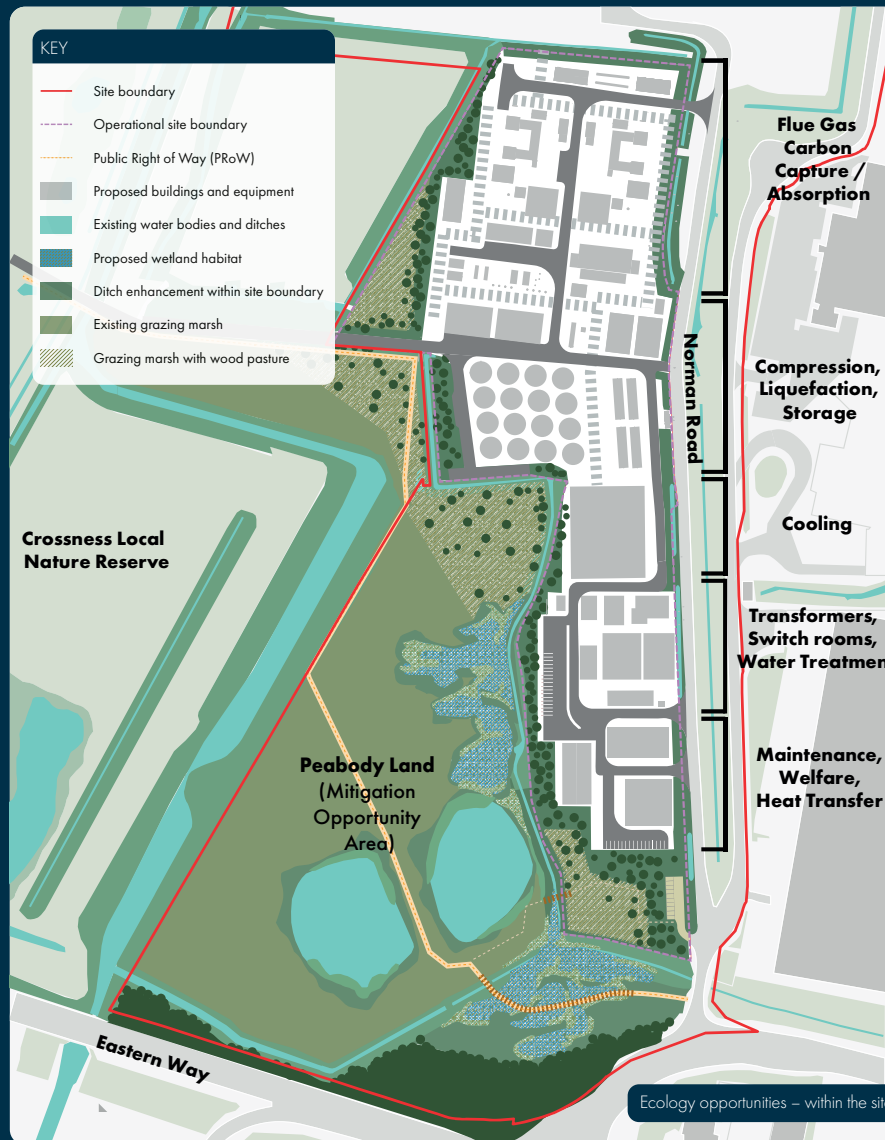
The Preliminary Environmental Information Report is a key document setting out our understanding of the effects of the Proposed Scheme to date. A non-technical summary of that document is provided from page 21 of this brochure.

Whilst much of the development is driven by technical requirements, there are some key elements within the Proposed Scheme where different opportunities can be considered. We would like your feedback on these matters and they are set out below.

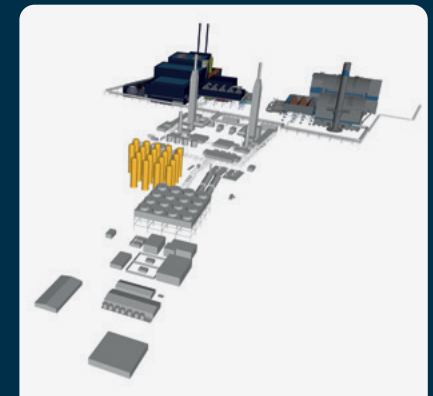
## FORMATION AND LAYOUT OF LIQUIFIED CO<sub>2</sub> STORAGE

The liquified CO<sub>2</sub> will need to be temporarily stored on site before it is exported by ship from the proposed new jetty.

Storage will be in large, insulated, pressurised, above ground tanks, with design elements, for example whether they are of a spherical or vertical design, to be influenced by a range of technical and environmental assessments. We are seeking your comments on the two design options for the CO<sub>2</sub> storage tanks.



