

**THE NATIONAL GRID ELECTRICITY TRANSMISSION PLC (GRAIN TO TILBURY)
COMPULSORY PURCHASE ORDER 2024**

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**TOWN AND COUNTRY PLANNING ACT 1990
(as amended) Town and Country Planning
(Development Management Procedure) (England) Order 2015**

Applicant: National Grid
Agent: Kate McGregor
National Grid

Application Ref: 23/01502/FUL
Date Accepted: 24th January 2024

Date of Decision: 24th January 2025

Grant of Full Planning Permission

Development at: Land To The South Of National Grids Electrical Substation For New Cable Tunnel Fort Road Tilbury Essex

Proposal: Proposed construction a new cable tunnel beneath the River Thames between Tilbury and Gravesend to provide additional transmission capacity. Above-ground infrastructure in the form of a new Cable Sealing End compound and a new head house building along with associated electricity infrastructure, access, parking, boundary treatment and two overhead gantry structures for future overhead lines. Temporary compound for the duration of the project to provide parking, staff welfare facilities, delivery vehicle parking, and equipment and machinery storage, including boundary treatment and lighting.

Planning permission is granted in accordance with the approved plans and specifications and subject to the condition(s) set out below:

TIME LIMIT

- 1 The development hereby permitted shall be begun before the expiration of three years from the date of this permission.

Reason: To comply with Section 91(1) of The Town & Country Planning Act 1990 as amended by Section 51 of the Planning and Compulsory Purchase Act 2004.

APPROVED PLANS

- 2 The development hereby permitted shall be carried out in accordance with the following approved plans:

Plan Number(s):		
Reference	Name	Received

PDD-100116-LAY-049 P01	Tilbury Headhouse – Planning – Proposed Roof Floor Plan	15th January 2024
PDD-100116-LAY-047 P01	Tilbury Headhouse – Planning – Proposed Ground Floor Plan	15th January 2024
PDD-100116-LAY-180 REV 2	Tilbury Headhouse – Planning – Proposed Site Sections	22nd December 2023
PDD-100116-ELE-003 REV 1	Tilbury Headhouse – Planning – Proposed Elevations	22nd December 2023
PDD-100116-LAY-050 REV 1	Tilbury Headhouse – Planning – Outline Sections	22nd December 2023
TKRE/60677311	Site Location Plan – Tilbury (Revision 1)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1) (Section 1)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1) (Section 2)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1) (Section 3)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1) (Section 4)	12th August 2024
PDD-100116-LAY-046 REV 2	Block Plan	22nd December 2023

Reason: For the avoidance of doubt and to ensure that the development is carried out in accordance with the details as approved with regard to policies PMD1 and PMD2 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

DETAILS OF MATERIALS TO BE SUBMITTED

- Notwithstanding the information on the approved plans, no development of permanent structures shall commence above ground level until written details or samples of all materials to be used in the construction of the external surfaces of the development hereby permitted have been submitted to and approved in writing by the local planning authority. The development shall be carried out using the materials and details as approved.

Reason: In the interests of visual amenity and to ensure that the proposed development is integrated with its surroundings in accordance with policy PMD2 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

DETAILS OF BOUNDARY SCREENING

- 4 No above ground development of permanent structures shall take place until details of the siting, height, design and materials of the treatment of all boundaries including gates, fences, walls, railings and piers have been submitted to and approved in writing by the local planning authority. The screening as approved shall be completed prior to the first use of the development and shall be retained and maintained as such thereafter.

Reason: In the interests of the visual amenity of the area and to ensure that the proposed development, in the Green Belt, does not have a detrimental effect on the environment as required by policies PMD1, PMD2 and policy PMD6 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

CONSTRUCTION HOURS

- 5 No demolition or construction works in connection with the development shall take place on the site at any time on any Sunday or Bank / Public Holiday, nor on any other day except between the following times:
Monday to Sunday 0800 - 1900 hours

Unless in association with an emergency or the prior written approval of the local planning authority has been obtained. If impact piling is required, these operations shall only take place between the hours of 0900 - 1800 hours on weekdays.

Notwithstanding the above, upon completion of the shaft construction phase the tunnelling phase shall be permitted to be constructed up to 24 hours per day, seven days per week.

Reason: In the interest of nearby amenity and nearby ecology and biodiversity in accordance with policies PMD1 and PMD7 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN [CEMP]

- 6 No demolition or construction works shall commence until a Construction Environmental Management Plan [CEMP] has been submitted to and approved in writing by the local planning authority in writing. The CEMP should contain or address the following matters:
- (a) Water management including wastewater and surface water drainage;
 - (b) Location and size of on-site compounds including the design layout of any proposed temporary artificial lighting systems;
 - (c) Details of the method for the control of noise with reference to BS5228 together with a monitoring regime;
 - (d) Measures to reduce vibration and mitigate the impacts on sensitive receptors together with a monitoring regime;
 - (e) Measures to reduce dust with air quality mitigation and monitoring;
 - (f) A method statement for the prevention of contamination of soil and groundwater and air pollution, including the storage of fuel, chemicals and

- other hazardous materials;
- (g) Details of a procedure to deal with any unforeseen contamination, should it be encountered during development;
- (h) A Site Waste Management Plan,
- (i) Details of method to control windblown dust;
- (j) Details of security measures including lighting layout and design;
- (k) Details of the duration of the tunnel construction and phasing over the lifecycle of the project
- (l) Details of the contractor appointed to undertake the construction works, including contact details;
- (m) Contact details for site managers including information about community liaison including a method for handling and monitoring complaints;
- (n) Contact details for Ecological Clerk of Works (ECoW) appointed for the duration of the development ensuring pre-commencement checks are completed;

Works on site shall only take place in accordance with the approved CEMP.

Reason: In order to minimise any adverse impacts arising from the construction of the development and in the interests of ecology and biodiversity, the environment, and safety and amenity in accordance with policies PMD1 and PMD2 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

CONTAMINATED LAND IN ACCORDANCE WITH APPROVED DETAILS

- 7 The development hereby approved shall be carried out in accordance with the Land Contamination Preliminary Risk Assessment Tilbury document submitted and approved through this planning permission, and shall be used to inform the required site investigation and associated risk assessment in accordance with the requirements of conditions 8 and 9.

Reason: To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors in accordance with policies PMD1 and PMD7 of the adopted Thurrock Core Strategy and Policies for the Management of Development [2015].

SITE REMEDIATION SCHEME

- 8 Where identified as necessary in accordance with the requirements of condition 7, no development shall commence, other than that required to carry out remediation, until a detailed remediation scheme to bring the site to a condition suitable for the intended use by removing unacceptable risks to human health, buildings and other property and the natural and historical environment has been submitted to and approved in writing by the local planning authority. The scheme must include all works to be undertaken, proposed remediation objectives and remediation criteria, timetable of works and site management procedures. The scheme must ensure that the site will

not qualify as contaminated land under Part 2A of the Environmental Protection Act 1990 in relation to the intended use of the land after remediation. The development hereby permitted shall not commence until the measures set out in the approved scheme have been implemented. The Local Planning Authority must be given two weeks written notification of commencement of the remediation scheme works.

Reason: To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors in accordance with policy PMD1 of the adopted Thurrock Core Strategy and Policies for the Management of Development [2015].

VERIFICATION OR VALIDATION REPORT

- 9 Following completion of measures identified in the approved remediation scheme from Condition 8, verification or validation report that demonstrates the effectiveness of the remediation carried out shall be submitted to and approved in writing of the Local Planning Authority.

Reason: To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors in accordance with policy PMD1 of the adopted Thurrock Core Strategy and Policies for the Management of Development [2015].

IMPACT PILING

- 10 No impact piling shall take place without the applicant submitting an assessment of the impact of such works and a scheme of mitigation [including the hours and duration of works] and it being approved in writing by the Local Planning Authority. Development shall only take place in accordance with the agreed scheme and mitigation and the terms of any such approval.

Reason: To ensure that the development does not have an unduly detrimental effect on the amenities and enjoyment of residential properties or other commercial operators in the vicinity in accordance with Policy PMD1 of the adopted Thurrock Local Development Framework Core Strategy and Policies for the Management of Development [2015].

SURFACE WATER DRAINAGE - PERMANENT WORKS

- 11 Prior to operation, a surface water drainage scheme for the operation phase of the development, based on the submitted sustainable drainage strategy, shall be submitted to and approved in writing by the Local Planning Authority. Details shall include:

(a) Full details of all components of the proposed surface water drainage system

including dimensions, locations, gradients, invert levels, cover levels and relevant construction details.

- (b) Supporting calculations confirming compliance with the Non-statutory Standards for Sustainable Drainage, and confirmation of the agreed discharge rate (currently stated as 0.4 l/s however the potential risk of blockage based on this rate is noted), and the attenuation volumes to be provided.
- (c) Details of the maintenance arrangements relating to the proposed surface water drainage system, confirming who will be responsible for its maintenance and the maintenance regime to be implemented.
- (d) The surface water drainage system shall be implemented and maintained in accordance with the approved details thereafter.
- (e) Infiltration tests to be carried out in line with BRE 365 for the locations where SUDS are proposed.

The surface water drainage scheme shall be constructed and completed in accordance with the details as approved prior to the first operational use of the development hereby permitted.

Reason: To ensure the incorporation of an appropriate drainage scheme and to avoid pollution of the water environment and to minimise flood risk in accordance with policies PMD1 and PMD15 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015] and to ensure compliance with the National Planning Policy Framework and the Non-Statutory Technical Standards for Sustainable Drainage Systems, and to ensure the proposed development is safe from flooding and does not cause flooding elsewhere.

FLOOD WARNING AND EVACUATION PLAN [FWEP] - IN ACCORDANCE WITH THE APPROVED DETAILS

- 12 Prior to the commencement of the development hereby approved the requirements of the Flood Warning and Evacuation Plan [FWEP] dated December 2023 which forms part of this planning permission shall be implemented, shall be made available for inspection by all users of the site and shall be displayed in a visible location all times thereafter.

Reason: To ensure that adequate flood warning and evacuation measures are available for all users of the development in accordance with policy PMD15 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

FLOOD RISK ASSESSMENT

- 13 The measures contained within the Flood Risk Assessment, which forms part of this planning permission, shall be fully implemented and in place prior to the first operational use of the development and shall be retained and maintained as such thereafter.

Reason: To ensure that adequate flood protection measures are installed for the safety of the building and for the safety of all users of the development in accordance

with policy PMD15 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

CONSTRUCTION TRAFFIC MANAGEMENT PLAN

- 14 No demolition or construction works shall commence until a Construction Traffic Management Plan [CTMP] incorporating a Construction Worker Travel Plan [CWTP] has been submitted to and approved in writing by the local planning authority. The CTMP shall contain or address the following matters as a minimum;
- (a) Details of the contractor appointed to undertake the construction works, including contact details;
 - (b) Construction traffic routing;
 - (c) Construction traffic vehicle type and quantum of movements;
 - (d) Details of an indicative site layout shall be provided;
 - (e) Wheel washing and sheeting of vehicles transporting loose aggregates or similar materials on or off site,
 - (f) Details of construction access or temporary access;
 - (g) Details of temporary hardstanding;
 - (h) Details of temporary hoarding/ fencing;
 - (i) Road condition surveys before demolition and after construction is completed; with assurances that any degradation of existing surfaces will be remediated as part of the development proposals. Extents of road condition surveys to be agreed as part of this CEMP;
 - (j) Details of the duration of the tunnel construction and phasing over the lifecycle of the project;
 - (k) Details regarding worst-case assumptions for vehicles trips (employee and operational movements) including details of their distribution and assignment through the Thurrock Highway network during the sensitive weekday peak hours 0700-0900 and 1600-1800. These are to be presented as turning flow diagrams with suitable commentary;
 - (l) Details of any changes to vehicle trips or construction assumptions different to those presented at full planning application stage;
 - (m) Details regarding the location of the satellite offices;
 - (n) Measures to manage down the impact of construction traffic on the Thurrock Highway during peak hours;
 - (o) Measures to encourage sustainable and active transport journeys for employee movements;
 - (p) Details of any abnormal load vehicle movements to be specified and agreed in advance with Thurrock Highways;

Thereafter, all construction activity in respect of the consented development shall be undertaken in full accordance with an approved CTMP and CWTP.

