SUMMARY OF PRELIMINARY ASSESSMENT OF EFFECTS IN THE PEIR

CHAPTER 5 AIR QUALITY

Construction Phase - Effects Identified in the PEIR	Construction Phase - Mitigation
• Impacts from dust, PM10 and PM2.5 • Emissions of NO2, PM10 and PM2.5 from operational NRMM • Road traffic emissions of NO2, PM10 and PM2.5 • Marine vessel emissions of NO2, PM10 and PM2.5	• 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 - Effects Identified in the PEIR	**Operation Phase - Mitigation**
• 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 NO2, PM10 and PM2.5 from new backup power generators (Ancillary Infrastructure) • Marine vessel emissions of NO2 PM10 and PM2.5	• 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 Phase - Mitigation
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.	Good practice measures to be secured through the Code of Construction Practice.
Operation Phase - Effects Identified in the PEIR	**Operation Phase - Mitigation**
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.	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.

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 - 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.

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	Construction Phase - Mitigation
• 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)	• 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 - Effects Identified in the PEIR	**Operation Phase - Mitigation**
• 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	• 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	Construction Phase - Mitigation
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 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	**Operation Phase - Mitigation**
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.	A beneficial outcome is concluded through the capture of c 1.3million tonnes CO_2. No mitigation is required or proposed.

CHAPTER 14 POPULATION, HEALTH AND LAND USE

Construction Phase - Effects Identified in the PEIR	Construction Phase - Mitigation
• On terrestrial businesses • On businesses that rely upon access to the River Thames • On walkers and cyclists • On terrestrial recreation	• 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	Operation Phase - Mitigation
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.	• 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 Phase - Mitigation
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.	• 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	**Operation Phase - Mitigation**
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.	• 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	Construction Phase - Mitigation
• Consumption of finite material resources • Requirement for off-site recovery and/or disposal of waste	• 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	**Operation Phase - Mitigation**
• Consumption of finite material resources, particularly amine-based solvents • Requirement for off-site recovery and/or disposal of waste	• Operation Environmental Management Plan

CHAPTER 17 GROUND CONDITIONS AND SOILS

Construction Phase - Effects Identified in the PEIR	Construction Phase - Mitigation
• 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	• 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	**Operation Phase - Mitigation**
None identified	• 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	Construction Phase - Mitigation
• Transport Accidents: Risk of a vessel colliding with the Proposed Jetty causing collapse/damage to marine structures	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	**Operation Phase - Mitigation**
• 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_2 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_2 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	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.