Indicative carbon capture storage – low vessel option



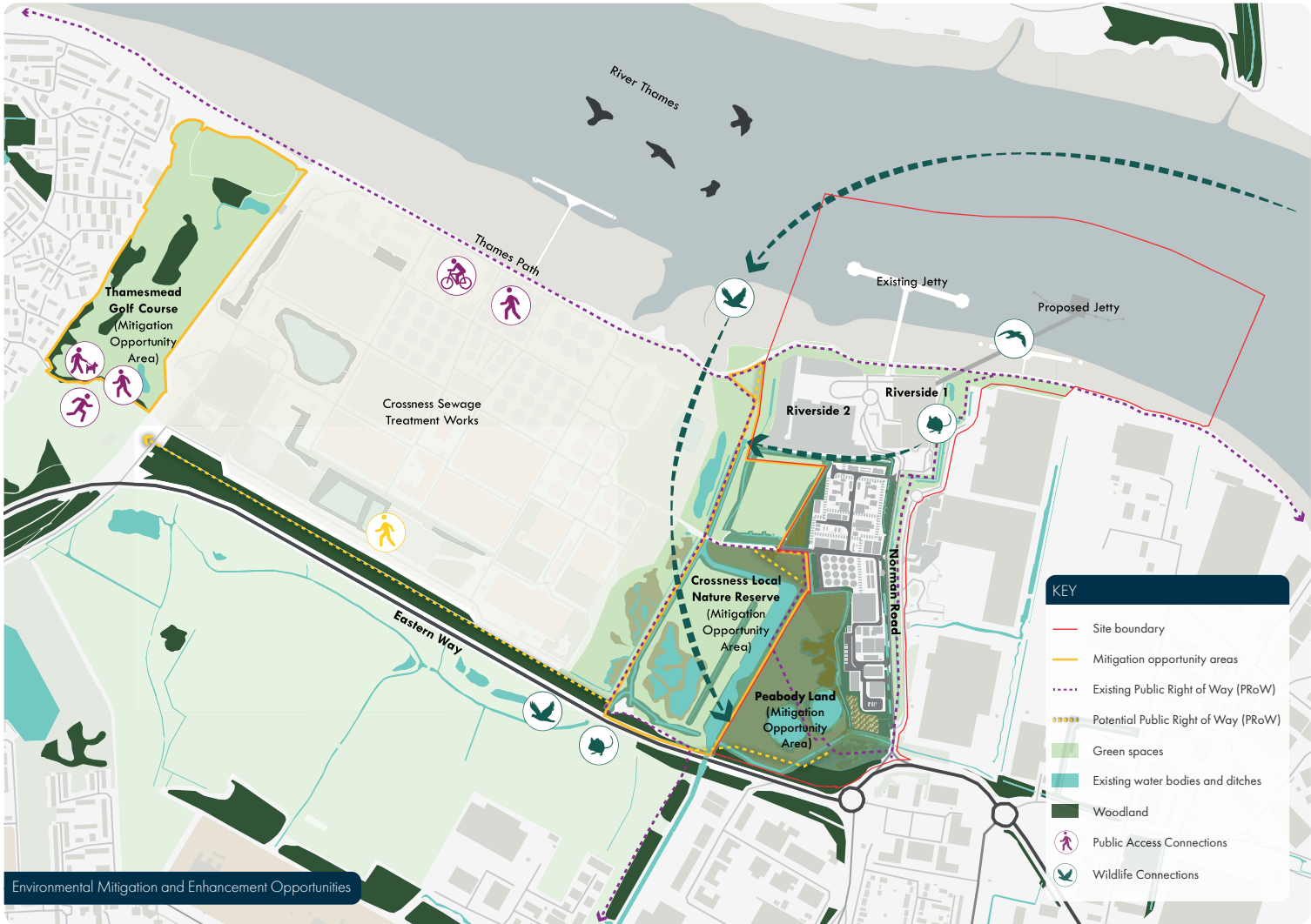
Indicative carbon capture storage – tall vessel option

# ENVIRONMENTAL MITIGATION AND ENHANCEMENT OPPORTUNITIES

We need to mitigate for the loss of land within the Crossness Nature Reserve and impacts to areas of open land. In addition, we would like to provide improvements to both biodiversity in the local area and access to open space(s) for local people. There are a range of opportunities within and around the site and in Thamesmead.

The graphic shows a number of opportunities to improve green spaces in the local area and provide positive outcomes for nature and the local community.

We would like to hear your priorities for these areas.



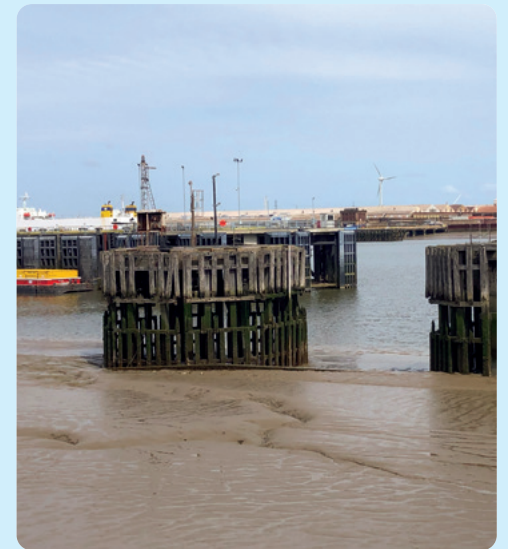
Environmental Mitigation and Enhancement Opportunities



## BELVEDERE POWER STATION JETTY (DISUSED)

This jetty has not been used for some time and is in disrepair; it is therefore not suitable to use as a jetty for our project and we are considering its future (in discussion with its owners). It could be removed entirely or remain in place, recognising its role as a piece of local history and/or offering opportunities to enhance habitats for birds.

We'd like to hear your views on whether it should be preserved, and your ideas of the future ecological or heritage role it could play.



# IMPROVED CONNECTIONS

We are exploring opportunities to improve both access to – and the connectivity of – existing rights of way. This would see improved access to open/green space for local people. We would like to hear feedback on your priority routes in this area.



# OUR DESIGN PRINCIPLES

We're also seeking feedback on themes from which we will develop design principles.

Our application will provide an outline level of design information on what the project could look like when complete, based on a set of design principles that will form part of the DCO application. These design principles would be carried through into any DCO that we receive, and final detailed design elements would need to align with them.

Our design principles will be prepared to help guide our ongoing design process in the run up to our DCO submission, and we would welcome your comments on the themes and content. The principles will be structured to align with guidance prepared by the National Infrastructure Commission under the following four thematic headings:



**CLIMATE**



**VALUE**



**PLACES**



**PEOPLE**

Cory is keen to enhance biodiversity and provision for green space and connectivity, as well as deliver a safe operational layout and an open channel of communication between all stakeholders and the community.

OPERATIONAL/COMMERCIAL BRIEF





Our four design principle themes are set out below and are supported with some examples of what they could deliver. We'd like your feedback on these and what they could each offer to the community.



