Riverside Energy Park

Environmental Statement Non-Technical Summary

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CORY
RIVERSIDE ENERGY

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1 Introduction

1.1.1 This document is the Non-Technical Summary of the Environmental Statement (ES) for a proposed Energy Park at Norman Road in Belvedere, within the London Borough of Bexley. The proposed Energy Park is called Riverside Energy Park (REP). REP is also described in this document as the 'Proposed Development'.

1.1.2 This document provides, in non-technical language, a summary of the information included within the ES. It has been prepared by Peter Brett Associates on behalf of Cory Environmental Holdings Limited (trading as Cory Riverside Energy and referred to as 'Cory' or 'the Applicant' throughout this document).

1.1.3 Cory is a leading recycling, energy recovery and resource management company with an extensive river logistics business based in London.

1.1.4 Cory operates the existing Riverside Resource Recovery Facility (RRRF) situated at Norman Road in Belvedere. RRRF is a key element of London's energy and resource management infrastructure and has been operating highly successfully since 2011.

1.1.5 REP seeks to maximise the use of Cory's existing energy and river infrastructure including its operational jetty, tugs and barges. REP will help meet London's need for further resource recovery and energy generation infrastructure.

1.1.6 Further information on Cory and on the Proposed Development is available at http://www.riversideenergypark.com.

1.1.7 The Proposed Development is made up of a number of components that work together to generate energy and would comprise:

- an Energy Recovery Facility (ERF);
- an Anaerobic Digestion facility;
- a Solar Photovoltaic Installation;
- Battery Storage; and
- Infrastructure to make a potential future district heating pipe connection possible.

1.1.8 The REP site would also incorporate other infrastructure required to operate the facility including, but not limited to ramps, parking, stores for supplies and office/welfare provision.

1.1.9 More information on the different elements of REP is included in **Section 2** to this Non-Technical Summary.

1.1.10 A Glossary containing key terms used in this report and the Application documents is provided in Chapter 18 of the ES **(Document Reference 6.2) and Document Reference 1.6**.

1.1.11 Most of the electricity generated by REP will be exported to the existing National Electrical Transmission System (the National Grid). Therefore, an electrical connection is needed to connect REP to an electricity grid connection point. Some of the electricity generated will be used on site.

1.1.12 REP and the Electrical Connection are together referred to as the 'Proposed Development'.

1.1.13 Cory is applying to the Secretary of State under the Planning Act 2008 (PA 2008) for powers to construct, operate and maintain REP. As REP would generate more than 50 megawatts of electricity, it is classified as a Nationally Significant Infrastructure Project. The Planning Act 2008 therefore requires a Development Consent Order to authorise its construction, operation and maintenance.

1.1.14 Plans showing the location and an Application Boundary for the Proposed Development are provided in Figures 1 and 2 of this Non-Technical Summary.

Environmental Impact Assessment

1.1.15 The Proposed Development is classified as 'Environmental Impact Assessment development' (EIA development) under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (described in the rest of this document as the 'Infrastructure EIA Regulations 2017').

1.1.16 Cory is therefore required to undertake an EIA for the Proposed Development. The EIA process assesses the likely significant environmental impacts of the Proposed Development across a range of topics. The results of the EIA are presented in the Environmental Statement (ES) (Document Reference 6.1) which is one of a number of documents which accompany the application for a Development Consent Order.

1.1.17 In January 2018, the Secretary of State for Business, Energy and Industrial Strategy provided Cory with a formal opinion (a 'Scoping Opinion') on what should be included within the EIA. This Scoping Opinion was informed by comments from local councils, statutory bodies (for example the Environment Agency) and other stakeholders.

1.1.18 Following the Scoping Opinion, a Preliminary Environmental Information Report (PEIR) was prepared in June 2018. The PEIR set out the preliminary environmental information and the preliminary findings of the EIA. A formal consultation process was carried out to inform interested people, groups and organisations about the Proposed Development. The PEIR allowed consultees to use the information to develop a view of the likely significant environmental effects of the Proposed Development, and provide any comments to Cory.

1.1.19 After additional environmental assessments, and taking into consideration comments from consultees on the PEIR, an ES has been prepared. The ES describes the likely significant environmental effects of the Proposed Development. This Non-Technical Summary summarises the ES in non-technical language.

Decision Making Process

1.1.20 Cory is applying for a Development Consent Order under Section 31 of the Planning Act 2008 for powers to construct, maintain and operate REP. Cory must submit an application for a Development Consent Order to the Secretary of State, who will first decide whether to accept the application for examination. If accepted for examination, the Secretary of State will appoint an independent Inspector or panel of Inspectors (known as the Examining Authority) to examine the application on behalf of the Secretary of State. The examination is a public process, in which interested parties are able to participate.

1.1.21 Following the examination, the Examining Authority will make a recommendation to the Secretary of State. The Secretary of State must determine the application in accordance with the relevant National Policy Statements for the Proposed Development. These National Policy Statements (NPSs) set out the Government's policy and expectations for Nationally Significant Infrastructure Projects.

Planning Policy Context

1.1.22 Section 104 of the Planning Act 2008 requires the Secretary of State to decide the application for development consent in accordance with any relevant National Policy Statement, unless one or more of the exceptions in that section apply. Due to the nature of the Proposed Development, three of the designated National Policy Statements for energy are relevant to the Proposed Development:

- Overarching National Policy Statement for Energy (EN-1): This sets out the overarching national policy for energy infrastructure as defined by the Planning Act 2008, which provides the primary basis for decisions by the Secretary of State;
- National Policy Statement for Renewable Energy Infrastructure (EN-3): This applies to nationally significant energy from biomass/waste infrastructure in England and Wales with at least 50 megawatts (MW) electrical generating capacity; and,
- National Policy Statement for Electricity Networks Infrastructure (EN-5): This applies to electricity networks in England with a voltage of 132 kilovolt (kV) or higher which are carried on towers/poles or buried underground, as well as associated infrastructure including substations and converter stations.

1.1.23 In deciding this application, the Secretary of State is also required to have regard to any other matters which the Secretary of State thinks are both important and relevant to the decision. Paragraph 4.1.5 of the Overarching National Policy Statement for Energy EN-1 clarifies that local authorities' Development Plan Documents or other documents in their Local Development Framework may be both important and relevant considerations to the Secretary of State's decision-making.

1.1.24 Therefore, the ES and this Non-Technical Summary have been prepared taking account of relevant European, national, regional and local policy. Further details of these are contained within **Chapter 2** of the ES.

1.1.25 If the Secretary of State decides to grant development consent through a Development Consent Order, this would allow the construction, operation and maintenance of the Proposed Development.

2 Overview of the Project

Introduction

2.1.1 The Application Site includes the entire footprint of the Proposed Development and is shown on **Figure 2** of this Non-Technical Summary. It includes the following:

- the REP site, located to the north of Belvedere off Norman Road;
- the Main Temporary Construction Compounds located to the south of the REP site and west of Norman Road;
- the Electrical Connection, running underground between the REP site and the Electrical Connection Point at Littlebrook substation connecting into an existing National Grid building in Dartford; and
- Cable Route Temporary Construction Compounds required to support the construction of the chosen Electrical Connection route. These will be small discrete compounds, required for a temporary period of time whilst works are undertaken along particular lengths of the Electrical Connection route.

2.1.2 The Proposed Development would be located within the administrative areas of the London Borough of Bexley and Dartford Borough Council.

Description of the Application Site

The REP Site and Main Construction Compounds

2.1.3 To the north of the REP site is the River Thames and the Thames Path long distance trail, and to the south and west is the Crossness Nature Reserve. The existing Thames Water Crossness Sewage Treatment Works site is approximately 200 m further to the west and includes the Grade I listed Crossness Pumping Station.

2.1.4 The Crossness Nature Reserve is a 25.5 ha local nature reserve which is part of the Erith Marshes Site of Metropolitan Importance for Nature Conservation, and contains a number of ditches, watercourses and ponds.

2.1.5 To the south of the REP site is Norman Road (the main road access into the site). The proposed Main Temporary Construction Compounds (an area of land which is used during construction of the Energy Park) would be located to the west of Norman Road in an area of land which has previously been developed.

2.1.6 To the east of the Crossness LNR, adjacent to Norman Road is a site owned by Cory, with planning permission for a Data Centre (Local Planning Authority reference: 15/02926/OUTM). South of Norman Road is the A2016, formed by the dual carriageway Picardy Manor Way at its junction with Norman Road (North), and by the dual carriageway Eastern Way, south of Crossness Nature Reserve.