Reason: In order to mitigate any adverse impacts arising from the construction of the development on the M25, A13 (part) and A1089 in accordance with DfT Circular 01/2022 and in the interest of highway efficiency, safety and amenity in accordance with policy PMD1 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

CONSTRUCTION WORKER TRAVEL PLAN

- 15 Prior to commencement of the development hereby permitted, a Construction Worker Travel Plan shall be submitted to and agreed in writing with the local planning authority. The Construction Worker Travel Plan shall include detailed and specific measures to reduce the number of journeys made by car to the site and shall include specific details of the operation and management of the proposed measures. The commitments explicitly stated in the Construction Worker Travel Plan shall be binding on the applicants or their successors in title. The measures shall be implemented upon the first operational use of the development hereby permitted and shall be permanently kept in place. Upon written request, the applicant or their successors in title shall provide the local planning authority with written details of how the agreed measures contained in the Travel Plan are being undertaken at any given time.

Reason: To reduce reliance on the use of private cars, in the interests of sustainability, highway safety and amenity in accordance with Policy PMD10 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

SPOIL REMOVAL

- 16 The spoil arising at the site by virtue of the development hereby approved shall only be removed from site and taken to a barge vessel where it will be transported along the river Thames to another site for disposal. No other means of spoil removal shall be used.

Reason: To minimise the impacts upon the highway network and in the interests of sustainable transport methods in accordance with Policies PMD10 and CSTP18 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

BARGE MOVEMENTS

- 17 Prior to the removal of any spoil from site, in conjunction with the requirements of condition 16, details of barge movements including dates, times and number of vessels shall be submitted to and agreed in writing with the local planning authority.

Reason: To minimise the impacts upon the highway network and in the interests of sustainable transport methods and to utilise the nearby port infrastructure in accordance with Policies PMD10 and CSTP18 of the adopted Thurrock LDF.

LANDSCAPE AND ENVIRONMENT MANAGEMENT PLAN (LEMP)

- 18 No development shall commence until a detailed landscape and environment management plan has been submitted to and approved in writing by the local planning authority in consultation with Natural England. In addition, to the details included within the Outline Landscape and Environment Management Plan submitted with the application the document shall also include the following:

- (a) Details of spoil type to be removed from site and location/s for its disposal;
- (b) Details of landscaping including planting species and planting schedule;
- (c) Mitigation strategy for Tall Fescue Planthopper;
- (d) Mitigation strategy for pollution prevention to protect designated sites;
- (e) Construction monitoring schedule for invertebrates to ensure the long term presence of notable species and habitats;
- (f) Post-construction monitoring schedule including the monitoring of invertebrates;
- (g) Detailed design information relating to the biodiverse brown roof, including structural details to ensure necessary substrates can be supported;
- (h) Details of any spoil being re-used across the site, particularly in the substrate of the brown roof
- (i) Details of the establishment maintenance (0-5 years), medium management (5-10 year) and outline the long term management that will be required, identifying who will be responsible for the long term management of the landscape and ecology features

During the tunnelling phase of the development the applicant shall undertake a review of the approved LEMP to consider whether there are opportunities for further ecological enhancements to the development which shall be submitted to and approved in writing by the local planning authority. If this review concludes there are reasonable further enhancements that can be implemented these enhancements shall be implemented as agreed.

The landscape and environment management plan shall be implemented in accordance with the details as approved and retained thereafter. The development shall then be carried out and maintained in accordance with these approved details.

Reason: To protect and improve the appearance of the site and the surrounding area in the interests of visual amenity and to protect the existing ecology of the area and to provide biodiversity enhancement opportunities, in accordance with policies PMD1, PMD2, PMD6 and PMD7 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

ARCHAEOLOGICAL TRIAL TRENCHING/ EXCAVATION/ MONITORING

- 19 No development or preliminary groundworks of any kind shall take place until a programme of archaeological investigation by trial trenching and excavation has been secured in accordance with a written scheme of investigation which has been submitted by the applicant and approved in writing by the local planning authority.

Reason: To ensure that investigation and recording of any remains takes place prior to commencement of development in accordance with Policy PMD4 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

VENTILATION DETAILS

- 20 Prior to the commencement of the tunnelling phase details of the ventilation of the

tunnel and head house building with regard to its location in close proximity to the adjacent Public Right of Way shall be submitted to and approved in writing by the local planning authority. This is to ensure that there is no impact upon the adjacent Public Right of Way or the users of the Public Right of Way. The ventilation system shall only be constructed in accordance with the approved details and shall be maintained and retained at all times thereafter.

Reason: In the interests of the visual amenity and users to the Public Right of Way in accordance with by policy PMD1 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

TEMPORARY EXTERNAL LIGHTING

- 21 Notwithstanding the details on the approved plans, prior to the commencement of development details of the means of temporary external lighting shall be submitted to and agreed in writing with the local planning authority. The details shall include the siting and design of lighting together with details of the spread and intensity of the light sources and the level of luminance. The lighting shall be installed in accordance with the agreed details and be removed prior to first operational use of the development, unless otherwise agreed in writing by the local planning authority.

Reason: In the interests of ecology and biodiversity and to ensure that the development can be integrated within its immediate surroundings in accordance with Policies PMD1 and PMD2 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

Reasons for Granting Consent:

In granting consent the Council has taken into account all relevant planning considerations and matters arising from comments from statutory consultees and public representations.

Policies that were taken into consideration when determining this application:

NPPF - National Planning Policy Framework

CSSP3 - Sustainable Infrastructure

CSSP4 - Sustainable Green Belt

CSSP5 - Sustainable Greengrid

CSTP16 - National and Regional Transport Networks

CSTP17 - Strategic Freight Movement and Access to Ports

CSTP18 - Green Infrastructure

CSTP19 - Biodiversity

CSTP22 - Thurrock Design

CSTP23 - Thurrock Character and Distinctiveness

CSTP24 - Heritage Assets and the Historic Environment

CSTP25 - Addressing Climate Change
CSTP26 - Renewable or Low-Carbon Energy Generation
CSTP27 - Management and Reduction of Flood Risk
CSTP28 - River Thames

OSDP1 - Promoting Sustainable Growth and Regeneration in Thurrock

PMD1 - Minimising Pollution and Impacts on Amenity
PMD2 - Design and Layout
PMD4 - Historic Environment
PMD6 - Development in the Green Belt
PMD7 - Biodiversity and Development
PMD8 - Parking Standards
PMD9 - Road Network Hierarchy
PMD10 - Transport Assessments and Travel Plans
PMD11 - Freight Movement
PMD12 - Sustainable Buildings
PMD13 - Decentralised Renewable and Low Carbon Energy Generation
PMD14 - Carbon Neutral Development
PMD15 - Flood Risk Assessment



Interim Executive Director Of Place

Date: 24th January 2025

Informative(s):-

- 1 Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended) - Positive and Proactive Statement:

The Local Planning Authority has acted positively and proactively in determining this application by identifying matters of concern within the application (as originally submitted) and negotiating, with the Applicant/Agent, acceptable amendments to the proposal to address those concerns. As a result, the Local Planning Authority has been able to grant planning permission for an acceptable proposal, in accordance with the presumption in favour of sustainable development, as set out within the National Planning Policy Framework.

- 2 River Works Licence

A River Works Licence is required with the Port of London Authority. The applicant is advised to contact the Port of London of Authority to discuss this requirement prior to commencing the development.

- 3 Public Footpath

Public Rights of Ways and Footpaths must remain open at all times during the

development. Should any diversions be required these must be discussed and agreed by the PROW team.

Important Information

1. This notice relates only to the requirements for planning permission under the Town and Country Planning Act 1990 (as amended). You may require consent from other statutory regulators before commencing with this development. **In particular you may require permission under the Building regulations. You must therefore contact the Building Control Division at this Council as soon as possible**
2. The applicant is reminded that under the Wildlife and Countryside Act 1981 (section 1) it is an offence to take, damage or destroy the nest of any wild bird while the nest is in use or being built. Planning consent for a development does not provide a defence against prosecution under this act. Trees and scrub are likely to contain nesting birds between 1 March and 31 July. Any trees and scrub present on the application site should be assumed to contain nesting birds between the above dates unless survey has shown it is absolutely certain that nesting birds are not present. The RSPB publish a booklet "Wild Bird and the Law". English Nature also produce Guidance Notes relating to Local Planning and Wildlife Law – both of which are useful.

BUILDING CONTROL

You have been granted Planning permission for your project, but what next?

You may need to complete your project in line with the Building Regulations. Building control is the process which checks that this is carried out and that your finished project is safe, sound and energy efficient.

Who needs building control and why?

We will work with you to ensure you meet regulations and on completion of works, we will issue a completion certificate which you will need when you come to sell your home. If you are not sure if you need Building Regulations approval then please contact us on the details below.

Website: <https://www.thurrock.gov.uk/buildingcontrol>
E-mail: Building.control@Thurrock.gov.uk
Phone: 01375 652655



DELEGATED REPORT

Reference: 23/01502/FUL	Site: Land To The South Of National Grids Electrical Substation For New Cable Tunnel Fort Road Tilbury Essex
Ward: Tilbury Riverside And Thurrock Park	Proposal: Proposed construction a new cable tunnel beneath the River Thames between Tilbury and Gravesend to provide additional transmission capacity. Above-ground infrastructure in the form of a new Cable Sealing End compound and a new head house building along with associated electricity infrastructure, access, parking, boundary treatment and two overhead gantry structures for future overhead lines. Temporary compound for the duration of the project to provide parking, staff welfare facilities, delivery vehicle parking, and equipment and machinery storage, including boundary treatment and lighting.

Plan Number(s):		
Reference	Name	Received
PDD-100116-LAY-049 P01	Tilbury Headhouse – Planning – Proposed Roof Floor Plan	15th January 2024
PDD-100116-LAY-047 P01	Tilbury Headhouse – Planning – Proposed Ground Floor Plan	15th January 2024
PDD-100116-LAY-180 REV 2	Tilbury Headhouse – Planning – Proposed Site Sections	22nd December 2023
PDD-100116-ELE-003 REV 1	Tilbury Headhouse – Planning – Proposed Elevations	22nd December 2023
PDD-100116-LAY-050 REV 1	Tilbury Headhouse – Planning – Outline Sections	22nd December 2023
TKRE/60677311	Site Location Plan – Tilbury (Revision 1)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1)	12th August 2024

TKRE/60677311	Site Location Plan – Tilbury (Revision 1) (Section 1)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1) (Section 2)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1) (Section 3)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1) (Section 4)	12th August 2024
PDD-100116-LAY-046 REV 2	Block Plan	22nd December 2023

The application is also accompanied by:

- Application form
- Confirmation of notice served to landowners
- Covering letter; dated 18 December 2023
- Summary of responses to consultee comments; dated 2 August 2024
- Environmental Impact Assessment – consisting of the following documents:
 - Environmental Statement, Volume I, Non-Technical Summary (Revision 1)
 - Environmental Statement, Volume II, Chapter 1: Introduction (Revision 1)
 - Environmental Statement, Volume II, Chapter 2: Alternatives
 - Environmental Statement, Volume II, Chapter 3: Project Description (Revision 1)
 - Environmental Statement, Volume II, Chapter 4: EIA Methodology
 - Environmental Statement, Volume II, Chapter 5: Consultation
 - Environmental Statement, Volume II, Chapter 6: Planning Policy
 - Environmental Statement, Volume III, Chapter 7: Biodiversity (Tilbury) (Revision 1)
 - Environmental Statement, Volume III, Chapter 8: Landscape and Visual (Revision 1) Part 1
 - Environmental Statement, Volume III, Chapter 8: Landscape and Visual (Revision 1) Part 2
 - Environmental Statement, Volume III, Chapter 9: Historic Environment (Tilbury) (Revision 1)