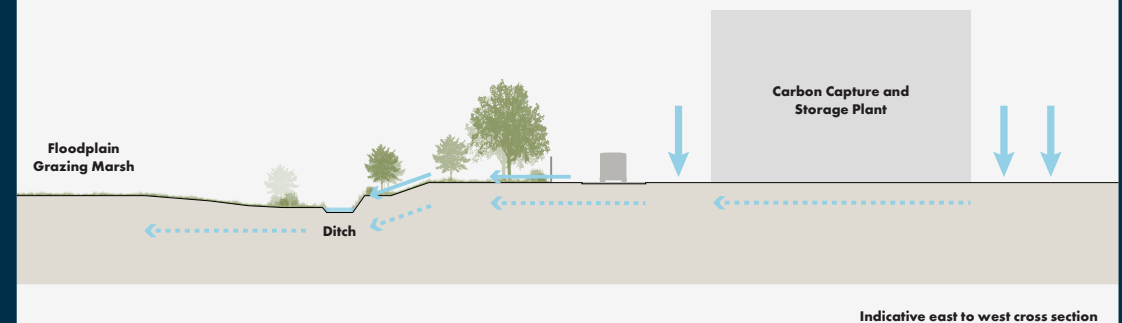
## CLIMATE

Mitigate and compensate for impacts on habitats in a way that is resilient to climate change.

Examples of this theme may include:

- Directing site drainage from the operational area to support local ground water levels and support grazing marsh habitat and reedbeds/ditch environments
- Protect against possible flooding, ensuring that key operational infrastructure will operate in the event of flooding and that there is no additional flood risk elsewhere

### Integrating surface water drainage to support habitat enhancement



## VALUE

Deliver a proposal that is efficient and secures benefits beyond the immediate operational site boundary.

Examples of this theme may include:

- Enabling enhanced provision of district heating to nearby communities
- Seeking to optimise the site layout for operational flexibility with minimised use of open land and habitat loss within the carbon capture facility, as well as adding up to six hectares to Crossness Nature Reserve
- Provide proportionate enhancement and mitigation for the loss of, and impacts to, open land, public access and natural areas



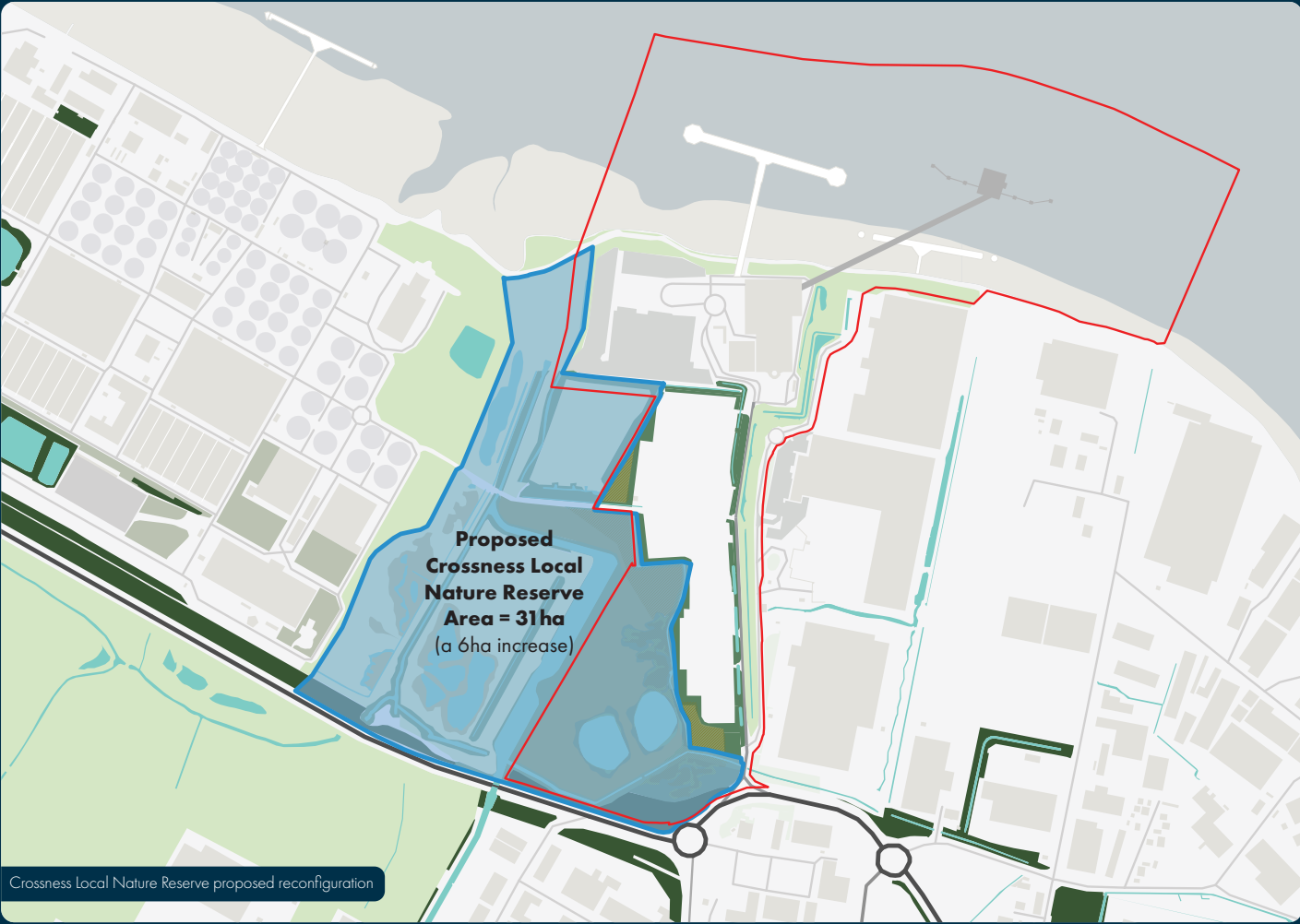
## PLACES

Delivering a proposal that addresses effects on the character and visual qualities of the local area, improving a sense of identity and quality of environment.

Examples of this theme may include:

- Prepare design guidance to support future detailed submissions to Bexley to ensure good design is delivered
- Provide planted boundaries around the site to support the natural character of the Crossness Nature Reserve
- Explore opportunities to extend the Crossness Nature Reserve as part of the mitigation strategy, by up to six hectares









## PEOPLE

Delivering tangible benefit to local people and communities.