2.1.7 The REP site includes the existing jetty extending out into the River Thames but excludes Cory's existing RRRF main building. The majority of the REP site is currently used for private vehicle circulation areas, the jetty access ramp, staff and visitor parking, open container storage, contractor maintenance, electrical substation and associated landscape/habitat areas.

Electrical Connection

2.1.8 The proposed Electrical Connection route would run southwards from the REP site towards the existing Littlebrook substation, in Dartford. There are a number of alternative proposed route options for the Electrical Connection. These have been identified and assessed through studies undertaken by UK Power Networks (UKPN), the local distribution network operator, and are shown in Figure 1.

2.1.9 The Electrical Connection routes are generally located on the highway (highway, verges and railway/watercourse crossings on highway structures) and are largely through urban areas.

2.1.10 Further engineering investigations are ongoing, however it is expected that a single Electrical Connection route option will be decided upon during the pre-examination and examination process, and that will allow the Development Consent Order to be granted on the basis of a single route.

2.1.11 Further detail about the REP site and surrounding area is provided in **Chapter 3** of the ES.

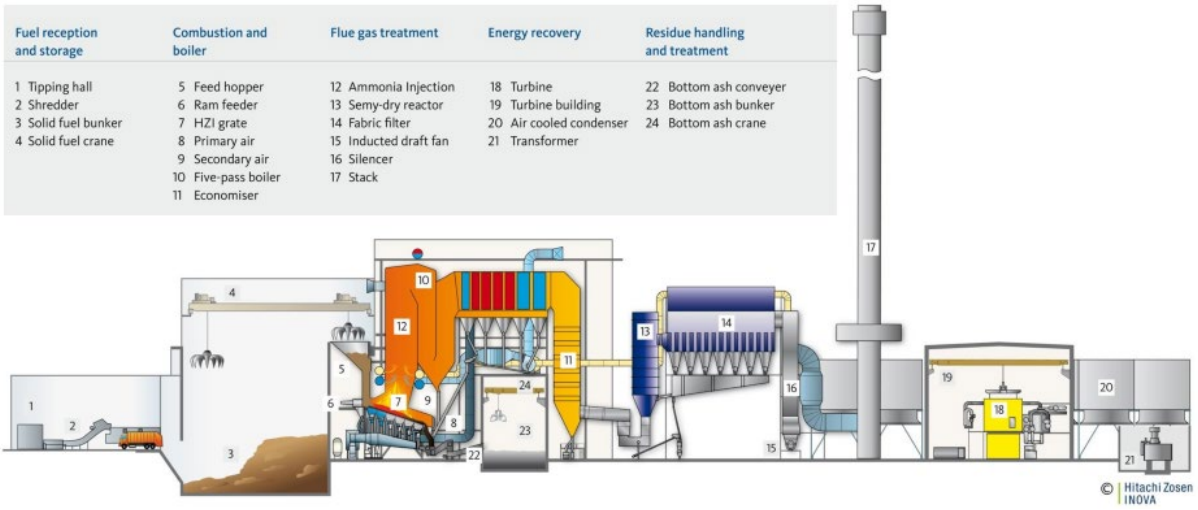
Description of the Proposed Development

Energy Recovery Facility

2.1.12 An Energy Recovery Facility is an industrial plant which uses thermal treatment technology (combustion) to process various types of waste and generate electricity. Electricity generated is normally exported to the electricity network, after a small amount of electricity has been used to run the plant itself.

2.1.13 The Energy Recovery Facility at REP would normally treat non-recyclable Commercial and Industrial waste, and would have the potential to accept non-recyclable household waste.

2.1.14 The image below provides an indicative diagram of the different parts required for a modern Energy Recovery Facility.

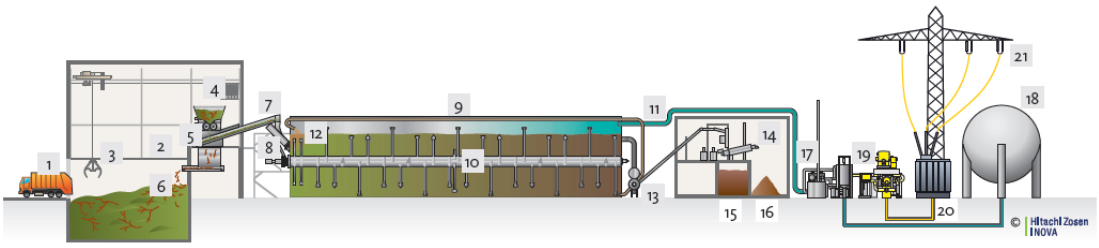


Anaerobic Digestion Facility

2.1.15 An Anaerobic Digestion facility processes food and green waste in the absence of oxygen. The waste is broken down by natural organisms and a biogas is generated. This is a useful by-product which can be used to generate renewable electricity.

2.1.16 The Anaerobic Digestion facility will also create another by-product digestate. The digestate would be transported off-site to be used as a fertiliser by the agricultural sector. Should this not be possible, it would be used as a fuel for REP to generate electricity.

2.1.17 The image below provides an indicative diagram of the different parts required for an Anaerobic Digestion Facility.



Waste Reception and Storage
1 Waste receiving
2 Waste bunker
3 Waste crane

Anaerobic Digestion
4 Shredder
5 Sieve
6 Sieve rejects
7 Conveying system
8 Feeding system
9 Digester
10 Agitator
11 Biogas pipe

Discharge
12 Inoculation pipe
13 Discharge system
14 KOM+Press
15 Liquid fertilizer
16 Compost

Energy Utilization
17 Biogas upgrading
18 Gas storage
19 Combined heat and power plant
20 Transformer
21 Electricity export

Solar Photovoltaic Installation

2.1.18 Solar photovoltaic modules (solar panels) convert solar radiation directly into electricity, in a silent and clean process that requires no moving parts.

2.1.19 Inclusion of solar panels at REP will increase the amount of renewable energy it can generate.

2.1.20 Solar panels would be located on the main REP Building roof areas. Initial studies demonstrate that high specification solar photovoltaic panels would be capable of generating up to 1.0 MW (equivalent to electricity for approximately 1,100 homes), depending on the final building form that is selected.

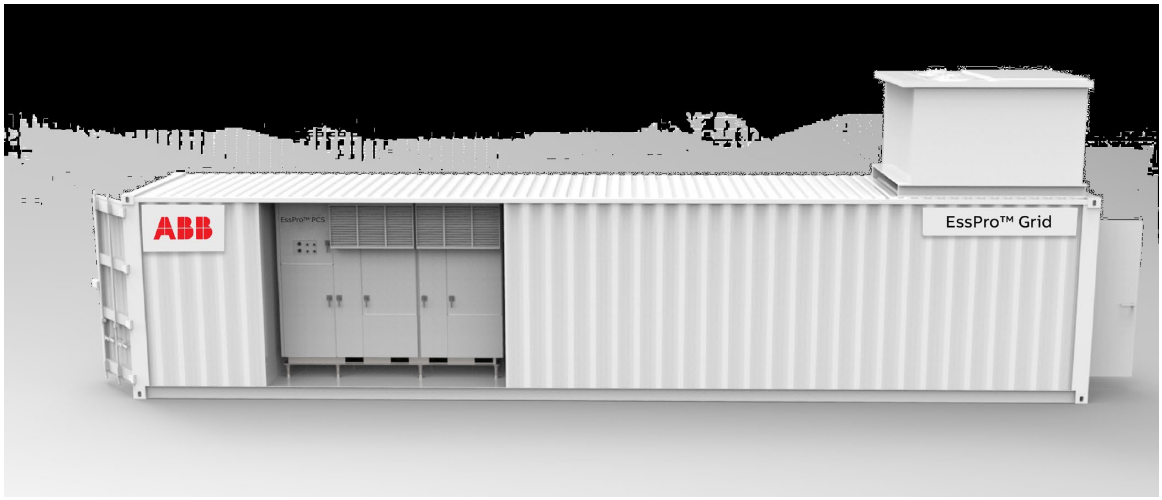
Battery Storage

2.1.21 The battery storage component of REP would store and supply additional power to the network at times of peak electrical demand. This would be integrated into the Main REP building and the batteries would be charged, when demand for electricity is low, directly from the energy produced from the Energy Recovery Facility, solar photovoltaic panels and the Anaerobic Digestion Combined Heat and Power engine (if generating).

2.1.22 The battery storage system would also have the capability to provide electricity during times when the Energy Recovery Facility is not operating (e.g. during routine maintenance shut down periods).