- Environmental Statement, Volume III, Chapter 10: Traffic and Transport (Tilbury) (Revision 1)
- Environmental Statement, Volume III, Chapter 11: Noise and Vibration (Tilbury) (Revision 1)
- Environmental Statement, Volume III, Chapter 12: Air Quality (Tilbury) (Revision 1)
- Environmental Statement, Volume III, Chapter 13: Water Environment (Tilbury) (Revision 1)
- Environmental Statement, Volume III, Chapter 14: Materials and Waste (Revision 1)
- Environmental Statement, Volume IV, Chapter 15: Biodiversity – Gravesend
- Environmental Statement, Volume IV, Chapter 16: Landscape and Visual Gravesend
- Environmental Statement, Volume IV, Chapter 17: Historic Environment Gravesend
- Environmental Statement, Volume IV, Chapter 18: Traffic and Transport Gravesend
- Environmental Statement, Volume VI, Chapter 19: Noise and Vibration Gravesend
- Environmental Statement, Volume IV, Chapter 20: Air Quality – Gravesend
- Environmental Statement, Volume IV, Chapter 21: Water Environment Gravesend
- Environmental Statement, Volume IV, Chapter 22: Materials and Waste
- Environmental Statement, Volume V, Chapter 23: Cumulative Effects Assessment (Revision 1)
- Environmental Statement, Volume V, Chapter 24: Summary (Revision 1)
- Environmental Statement, Volume VI, Appendix 3.1: Outline Construction Environmental Management Plan (Revision 1)
- Environmental Statement, Volume VI, Appendix 7.2: Ornithological Baseline Report (Revision 1)
- Environmental Statement, Volume VI, Appendix 7.3: Great Crested Newt eDNA Surveys (Revision 1)
- Environmental Statement, Volume VI, Appendix 7.4: Bat Survey Report (Revision 1)

- Environmental Statement, Volume VI, Appendix 7.5: Otter and Water Vole Survey Report (Revision 1)
- Environmental Statement, Volume VI, Appendix 7.6: Badger Survey Report (Revision 1)
- Environmental Statement, Volume VI, Appendix 7.7: Reptile Survey (Revision 1)
- Environmental Statement, Volume VI, Appendix 7.9: National Vegetation Classification Survey Report (Revision 1)
- Environmental Statement, Volume VI, Appendix 9.1: Historic Environment Desk Based Assessment (Revision 1) Part 1
- Environmental Statement, Volume VI, Appendix 9.1: Historic Environment Desk Based Assessment (Revision 1) Part 2
- Environmental Statement, Volume VI, Appendix 9.3: Written Scheme of Investigation for Geoarchaeological Deposit Modelling and Borehole Survey (Revision 1)
- Environmental Statement, Volume VI, Appendix 10.1: Outline Construction Traffic Management Plan (Revision 1)
- Environmental Statement, Volume VI, Appendix 10.2: Abnormal Load Assessment Report
- Environmental Statement, Volume VI, Appendix: 10.3: Transport Note (Tilbury) (Revision 1)
- Environmental Statement, Volume VI, Appendix 10.4: Transport Scoping Meeting Minutes
- Environmental Statement, Volume VI, Appendix 10.5: Receptor Sensitivity Levels (Tilbury)
- Environmental Statement, Volume VI, Appendix 10.6 Baseline Traffic (Tilbury)
- Environmental Statement, Volume VI, Appendix 10.7: Preliminary Highway Impact Assessment (Tilbury) (Revision 1)
- Environmental Statement, Volume VI, Appendix 10.8: Magnitude of Change (Tilbury) (Revision 1)
- Environmental Statement, Volume VI, Appendix 10.9: Assessment of Construction and Decommissioning Phases (Tilbury) (Revision 1)
- Environmental Statement, Volume VI, Appendix 10.10: Cumulative Assessment (Tilbury) (Revision 1)
- Environmental Statement, Volume VI, Appendix 11.1: Human Hearing and Acoustic Terminology

- Environmental Statement, Volume VI, Appendix 11.2: Baseline Noise and Vibration Monitoring Report
- Environmental Statement, Volume VI, Appendix 11.3: Noise and Vibration Calculations and Modelling
- Environmental Statement, Volume VI, Appendix 12.1: Detailed Air Quality Assessment Methodology
- Environmental Statement, Volume VI, Appendix 12.2: Detailed Dispersion Modelling Methodology (Revision 1)
- Environmental Statement, Volume VI, Appendix 13.1: Water Framework Directive Assessment (Revision 1)
- Environmental Statement, Volume VI, Appendix 16.1: Landscape Character Assessment Tables – Gravesend
- Environmental Statement, Volume VI, Appendix 16.2: Visual Assessment Tables – Gravesend
- Environmental Statement, Volume VI, Appendix 18.1: Transport Statement Note – Gravesend
- Environmental Statement, Volume VI, Appendix 18.2: Transport Scoping Meeting Minutes – Gravesend
- Environmental Statement, Volume VI, Appendix 18.3: Receptor Sensitivity Levels – Gravesend
- Environmental Statement, Volume VI, Appendix 18.4: Baseline Traffic Movements – Gravesend
- Environmental Statement, Volume VI, Appendix 18.5: Construction Worker Trip Distribution – Gravesend
- Environmental Statement, Volume VI, Appendix 18.6: Preliminary Highway Impact Assessment – Gravesend
- Environmental Statement, Volume VI, Appendix 18.7: Magnitude of Change – Gravesend
- Environmental Statement, Volume VI, Appendix 18.8: Assessment of Construction Decommissioning Phases – Gravesend
- Environmental Statement, Volume VI, Appendix 18.9: Cumulative Assessment – Gravesend
- Environmental Statement, Volume VI, Appendix 23.1: Cumulative Assessment Long and Short List of Other Developments
- Environmental Statement, Volume VI, Appendix 4.1: EIA Screening Opinions

- Environmental Statement, Volume VI, Appendix 4.2: EIA Screening Opinion Project Responses
- Environmental Statement, Volume VI, Appendix 4.3: Competent Expert Advice
- Environmental Statement, Volume VI, Appendix 7.1: Preliminary Ecological Appraisal
- Environmental Statement, Volume VI, Appendix 7.10: Marine Assessment Screening
- Environmental Statement, Volume VI, Appendix 7.8: Invertebrate Report
- Environmental Statement, Volume VI, Appendix 8.1: Landscape Character Assessment Tables (Tilbury)
- Environmental Statement, Volume VI, Appendix 8.2: Visual Assessment (Tilbury)
- Environmental Statement, Volume VI, Appendix 9.2: Desk-based Geoarchaeological Deposit Modelling Report
- Flood Warning and Evacuation Plan; dated December 2023
- Land Contamination Preliminary Risk Assessment (Tilbury); dated July 2024
- Statement of Community Involvement; dated December 2023
- Sustainability Statement (Revision 1); dated December 2023
- Design and Access Statement (Tilbury)
- Outline Architectural Specification for Headhouses
- Arboricultural Impact Assessment (AIA); dated July 2024
- Biodiversity Metric
- Biodiversity Net Gain Assessment and Strategy Report (Revision 1)
- Land Contamination Preliminary Risk Assessment (Tilbury); dated July 2024
- Outline Landscape and Environmental Management Plan (Revision 1)
- Planning Statement (Tilbury) (Revision 1))
- TKRE Drainage Management Plan; dated 11 June 2024
- Report to inform Habitats Regulations Assessment (Revision 4); dated November 2024
- Flood Risk Assessment – Revision 4; dated July 2024

Applicant: National Grid	Validated: 24 January 2024 Date of expiry: 24 January 2025 (Extension of Time agreed)
Case Officer: Nina Hicks	

1.0 DESCRIPTION OF PROPOSAL

Full planning permission is sought for the construction of a new cable tunnel running north to south, from Tilbury to Gravesend underneath the river Thames. This application is for Thurrock's determination, but Gravesham also have a planning application for the south side of the river and the MMO are dealing with the middle section of the river that is beyond the low tide mark for both Thurrock and Gravesham authorities.

The proposed development consists of the boring for a new tunnel which would largely be below ground running below the river Thames. The tunnel would be approximately 2.2km long from headhouse to headhouse and 4.5m in diameter. However, the construction of a new sealing end compound (SEC) is also required as part of the development. One located in Thurrock and another in Gravesham. Within the compound would be a new tunnel headhouse covering the tunnel shaft, cables and cable terminations, a water tank for firefighting purposes, Surge Arresters for protection of underground cables, earth switches, and new overhead line gantry structures. The proposal also includes the provision of above ground infrastructure in terms of access and parking. The SEC would be enclosed by 2.4 metre high mesh or palisade security fencing topped with an electric pulse fence extending to a height of 3.4 metres above ground level.

The headhouse contained within the SEC allows controlled and safe access to the tunnel shaft, provides ventilation fans and equipment, would be the storage location for mechanical and electrical equipment, and to control equipment for the cable circuits. The headhouse would have a footprint of 23.5m x 20.5m with an approximate height of 10 metres above ground level. Final sizing details will be confirmed during the detailed design stage. The headhouse would also accommodate ventilation plant, a control room, switch room, power supply room, main fans room, shaft access via a staircase (with space for a lift, and lift motor room, if required), changing and shower room and toilet. Externally, the headhouse would have a biodiverse roof, a temporary generator, a pedestrian footpath and an access hatch for cabling. Final details of the ventilation system have not yet been considered. However, it is noted that the ES sets out that the building would be acoustically insulated to ensure operational noise levels are acceptable.

Modifications to existing overhead lines would also take place as part of the wider project. However, these modifications would be consented and implemented through Section 37 of the Electricity Act 1989. Whilst supporting documents submitted with

the application may refer to such modifications, it is noted that this does not form part of the permission being sought. The proposed overhead gantries however, would accommodate the modified overhead power lines going forward.

The application also proposes to construct a temporary compound close to the development site, for the duration of the development, which would host staff welfare facilities, delivery vehicle parking, machinery and equipment storage. New boundary treatment would also be constructed along with external lighting. The proposed development would commence from the Tilbury site and would serve as the main construction depot for the duration of the development.

Chapter 3, Section 3.3 of Volume II of the Environment Statement details that the proposed new tunnel would be approximately 2.2km in length with an internal diameter of 4m. The tunnel would be set at a depth of approximately -34m to -32m below Ordnance Datum and approximately three to four tunnel widths below the riverbed. The tunnel has a designed life expectancy of 120 years.

An existing cable tunnel already runs below the Thames exiting at Gravesham, with the associated sealing end compound sited south of the proposed location for its replacement, closer to the Thames flood defence wall. The proposed tunnel project would run almost parallel with the existing tunnel with a clear degree of separation between the two. The existing tunnel is no longer deemed fit for purpose due to its age, and in terms of safe working environments and health and safety and will be decommissioned once the development of the new tunnel is complete. Existing cables and cables joints will be purged and sent for recycling. Cabling and steel within the existing headhouse and SEC will be recycled, reconditioned or repurposed. The replacement tunnel will be much larger in diameter to ably accommodate additional cabling when required during periods of upgrade.