Examples of this theme may include:

- Improvements to local public footpath connections, potentially to deliver a circular recreational route linking Thamesmead to the Crossness Nature Reserve
- Making provision for enhancement of existing features to improve public awareness of local nature and points of cultural and educational interest
- Improvements to accessibility of open spaces on site, making them more attractive to the community
- Expansion of Crossness Nature Reserve



# WHAT IS A PEIR AND WHAT IS IT FOR?

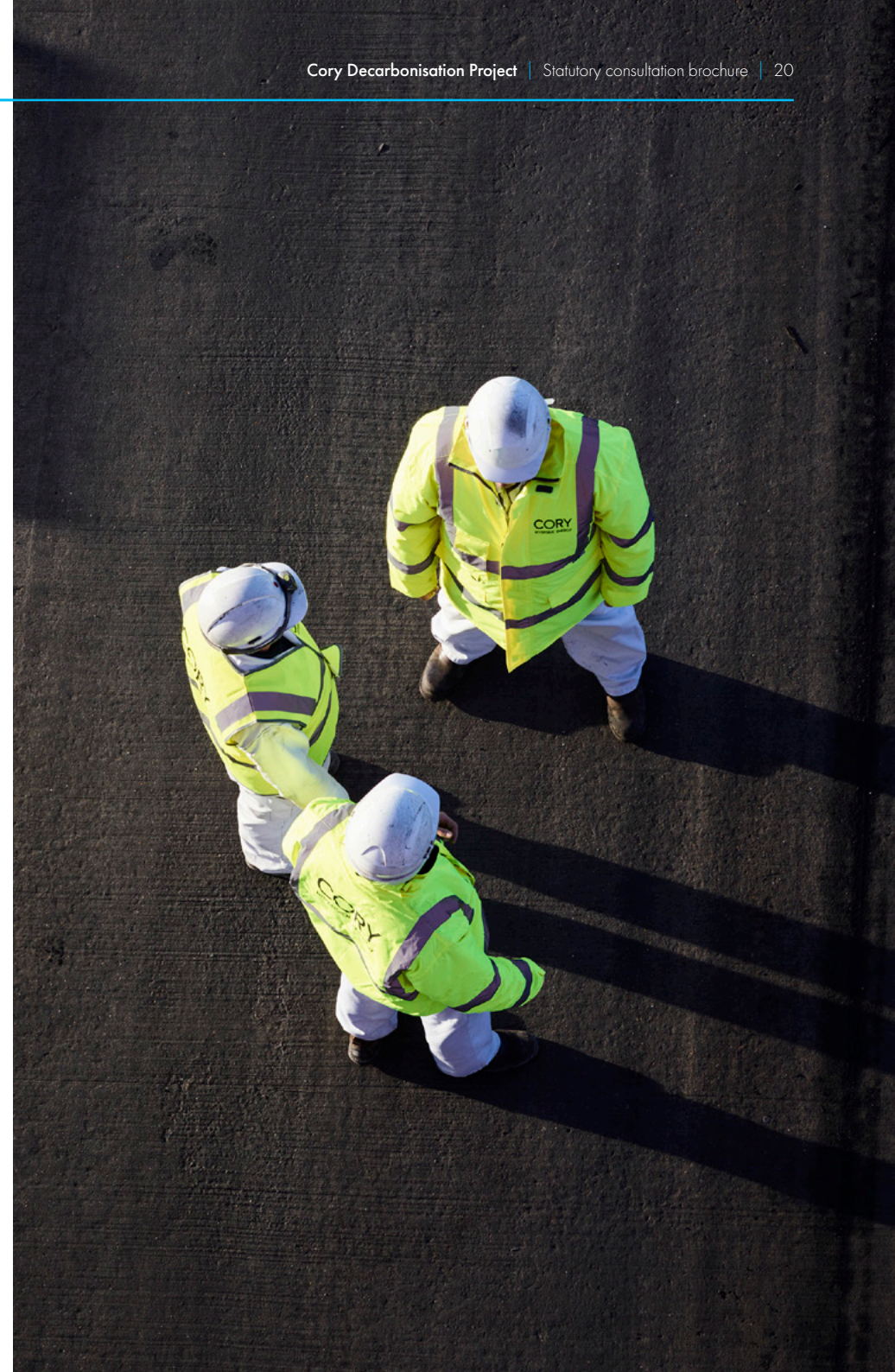
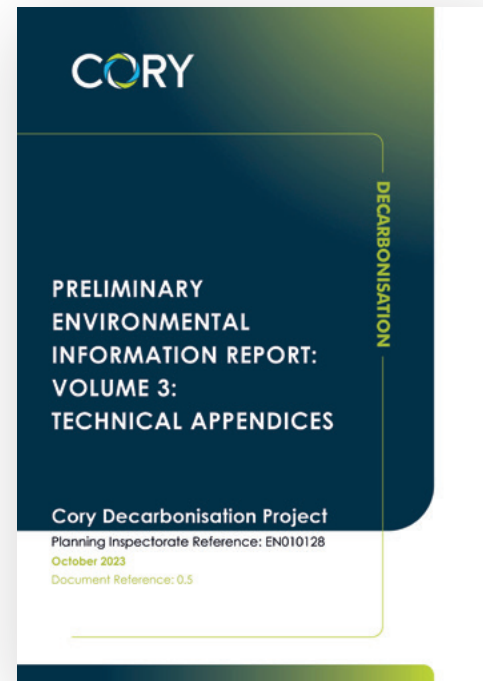
**A PEIR is a Preliminary Environmental Information Report (PEIR) produced as part of the planning process for a Nationally Significant Infrastructure Project.**

The purpose of the PEIR is to provide preliminary environmental information to enable members of the public and local communities, local authorities, statutory bodies, and people whose land or interests would potentially be affected to understand the likely environmental effects of the project at this preliminary stage of project development.

This helps to ensure that the importance of the predicted effects and the scope for avoiding, preventing, reducing or, if possible, offsetting them are properly understood by the public and the authority granting consent before it makes its decision.

The PEIR is based on the site boundary shown on page two of this brochure. However, the exact size of the proposed scheme is likely to be refined following further environmental assessment and consultation, ahead of submission of the DCO application.

Your feedback on the PEIR can inform our assessments and the development of mitigation measures going forward.





## FORMAT OF THE PEIR

The PEIR is presented in 22 chapters across three volumes (1: Main Text; 2: Figures; and 3: Technical Appendices).