2.1.23 The battery storage system would improve the operational performance and reliability of REP.

2.1.24 The image below shows a typical battery storage unit.



Combined Heat and Power Infrastructure

2.1.25 REP would include all the necessary infrastructure within the REP site to supply a potential local district heating network. The heat supply system would be able

to export up to 30 MW of heat to local offsite consumers (this is equivalent to heating approximately 10,500 local homes and businesses).

2.1.26 The Applicant is in discussions with the relevant local authorities and housing developers to explore opportunities for REP to provide a local heat connection.

2.1.27 The Anaerobic Digestion process will also have the ability to supply some heat.

The Electrical Connection Route

2.1.28 REP would be connected to the electricity network via a new 132 kV connection ('the Electrical Connection'). It is proposed that the Electrical Connection would be routed predominantly via the existing road network and would be mostly underground.

2.1.29 The connection would require a new substation within the REP site. The connection to the electricity network would be made into an existing National Grid substation building (the existing Littlebrook substation) with no changes to the outside of the building required. The image below shows the existing Littlebrook substation.

Temporary Construction Compounds

2.1.30 Two forms of Temporary Construction Compound would be required:

- the Main Temporary Construction Compounds; and
- the Cable Route Temporary Construction Compounds.

2.1.31 The Main Temporary Construction Compounds would be located on the western side of Norman Road, to the south of the REP site and would be used as a laydown area, including delivery reception and storage for construction materials, construction equipment, fabrication and for staff welfare.

2.1.32 Cable Route Temporary Construction Compounds would be required to provide small scale localised storage of materials whilst the Electrical Connection route is being constructed.

REP Key Operations

Delivery of Waste to REP

2.1.33 Waste being delivered to the Energy Recovery Facility would predominantly arrive via the River Thames and the existing jetty at Belvedere, and otherwise by road. This will maximise the use of Cory's existing fleet of tugs, barges, containers and wharves. The existing jetty has enough capacity to support deliveries of waste to the Energy Park facility (up to 805,920 tonnes per annum). No changes or construction to the jetty is required, and there will be no construction works in the river.

2.1.34 Food and green waste for the Anaerobic Digestion facility would be collected from local sources, and delivered by road.

Removal of by-products from REP

2.1.35 The Energy Recovery Facility would produce two by-products, Incinerator Bottom Ash and Air Pollution Control Residue, both of which will be recycled and used within the construction industry. Incinerator Bottom Ash would be removed from the REP site via barges along the River Thames to the Port of Tilbury, once again using the existing jetty. Air Pollution Control Residues from the Energy Recovery Facility and digestate from the Anaerobic Digestion facility would be removed by road.

3 Assumptions and Assessment Terminology

Introduction

3.1.1 The ES includes a number of assumptions. This Section sets out these key assumptions and outlines how the Proposed Development has been assessed.

Assumptions

3.1.2 Throughout the following sections, the terms: construction, operation and decommissioning have been used. These are defined as follows:

- Construction – Construction of the Proposed Development. Depending on the final technology selection, this is anticipated to take approximately three years, starting in 2021.

- Operation – REP is expected to start working and enter a period of testing from 2024 onwards. Normal ongoing operations (including maintenance) are expected to begin in mid to late 2025. No specific timescale for operation of REP is proposed, the plant will be maintained to maximise its operational working life. During this time, there will also be maintenance activities and therefore "operation" also includes maintenance.

- Decommissioning – It is assumed for the purposes of this assessment that the equipment within REP would be removed once the plant had ceased operations permanently. Any decommissioning phase is assumed to be of a similar or shorter duration to construction, and therefore environmental effects are considered to be of a similar level to those during the construction phase. It is assumed that the ducting (tubes put underground which the wires sit within) for the Electrical Connection would remain in situ, but that the cables may be removed.

3.1.3 Where details of the Proposed Development are not fixed at this stage, a reasonable ‘worst case’ is assumed. This makes sure the assessment is carried out on a conservative basis. The following assumptions have been made within the assessment:

- The exact height of the stacks of the Energy Recovery Facility are not known at this stage. However, for the purpose of the air quality assessment, a reasonable worst case stack height of 90 m Above Ordnance Datum (AOD) has been assumed. This is the lowest possible stack height and would therefore give rise to the largest impacts. For assessments considering the visual impact of the Proposed Development, a maximum height of up to 113 m AOD has been assumed as the highest possible stack would give rise to the largest impacts in terms of landscape and visual impacts.

- It is anticipated that the Energy Recovery Facility would treat approximately 655,000 tonnes of residual (non recyclable) waste per annum. However, for the environmental assessments a ‘reasonable worst case’ maximum

throughput of approximately 805,920 tonnes per annum has been assessed.

- The Anaerobic Digestion facility is assumed to have a throughput of up to 40,000 tonnes green and food waste per annum.
- The Electrical Connection ducting will be left in place once the operations have permanently ceased. Cables may be removed or made safe and left in place.
- Standard control measures (these are referred to as embedded mitigation within the ES) will be used such as working in accordance with best practice guidance and measures which are routinely incorporated in similar developments constructed in the UK.

3.1.4 A reasonable worst case scenario has been undertaken for each topic, as outlined within **Chapters 6 – 14** of the ES.

Assessing Effects

3.1.5 In line with feedback from the Secretary of State and stakeholders, the following topics have been assessed as part of the EIA:

- Chapter 6 - Transport;
- Chapter 7 - Air Quality;
- Chapter 8 - Noise and Vibration;
- Chapter 9 - Townscape and Visual Impacts;
- Chapter 10 - Historic Environment;
- Chapter 11 - Terrestrial Biodiversity;
- Chapter 12 - Hydrology, Flood Risk and Water Resources;
- Chapter 13 - Ground Conditions;
- Chapter 14 - Socio Economics;
- Chapter 15 - Other Considerations;
- Chapter 16 - Summary of Preliminary findings and In-Combination Effects;
- Chapter 17 - Schedule of Mitigation and Monitoring; and
- Chapter 18 – Glossary.

3.1.6 A range of site surveys and data collection exercises have been used to find out the environmental conditions within the relevant study areas.

3.1.7 If the Proposed Development is granted consent by the Secretary of State, it is expected that construction would commence in 2021. The assessment therefore uses a '2021 baseline' to provide a future baseline which the Proposed Development can be assessed against.

3.1.8 The ES presents the findings of the assessment of likely significant environmental effects that could occur during the construction, operation and decommissioning phases. Specific details about the construction works will not be known until the detailed design of the Proposed Development is known. Therefore, the assessment has been based on available information and reasoned judgements supplied from similar projects. This has allowed likely significant environmental effects to be identified. In judging the significance of potential construction effects, it has been assumed that the construction mitigation measures (measures put in place to reduce impacts) identified within the assessment are fully implemented. The Development Consent Order would make sure this mitigation is implemented.

3.1.9 Each ‘topic assessment’ identifies receptors (e.g. people or an ecological site / habitat / species that might potentially be affected by a potential impact or impacts) to the Proposed Development. The assessment then considers how sensitive a receptor is to change or impacts (the sensitivity) and the size of change or impact on that receptor (the magnitude). The significance of the effect on the receptor is then determined having regard to both of these factors. Further detail is provided in the methodology section for each environmental topic in the ES.

3.1.10 An example of generic significance criteria is provided in Table 1 below. Where this methodology differs for a particular topic, this is described within that topic chapter.

3.1.11 Effects that are described as ‘substantial’, ‘major’ or ‘moderate’ are determined to be significant; and effects that are described as ‘minor’ or ‘negligible’ are determined to be not significant in the context of the Infrastructure EIA Regulations 2017.

Table 1 Generic Significance Criteria

	Significance Level	Criteria
Significant	Substantial	These effects are given this level of significance as they represent key factors in the decision-making process. These effects are generally, but not always, associated with sites and features of national or regional importance. A change at a site or feature of district importance may also enter this category.
	Major	These effects are likely to be important considerations at a local or district scale and may become key factors in the decision-making process.
	Moderate	These effects, while important at a local scale, are not likely to be key decision-making issues.
Not significant	Minor	These effects may be raised as local issues but are unlikely to be of importance in the decision-making process. Nevertheless, they are of relevance in enhancing the subsequent design of the project and consideration of mitigation or compensation measures.
	Negligible	Either no effect or an effect which is beneath the level of perception, within normal bounds of variation or within the margin of forecasting error. Such effects should not be considered by the decision-maker.