The applicant has previously submitted a Screening Opinion (ref: 23/00681/SCR) in June 2023 where a request as to whether an Environmental Impact Assessment would be required to support any forthcoming planning application was sought. The Council determined the development as falling within Schedule 2 but would not have the potential to generate significant environmental effects in the location proposed so as to require the submission of an EIA. Therefore, it was deemed that an EIA would not be required for the site denoted within that application. However, the applicant sought the same advice from Gravesham Borough Council where it was determined that an EIA would be required. Based on this, for completeness and clarity given that applications have been submitted to both LPA's simultaneously, this application has been submitted with an Environmental Impact Assessment (EIA). This assessment is detailed with the Environmental Statement (ES) within the application. The ES considers the environmental effects of the proposed development during construction and during the operational phase (when built and occupied) and includes measures either to prevent, reduce or offset any significant adverse effects on the environment. The ES is accompanied by the chapters and appendices referred to above.

The Council has a statutory duty to consider environmental matters and the EIA is an important procedure for ensuring that the likely effects of new development are fully understood and fully taken into account before development proceeds. EIA is, therefore, an integral component of the planning process for significant developments. EIA leads to improved decision making by providing the development management process with better information. EIA not only helps to determine whether development should be permitted, but also facilitates the drafting of planning conditions and legal agreements in order to control development, avoid or mitigate adverse effects and enhance beneficial effects. Therefore, it is vital that the environmental issues raised by the application are assessed in a robust and transparent manner.

In order to fulfil the requirements of the EIA Regulations it is necessary to ensure (a) that the Council has taken into account the environmental information submitted, and (b) that any planning permission granted is consistent with the development which has been assessed. To achieve this second objective the Council has the ability to impose conditions and secure mitigation measures by Section 106 obligations.

Since submission of the application in December 2023, the local planning authority has consulted and publicised the application in accordance with the requirements of the EIA and Planning Regulations. In August 2024 amended information was submitted in the form of individual updated ES chapters including appendices (where relevant) alongside updated plans and technical studies, these were subject to consultation and publicity in accordance with the requirements of the Regulations.

2.0 SITE DESCRIPTION

The application site, as indicated on the red lined location plan, is mostly set within land owned by the Port of Tilbury, London (PoTLL) located to the east and west of Power Station Road (private road) and to the north and south of Ash Field Road (private road). Land included within the red line sited to the east and southeast falls within the ownership of Ingrebourne Valley Goshem's Farm restoration project. The application site covers an area of 13800m² in total (13.8 hectares) and is located east of Tilbury Fort occupying the southeastern corner of the PoTLL site and includes adjacent private access roads leading to a jetty located in Ingrebourne Valley and Tilbury Substation to the north. The proposed construction compound occupies the southwest of the application site and is located opposite and in close proximity of both the existing sealing end compound and the proposed new sealing end. The construction compound is located on land formerly occupied by Tilbury Power Station.

The site hosting the sealing end compound would have a coverage of approximately 7399m² and would be the only area of land resulting in permanent development once the tunnel project has been completed and temporary compounds and all other associated temporary works have been removed. This is notwithstanding the necessary Section 37 electricity works which do not require planning permission.

West Tilbury Marshes are located directly to the east of the application site and Tilbury Riverfront to the south. These are identified as local wildlife sites. However, the proposed development would not take place within these designated areas. Archaeological interest is outlined within the site, along with being set in a HSE licensed explosive site at the Port of Tilbury. The site is set within Flood Zone 3 as identified by the Environment Agency, which benefits from flood defences with the Thames flood defence wall located in close proximity of the southern boundary. A Public Right of Way (footpath no. FP146) and National Cycleway Network Route 13 are also located south of the application site running alongside the Thames flood defence wall.

The current access between the existing sealing end compound, substation, proposed sealing end compound site and the proposed construction compound are all served by existing hardstanding or surfaced roads, albeit on Port of Tilbury owned land. The applicant has followed the correct procedures in terms of completion of the correct certificate on the application form and that notice has been served in the correct manner advising all identified landowners of the intention to submit this planning application.

3.0 RELEVANT HISTORY

Application Reference	Description of Proposal	Decision
12/00890/OUT	Outline application for works required on the Tilbury Power Station site (onshore application) to extend the lifetime by 12-15 Years.	Approved
15/00576/FUL	Extension to substation compound to incorporate new 11kv transformer and new emergency water storage tank, with amended palisade fencing.	Approved
18/00549/SCO	Planning Inspectorate Consultation to the Local Planning Authority for an EIA Scoping opinion for a future Development Consent Order to develop a new Combined Cycle Gas Power Station with a generating capacity up to 2500 megawatts (MW), Open Cycle Gas Turbines with a generating capacity up to 300MW and an energy storage facility	EIA Required
21/00947/FUL	Replacement surface water outfall	Approved
23/00681/SCR	Request for Environmental Impact Assessment (EIA) Screening Opinion pursuant to Part 2 (6) of the Town and Country Planning (Environmental Impacts Assessment) Regulations 2017 (as amended): National Grid TKRE tunnel project from Tilbury to Gravesend.	EIA Not Required
23/00790/DCOAPP	Non Statutory Consultation for the Norwich to Tilbury Project (Formerly known as East Anglia Green). The	Advice Given

	proposal is for the construction of a new 400kV electricity transmission line between Norwich and Tilbury and a new substation at Bramford to connect to new offshore wind farms close to the coast. The consultation runs from 27 June 2023 to 21 August 2023. For Thurrock the proposal would see the new 400kV electricity transmission line entering the Borough from the north and would head south to connect to the Tilbury sub station. The new 400kV electricity transmission line would mainly comprise of overhead lines but with some elements of underground cabling.	
24/00057/ELEC	Section 37 application consultation relating to the installation of new 400 kv overhead lines and the erection of one new 49m high pylon in association with the proposed development being considered under ref: 23/01502/FUL (Proposed construction a new cable tunnel beneath the River Thames between Tilbury and Gravesend to provide additional transmission capacity. Above-ground infrastructure in the form of a new Cable Sealing End compound and a new head house building along with associated electricity infrastructure, access, parking, boundary treatment and two overhead gantry structures for future overhead lines. Temporary compound for the duration of the project to provide parking, staff welfare facilities, delivery vehicle parking, and equipment and machinery storage, including boundary treatment and lighting).	Advice Given
24/00135/CONDC	Application for the approval of details reserved by condition no. 3 (Constructions Environmental Management Plan (CEMP)) and no. 4 (Reptile and Saltmarsh Protection Plan) of planning permission ref. 21/00947/FUL (Replacement surface water outfall).	Approved
24/00306/NMA	Application for a proposed non-material amendment to planning permission ref: 21/00947/FUL (Replacement surface water outfall.) to alter the alignment of the drainage outfall entering the existing compound. Land to the south and east of National Grid's existing cable tunnel compound, off Sub Station Road, Tilbury	Approved

4.0 CONSULTATIONS AND REPRESENTATIONS

Detailed below is a summary of the consultation responses received. The full version of each consultation response can be viewed on the Council's website via public access at the following link: www.thurrock.gov.uk/planning

PUBLICITY:

This application has been advertised by way of individual neighbour notification letters, press advert and public site notice which has been displayed nearby. One written comment of objections has been received commenting on the following:

- Planning Notice under Article 13 has not been received
- Concerned with the impact the development would have on the highway network, in particular the Asda Roundabout
- A cumulative assessment of the impact of the development needs to be considered
- Alternative methods of spoil removal other than the use of the river has not been detailed

EMERGENCY PLANNING:

No objections.

ENVIRONMENTAL HEALTH:

No objections under air quality.

No objections under noise, subject to recommended conditions to be included as part of the agreed CEMP and a restriction on the construction hours.

No objections under contaminated land, however a site specific Remediation Strategy and subsequent verification report may be required if contamination is encountered or considered to pose an unacceptable risk.

A piling risk assessment should be carried out if driven piles are proposed.

FLOOD RISK MANAGER:

No objections, subject to a condition requiring a surface water drainage scheme for the development to be agreed.

HIGHWAYS:

No objections, subject to conditions requiring the submission of a CTMP, CWTP, CEMP and Travel Plan. Informative relating to works falling within the remit of highways.

LANDSCAPE AND ECOLOGY:

No objections, subject to conditions relating to the LEMP and CEMP and for the CEMP to include details of the disposal site for spoil once it has been selected.

PUBLIC RIGHT OF WAY:

No objections, subject to confirmation on the details relating to the ventilation system which could face existing and future public highways.

URBAN DESIGN:

No objections, subject to recommendation of a condition requiring submission of external materials.

HERITAGE ADVISOR:

No objections.

WASTE STRATEGY:

No comments received.

GRAVESHAM BOROUGH COUNCIL:

No objections.

ARCHAEOLOGY:

No objections, subject to conditions relating to trial trenching/ excavation/ monitoring.

ANGLIAN WATER:

No comments to make.

NATIONAL GAS:

No assets affected in this area.

NATIONAL HIGHWAYS:

No objections, subject to the recommended conditions relating to the submission of updated and finalised construction vehicle movements once a contractor is appointed, submission of a CTMP containing a CWTP and that National Highways are consulted on finalised construction details.

MARINE MANAGEMENT ORGANISATION:

No objections, subject to informatives relating to MMO Licensing and consent.

PORT OF LONDON AUTHORITY:

No objections, subject to a condition relating to the use of the river detailed within the CTMP. Informative stating the requirement for a River Works License.

NETWORK RAIL:

No objections, subject to recommended informatives.

HISTORIC ENGLAND:

No objections.

ENVIRONMENT AGENCY:

No objections.

KENT AND ESSEX INSHORE FISHERIES:

No comments received.

BUGLIFE:

No objections. However, a more detailed CEMP, OLEMP and LEMP should be conditioned.

ESSEX FIRE AND RESCUE:

No objections, subject to advisory comments relating to Building Regulations, Water Supplies and Sprinkler Systems.

NATURAL ENGLAND:

No objections, subject to appropriate mitigation being secured.

CADENT GAS:

No assets affected in this area.

ESSEX POLICE DESIGNING OUT CRIME:

No objections. Welcomes engagement with applicant.

5.0 POLICY CONTEXT

National Policy

National Planning Policy Framework (NPPF)

The latest NPPF was published on 12 December 2024. Paragraph 11 of the Framework sets out a presumption in favour of sustainable development. This paragraph goes on to state that for decision taking this means:

- c) approving development proposals that accord with an up-to-date development plan without delay; or
- d) where there are no relevant development plan policies, or the policies which are most important for determining the application are out of date¹, granting permission unless:
 - i. the application of policies in this Framework that protect areas or assets of particular importance provides a strong reason for refusing the development proposed²; or
 - ii any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole, having particular regard to key policies for directing development to sustainable locations, making effective use of land, securing well-designed places and providing affordable homes, individually or in combination.

¹ This includes, for applications involving the provision of housing, situations where the local planning authority cannot demonstrate a five year supply of deliverable housing sites ...

² The policies referred to are those in this Framework relating to: habitats sites and/or SSSIs, land designated as Green Belt, Local Green Space, AONBs, National Parks, Heritage Coast, irreplaceable habitats, designated heritage assets and areas at risk of flooding or coastal change.