Chapter one of the PEIR is the Introduction, setting out relevant context including the requirement for Development Consent, the definition of and requirement for environmental impact assessment, relevant national policy and the purpose of the PEIR.

Chapter two contains a detailed breakdown of our project including information on the Carbon Capture Facility, Proposed Jetty, Mitigation Area and Temporary Construction Compounds. Further information on the facilities, designations and surrounding area of the site can be found in the PEIR.

Chapter 3 presents the alternatives that have been considered in the design evolution to date and Chapter 4 sets out the overall approach to the EIA for the Proposed Scheme. A detailed overview of the methodology adopted for each technical topic is then provided within the respective chapter of the PEIR. The approach to the assessment has been informed by current best practice guidance, as set out within the Planning Inspectorate Advice Note Seven.

Chapters 5 to 20 are those individual technical topic chapters, with each containing a preliminary assessment of the environmental impacts of the Proposed Scheme as it is currently understood. Cory will be taking account of the results of this assessment in further developing the scheme, including the development of mitigation measures, to seek to minimise adverse environmental effects where possible.

Chapter 21 presents the method intended to be used for the assessment of combined and cumulative effects. In accordance with legislation and guidance, the following types of combined and cumulative effects will be assessed:

- Intra-project effects – the interaction and combination of different residual environmental effects of the Proposed Scheme affecting the same receptor. For example, visual and noise effects during construction affecting nearby homes.
- Inter-project effects – the residual environmental effects of the Proposed Scheme combining and interacting with the residual environmental effects of other, committed development(s), affecting the same receptor. For example, traffic effects upon users of the local road network because of the Proposed Scheme and a nearby industrial development.

Finally, Chapter 22 presents a summary of the preliminary effects considered to date.

The table starting on the next page outlines the effects that have been identified in the preliminary assessment (whether they are considered significant or not) and based on the Proposed Scheme as it is currently understood as the design continues to evolve. The preliminary effects and mitigation measures necessarily vary in detail, depending on the level of assessment that has been undertaken to date. The preliminary mitigation measures presented below are an example of those identified in the PEIR and may change and/or be supplemented as a result of further work in preparing the ES. You can find more information on the anticipated environmental impacts in each of the relevant chapters within the PEIR.

## ACCESSING THE PEIR

The PEIR for Cory's decarbonisation project can be viewed at [corydecarbonisation.co.uk](http://corydecarbonisation.co.uk). We can also provide a hard copy of the PEIR for a charge of £300 and an electronic version on a USB storage stick for a charge of £10.



## SUMMARY OF PRELIMINARY ASSESSMENT OF EFFECTS IN THE PEIR

### CHAPTER 5 AIR QUALITY

#### Construction Phase - Effects Identified in the PEIR

- Impacts from dust, PM10 and PM2.5
- Emissions of NO<sub>2</sub>, PM10 and PM2.5 from operational NRMM
- Road traffic emissions of NO<sub>2</sub>, PM10 and PM2.5
- Marine vessel emissions of NO<sub>2</sub>, PM10 and PM2.5

#### Operation Phase - Effects Identified in the PEIR

- Changes to emissions of AQS pollutants and other pollutants arising from the Riverside Campus as a result of the Carbon Capture and Storage Facility
- Emissions of NO<sub>2</sub>, PM10 and PM2.5 from new backup power generators (Ancillary Infrastructure)
- Marine vessel emissions of NO<sub>2</sub> PM10 and PM2.5

#### Construction Phase - Mitigation

- Good practice measures in the Code of Construction Practice, including following guidance from the Institute of Air Quality Management
- Conditions of the Environmental Permit

#### Operation Phase - Mitigation

- Setting appropriate heights for the new Absorber Stacks (recommended minimum of 100m, see Appendix 5-2: Operational Phase Assessment (Volume 3))
- Flue gas from the two new Absorber Stacks will be continuously monitored via a Continuous Emissions Monitoring System (CEMS)

A formal statement setting out the evidence base for the design measures incorporated in the Proposed Scheme to satisfy the requirements for Air Quality Positive will be provided as a technical appendix to the ES.

### CHAPTER 6 NOISE & VIBRATION

#### Construction Phase - Effects Identified in the PEIR

Construction noise impacts on landside receptors including residential properties on Clydesdale Way, North Road and Little Brights Road, the Travellers' site at Jenningtree Way and Travelodge London Belvedere Hotel have been assessed. The PEIR has concluded that construction noise is not significant, subject to the implementation of mitigation measures.

#### Operation Phase - Effects Identified in the PEIR

Operational noise impacts on landside receptors at Clydesdale Way and Travelodge London Belvedere Hotel have been assessed. The PEIR has concluded that noise from the operation of the Proposed Scheme is not significant, subject to the implementation of mitigation measures.

#### Construction Phase - Mitigation

Good practice measures to be secured through the Code of Construction Practice.

#### Operation Phase - Mitigation

Selecting quietest air source heat pumps (ASHP) and locating plant as far as practicable away from sensitive receptors.

**CHAPTER 7 TERRESTRIAL BIODIVERSITY****Construction Phase - Effects Identified in the PEIR**

- Habitat loss and fragmentation
- Noise and vibration
- Dust
- Surface water run-off
- Lighting
- Changes in air quality
- Shading

Some or all of which may apply to each of the following receptors as identified and explained in the PEIR chapter: Crossness LNR, Erith Marshes MSINC, Belvedere Dykes SINC, River Thames and Tidal Estuaries MSINC, Habitats of Principal Importance, other habitats, and local flora and fauna (including important bird and water vole populations).

**Construction Phase - Mitigation**

- Habitat creation and enhancement, eg coastal grazing marsh
- Good practice measures to be secured through the Code of Construction Practice, including timing of certain works to avoid sensitive periods
- Pollution control measures
- Lighting Strategy

**Operation Phase - Effects Identified in the PEIR**

- Noise and vibration
- Maintenance activities
- Surface water run-off
- Lighting
- Changes in air quality
- Shading

Some or all of which may apply to each of the following receptors as identified and explained in the PEIR chapter: Crossness LNR, Erith Marshes MSINC, Belvedere Dykes SINC, River Thames and Tidal Estuaries MSINC, Habitats of Principal Importance, other habitats, and local flora and fauna (including important bird and water vole populations).