3.1.12 Consideration has been given to the potential mitigation measures which could be used to make sure that any *likely adverse significant environmental effects* of the Proposed Development are reduced. These mitigation measures fall broadly into two categories:

- embedded mitigation - this is designed to be a built in part of the scheme for which planning permission is sought (e.g. limiting the height of a stack, or building form) or those which would be undertaken to meet existing legislative requirements. An outline Code of Construction Practice (CoCP) has been submitted with the REP DCO application (Document Reference 7.5). This outlines a range of mitigation measures to be implemented during the construction phase. As there is a Requirement for the items within the outline CoCP to be delivered as part of the REP DCO, they have been considered as 'embedded' into the scheme; and

- further mitigation - those which require further activity to be achieved, are identified through carrying out assessments and do not form part of the scheme design in their own right.

3.1.13 The Infrastructure EIA Regulations 2017 also require an assessment of how the project will affect the environment in combination with the effects of other proposed projects in the area that are being constructed and/or operating at the same time (known as cumulative effects).

3.1.14 Other developments to be included within the cumulative assessment, have been identified using a tiered approach following advice notes from the Secretary of State. The 'other developments' which have been considered to give rise to cumulative effects alongside the Proposed Development are listed in Appendix A.4 of the ES. Different developments have been considered by each different topic, depending on the nature of the potential effects from each topic and the geographical extent over which cumulative effects may occur ('zone of influence'). A summary of the cumulative effects from each topic are presented in Section 4 of this NTS.

3.1.15 **Chapter 4** of the ES provides further information on the types (tiers) of cumulative development to be included.

4 Assessment of Effects

4.1.1 Table 2 below summarises the results of the assessments (from construction, decommissioning and operation of the Proposed Development) undertaken within the topic specific chapters of the ES.

Table 2 Summary of residual effects

Topic chapters of the ES	Significance of residual effects	
	Construction and decommissioning	**Operation**
Chapter 6 - Transport	Effects to Public Rights of Way are considered minor, temporary and **Not Significant**. Effects to highway links and highway junctions are considered minor adverse and temporary and therefore **Not Significant**.	Effects to highway links, highway junctions, pedestrian fear and intimidation and Public Rights of Way are considered to be **Not Significant**.
Chapter 7 – Air Quality	Effects to human health and terrestrial biodiversity from dust are considered to be **Not Significant**.	Effects from operational emissions to human health and terrestrial biodiversity are considered to be **Not Significant**.
Chapter 8 – Noise and Vibration	Effects at the nearest noise sensitive receptors are considered to be **Not Significant**.	Effects at the nearest noise sensitive receptors are considered to be **Not Significant**.

Topic chapters of the ES	Significance of residual effects	
	Construction and decommissioning	**Operation**
Chapter 9 – Townscape and Visual Impact Assessment	Effects to townscape character of the REP site and a number of visual receptors within 1 km of the proposed stack are considered to be **Significant (Moderate Adverse)**.	Effects to townscape receptors (Crossness Conservation Area; the character and appearance of the REP Site; and on the landscape of Crossness Local Nature Reserve marshland, and scrubland habitats on the REP site), as well as visual receptors within 1 km of the proposed stack are considered to be **Significant (Moderate Adverse)**. This is mainly related to the introduction of large built form on a previously undeveloped site.
Chapter 10 – Historic Environment	Effects to heritage assets are considered to be **Not Significant**.	Effects to heritage assets are considered to be **Not Significant**.
Chapter 11 – Terrestrial Biodiversity	Effects to designated areas, habitats, and protected species are considered to be **Not Significant**.	Effects to designated areas, habitats, and protected species are considered to be **Not Significant**.
Chapter 12 – Hydrology, Flood Risk and Water Resources	Effects to water courses, ground water, Crossness Nature Reserve, the River Thames and existing infrastructure are considered to be **Not Significant**.	Effects to water courses, ground water, Crossness Nature Reserve, the River Thames and existing infrastructure are considered to be **Not Significant**.
Chapter 13 – Ground Conditions	Effects to human health, property, ground water, surface water and ecological systems are considered to be **Not Significant**.	Effects to human health, property, ground water, surface water and ecological systems are considered to be **Not Significant**.

Topic chapters of the ES	Significance of residual effects	
	Construction and decommissioning	Operation
Chapter 14 – Socio-economics	Effects to the labour market and local accommodation providers are considered to be beneficial and **Significant.** Effects to community infrastructure and key business sectors are considered to be **Not Significant**.	Effects to the labour market are considered to be beneficial but **Not Significant.** Effects to community infrastructure and the energy generation business sector are considered to be **Not Significant**. **Significant** beneficial effects on the waste management business sector are anticipated.

Transport

4.1.2 REP would be accessed via the River Thames using Cory's existing operational jetty to the north of the site. Additionally, pedestrians, cyclists, public transport users and vehicles can access the site via Norman Road. Norman Road provides a link to the surrounding road network through a junction with Picardy Manorway. To the west the highway network connects to the A2016 and in turn, to the South Circular, Woolwich Ferry and Blackwall Tunnel. To the east it connects to the A282, the M25 and the Dartford Crossing. The REP site is accessible using the number 180 and 401 bus services and Belvedere railway station is within reasonable walking distance (approximately 20 minute walk).

4.1.3 The potential effects of the Proposed Development on transport receptors have been assessed and are presented in the ES **Chapter 6**.

4.1.4 The assessment has assumed a number of embedded mitigation measures would be applied to limit potential effects. This includes a CoCP, Operational Travel Plan and a Construction Traffic Management Plan (CTMP). The CTMP is a document which would set out management measures to limit effects from construction traffic, such as delivery routes and the use of temporary traffic lights.

4.1.5 A number of transport related receptors have been identified which could be affected by the Proposed Development. While most receptors are road links and junctions susceptible to impacts by increased traffic flows leading to delays, some, are public rights of way, which would potentially be affected during the construction phase of the Electrical Connection route.

4.1.6 The assessment of effects from temporary construction traffic has identified that following the implementation of mitigation measures, effects to receptors would be **Minor** or **Negligible** and temporary in nature, and therefore not significant.

4.1.7 While Cory intends to receive the majority of waste throughputs via the existing jetty, the ES considers two scenarios: 75% of waste arriving by river (the nominal scenario), and 100% by road (a reasonable worst case scenario). This approach makes sure that the ES presents both the most likely case and a reasonable worst case assessment which is considered conservative and robust.

4.1.8 Throughout preparing the assessments, Cory has consulted, to agree scope and methodology, with relevant bodies, including: Highways England, Transport for London, and local highways bodies including Kent County Council, and London Borough of Bexley.

4.1.9 The ES presents an assessment of traffic flow data based on traffic surveys which have been undertaken at several locations on the road network in the vicinity of the Application Site.

4.1.10 The assessment has indicated that the effects generated by the operation of the Proposed Development (based on the reasonable worst case assumption of 100% of waste being delivered by road) are considered **Negligible**, and not significant. Mitigation measures such as the use of the river and encouraging the use of more sustainable transport, reduces these potential effects even further.

4.1.11 The assessment undertaken has used transport modelling which already includes additional traffic likely to be generated from other developments built out in the vicinity of the Proposed Development in the future as well and local consented development.

Air Quality

4.1.12 The air quality effects associated with the construction and operation of the Proposed Development have been assessed and the findings are presented in **Chapter 7** of the ES. The main effects associated with construction include the potential generation of dust, which can be controlled by standard embedded mitigation techniques such as limiting activities which have potential to create large quantities of dust and damping down areas which could potentially emit dust. These measures would be included in the CoCP. With these and other mitigation measures in place, the construction activities are not predicted to have any significant effects on the environment or receptors.

4.1.13 Whilst there will be additional traffic associated with the construction of the Proposed Development, this is unlikely to lead to significant air quality effects.

4.1.14 The potential for odour effects from the operation of REP has been considered to be not significant. Waste would be delivered in sealed containers and the Energy Recovery Facility would operate under ‘negative pressure’ therefore removing any odour from the outflow of air. Similar measures are in place at the RRRF operated by Cory and no odour complaints have been received since it became operational in 2011.

4.1.15 The main air quality effects from the operation of REP will be associated with emissions from the Energy Recovery Facility. Predicted emissions from the Energy Recovery Facility have been subject to mathematical computer modelling simulating how air pollutants disperse in the atmosphere, assuming for this assessment that the buildings on site are the largest size (based on the reasonable worst case), and the emissions stack is the smallest that is envisaged to be necessary to disperse emissions. These assumptions will lead to worst case predictions of the maximum ground level pollutant concentrations resulting from the Energy Recovery Facility. Emissions from the separate combustion process are outlined below.