The NPPF sets out the Government's planning policies. Paragraph 2 of the NPPF confirms the tests in s.38 (6) of the Planning and Compulsory Purchase Act 2004 and s.70 of the Town and Country Planning Act 1990 and that the Framework is a material consideration in planning decisions. The following chapter headings and content of the NPPF are particularly relevant to the consideration of the current proposals:

- 2. Achieving sustainable development
- 4. Decision-making
- 9. Promoting sustainable transport
- 10. Supporting high quality communications/infrastructure
- 11. Making effective use of land
- 12. Achieving well-designed places
- 13. Protecting Green Belt land

- 14. Meeting the challenge of climate change, flooding and coastal change
- 15. Conserving and enhancing the natural environment
- 16. Conserving and enhancing the historic environment

National Planning Policy Guidance (PPG)

In March 2014 the Department for Communities and Local Government (DCLG) launched its planning practice guidance web-based resource. This was accompanied by a Written Ministerial Statement which includes a list of the previous planning policy guidance documents cancelled when the NPPF was launched. PPG contains a range of subject areas, with each area containing several subtopics. Those of particular relevance to the determination of this planning application comprise:

- Air Quality
- Appropriate Assessment
- Biodiversity net gain
- Climate change
- Design: process and tools
- Environmental Impact Assessment
- Flood Risk and Coastal Change
- Green Belt
- Healthy and safe communities
- Historic environment
- Land affected by contamination
- Natural Environment
- Noise
- Planning obligations
- Renewable and low carbon energy
- Strategic environmental assessment and sustainability appraisal
- Transport evidence bases in plan making and decision taking
- Travel plans, transport assessments and statements in decision-taking
- Use of Planning Conditions
- Waste
- Water supply, wastewater and water quality

Energy National Policy Statements

EN1 – Overarching National Policy Statement for Energy (2023)

EN3 – National Policy Statement for Electricity Networks Infrastructure (2023)

Local Planning Policy

Local Planning Policy: Thurrock Local Development Framework (as amended) 2015

The Council adopted the “Core Strategy and Policies for the Management of Development Plan” in (as amended) in 2015. The following Core Strategy policies apply to the proposals:

OVERARCHING SUSTAINABLE DEVELOPMENT POLICY

- OSDP1 - Promotion of Sustainable Growth and Regeneration in Thurrock

SPATIAL POLICIES:

- CSSP3 - Sustainable Infrastructure
- CSSP4 - Sustainable Green Belt
- CSSP5 - Sustainable Greengrid

THEMATIC POLICIES:

- CSTP16 - National and Regional Transport Networks
- CSTP17 - Strategic Freight Movement and Access to Ports
- CSTP18 - Green Infrastructure
- CSTP19 - Biodiversity
- CSTP22 - Thurrock Design
- CSTP23 - Thurrock Character and Distinctiveness
- CSTP24 - Heritage Assets and the Historic Environment
- CSTP25 - Addressing Climate Change
- CSTP26 - Renewable or Low-Carbon Energy Generation
- CSTP27 - Management and Reduction of Flood Risk
- CSTP28 - River Thames

POLICIES FOR THE MANAGEMENT OF DEVELOPMENT

- PMD1 - Minimising Pollution and Impacts on Amenity
- PMD2 - Design and Layout
- PMD4 - Historic Environment
- PMD6 - Development in the Green Belt
- PMD7 - Biodiversity and Development
- PMD8 - Parking Standards
- PMD9 - Road Network Hierarchy

- PMD10 - Transport Assessments and Travel Plans
- PMD11 - Freight Movement
- PMD12 – Sustainable Buildings
- PMD13 - Decentralised Renewable and Low Carbon Energy Generation
- PMD14 - Carbon Neutral Development
- PMD15 - Flood Risk Assessment

Thurrock Local Plan

In February 2014 the Council embarked on the preparation of a new Local Plan for the Borough. In December 2023 the Council began an Initial Proposals Consultation (Regulation 18). Previously it was anticipated that the Draft Consultation (Regulation 19) would take place in December 2024. As a result of a variety of factors including the delay to the Government decision on the Lower Thames Crossing (now expected May 2025), fundamental changes being considered to the NPPF, the need to ensure a robust evidence base and an increased emphasis on the Duty to Cooperate, at Cabinet on 9 October 2024 Members approved a revised timescale for the LDS. It is proposed that the Draft Consultation (Regulation 19) will now take place between January and March 2026.

Thurrock Design Strategy

In March 2017 the Council launched the Thurrock Design Strategy. The Design Strategy sets out the main design principles to be used by applicants for all new development in Thurrock. The Design Strategy is a supplementary planning document (SPD) which supports policies in the adopted Core Strategy.

6.0 ASSESSMENT

Procedure

The EIA Regulations require local planning authorities to examine the information within the Environmental Statement (ES) to assess the significant effects of the proposed development on the environment (beneficial and adverse), in addition to the material planning considerations. The EIA Regulations require the likely significant effects of the development to cover the direct effects and any indirect, secondary, cumulative, transboundary, short, medium and long term, permanent and temporary, positive and negative effects of the development. The Environmental Statement considers the baseline conditions (existing conditions), construction and operational phases (when the development is occupied) as part of this assessment. This application has been advertised (inter-alia) as a Major Development being accompanied by an Environmental Statement.

The material considerations for this application are as follows:

- I. Principle of the Development
- II. Design, Layout and Impact Upon the Area and Landscape Impact
- III. Access, Traffic Impact, Parking and Transport
- IV. Ecology and Biodiversity
- V. Flood Risk and Drainage
- VI. Noise and Vibration
- VII. Air Quality
- VIII. Land Contamination
- IX. Energy and Climate Change
- X. Heritage and Archaeology
- XI. Amenity Impacts
- XII. Other Matters

I. PRINCIPLE OF THE DEVELOPMENT

With regard to the principle land use, the majority of site is not specifically allocated within a designated use within the Core Strategies Policies Map as it is shown in a 'white land' area. However, part of the red line area extends into the Metropolitan Green Belt (GB) where the route of the tunnel would be located along with an access track to Geshem's jetty and areas of land within the site but not subject to proposed development. These could be considered to be 'inappropriate development' based on the definition within paragraph 153 of the NPPF. In terms of the impact upon the GB it is considered that the tunnel below ground would not be seen once completed and in operational use, therefore this does not affect the openness of the GB. The access track appears to already exist as an unmade route serving the jetty, along with other areas of land within the site in the GB. Paragraph 154 of the NPPF for 'exceptions' to 'inappropriate development' applies here through section 'h)' as the tunnel would form 'engineering operations' and the track 'local transport infrastructure'.

The location of the proposed development would be sited approximately 45 metres north of a section of the Tilbury Power Station Local Wildlife Site. However, the land subject of the proposal is not subject to any locally, nationally or internationally important land designations.

The proposed development would be associated with the current operational use of

the application site in regard to the existing tunnel and access to it that currently exists, as denoted by the red line location plan, with the exception of private access roads and the construction compound.

The applicant is National Grid and has demonstrated that there is an urgent need for electricity network reinforcement which is recognised through the NPPF but also through the National Policy Statements (NPS) for Energy.

Therefore, there are no in principle objections to the proposal and its location. In addition, the proposal would provide essential national electricity infrastructure where such proposals should be supported unless there are overriding material considerations indicating otherwise. The Environmental Statement submitted with this application will be assessed in this regard, as covered in the following sections where conclusions will be drawn based upon the relevant evidence submitted by the applicant.

II. DESIGN, LAYOUT AND IMPACT UPON THE AREA AND LANDSCAPE IMPACT

Policies CSTP22 and CSTP23 both seek to create high quality design, character and distinctiveness for new developments, and policy PMD2 requires proposals to respond to the sensitivity of the site and its surroundings for various criteria. Chapter 12 of the NPPF as a benchmark to new development, requiring 'the creation of high quality places'. Furthermore, chapter 12 of the NPPF aims to ensure developments are 'visually attractive' and 'sympathetic to the local character' of an area.

A Design and Access Statement has been submitted supporting the application. Sections 1.1.3 and 1.1.4 sets confirms that National Grid is regulated by the Office for Gas and Electricity Markets. Through the terms of its transmission licence and obligations under Schedule 9 of the Electricity Act 1989 National Grid is required to operate its transmission system in an economic, efficient and co-ordinated manner whilst having regard to the preservation of amenity. Schedule 9 requires National Grid to have regards to the desirability of preserving natural beauty, conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest. The Schedule requires National Grid to do what it reasonably can to mitigate any effect which its proposals would have on such features.

Section 1.1.6 of the DAS simplifies the proposed development as; two new sealing end compounds consisting of a new tunnel headhouse and a new overhead line gantry structure, one sited within Thurrock and the other within Gravesham. A new tunnel will also be bored between the two sealing end compounds. This application allows for temporary construction compounds associated with these works.

Design Considerations

The sealing end compound

The proposed sealing end compound (SEC) would be wholly located within land owned by the Port of Tilbury and would be sited on land formerly occupied by Tilbury Power Station. The existing SEC within the locality is set approximately 290 metres south of the proposed development with the river Thames located approximately 400 metres south of the proposal. The current landscape provides a mix of industrial and agricultural uses with the river Thames directly to the south. The bored tunnel would measure approximately 2.2km in length (from headhouse to headhouse) and would not be visible when viewing the SEC. By siting the new SEC in close proximity of the existing, the extent of overhead lines required, in terms of additional lines and amendments to the existing lines, would be minimal.

The proposed footprint of the SEC enclosure would measure approximately 7399m², with the headhouse building having a footprint of circa. 481m² measuring 23.5m x 20.5m. The size of the headhouse is determined by the requirements for mechanical and electrical equipment to ventilate and access the tunnel and tunnel shaft. Spacings required between the overhead line conductors where they connect to the building before transitioning to the cable sealing end structures determine the size of the SEC. The highest part of the development would be the overhead gantry at a height of 13 metres.

Section 2.8 of the DAS refers to the siting of the SEC being positioned to take into consideration the potential impacts upon the sensitive habitats and species in the vicinity.

However, when taking into account the technical particulars the applicant is required to adhere to, including safety impacts and security requirements, the overall scale of the headhouse building is considered to be minimal in comparison to the coverage of the entire SEC. The remainder of the SEC would host the overhead gantries, parking spaces, and other ancillary machinery associated with the proposed operational use. A small area of the SEC would be covered in hardstanding, with the majority of the remainder of the site finished with a gravel covering. Collectively, the proposed SEC enclosure would be acceptable in terms of scale and siting in accordance with policies CSTP22 and PMD2.

The SEC would be enclosed by fencing at a height of 3.4 metres above ground level. The top 1 metre of this fencing would be an electrified section for additional security.

The Headhouse

The headhouse building would be sited to the southeastern corner of the SEC with a curved standing seam roof with biodiversity panels. Aluminium fascia boards, gutters and downpipes would complete the roof materials. The walls would be finished with composite cladding wall panels incorporating powder coated metal doors and louvres where indicated. Whilst most of the colours of the external materials have been stated

within the DAS statement, it would be considered as reasonable to include a condition whereby samples or details of the external materials to be used shall be submitted for approval, should permission be granted.

The headhouse would provide access to the tunnel shaft and contain electrical and mechanical equipment. In addition, the headhouse also contains primary electrical and mechanical systems ventilating the tunnel between Tilbury and Gravesend. Workspaces and staff welfare accommodation would also be provided within this building. In terms of the actual siting of the building, this needs to be located over the shaft itself with the precise location determined by the need for shaft access and the location of any cables. Therefore, the location of the headhouse cannot be negotiated.

The green biodiverse roof of the headhouse building would be orientated north. This would result in views from the south (the river Thames) and west (Port of Tilbury) facing the clad side elevations of the building. Whereas views from the north and northeast, which are considered to provide the most advantageous views from West Tilbury Marshes, would likely be less impacted in comparison.

The Urban Design Officer has commented that the design of the headhouse building is of a standard design that does little to respond to the positive elements of the broader landscape character of the surrounding area. It is also noted that the external elevation materials have been outlined as failing to respond to the surrounding context and could have been designed promoting a more solid construction, rather like the architectural features visible along this section of the Thames seen at Tilbury and Coalhouse Forts.

Whilst the above comments have been considered, the importance of the proposal in terms of national and regional infrastructure are considered to be of a higher importance in this instance. In addition, as stated in the comments received from Urban Design, the building is of a fairly standard design. Therefore, whilst improvements could be made, the limited coverage of the proposed headhouse building would not necessarily be considered as a valuable negotiation to be had with the applicant given the Government requirements for such projects to be completed. Moreover, as stated above, the inclusion of a condition requiring submission of material details would enable the Council to have greater control over the resulting appearance of the headhouse building.