**Operation Phase - Mitigation**

- Habitat management and improvement
- Good practice measures to be implemented through the Operation Environmental Management Plan, including timing of certain operations to avoid sensitive periods
- Design changes and operational control
- Pollution control measures
- Lighting Strategy

## CHAPTER 8 MARINE BIODIVERSITY

### Construction Phase - Effects Identified in the PEIR

- Loss or disturbance of habitat
- Changes in water quality and release of contaminants
- Noise and vibration
- Lighting
- Vessel strike for marine mammals
- Changes in suspended sediment levels and subsequent sediment deposition
- Increased wave wash
- Spread of INNS

Some or all of which may apply to each of the following receptors as identified and explained in the PEIR chapter: Medway Estuary MCZ, River Thames and Tidal tributaries SINC, Intertidal and Subtidal habitats and associated benthic communities, Marine plants and macroalgae, fish, and marine mammals.

### Operation Phase - Effects Identified in the PEIR

- Loss or disturbance of habitat
- Water quality and release of contaminants
- Noise and vibration
- Lighting
- Vessel strike for marine mammals
- Changes in suspended sediment levels and subsequent sediment deposition
- Increased wave wash
- Spread of INNS

Some or all of which may apply to each of the following receptors as identified and explained in the PEIR chapter: Medway Estuary MCZ, River Thames and Tidal tributaries SINC, Intertidal and Subtidal habitats and associated benthic communities, Marine plants and macroalgae, fish, and marine mammals.

### Construction Phase - Mitigation

- Habitat creation and enhancement, e.g. tidal terracing or offsite habitat creation
- Good practice measures to be secured through the Code of Construction Practice, including timing of certain works to avoid sensitive periods, as well as mitigating noise and vibration generation
- Pollution control measures
- Lighting Strategy
- INNS Management Plan

### Operation Phase - Mitigation

- Habitat management
- Good practice measures to be implemented through the Operation Environmental Management Plan, including timing of certain operations to avoid sensitive periods
- Pollution control measures
- Lighting Strategy
- INNS Management Plan



**CHAPTER 9 HISTORIC ENVIRONMENT****Construction Phase - Effects Identified in the PEIR**

- Potential physical effects on unknown buried heritage assets within the Site (archaeological remains), including potential submerged remains within the Thames foreshore (marine)
- Demolition of non-designated above ground heritage assets within the Site (i.e. the Belvedere Power Station Jetty (disused), if removed as part of the Proposed Scheme)

**Operation Phase - Effects Identified in the PEIR**

- Potential indirect effects on unknown buried heritage assets within the Site (archaeological remains), including potential submerged remains within the Thames foreshore (marine)
- Potential permanent effects on designated above ground heritage assets located beyond the Site Boundary and within the Study Area through changes to setting

**Construction Phase - Mitigation**

- Good practice measures to be secured through the Code of Construction Practice.
- Production and publication of a Geoarchaeological Deposit Model
- Further survey of the proposed dredged channel followed by archaeological mitigation (i.e. targeted excavation/recording, watching brief or preservation in situ), if required
- Historic England Level 2 Historic Building Recording, in the event that the demolition of the Belvedere Power Station Jetty (disused) is proposed

**Operation Phase - Mitigation**

- Production and publication of a Geoarchaeological Deposit Model
- Further survey of the proposed dredged channel followed by archaeological mitigation (i.e. targeted excavation/recording, watching brief or preservation in situ), if required

## CHAPTER 10 TOWNSCAPE AND VISUAL

### Construction Phase - Effects Identified in the PEIR

- On townscape character; particularly through change in site character and vegetation cover and change in local townscape character within 2km of the Site
- On visual amenity; particularly through change in character and visual amenity for users of open spaces and change in visual amenity users of the local PRow network, local road network, and residential areas within 2km of the Site

### Construction Phase - Mitigation

- Good practice measures to be secured through the Outline Code of Construction Practice including consideration of
  - Areas would be cleared for construction as close as practicable to works commencing and top soiling, reseeding and planting would be undertaken as soon as practicable after sections of work are complete
  - The core Temporary Construction Compounds (laydown areas) will be located centrally within the Site to minimise their townscape and visual effects (as shown on **Figure 1-3: Indicative Site Layout Plan (Volume 2)**)
  - Construction area(s) would be kept tidy (e.g., free of litter and debris)
  - Work during the hours of darkness will be avoided as far as practicable and where necessary directed lighting would be used to minimise light pollution/glare (as demonstrated by the construction working hours detailed in **Chapter 2: Site and Proposed Scheme Description (Volume 1)**)
  - The roads providing access to the construction site will be kept free of excessive dust and mud as far as is reasonably practicable
  - Lighting levels would be kept to a minimum necessary for security and safety (this would be set out in the Outline Lighting Strategy which will accompany the application for development consent)
  - Stockpiles, would be utilised to screen views of construction activities and light pollution within the surrounding area, where practicable
  - Site hoarding erected to minimise intrusion from construction activities on PRow

### Operation Phase - Effects Identified in the PEIR

- On townscape character; particularly through change in site character and vegetation cover and change in local townscape character within 2km of the Site
- On visual amenity; particularly through change in character and visual amenity for users of open spaces and change in visual amenity for users of the local PRow network, local road network, and residential areas within 2km of the Site

### Operation Phase - Mitigation

- Ongoing design evolution of the site layout and plant
- Mitigation measures identified through the evolving design and Design Approach Document