4.1.16 Modelling of emissions from the Energy Recovery Facility has predicted that industry assessment thresholds (above which significant effects could occur) would not be exceeded, and there will be **no significant effects** on human health. In addition, emissions from the Energy Recovery Facility are not predicted to have a significant effect on ecological sites. The effects of emissions from the Energy Recovery Facility have also been considered in conjunction with, as part of the baseline, emissions from the RRRF and Crossness Sewage Sludge Incinerator, and no exceedances of relevant assessment levels have been predicted.

4.1.17 Modelling of emissions from the combustion of biogas and from the Anaerobic Digestion facility predict that associated effects are restricted to the immediate vicinity of REP. There are not predicted to be any significant effects from the emissions from the Anaerobic Digestion facility.

4.1.18 Waste may be delivered to REP by river or road and an assessment has been undertaken of the potential effects of using either option for the transport of waste. The transport of waste is not predicted to give rise to significant effects on air quality.

4.1.19 No significant cumulative effects are predicted to arise as a result of the Proposed Development in conjunction with other developments which would be under construction or operation at the same time as the Proposed Development.

Noise and Vibration

4.1.20 The potential effects from noise and vibration that may result from the construction, operation and decommissioning of the Proposed Development have been assessed and are presented in **Chapter 8** of the ES.

4.1.21 The nearest noise sensitive receptors have been identified and agreed with the local Environmental Health Officer. They include residential properties to the south of the Proposed Development such as Hackney House apartments, Jutland House apartments and dwellings along St. Thomas Road.

4.1.22 An assessment of the noise and vibration effects associated with the construction and decommissioning of REP has been undertaken assuming that all construction plant would be operating at the same time. This provides a

conservative assessment. It has also assumed that the CoCP would be in place which would set out best practice construction techniques to minimise noise.

4.1.23 The assessment has concluded that effects at the closest dwellings are Negligible and not significant, owing to embedded mitigation measures and distance (minimum of approximately 750 m) from noise generating activities.

4.1.24 Similarly, effects from the construction of the Electrical Connection are considered to be **Negligible** and not significant due to mitigation measures which would be applied.

4.1.25 The assessment of operational noise from REP (taking into account the existing noise conditions around REP through survey work agreed with the local Environmental Health Officer), is based on noise generated from plant operating at maximum levels and continuously over a 24 hour period. In addition, as outlined in the transport section above, this assessment uses a scenario where 100% of waste is delivered to REP by road. This is considered to provide a conservative and reasonable worst case assessment.

4.1.26 The noise effects from the operation of REP, based on computer modelling, have been calculated to be below the background levels at the nearest sensitive receptors for both the daytime and night-time. The effect is therefore considered to be **Negligible** and not significant.

4.1.27 No significant cumulative effects are predicted to arise on noise sensitive receptors as a result of the Proposed Development in conjunction with other developments which would be under construction or operation at the same time as the Proposed Development.

Townscape and Visual Impact Assessment

4.1.28 The effects from the Proposed Development on townscape (including townscape features and character) and people's views and visual amenity have been assessed. Effects could occur from construction activities (e.g. ground clearance, use of any large cranes and mobile construction plant), decommissioning (e.g. any potential dismantling of structures, restoring land), as well as during operation (e.g. the stack and the Main REP building).

4.1.29 The area surrounding the Proposed Development has a history of industrial and marine engineering as well as transport infrastructure. This is shown in from the mixed age of buildings in the area, e.g. the Crossness Conservation Area contains public health engineering structures from the Victorian period. There are also modern commercial and industrial buildings together with the sewage treatment plant nearby.

4.1.30 The areas immediately surrounding the REP site, on both the northern and southern banks of the River Thames, are mainly industrial areas with relatively tall structures, including wind turbines on the northern side of the River Thames and the south near Crossness, as well as large shed-like buildings and tall stacks in the area.

4.1.31 The surrounding land is generally flat and open alongside the River Thames corridor, with the long distance Thames Path and National Cycle Route 1 following the river's edge.

4.1.32 Potential visual receptors include users of Public Rights of Way, cycle routes, open spaces and parks. Further visual receptors include people using the River Thames, road and rail network and people visiting, living or working within the study area.

4.1.33 The findings of the assessment are based on professional judgement, experience from similar projects as well as accepted industry guidance. The assessment assumes for this topic that the Proposed Development would have a maximum stack height of 113 m AOD, and the maximum building height will be 65 m AOD, which provide the basis for assessing a reasonable worst-case scenario.

4.1.34 The assessment shows that the construction of REP could give rise to temporary (**Moderate**) significant effects on views within 1 km of the stack, and on the townscape character of the REP site itself.

4.1.35 During operation there is the potential that the Proposed Development could result in (**Moderate**) significant effects to views within 1 km of the stack, as well as (**Moderate**) significant townscape effects on Crossness Conservation Area; the character, and appearance of the Site; and on the landscape of Crossness Local Nature Reserve marshland adjacent to the Energy Park as well as scrubland habitats on the REP site itself. This is largely due to the introduction of new buildings to a site which is currently undeveloped. Additional combined or incremental cumulative visual effects from 'Other Developments' are mostly of a **Minor** significance and are therefore not significant. However, there are adverse cumulative incremental visual effects of a **Moderate** level of significance in viewpoints close to the site.

4.1.36 The design process will be progressed in accordance with Design Principles (**Document Reference 7.4**), including design development of colours and materials in context to the surroundings and in line with Context Colour Palettes

Historic Environment

4.1.37 The effects from the construction, decommissioning and operation of the Proposed Development on surrounding archaeology and cultural heritage have been assessed in **Chapter 10** of the ES, including the potential effects on below ground archaeological remains, geoarchaeological deposits (archaeological soils and sediments) at the REP site and on the settings of designated heritage assets (such as listed buildings).

4.1.38 There are several designated and built heritage assets in the vicinity of the REP site including: the Crossness Conservation Area, the Grade I listed Crossness Pumping Station, two Grade II listed workshops at Crossness Pumping Station, a locally listed engine house at Crossness Sewage Treatment Work, the Grade

II listed jetty at Dagenham Dock and the scheduled and grade II listed Lesnes Abbey, approximately 1.5 km south-west of the study site.

4.1.39 The findings of the assessment are presented in **Chapter 10** of the ES and the assessment is undertaken in accordance with relevant and up to date industry guidance, which identify good practice in the assessment process.

4.1.40 The assessment of the construction and decommissioning phases of the Proposed Development considers the potential for the removal of non-designated heritage assets of local significance, and assumes a depth of approximately 1.2 m for the Electrical Connection trench except where there is a potential for some localised areas of deeper excavation as required. The potential effect of the Proposed Development during construction and decommissioning on the historic environment is considered to be **Negligible** and not significant.

4.1.41 The assessment of operational effects from the Energy Park assume the same heights for the built form of the Proposed Development as outlined for the Townscape and Visual Impact assessment, providing the basis for assessing a reasonable worst-case scenario.

4.1.42 Taking the maximum stack height into account, the Proposed Development, when operational, is considered to result in **Negligible** and not significant effects.

4.1.43 No significant cumulative effects are predicted to arise on heritage receptors as a result of the Proposed Development in conjunction with other developments which would be under construction or operation at the same time as the Proposed Development.

Terrestrial Biodiversity

4.1.44 An assessment of likely effects upon terrestrial biodiversity from the construction, and operation of the Proposed Development is presented in **Chapter 11** of the ES. The Proposed Development has the potential to affect terrestrial biodiversity receptors during either site clearance, construction, and/or operation from: habitat loss; disturbance; dust; surface water drainage; lighting; and effects as a result of emissions from the stack being deposited on biodiversity receptors.

4.1.45 One internationally designated site, Epping Forest Special Area of Conservation (SAC), is within 15 km of the proposed stack location. 14 national and international statutory designated sites were identified within 15 km of the REP site which are designated for biological interest.

4.1.46 Three Local Nature Reserves (LNR), 38 Sites of Importance for Nature Conservation (SINCs), two Local Wildlife Sites (LWS) and one Roadside Nature Reserve (RsNR) have been identified within 2 km of REP.