The proposed building's design shows it would be finished in grey coloured elevations and a green coloured roof which would assist with its assimilation into this site's location having regard to the existing industrial nature of the area but also the open GB and countryside to the east. Its scale is acceptable and lower in height than existing development in the immediate surroundings including the existing electricity infrastructure of pylons and a sub station. There are no objections to its appearance and impact upon this location having regard to national and local design policies.

Other Works

The existing private road (Substation Road) currently used to access the Tilbury substation located to the north of the site and the existing SEC to the south, would continue to be used to gain access to the proposed SEC. Vehicle parking is proposed within the compound as part of this development. The existing track to Goshem's jetty would also be used. None of these elements of the scheme present any design concerns.

Landscaping

As set out in Volume IV, Chapter 16 of the ES, the applicant acknowledges the character of the surrounding landscape whereby heritage assets are present, the functionality of and distinctiveness within the existing landscape, along with the wildness and tranquillity of the area. Extents to which the proposed development would impact the existing landscape have been considered by the applicant which includes both the application site and the wider area.

Whilst it is inevitable that the wider geographic area would be altered as a result of the proposed development, the immediate setting would be directly and permanently impacted by virtue of the proposed buildings and gantries. However, it is deemed by the applicant that whilst the wider landscape would be impacted, this is considered as a temporary impact which is considered as reversible once the construction phase has passed.

The above assessment is considered accurate, with the wider benefits of the infrastructure project being considered to somewhat mitigate permanent landscaping impacts. However, this conclusion only considers the visual landscaping impacts in terms of the proposed actual built form, not physical or environmental impacts. These impacts are assessed in the following relevant sections.

Landscape and Visual Impact

The ES includes a section on Landscape and Visual Impact. The site is not identified to fall within any landscape designations but is subject to local landscape character assessments. The ES assesses there to be 'no likely landscape and visual effects' and this applies to both the construction and operational phases of the proposed development. The consultation response from the Council's Landscape and Ecology Advisor agrees with this comment, and along with the remarks received from the Council's Urban Design Officer, who has not raised any objections. Therefore, taking this into account and the planning policy position it is considered that there are no objections raised in terms of the Landscape and Visual Impact Assessment.

Alternatives

The Environmental Statement, Volume II, sets out that alternatives have been considered including the impacts upon the natural environment, cultural heritage, landscape of the area and its visual quality. National Grid have considered the impacts of the proposals on engineering, economic, environmental and social factors. Stakeholders and members of the public have been consulted where feedback has been considered.

Various options have been considered which are suitably explained and evaluated in the above document. Option 1 considers the installation of new cabling within the existing tunnel. This would require civil repair work to the tunnel and for the existing ventilation system to be replaced as a consequence of the additional heat production from the additional cables. This would ultimately result in the construction of an additional building measuring approximately 20 metres by 10 metres. This option would result in health and safety implications in terms of the confined working space the existing tunnel would create, by virtue of the diameter of the additional cable. Option 3 considered the introduction of overhead power lines across the river Thames to replace the existing tunnel. The cables would span approximately 2km. Limited space for anchor pylons and diversions to achieve suitably tensioned lines proved problematic as the overhead line pylons would need to be circa 245 metres in height to allow clearance for passing shipping vessels.

Option 2, the boring of a new tunnel running parallel with the existing, was therefore considered as the most appropriate, although the most expensive option. The environmental impacts have been considered of short term with the long term impacts being localised to the immediate locality by virtue of the proposed Sealing End Compound. Section 2.5.18 of Volume II of the ES concludes that the proposed option 2 would result in fewer effects on the area and environment, and would largely be temporary. Having considered the alternative proposals, with the limited information provided, the most appropriate option is the proposal being put forward.

Conclusion for this section

Overall, the proposed layout, scale, massing and bulk of the proposed development is considered acceptable. In addition, the design, appearance and character impact of the proposed buildings are also acceptable. This proposal is required in order to meet government infrastructure requirements whereby some degree of tolerance should be applied, notwithstanding the environmental impacts which have not yet been assessed. Sustainability measures have been considered by the applicant and have been suitably incorporated.

The Council's Urban Design Team initially commented that the design of the buildings were standard in appearance with little response to the broader landscape character. However, additional comments received following re-consultation due to the receipt of an amended red lined plan, does not necessarily raise significant design concerns, merely that there are opportunities to consider a more creative design solution. Therefore, it would be appropriate to include a condition requiring material

samples be submitted for approval prior to the commencement of above ground development.

Gravesham Council raise no concerns with the proposal, only recommend that the full suite of documents, including those impacting the Kent side of the development be considered.

Essex Fire and Rescue have confirmed that the access arrangements are satisfactory in terms of the Essex Act 1987- Section 13. Other comments state that Building Regulation compliance is the responsibility of anyone carrying out building works, and water supplies may be required for firefighting purposes. This should be considered by the applicant and are advised to contact the Water Section at Service Headquarters. An informative has been included.

National Gas have confirmed there are no transmission assets affected within the area of the application site.

Essex Police Designing out Crime Team have commented that Crime Prevention Through Environmental Design (CPTED) should be considered early into the co-ordination of the development and the site is designed incorporating these principles. Engagement with the applicant is encouraged. An informative has been included.

Overall, based on the above, when considering the physical constraints of the development by way of the requirement for an exact siting of the headhouse building and the context of the immediate locality, there are no objections to the layout of the proposed development in terms of policies CSTP22, PMD2, and having regard to national planning policy.

III. ACCESS, TRAFFIC IMPACT, PARKING AND TRANSPORT

The application site is directly accessible via internal Port Roads falling within the ownership of Port of Tilbury. However, access to the site is gained via a highway network consisting of Thurrock adopted roads and national Strategic Road Networks maintained and monitored by National Highways.

Policy PMD9 ensures that access requirements are appropriately considered when determining planning applications. Policy CSTP17: *Strategic Freight Movement and Access to Ports* is also relevant as this identifies the need for freight traffic to keep to the most suitable routes in order to reduce adverse impacts on amenity, the environment, sustainable transport modes, and the integrity of the highway itself.

Relevant local issues focus around congestion on the Strategic Road Network and the potential for this to worsen with the growth that needs to be accommodated in Thurrock. Policy PMD9 ensures that proposals affecting the highway will be considered in relation to the road network hierarchy, aiming to mitigate adverse impacts on the transport system, including capacity, safety, air quality and noise.

The application site is accessible via an existing Port Road from Tilbury 2 leading along Sub Station Road. Whilst no additional roads or access points would be required, the introduction of one new vehicular crossover would be required between the access road and pathway.

Sealing End Compound Parking

The proposed development would provide parking for six vehicles within the enclosed sealing end compound via main entrance gates, this would include one disabled parking space. Once constructed, visitors to the compound would largely travel by vehicle due to the inaccessible location of the site and given that site visits would predominantly be for maintenance or repair purposes. Vehicles requiring access to the compound would include private vehicles, light goods and heavy goods vehicles.

Given that the compound would not be occupied once operational, with the exception of maintenance, servicing and in the event of an emergency, there is no expectation that the site would generate general waste. Any waste created by on site works would be required to be cleared by personnel or contractors in accordance with existing procedures. Therefore, no waste provision has been provided. It is accepted that no refuse vehicle would require access to the SEC once operational.

Once construction has been completed, the decommissioning phase of the existing Sealing End Compound will commence. After which, it is reasonable to conclude that the impact upon the locality, in terms of vehicle movements, would be similar to that already experienced by the existing operational SEC sited in close proximity to the application site.

Construction, Traffic Generation and Trips

An Outline Construction Environmental Management Plan forms part of the ES suite and has been considered by the Council's Environmental Health Officer who confirms that the proposed hours of work for general construction, between 08.00 to 19.00 Monday to Sunday, would be acceptable. A suitable condition would restrict development to these proposed hours, which would in turn, result in control of vehicle movements associated with the construction works.

The Council's Highways Officer confirms that the potential vehicle movement arising from the proposed development would predominantly impact the trunk road network, which would largely be during the construction period. The response also states that the Thurrock Highway Network would be significantly impacted. Thurrock Highways feed into a critical junction at the Asda Roundabout, Tilbury, which falls under the jurisdiction of National Highways.

National Highways initial comments also acknowledges that the majority of the traffic impacts would be experienced during the construction phase of the project, with

construction being given a time span of 46 months. Whilst the Gravesham proposals received a comment of no objection from National Highways in terms of traffic impacts, it is noted that engagement with Thurrock Council and the Lower Thames Crossing team would be welcomed. It is also recommended that consideration of traffic impacts upon the wider Strategic Road Network is required in order to accurately assess all junction of the A13 up to and including junction 30 of the M25.

Following communications between the applicant, National Highways and Thurrock Highways, an amended version of Volume III, Chapter 10 (Traffic and Transport – Tilbury) of the ES has been submitted where all comments relating to vehicle movements and the cumulative impacts of other nearby consented developments have been considered to inform this document. Details of such schemes are set out in Volume V, Chapter 23 (Cumulative Impacts) of the ES. Additional appendices also support Chapter 10, as listed in section 10.1.4 of this document.

Section 10.7 of the above document sets out that the proposed development will minimise construction impacts through the implementation of a Construction Transport Management Plan (CTMP) and a Construction Environmental Management Plan (CEMP) during the construction phase. An outline CTMP and CEMP have been submitted for consideration.

The outline CTMP sets out the mitigation measures to be implemented during the construction phase of the development, which include:

- the removal of tunnelled spoil by barge utilising the Port of Tilbury docks;
- a remote satellite office outside of the Thurrock area for staff who do not need to be directly on site;
- a Construction Worker Travel Plan (CWTP) to promote and encourage sustainable transport modes for construction workers;
- management of construction traffic to reduce impacts upon local residents, businesses and road users;
- a traffic routing strategy; security personnel and traffic marshals to ensure access to the site and the approach roads remains safe for all users;
- temporary traffic management and construction signage at access points; a delivery management system will be used to ensure deliveries to site are spread across the day to minimise the impacts of HGV traffic;
- provision of safe pedestrian routes between car parking areas, access points, work area, site offices and staff welfare facilities;
- loading and unloading parking areas; a parking review to ensure clear routes; vehicles to be correctly maintained and operated;

- information packs provided to all construction workers; permits in place to allow a specialised haulage service;
- access route and swept path analysis for the largest materials delivery vehicles; vehicles to be checked and cleaned prior to exiting site.

Baseline traffic movements have been submitted as part of the ES. The document has considered all nearby roads including the A13 and roads leading to and from the nearby Asda roundabout. These set out existing baseline traffic movements based on two way flows recorded in 2023, followed by future baseline two way traffic flow predicted for 2026. The 2026 figures are believed to be based on cumulative agreed developments in the area, as provided by the Council's Highways Officer.

Section 10.3.1 sets out that the study area used for the purposes of the Traffic and Transport document has been defined based upon the area where there may be a transport impact resulting from the construction of the proposed development, including routes along which HGV's and construction worker vehicles will travel during the construction phase. Baseline traffic data for the surrounding highway network has also been obtained and considered along with traffic growth data, local network information and Department for Transport traffic count data. The public transport network taken into consideration includes the nearby Tilbury Town railway station and Grays and East Tilbury railway stations set further afield, along with bus stops close to the site and walking and cycling routes within the area.

Whilst exact data relating to vehicles connected with the construction phase of the proposed development cannot yet be offered, phasing details have been provided ranging from phase 0 (site set up) through to phases 5/6 for delivery of cables and OHL works, with estimated vehicle movements including timescales for each phase.

A response received from National Highways dated 4 September 2024 initially recommended that planning permission not be granted for a period of 3 months due to many queries raised relating to the further information/ data required in order for National Highways to fully assess the implications of the proposed development on the Strategic Road Network. Following meetings and the submission of amended and additional documents, National Highways provided a final response on 25 October 2024 whereby all objections were removed, subject to the inclusion of recommended conditions, given that review of the Transport Technical Note, including appendices, provides clarification and additional information on the points previously queried.