## CHAPTER 11 WATER ENVIRONMENT AND FLOOD RISK

### Construction Phase - Effects Identified in the PEIR

- Quality of surface water features (including the biological, physico-chemical and hydromorphological quality aspects)
- Quantity of surface water features/flows
- Biological, physico-chemical and hydromorphological quality elements of the WFD designated water bodies (Thames Middle Water Body and Greenwich Tertiaries and Chalk Groundwater Body)
- Changes to the sediment transport regime
- Groundwater quality and quantity (level and flow) of the Secondary A bedrock aquifers (Lambeth Group including Thanet Sand Formation) and superficial deposit aquifers designated Secondary (undifferentiated and Secondary A aquifers (Alluvium, Head Deposits and Taplow Gravel Member respectively))
- Flood Risk, through:
  - Breach of the River Thames flood defences
  - Flooding from Marsh Dykes
  - Loss of watercourse channel
  - Flood risk associated with the Proposed Jetty
  - Surface water flooding
  - Groundwater Flooding
  - Artificial sources
  - Flood risk to people

### Construction Phase - Mitigation

- Good practice measures to be secured through the Code of Construction Practice, to include compliance with appropriate good practice guidance including (but not limited to) the following:
  - CIRIA (C532) Control of Water Pollution from Construction Sites
  - CIRIA (C741) Environmental Good Practice Onsite Guide
  - Guidance for Pollution Prevention for businesses
- Preventing large amounts of earth from being washed away during periods of heavy rainfall through minimising areas of exposed surface (only removing vegetation when necessary) and keeping gradients as shallow as possible
- Surface water run-off and excavation dewatering would be captured and settled out prior to disposal in accordance with the relevant consent/permit requirements. Any contaminants would be removed prior to disposal
- Incorporating hydrocarbon interceptors into the Site drainage system at high-risk areas, such as parking, unloading and refuelling areas, to remove hydrocarbons and oils from surface water prior to discharge
- Drip trays would be used under equipment such as generators, and wheel washing facilities to minimise the risk of pollutants infiltrating groundwater or the surface water drainage network
- Stockpiles/excavated materials would be stored in such a way to minimise silt laden runoff (e.g., by covering or seeding) and avoid increased sediment load within the drainage network
- Provision of storage facilities and tanks, and machinery refuelling within bunded areas, which should, unless not reasonably practicable, be located further than 10m of water bodies or drainage systems



**CHAPTER 11 WATER ENVIRONMENT AND FLOOD RISK****Operation Phase - Effects Identified in the PEIR**

- Quality of surface water features (including the biological, physico-chemical and hydromorphological quality aspects)
- Quantity of surface water features/flows
- Biological, physico-chemical and hydromorphological quality elements of the WFD designated water bodies (Thames Middle Water Body and Greenwich Tertiaries and Chalk Groundwater Body)
- Changes to the sediment transport regime
- Impacts to groundwater flows and levels on the Thanet Sand and Lambeth Group (bedrock) Secondary A aquifers and superficial deposit aquifers designated Secondary Undifferentiated and Secondary A aquifers (Alluvium, Head Deposits and Taplow Gravel Member, respectively)
- Groundwater quality of the superficial and bedrock aquifers
- Flood Risk, through:
  - Breach of the River Thames flood defences
  - Flooding from Marsh Dykes
  - Loss of watercourse channel
  - Flood risk associated with the Proposed Jetty
  - Surface water flooding
  - Groundwater Flooding
  - Artificial sources
  - Flood risk to people

**Operation Phase - Mitigation**

- Drip trays would be used under equipment such as generators, and wheel washing facilities to minimise the risk of pollutants infiltrating groundwater or the surface water drainage network
- Stockpiles/excavated materials would be stored in such a way to minimise silt laden runoff (e.g., by covering or seeding) and avoid increased sediment load within the drainage network
- Provision of storage facilities and tanks, and machinery refuelling within bunded areas, which should, unless not reasonably practicable, be located further than 10m of water bodies or drainage systems

**CHAPTER 12 CLIMATE RESILIENCE**

The assessment of residual effects will be presented in the ES, following the complete assessment of embedded mitigation and significance. It is anticipated that with the additional design, mitigation and enhancement measures in place that all effects will be considered Not Significant.

**CHAPTER 13 GREENHOUSE GASES****Construction Phase - Effects Identified in the PEIR**

GHG emissions to global atmosphere. The effects of GHG emissions relate to their contribution to global warming and climate change. These impacts are global and cumulative in nature, with every tonne of GHG contributing to impacts on natural and human systems.

Construction emissions from the Proposed Scheme footprint but also relating to the transport of materials to and from the Site and their manufacture. This may be distant from the Proposed Scheme location, for example, GHG emissions associated with the manufacture of concrete in terms of embodied carbon and energy in the production process.

**Construction Phase - Mitigation**

Construction emissions could be minimised through design optimisation in line with PAS 2080:2023 principles to reflect the carbon reduction hierarchy (Avoid, Switch, Improve) as well as other measures detailed in Section 13.8 of the PEIR.

**Operation Phase - Effects Identified in the PEIR**

GHG emissions to or removal from the global atmosphere. The effects of GHG emissions relate to their contribution to global warming and climate change. These impacts are global and cumulative in nature, with every tonne of GHG contributing to impacts on natural and human systems.

Operation emissions (increase or reduction) which result from the operation of the Proposed Scheme and any shifts in energy usage that may occur. In this case, GHG emissions include those for embodied emissions arising from materials and waste for the operation of the Proposed Scheme, the capture of carbon and operational energy and water use.

**Operation Phase - Mitigation**

A beneficial outcome is concluded through the capture of c 1.3million tonnes CO<sub>2</sub>. No mitigation is required or proposed.

**CHAPTER 14 POPULATION, HEALTH AND LAND USE****Construction Phase - Effects Identified in the PEIR**

- On terrestrial businesses
- On businesses that rely upon access to the River Thames
- On walkers and cyclists
- On terrestrial recreation

**Construction Phase - Mitigation**

- Good practice measures to be secured through the Code of Construction Practice
- Construction Traffic Management Plan
- With the exception of Munster Joinery, access to terrestrial businesses would be maintained throughout construction
- Access to the River Thames for recreational users would be maintained throughout construction
- A safety vessel to be present during construction activities of the Proposed Jetty
- Engagement with local businesses and pathway users, including clear signage through planned disruption

**CHAPTER 14 POPULATION, HEALTH AND LAND USE****Operation Phase - Effects Identified in the PEIR**

The PEIR has concluded that once operational of the Proposed Scheme is not likely to result in significant effects, after the implementation of mitigation measures.