4.1.47 The habitats potentially directly affected by the Proposed Development are mainly characterised by artificial habitats including bare ground, areas of tarmac and hard-standing. However, semi-natural and created habitats are also present within the REP site and nearby River Thames and coastal grazing marsh (within Crossness Local Nature Reserve immediately adjacent to the REP site). These habitats have the potential to support protected or otherwise notable species. Surveys for the following species have been carried out: breeding and wintering birds, bats, terrestrial invertebrates, reptiles and water voles.

4.1.48 A full assessment of effects from construction and operation of REP has been undertaken against the ecological baseline established through ecological survey. This takes into account the results of modelling of emissions from the ERF stack during operation, noise monitoring and modelling, and other predicted environmental changes such as pollution of surface water and shading which have the potential to have ecological effects.

4.1.49 The assessment also includes embedded mitigation measures, as described in Section 3 of this document. These include the commitment to a minimum stack height, use of a CoCP to limit potential impacts during construction, and adherence to a lighting strategy, surface water management strategy and an Outline Biodiversity and Landscape Mitigation Strategy.

4.1.50 Considering effects during construction, residual adverse effects to reptiles, significant at a local scale, (equivalent to a Minor effect) have been identified. These effects relate to the construction of the Electrical Connection route within the Joyce Green Quarry site. It may be possible to avoid this impact by restricting the extent of construction footprint in this area, or by choosing an alternative route but the residual effect is based on the reasonable worst-case parameters defined for the assessment.

4.1.51 No other residual effects have been identified on any habitats, designated sites or protected species.

4.1.52 No significant cumulative effects on ecological receptors are predicted to arise as a result of the Proposed Development in conjunction with other developments which would be under construction or operation at the same time as the Proposed Development.

Hydrology, Flood Risk and Water Resources

4.1.53 An assessment of likely effects upon hydrology, flood risk and water resources, from the construction operation and decommissioning phases of the Proposed Development has been undertaken and the findings are presented in **Chapter 12** of the ES.

4.1.54 The REP site is located on the south bank of the River Thames and falls within Flood Zone 3 (high probability of flooding). However, the REP site already benefits from flood defences designed to protect against a flood event with a probability of occurring once every 1,000 years.

4.1.55 Crossness Local Nature Reserve is located immediately to the south of the REP site and has a number of surface water features, including the Great Breach Dyke, which receives surface water run-off from the Abbey Wood area to the south and ultimately outfalls to the River Thames.

4.1.56 The Electrical Connection Route extends to the south-east of the REP site and crosses over the River Cray and the River Darent approximately 3 km and 2 km to the west of the connection point at the Littlebrook substation respectively. The Electrical Connection route also benefits from the same level of flood protection as above.

4.1.57 Potential effects during the construction phase include changes to the surface water drainage network and the contamination of both surface water and groundwater, including increased volumes of silt in watercourses. In addition, works in close proximity to the River Thames tidal flood defences have the potential to affect the stability of the defence embankment and therefore the structural integrity of the defences.

4.1.58 Potential effects during the operational phase include an increase in the impermeable area within the catchment of the Great Breach Dyke which, in the absence of mitigation, has the potential to increase surface water run-off to the dyke and associated drains/tributaries. This has the potential to increase flood risk to existing development/infrastructure/third party assets/land in the vicinity and downstream of the REP site. There is also the potential for the contamination of surface water entering the Great Breach Dyke and associated watercourses as a result of silts and chemicals being washed off areas of hardstanding within the REP site. The assessment notes that during the operational phase, the Electrical Connection, comprising a buried cable, will not give rise to effects upon hydrology, flood risk and water resources.

4.1.59 However, embedded mitigation measures would be included to limit these effects including:

- Best practice working methods to prevent both water pollution and adverse impacts upon the surface water drainage regime;
- Appropriate storage of oil and chemical tanks;
- Any surface water potentially contaminated by hydrocarbons would be passed through oil/grit interceptors prior to discharge;
- Precautions would be in place to prevent silt laden run-off, arisings or chemicals entering watercourses; and
- Where required, cables would be laid at a sufficient depth beneath watercourses to avoid causing damage to the integrity of embankments during installation.

4.1.60 Based upon the assessment of likely effects upon hydrology, flood risk and water resources, it is concluded that effects from construction,

decommissioning, and operation would be localised, temporary and **Negligible** which would not be significant.

4.1.61 A Flood Risk Assessment (Document Reference 5.2) has also been prepared to support the Development Consent Order Application and the results are summarised in **Chapter 12** of the ES. No significant effects from flooding have been identified during operation of the Proposed Development to REP itself or to other receptors.

4.1.62 No significant cumulative effects are predicted to arise as a result of the Proposed Development in conjunction with other developments which would be under construction or operation at the same time as the Proposed Development.

Ground Conditions

4.1.63 An assessment of likely effects upon ground conditions from the construction, operation and decommissioning phases of the Proposed Development has been undertaken and is presented in **Chapter 13** of the ES.

4.1.64 Current land uses include structures and buildings associated with the existing RRRF, wetland and wasteland habitat, storage and car parking.

4.1.65 The assessment has involved a study of available desk based information on land within and surrounding the Proposed Development, as well as a review of environmental datasets, responses made by regulatory authorities (Environment Agency and local Environmental Health Officer) to enquiries and a walkover survey.

4.1.66 A site investigation using boreholes and laboratory analysis of soil and ground water samples has also been undertaken to more accurately characterise the site conditions

4.1.67 Historically the site was developed with various historical industrial uses including a manure works, a borax processing works and a Fish Guano Works.

4.1.68 Available geological literature indicates that the anticipated sub-surface layers underneath the REP site are likely to be ‘Alluvium’ over ‘River Terrace Deposits’ and ‘London Clay’. However, a review of historical ground investigation reports indicates that the natural sub-surface layers are likely to be overlaid by made ground (not natural) of varying thickness.

4.1.69 A number of potential ground instability conditions have been identified which are associated with the natural geology and relate to the potential presence of historical in ground obstructions, variable consistency of made ground and compressible clays and peat.

4.1.70 The following potential contaminants have been identified at the REP site and temporary construction areas:

- Hydrocarbons (TPH and PAH);

- Asbestos;
- Ground gases (methane, carbon dioxide, depleted oxygen levels); and
- Boron.

4.1.71 The receptors identified within this assessment include human health, surface water, ground water, property and ecological systems (further explanation of these receptors is available in **Chapter 13** of the ES).

4.1.72 Provided relevant investigation, monitoring and assessment work is undertaken prior to commencement of construction, the appropriate mitigation measures would be identified and included in the construction of the Proposed Development. Additionally, provided the protocols and specific personal protection measures are included in the final Code of Construction Practice (CoCP), the potential effects on all sensitive receptors is anticipated to be **Negligible/no effects**, neither of which are significant.

4.1.73 No significant cumulative effects are predicted to arise as a result of the Proposed Development in conjunction with other developments which would be under construction or operation at the same time as the Proposed Development.

Socio Economic

4.1.74 An assessment of socioeconomic effects resulting from the proposed development is presented in **Chapter 14** of the ES which identifies potential effects associated with the construction, operation and decommissioning of the Proposed Development upon the labour market and community infrastructure.

4.1.75 The study area for the assessment is based on a 60-minute drive time catchment from the REP site. This is considered to reflect the upper limit that individuals would typically commute on a daily basis. The assessment follows UK Government guidelines and best practice guidance.

4.1.76 The socio-economic profile of the study area identifies the area as having a readily available skilled labour, increasing population, above average economic activity and high educational attainment. The community infrastructure baseline identifies a number of facilities in proximity to the Proposed Development.

4.1.77 The assessment of likely effects identifies that the increase in construction jobs arising from the Proposed Development, as well as the increase in operational jobs required, has Slight/Moderate beneficial effects on the labour market.

4.1.78 In terms of community infrastructure, it is concluded that effects associated with both construction and decommissioning activities would be **Negligible** and not significant. Similarly, effects arising from the operational phase would be **Negligible** and not significant.

4.1.79 The Proposed Development would have Slight/Moderate beneficial effects on the socio-economic status of the area though both employment creation and capital expenditure and worker spending in the local economy.

4.1.80 During operation, there would be the equivalent of approximately 75 permanent jobs created. This is anticipated to bring Slight/Moderate beneficial effects to the area in the vicinity of the REP site through the generation of jobs, supply chain linkages and employee spending.

4.1.81 Direct temporary construction employment would contribute approximately £93.3 million gross value added (GVA) to the economy and net additional direct operational employment would contribute approximately £7.2m GVA to the economy.

4.1.82 No significant cumulative effects are predicted to arise as a result of the Proposed Development in conjunction with other developments which would be under construction or operation at the same time as the Proposed Development.