The National Highways response confirms that vehicle trip movements associated with the peak construction period is now understood, along with impacts upon the SRN during the sensitive peak periods. Cumulative committed development has also been detailed and considered. The ES specifies that traffic flow data between 6pm-7pm has been modelled using the baseline traffic flows between the hours of 5pm-6pm, in the absence of data for this time period. In addition, Core construction working hours would be Monday to Sunday 8am – 6pm with three eight hour shifts adopted during the tunnelling phase.

Chapter 10 of the ES sets out that a worst case scenario would result in an additional 622 construction vehicle movements per day. The initial tunnelling phase would last for 33 weeks with the duration of the construction phase lasting for 46 months. This would result in 264 HGV two way movements per day during peak construction. With regards to staff, it is expected that the development would see a daily peak of 36 in and then 36 out trips for construction workers during the morning and evening peak times during the construction phase, along with 44 in and 44 out tunnel works operating on a 3 x 8 hour shifts that would be outside of the normal peak traffic periods. If all workers used were to drive individually to the site then they can be accommodated in the compound car park which is currently indicated to provide 100 car parking space, although a Construction Worker Travel Plan should be in place via a planning condition to secure sustainable transport options to the site for construction workers.

The technical note submitted details the worst case scenario during construction periods but also provides clarity on the locations where trip impacts are likely to occur. It is acknowledged that trip movements, its distribution and assignment, are based on assumptions and are subject to refinement during the progression of the scheme once contractors are brought on board to undertake works. Therefore, whilst National Highways appreciate the results provided, these do remain as estimates at this stage due to the nature of the proposed development.

Recommended conditions require the submission of updated and finalised construction vehicle movements (including employees, HGV's and materials) once a contractor has been appointed. This condition has been agreed with the applicant. This data would be provided as part of the CTMP incorporating the CWTP. Details within the CTMP should align with the sustainable and active travel requirements of the Department for Transport Circular 01/2022. The aforementioned is considered as a reasonable and justifiable condition, which the applicant is agreement with.

Updated comments received from the Council's Highways Officer raise no objections subject to the inclusion of conditions requiring the submission of a final CTMP for approval, as per the comments from National Highways, the submission of a CEMP which includes a road condition survey before and after construction. It is also recommended that a Construction Worker Travel Plan be submitted and approved and implemented to promote sustainable travel choices.

Furthermore, it is also recommended that, notwithstanding the details submitted relating to the indicative layout, details relating to all access points into and out of the site onto the public highway and onto the internal roadway and parking shall be submitted and approved in writing, and that all details shall be implemented on site and maintained by the operator of the site for as long as the development is in use. This can form part of the requirement for the CTMP.

Policy PMD10 requires Transport Assessments to accord with relevant transport guidance and paragraph 113 of the NPPF requires planning applications to be supported by Transport Assessments so that the likely impacts of the proposal can be assessed.

Policy PMD9 requires development to avoid causing congestion as measured by link and junction capacities. Paragraph 104 of the NPPF requires the impact of development on transport networks to be addressed and paragraph 111 of the NPPF identifies that development should only be prevented or refused on highway grounds if there is a 'severe' impact upon the road network.

Within and beyond the Thurrock area policy CSTP16 seeks to improve national and regional transport networks to ensure growth does not result in routes being above capacity. The policy seeks to achieve this through improving capacity by improving transport interchanges and supporting additional highway capacity through the use of technology and information.

National Highways have provided comment that the latest information provided by the applicant includes methodologies and assumptions that the shift workers would travel to site in single occupancy vehicles assumed to all travel by car. Although car sharing and public transport will be promoted through the CWTP, this is considered as a worst case scenario for vehicle movements associated with workers on site. The trip attractions and assumptions are therefore considered acceptable by National Highways.

Collision data, including trends and patterns has been provided by the applicant. National Highways have reviewed this information and are satisfied that collision data does not show any discernible pattern or overriding safety concern at the A13/ A1089 junction despite the occurrence of collisions in the five year data provided. Based on this, no further assessment in relation to the construction traffic is required.

In addition, National Highways have confirmed that no further capacity assessments in terms of impacts on the SRN is required post determination. However, National Highways have requested they are consulted during the assessment of the finalised CTMP through a discharge of condition application. application.

National Highways have also requested that a condition be included whereby they are consulted on finalised construction details, once a contractor is appointed allowing them to check the assumptions of final traffic movements submitted. The reasoning for this condition is understood and considered reasonable and necessary in order to ensure the final impacts upon the SRN would be acceptable.

The Port of London Authority have been consulted due to the locality of the site. It has been recommended that a suitably worded condition be included requiring the removal of spoil be transported by barge via the river Thames, which is welcomed. It

is also requested that consideration is given to the receipt of materials to site via barge as the location of the site should be exploited in this regard. The applicant has alluded that discussions regarding deliveries coming to site via the Port have been discussed with the Port of Tilbury (PoTLL) but has not been confirmed. Regardless, given that National Highways and Thurrock Highways have considered the fullest extent of vehicle movements across the nearby highway network, whilst this type of transport would be advantageous, it is unlikely to be forceable. However, a suitably worded informative will be added for the applicant's review.

The PoTLL have commented on the application raising concerns that the cumulative impacts relating to the construction phase of the of the scheme be comprehensively considered. It has been requested that any amended transport data be forwarded for their consideration. It is also noted that PoTLL request that the removal of spoil by barge be included as a condition, should permission be granted. National Highways have systematically considered the evidence put forward by the applicant, and are satisfied by the data provided that the road networks surrounding the Port would have capacity to carry additional traffic modelled during the construction phase. It has also been suggested by National Highways that a condition be included to ensure that spoil is transported by barge. It is also considered necessary that the applicant submit details for an alternative method of removal, if required.

ES Assessment

The submitted ES considers that the potential impacts and environmental risks relating to traffic and transport can be managed through mitigation measures. Whilst cumulative traffic increases have been identified for the A1089 (south) and A1089/ Station Approach junction, these increases would remain without implementation of the proposed development as a consequence of consented developments as and when they are built out. However, it is stated in the ES that the development is expected to have a low or negligible impact with mitigation in place. No environmental consequences upon the local highway network as a result of construction related traffic are expected. No additional mitigation, other than previously set out conditions, would be required. Once built, the operational phase of the development would involve much less vehicle movements and at that point only minimal vehicle movements would be involved with the servicing of the tunnel and equipment.

Conclusion for this Section

The assessment of the site access, traffic impacts, highways network assessment, construction traffic, traffic generation and trips, along with mitigation measures, have been subject to consultation and discussions throughout the lifetime of this planning application. As identified above, planning conditions are considered necessary to help mitigate the impact of the development, particularly during the construction phase.

Overall, the traffic impacts, highways network assessment, construction traffic, traffic generation and trips are considered acceptable. Conditioning of the submission of a CEMP and CWTP, which would include a travel plan, are in accordance with relevant policies and the NPPF.

IV. ECOLOGY AND BIODIVERSITY

Policy CSTP19 seeks measures to contribute to biodiversity in the Borough through positive biodiversity management. Policy PMD7 requires development proposals to retain local biodiversity value and enhance on site to mitigate any loss of biodiversity. Paragraph 175 of the NPPF advises that development should be 'minimising impacts on and providing net gains for biodiversity'.

An Environmental Impact Assessment (EIA) screening opinion was considered on a similar site boundary prior to submission of this application. It was considered that an EIA would not be required. However, the applicant resolved to submit this application with the inclusion on an ES, a decision largely made as a consequence of Gravesham Borough Council's assessment that an EIA would be required for the application falling within their boundary. Two single applications have been submitted. This is not a joint application. The middle part of the Thames is subject to the consideration of the MMO.

The site is partially located in a local wildlife site listed in the ES as The Tilbury Power Station Local Wildlife Site. It is noted from Council constraints that land to the east and north of the site are also designated as local wildlife sites identified as 'Tilbury Riverfront' and 'West Tilbury Marshes Complex'. These along with the Thames Estuary and Marshes Special Protection Area (SPA) fall outside of the site but the impact upon them and the Ramsar Site 'Zone of Influence' needs to be assessed. . The Local Planning Authority is therefore required to undertake a Habitat Regulations Assessment to understand the impact.

Mucking Flats and Marshes, located to the east, are Sites of Special Scientific Interest (SSSI). Land surrounding the site is designated as Metropolitan Green Belt.

Habitats Regulations Assessment

In considering the European site interest, the local planning authority, as a competent authority under the provisions of the Habitats Regulations, should have regard for any potential impacts that the proposals may have. The Habitat Regulations, which are a UK transposition of EU Directives relating to the conservation of natural habitats, flora and fauna and specifically wild birds, apply to certain designated sites including Special Protection Areas (SPA) and Ramsar sites. Of particular relevance to this application, regulation 63 of the Habitats Regulations requires, inter-alia, that:

Before deciding to give any permission for a plan which:

(a) is likely to have a significant effect on a European Site (either alone or in

- combination with other plans or projects), and*
- (b) is not directly connected with or necessary to the management of that site*

The competent authority must make an appropriate assessment of the implications for that site in view of that site's conservation objectives.

The table below is the Habitats Regulation Assessment (HRA) as required under the Conservation of Habitats and Species Regulations 2017. The procedure for assessment follows a number of key stages, which for this assessment are stages 1 to 3 as explained in the table below with the LPA's response to each stage:

Stage	LPA response
Stage 1 is the Screening Assessment	<p>The Thames Estuary & Marshes Special Protection Area (SPA) and Ramsar site lies within 2.5km of the proposed development and Natural England has identified that intertidal mudflats approximately 360m south of the tunnel construction site on the Tilbury side of the river constitute functionally-linked habitat for the SPA/Ramsar. Mucking Flats and Marshes SSSI, the nearest part of the SPA/Ramsar, is located approximately 2.3km to the east of the works at Tilbury.</p> <p>The ruling by the Court of Justice of the European Union in the case of People Over Wind, Peter Sweetman v Coillte Teoranta (C-323/17) held that 'it is not appropriate at the screening stage to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site'. Mitigation measures cannot be taken into account at the screening stage but they can be taken into account in an Appropriate Assessment.</p> <p>The TKRE project has the following impact pathways which could impact the Thames Estuary & Marshes SPA/Ramsar site:</p> <ul style="list-style-type: none"> • Construction related atmospheric noise impacts at either tunnelling site; • Construction related visual disturbance (human activity and lighting) impacts at either tunnelling site; • Potential for disturbance associated with use of the Port of Tilbury; • Water pollution; • Construction related air quality impacts; and

	<ul style="list-style-type: none"> Construction related noise disturbance impacts from the tunnelling itself beneath the River Thames. <p>The TKRE Cable Tunnel Replacement Project Report to inform Habitats Regulations Assessment – AECOM November 2024 (RIHRA 2024) provides the relevant information regarding each impact pathway.</p> <p>The scale of the works and the distance between the development site and SPA/Ramsar site means that it can be concluded that the project would have no likely significant effect on the Thames Estuary & Marshes SPA/Ramsar site either alone or in combination with other plans or projects except through noise impacts and possibly disturbance from the tunnelling into the water column.</p> <p>The transportation of spoil for disposal will be carried out by barge. One of three options for disposal is within the SPA (Cliffe Pools). It is accepted that no barge movements would occur to this site during November to March. No specific mitigation is required as this will be secured through the wider project CEMP.</p>
Stage 2 is the Appropriate Assessment	<p>The assessment of the sub-surface disturbance during tunnelling concludes that this operation will have no adverse impact on the integrity of Thames Estuary & Marshes SPA/Ramsar site. No specific mitigation is required.</p> <p>Modelling of noise levels associated with construction activities shows that changes in noise levels would be below the threshold levels known to cause disturbance to qualifying features.</p> <p>These impacts would not result in any in combination effects.</p>
Summary of the Appropriate Assessment	<p>It is concluded that there will be no adverse effect of the Proposed Development on the integrity of the Thames Estuary & Marshes SPA/Ramsar site either alone or in combination with other plans or projects.</p>

Having considered the proposed avoidance and mitigation measures above, it is concluded that with mitigation the project will not have an Adverse Effect on the Integrity of the European sites included within the Essex Coast RAMS. Natural England have been sent the Habitats Regulation Assessment in response to their consultation response, but the responsibility lies with the Council as the competent authority.