**Operation Phase - Mitigation**

- Ongoing maintenance of Mitigation Areas as identified in the ES
- Emergency Preparedness and Response Plan
- Operation Environmental Management Plan
- Development of a Passage Plan (River Thames)
- Ongoing engagement with local community and pathway users, included renewed information boards

**CHAPTER 15 SOCIO-ECONOMICS****Construction Phase - Effects Identified in the PEIR**

Construction effects on employment generation (gross direct and net additional) and GVA generation have been assessed. The PEIR has concluded that, although beneficial, these effects are not significant, even with the implementation of mitigation measures.

**Construction Phase - Mitigation**

- Seeking to enable the relocation of Munster Joinery
- Seeking to recruit local wherever practicable
- Implement site security arrangements and continue engagement with Metropolitan Police and Port of London Authority throughout evolving design

**Operation Phase - Effects Identified in the PEIR**

Operational effects on employment generation (gross direct and net additional) and GVA generation have been assessed. The PEIR has concluded that although beneficial these effects are not significant, even with the implementation of mitigation measures.

**Operation Phase - Mitigation**

- Policy of local recruitment wherever practicable with access to training and career development
- Recruitment and staff management processes to be fair and equitable to all
- Continue to provide community funding



**CHAPTER 16 MATERIALS AND WASTE****Construction Phase - Effects Identified in the PEIR**

- Consumption of finite material resources
- Requirement for off-site recovery and/or disposal of waste

**Construction Phase - Mitigation**

- Good practice measures to be secured through the Code of Construction Practice
- Seeking to enable the relocation of Munster Joinery and reuse any demolition materials from the site
- Seeking to reuse dredged arisings and excavation materials
- Reusing existing materials on site to the extent practicable
- Site Waste Management Plan
- Materials Management Plan

**Operation Phase - Effects Identified in the PEIR**

- Consumption of finite material resources, particularly amine-based solvents
- Requirement for off-site recovery and/or disposal of waste

**Operation Phase - Mitigation**

- Operation Environmental Management Plan

**CHAPTER 17 GROUND CONDITIONS AND SOILS****Construction Phase - Effects Identified in the PEIR**

- Site users and staff (excluding construction staff); particularly potential exposure to contamination within underlying soils/groundwater
- Third party neighbours; particularly potential exposure to contamination within underlying soils/groundwater
- Construction staff; particularly potential exposure to contamination within underlying soils/groundwater and reuse of dredged arisings
- Controlled waters; particularly potential exposure to contamination within underlying soils/groundwater
- Below ground services and building structures; particularly potential exposure to contamination within underlying soils/groundwater

**Construction Phase - Mitigation**

- Good practice measures to be secured through the Code of Construction Practice
- Ground investigation prior to construction
- Materials Management Plan
- Earthworks Specification
- Remediation Strategy
- Piling Risk Assessment

**Operation Phase - Effects Identified in the PEIR**

None identified

**Operation Phase - Mitigation**

- Operation Environmental Management Plan

**CHAPTER 18 LANDSIDE TRANSPORT****Construction Phase - Effects Identified in the PEIR**

- Pedestrian and cyclist severance
- Pedestrian and cyclist delay
- Pedestrian and cyclist amenity
- Fear and intimidation
- Public transport network

An assessment of driver delay and accidents and safety will be presented within the ES.

**Construction Phase - Mitigation**

- Framework Construction Traffic Management Plan (FCTMP)
- Construction Workforce Travel Plan (CWTP)
- Maintaining openness of PROW where practicable and accessible (or provide suitable diversionary routes)

**Operation Phase - Effects Identified in the PEIR**

- Pedestrian and cyclist severance
- Pedestrian and cyclist delay
- Pedestrian and cyclist amenity
- Fear and intimidation
- Public transport network
- Hazardous loads

An assessment of driver delay and accidents and safety will be presented within the ES.

**Operation Phase - Mitigation**

- Workplace Travel Plan (WTP)

**CHAPTER 19 MARINE NAVIGATION****Construction Phase - Effects Identified in the PEIR**

- Vessel collision, contact, grounding and breakout

**Construction Phase - Mitigation**

- Measures to be determined through the Navigation Risk Assessment

**Operation Phase - Effects Identified in the PEIR**

- Vessel collision, contact, grounding and breakout

**Operation Phase - Mitigation**

- Design and location of Proposed Jetty
- Measures to be determined through the Navigation Risk Assessment

## CHAPTER 20 MAJOR ACCIDENTS AND DISASTERS

### Construction Phase - Effects Identified in the PEIR

- Transport Accidents: Risk of a vessel colliding with the Proposed Jetty causing collapse/damage to marine structures

### Construction Phase - Mitigation

Implementation of mitigation measures identified in other technical topic chapters, including:

- Programme of hazard studies of the Carbon Capture Facility
- Environment, Health & Safety Management systems
- CDM Health & Safety Plan
- Supplier management environmental, health & safety standards
- Risk management systems
- Code of Construction Practice
- OEPRP

### Operation Phase - Effects Identified in the PEIR

- Industrial and urban accidents: Risk of fire and/or explosion or release of harmful gas from unconfined vapour on the Carbon Capture Facility
- Industrial and urban accidents: Risk of a major fire on the Carbon Capture Facility due to the lack of fire water capacity
- Industrial and urban accidents: Explosion or release of harmful gas from large scale release of CO<sub>2</sub> resulting from a loss of containment event involving a pipeline and/or storage tank
- Industrial and urban accidents: Risk of fire and/or explosion or release of harmful gas from Riverside 1 and/or 2 facilities initiating a major event at the Carbon Capture Facility
- Transport accidents (waterways): Risk of explosion or release of harmful gas from large scale release of CO<sub>2</sub> resulting from a loss of containment event involving a marine vessel
- Pollution accidents (land and water) – Harm to ecological receptors from loss of containment of hazardous materials/waste into surface water features

### Operation Phase - Mitigation

Implementation of mitigation measures identified in other technical topic chapters.

## CHAPTER 21 CUMULATIVE EFFECTS

An assessment of cumulative effects will be presented in the ES.





## CONTACT US

If you'd like any more information or have any questions about the project, you can contact us:



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