Other Considerations

4.1.83 The Proposed Development may give rise to other environmental effects over and above those described above, including Climate, Lighting, Human Health, Waste and Aviation, for which specific assessments were not required as agreed through the Scoping Opinion provided by the Planning Inspectorate.

4.1.84 Nevertheless, given that the Proposed Development may give rise to some of these effects, they have been considered in the ES (**Chapter 15**).

Climate Change

4.1.85 The effects of climate on and from the Proposed Development have been considered within topic chapters where relevant (e.g. **Chapter 9** (Biodiversity) and **Chapter 12** (Hydrology, Flood Risk and Water Resources)). No significant effects have been reported.

4.1.86 However, a qualitative assessment of greenhouse gas emissions is submitted with the Development Consent Order application which concludes that greenhouse gas emission from the construction of REP is minimal, and has positive impacts in terms of recovered energy from waste and generation of renewable energy.

4.1.87 It is proposed to deliver the majority of waste to REP by barge from Waste Transfer Stations (WTS) along the River Thames and the remainder would be delivered by road. Waterborne freight is relatively energy efficient when compared to Heavy Goods Vehicles (HGV)[1], and therefore reduces GHG emissions associated with the operation of REP

Lighting

4.1.88 Lighting will be required both temporarily during the construction phase and permanently during the operational phase of REP. During construction, temporary lighting will be used to provide a safe working site during the hours

[1] Guidelines for Measuring and Managing CO2 Emission from Freight Transport Operations (Cefic and ECTA 2011)

of darkness, however no significant effects from light intrusion, sky glow or glare are anticipated.

4.1.89 During operation, limited external artificial lighting will be used to ensure safe and secure use of the REP site. A detailed external artificial lighting design will be developed in accordance with relevant legislation and guidance in order to minimise light intrusion, sky glow or glare.

4.1.90 Potential effects of lighting on ecological receptors are considered in **Chapter 11**.

Waste

4.1.91 REP will manage large quantities of waste for recovery and recycling. However, the facility itself will generate very little waste. The majority of waste and outputs from the processes will be recycled and recovered through existing tried and tested procedures. The expected management routes are outlined in Appendix K.4 of **Chapter 15.**

Aviation

4.1.92 Consideration of effects on aviation resulting from the Proposed Development is provided in **Chapter 15.** Effects to civil or military aviation or defence interests are not anticipated to be significant.

Human Health

4.1.93 Human health is considered through a Health Impact Assessment which is included as Appendix K.1 to **Chapter 15** of the ES. This, along with the Air Quality Assessment, assesses the effects of the Proposed Development on human health. The assessments have not identified any significant negative effects to human health, and identified that there may be some long term positive effect on health outcomes associated with security of energy supply and the potential for connecting to a local district heating network dependent on the pricing structure of the energy and the affordability to those on low incomes.

In-Combination Effects

4.1.94 Individual environmental effects from the same project combining to result in a different/more significant effect on the same receptor can occur, these are referred to as in-combination effects. For example, an individual receptor (i.e. an ecological species) could be affected by noise impacts from the operation of REP as well as impacts to air quality from operational emissions.

4.1.95 The ES has identified (in **Chapter 16**) instances where an individual receptor is affected by different impacts, and concluded (as a result of mitigation measures) that the combination of these effects does not result in new or different significant effects above those identified within the ES.

Cumulative Effects

4.1.96 The ES has provided a list of other development which has been taken into consideration for the assessment of cumulative effects. This list has been prepared and consulted on, which has informed assessments within the Environmental Statement. The list is included as Appendix A.4.

4.1.97 No significant adverse cumulative effects have been identified.

5 Alternatives Considered

5.1.1 The REP site is considered highly suitable for the Proposed Development. Based on the following advantages, alternative sites were not considered:

- REP's proven and deliverable riverside location in London and easy access to the River Thames network beyond;
- Use of the existing operational jetty and road access;
- Location within an existing urbanised/industrialised environment;
- Adequate footprint within the REP site for the development;
- Ability to connect to the local electricity distribution network;
- Located at what is considered to be an appropriate distance from existing residential receptors;
- Lack of conflict with statutory environmental designations (noting that although the REP site falls within a flood zone, it does however benefit from flood defences);
- Benefits from proximity to potential district heat network users; and
- The REP site is previously developed land.

Alternative Layouts

5.1.2 Alternative layouts of the Proposed Development were considered. Consideration was given to the requirements of the proposed energy generation technology, the space available within the REP site, and the requirement to ensure the adjacent RRRF remained fully operational.

5.1.3 Four layouts were considered, two on a north to south orientation and two on an east to west orientation (see **Chapter 5** of the ES for further details). It was identified that a north to south orientation opened up views to and from the River Thames, and would enable efficient operations within the site.

5.1.4 It was further identified that orientating the Proposed Development such that the stack (and thus the narrower end of the Main REP Building) was located at the northern end would allow more opportunity for landscaping and would maximise the opportunity for Solar Photovoltaic Panels.

Use of the Marine Environment

5.1.5 During early stages of the project design process, it was considered whether temporary works within the River Thames (temporary causeway or temporary cranes) may be required to enable construction of the Proposed Development.

5.1.6 As the project design evolved it was recognised that no intrusive works in the marine environment were required. Only the existing jetty and mooring points would be utilised. This prevents the need to install a temporary causeway; lift components over a public footpath and flood defence wall; or the need for any localised dredging.

Electrical Connection route

5.1.7 Two options for connecting REP to the electricity distribution network were initially considered, routing to either Renwick Road, Barking (north west of the REP site, through an existing utility tunnel under the River Thames) or to the Littlebrook substation in Dartford (south east of the REP site).

5.1.8 Through working with UK Power Networks (UKPN), the Barking connection option was discounted due to insufficient space within an existing utility tunnel under the River Thames, therefore the Littlebrook connection was progressed. Further consideration by UKPN has identified alternative routing options for connecting to the Littlebrook substation. Selection of a final single Electrical Connection route will be confirmed in partnership with UKPN, and it is the Applicant's intention that only a single route to the Littlebrook will ultimately be put forward for approval as part of the final REP Development Consent Order. For the purpose of the assessments presented in the ES, all route options to Littlebrook at Dartford have been considered.

Alternative Laydown Areas

5.1.9 There is insufficient space within the REP site to accommodate all temporary laydown, fabrication, welfare and parking provision that is required during the construction phase. A desk top exercise was undertaken to identify other sites which would be suitable to use.

5.1.10 Search criteria included overall area, distance from the REP site, distance to the A2016, and avoiding areas of high density housing. This identified nine sites, three of which were considered advantageous over the others (see **Chapter 5** of the ES for further information). Due to proximity to the REP site and existing relationship with landowners, the land west of Norman Road was progressed.

5.1.11 Further information regarding the alternatives outlined above is available in **Chapter 5** of the ES.

6 Further Information

6.1.1 In accordance with Regulation 20 of the Infrastructure EIA Regulations 2017 copies of the ES, this ES Non-Technical Summary and the Figures may be examined during the pre-examination and examination periods at the locations outlined in Table 3 below:

Table 3: Inspection venues for consultation documents

Venue name and location	Opening times	
Upper Belvedere Community Library Woolwich Road Upper Belvedere DA17 5EQ	Monday Tuesday Wednesday Thursday Friday Saturday Sunday	09.30-13.00 09.30-17.30 13.45-17.30 CLOSED 09.30-17.30 09.30-14.30 CLOSED
London Borough of Bexley Civic Offices 2 Watling Street Bexleyheath Kent DA6 7AT	Monday Tuesday Wednesday Thursday Friday Saturday Sunday	09.00-17.00 09.00-17.00 09.00-17.00 09.00-17.00 09.00-17.00 CLOSED CLOSED
Dartford Library Central Park Market Street Dartford Kent DA1 1EU	Monday Tuesday Wednesday Thursday Friday Saturday Sunday	08.30-18.00 08.30-18.00 08.30-18.00 08.30-20.00 08.30-18.00 09.00-17.00 CLOSED

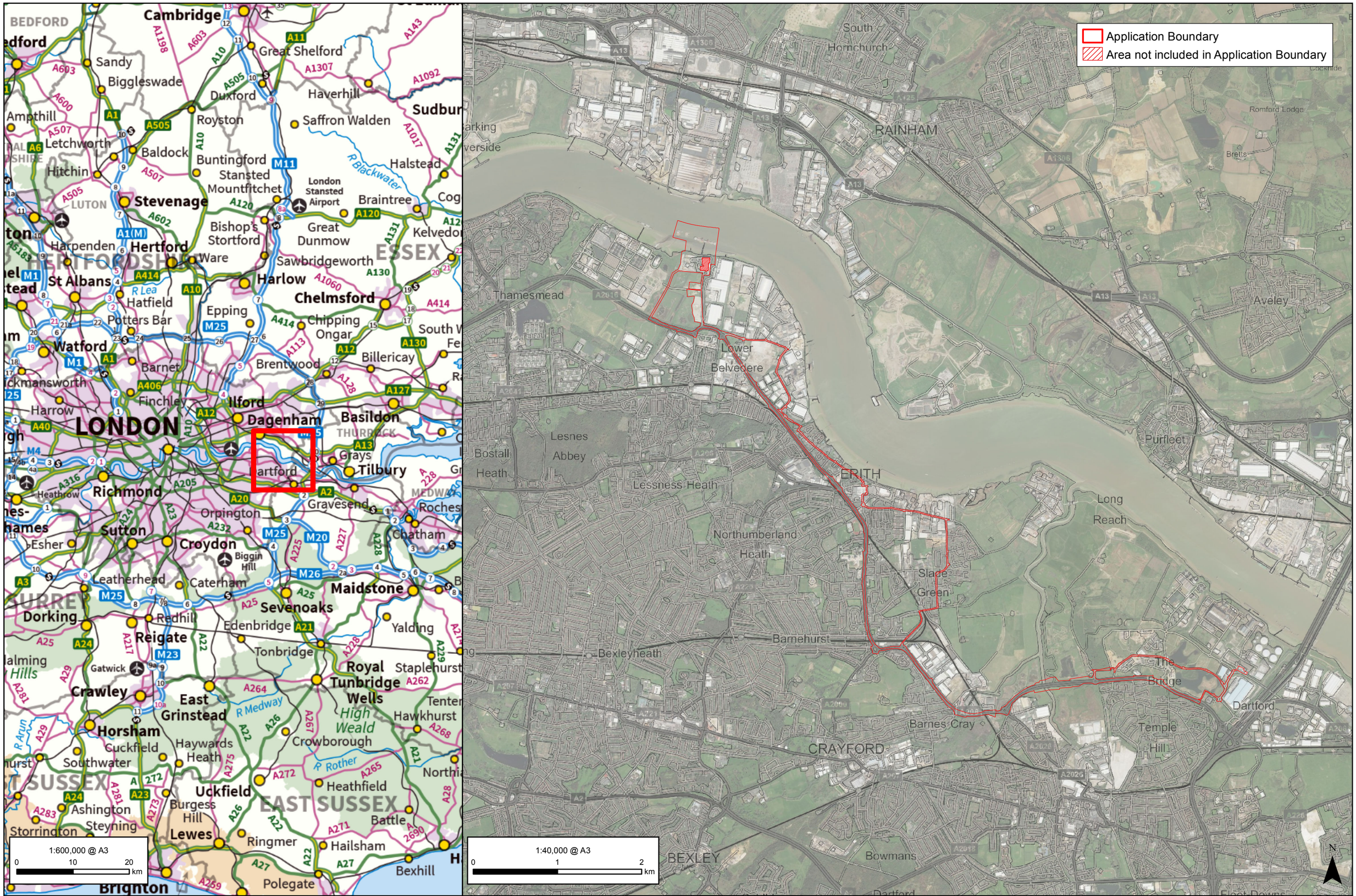
6.1.2 The opening times provided in Table 3 are indicative and subject to the venue's operating procedures.

6.1.3 The technical appendices to the ES will only be available electronically at the council offices and libraries.

6.1.4 All consultation documents are available on the REP website: http://www.riversideenergypark.com.

7 Figures

- Figure 1 – Site Location Plan
- Figure 2 – Application Boundary



RIVERSIDE ENERGY PARK

Contains OS data © Crown Copyright and database right 2018
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Contains Ordnance Survey data © Crown copyright and database right [2018]

pba peterbrett

Client: CORY RIVERSIDE ENERGY

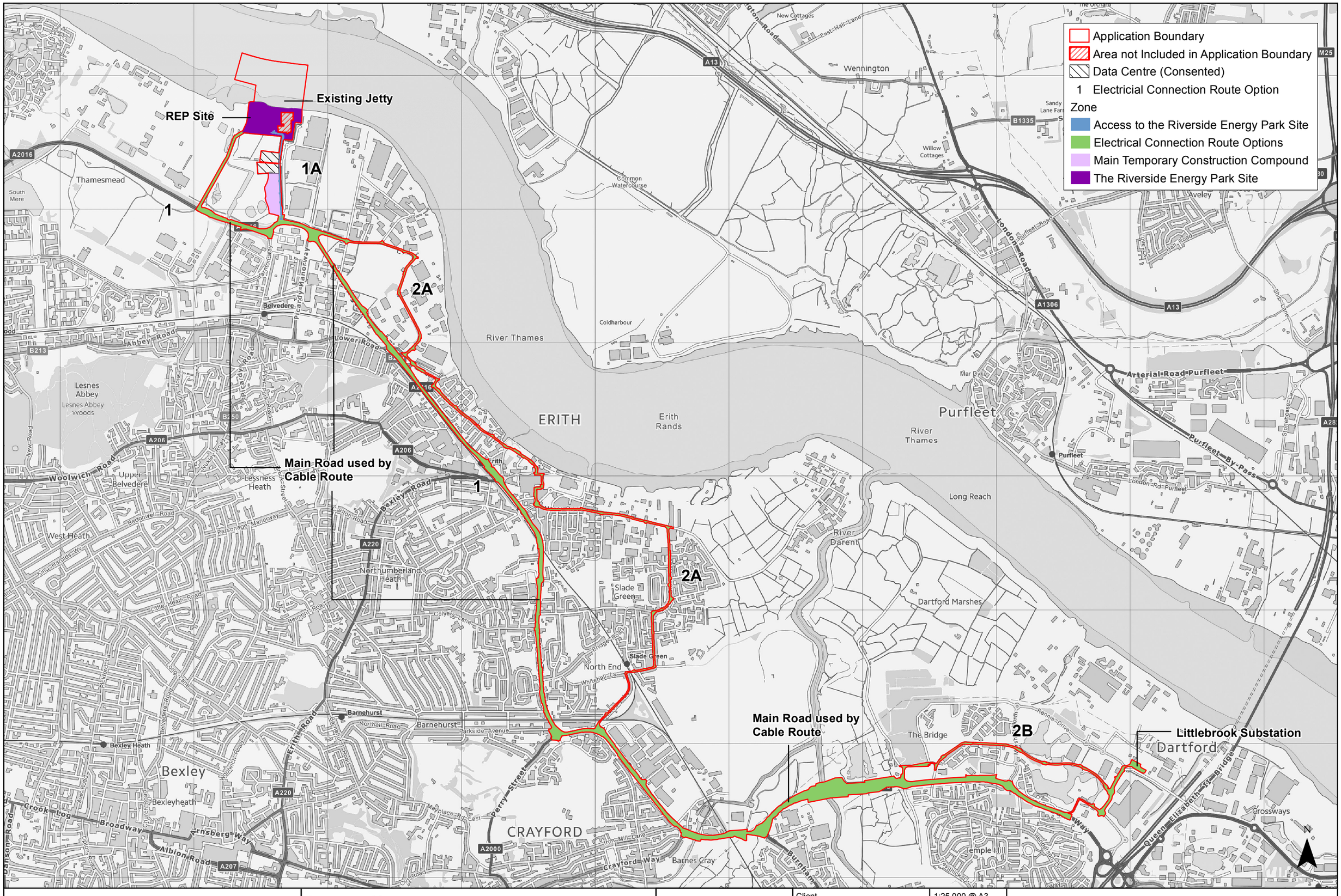
08/11/18

Drawn: CM

Checked: SC

Site Location Plan

Figure 1 | Rev 0



RIVERSIDE ENERGY PARK

0 0.5 1 km

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Based on Babcock/EDF plan - RRRL Cable Route Landowners - 2-01-2010 - Drawing NO. Cable Route Plan

pba peterbrett

Client: CORY RIVERSIDE ENERGY

1:25,000 @ A3	
08/11/18	
Drawn: HG/CM	
Checked: JM	

Application Boundary and Assessment Areas

Figure 2 | Rev 0

Document Path: Z:\Projects\42166\02_mxd\ESPlans\42166_ApplicationBoundary_AssessmentBoundary.mxd