Having made this appropriate assessment of the implications of the plan or project for the site in view of that site's conservation objectives the authority may now agree

to the plan or project under regulation 63 of the Conservation of Habitats and Species Regulations 2017.

It is therefore agreed that local planning authority formally determine that, on the basis of the information available and the mitigation identified, the proposed development would not have a likely significant impact on a European site either alone or in combination with other plans or projects.

Ecological Assessment

The applicant's Preliminary Ecological Appraisal includes assessments for both the Gravesend and Thurrock applications sites. Section 2.2.1 identifies that the Thurrock site collectively provides a mixture of in-use and disused industrial grounds, grassland, scrubland, bare ground, ditches, ephemeral vegetation, short ephemeral vegetation, areas of no vegetation and large areas of unconsolidated sandy/ silty soils. The site affords industrial and agricultural landscapes along with views of residential urban areas.

A desk top study of the area was undertaken in November 2022 followed by a walkover survey carried out over several days in the same month. Section 3.1.1 of the report notes one site of international designation within proximity of the application site and six statutory designated sites. The ES identifies that widespread reptile species occur at Tilbury. Ornithology surveys have recorded gadwall; little egret; avocet; whimbrel; black tailed godwit; dunlin; and redshank. No badgers have been recorded at Tilbury, but are known to be active in the local area. No bats, great crested newts or otters and water voles have been recorded at Tilbury. Hazel dormice cannot be scoped at the site due to the lack of suitable connected habitats on site, and do not need to be further considered given the isolation of the specific blackthorn and bramble areas.

As stated above, the Habitat Regulations Assessment has assessed the potential effects on the nearby Thames Estuary and Marshes SPA and Ramsar site. Wintering birds were in the process of being surveyed at the point of submission of the application. Features and recommendations of works to be undertaken are listed in the Primary Ecological Appraisal document. This also details relevant site constraints for each of the recommended works, setting out that methods of reducing impacts to the designated sites in terms of noise disturbance, and light and dust pollution should be detailed within the CEMP.

It was also identified that an initial Biodiversity Net Gain calculation should be undertaken to quantify losses in biodiversity that may occur as a consequence of the development. Despite the application being submitted prior to the introduction of mandatory BNG, the applicant set out early in the process that National Grid have internal sustainability policies whereby a BNG assessment will be completed. However, given that the BNG component of the application is not considered as compulsory, these elements cannot be subject to planning condition.

The Preliminary Ecological Appraisal recognises that the banks along the river Thames provide foreshore habitats and are potentially suitable to support the overwintering assemblage of waders and waterfowls. The construction works have potential to impact these bird populations. Therefore, it has been recommended in this document that further assessments and surveys should be carried out to establish potential disturbance impacts on birds and this can be secured through a planning condition.

The ES Statement, Volume VI, Appendix 7.6 contains a Badger Survey Report. This document sets out that camera traps were deployed at the site on two occasions in September and October 2023. No badger activity was recorded, nor was there any evidence that badgers remain active in this area, despite the presence of badger setts. It is also detailed that badgers are a highly mobile species that can readily establish new setts, adopting new commuting and foraging patterns. It has therefore been suggested by the applicant's ecologist that an updated badger survey be carried out within 6 months prior to the commencement of construction of site to eliminate the presence of new setts. This recommendation is considered reasonable and is deemed justifiable to be included as a condition.

The report details that three important areas of grassland habitat exist within the application site which are located to the northeast, northwest, southeast and southwest sectors. It is recommended that impacts to these three areas be avoided. However, some loss of Tall Fescue Planthopper habitat is expected. Alternative adequate habitat should be provided nearby by way of compensation. Translocation of this species is recommended to take place between mid-July and end of August.

A revised BNG Metric was submitted, dated 3 June 2024, where it is recorded that irreplaceable habitat is present at baseline. Headline results outline that on-site net change would measure -13.5%. Off-site figures indicate that the development would result in an off-site net change of 9.26%. Overall, these figures equate to an increase in habitat units of 11.88% and watercourse units of 23.19%. However, as previously set out, this application is exempt from a BNG assessment as the application was submitted prior to the compulsory submission date of 12 February 2024. National Grid do adopt their own BNG policies and have therefore provided this information despite this not being necessary for this application.

Consultation Responses

Buglife provided a response on 12 March 2024, confirming that the construction phase would not result in any permanent habitat loss, but a temporary loss or modification of habitats to invertebrates would occur, albeit of a short duration. However, approximately 0.35ha of Tall Fescue grassland would be temporarily impacted for up to four years. The response remarks that whilst invertebrates can benefit from disturbance, the clearance of scrub and grassland should be minimised. It is recommended that a CEMP be included by way of condition for specific fencing

locations to be provided. Buglife further recommend that habitats impacted by the works should only be restored through natural regeneration and that reseedling is not necessary. The use of commercial seed mixes would not be appropriate in this area, whilst locally collected seed would be acceptable. It is commented that the OLEMP does not provide details as to how the retained and restored habitats would be managed in the long term. Details of this should be provided in the LEMP. Should the above be taken forward, Buglife are satisfied that these measures would reduce the impacts the proposal would have on invertebrates.

Natural England's initial response raised no objections subject to appropriate mitigation measures being secured. Mitigation measures were suggested as revisions to the Habitat Regulations Assessment, production of a CEMP and LEMP. A further reply was provided in September 2024 in response to the re-consultation based on the revision of the red lined location plan and updated documents submitted by the applicant. Again, no objections were raised with the recommendation that a detailed CEMP and LEMP be provided. It is considered appropriate that these can be addressed by way of an appropriately worded planning condition. Additional comments were made with regards to revisions to the submitted HRA, which has been produced by the applicant rather than the LPA.

The Environment Agency have provided comment based on the ecological impacts of the development. It is noted they refer to the construction and operational activities at the site and that these need to be managed in an effective manner to ensure that the ecological value of the wetland habitats and ditch habitats are not unacceptably impacted. Based on this, it is recommended that Chapter 15 of the Ecological Appraisal of the ES be adopted. The inclusion of a LEMP is also recommended by way of condition. Further comments received refer to justification provided by the applicant with regard to artificial lighting required at the site. This context is agreeable and the requirement for a submission of detailed design is not required.

The Council's Landscape and Ecology Advisor has reviewed the Ecological Impact Assessment along with the supporting relevant studies relating to protected species. The comment confirms that the inclusion of a biodiverse roof to the headhouse building is welcomed. Two matters previously addressed by Natural England have now been covered in an amended version of the Report to Inform the HRA, which is considered acceptable subject to confirmation from Natural England. As a competent authority, Thurrock has now adopted the Report to Inform the HRA rather than preparing its own document. It is suggested that a recommendation within the planning report to formally adopt TKRE Cable Tunnel Replacement Project – Report to Inform Habitats Regulation Assessment Rev 4 - National Grid – November 2024 be included. This is the preferred route for the LPA and this matter is covered in more detail below.

The Marine Management Organisation raise no concerns to the proposal. Comments have been included in their response setting out that EIA applications require a marine license which cannot be issued until a suitable application has been

submitted compliant with the Marine Works Regulations. An informative has been requested to be included.

Conclusion for this section

The EIA element of the application has been considered along with the necessity to consider a Habitat Regulations Assessment. In conjunction with the Council's Landscape and Ecology Advisor, the Council are satisfied that the proposed development, with mitigation measures, would not result in an adverse impact upon the Essex Coast RAMS. The applicant has provided the HRA document which is considered acceptable and has been adopted by the Council. Consultees have raised no concerns subject to conditions requiring the submission and approval of finalised versions of the LEMP and CEMP, which have been added as pre-commencement conditions.

Based on the above, the proposal accords with policies CSTP19 and PMD7 and the requirements of the NPPF.

V. FLOOD RISK AND DRAINAGE

Policies CSTP27 and PMD15 are relevant along with paragraphs 159 to 169 of the NPPF and the guidance contained within the PPG on flood risk need to be considered.

The site is located in Flood Zone 3a with a high probability of flooding. The applicant has submitted a revised Flood Risk Assessment (FRA) to support the application where a Sequential Test has been applied. The document confirms that the location for the proposed SEC development consists of hardstanding and is surrounded by historic ash landfill to the east and the former Tilbury B Power Station to the west (this area will form the temporary construction compound). The site is not located within an 'Area of Critical Drainage (AoCG)' where flooding during severe weather can occur. Whilst the site remains susceptible to surface water flooding, it is protected by defence measures along the frontage of the river Thames, which is designed for the 1 in 1,000 year flood event.

The proposed development has an expectancy of being operational in 2028 with an operational lifespan of 50 years for the Sealing End Compound and Headhouse buildings. The FRA has been assessed accommodating the 50 year term with a worst case scenario of 120 year life. The Flood Risk and Coastal Change Guidance is limited in this instance given this provides data up to 2125. A precautionary approach has been taken as a consequence where the upper end of climate change allowances has been considered.

Sequential and Exception Tests

As the site is located within the highest risk flood zone (flood zone 3a), as identified on the Environment Agency flood maps and as set out in the PPG's 'Table 1 - Flood Zones', the site is subject to a high probability risk of flooding. The proposal would provide essential utility infrastructure which has to be located in the flood zone area for operational reasons falling within the 'Essential Infrastructure' section of the PPG's 'Annex 3: Flood Risk Vulnerability Classification'.

In accordance with the PPG's 'Table 2 – Flood Risk Vulnerability and Flood Zone Incompatibility' the table identifies that this form of development would require an Exception Test.

The Council is satisfied that the development passes the sequential test in so far as the location of the development needs to be sited in the proposed location due to the location of the existing tunnel below the Thames that the proposal would in time replace, and due to the siting of the adjacent substation and the proximity of the existing overhead lines in this locality.

In accordance with paragraph 178 of the NPPF, exception tests should be informed by a site specific flood risk assessment where it is demonstrated that the development would provide wider sustainability benefits to the community that outweigh flood risk; and that the development will be safe for its lifetime taking into account the vulnerability of its users without increasing flood risk elsewhere, and where possible, will reduce flood risk overall. In addition to this, essential infrastructure, such as this, shall be designed and constructed to remain operational and safe in times of flood.

With regards to the Exception Test, the development would be considered to satisfy element a) as there would be a wider sustainability benefit through the continued need for electricity demand, supply and transmission to serve this area and the wider south east; the FRA confirms that the development would be safe for its lifetime including taking into account future users where numbers of people and reasons to access the SEC and associated tunnel would be limited. In addition, the FRA demonstrates that the development would be safe for more years than its expected lifespan of 50 years and shall remain operational and safe in times of flood.

Flood Risk Assessment

The site is protected from flooding by existing flood defences located in close proximity of the site along the bank of the river Thames. The applicant's FRA includes a breach evacuation strategy for users of the site. There is a site-specific Flood Warning and Evacuation Plan (FWEP) submitted with the application which identifies responsibilities to sign up to flood warnings, a flood event management response plan, an evacuation plan, a flood event recovery and an annual review process. The Council's Emergency Planner raises no objections and the FWEP will be subject of a planning condition for compliance reasons. In terms of physical works ground levels would be raised to mitigate and address potential groundwater flood risk.

The Environment Agency raise no objection to the application on flood risk grounds but recommend that flood proofing measures are implemented in building construction, safe refuge is also included in the safety of the building design, and that an emergency flood plan is implemented.

The Council's Lead Local Flood Authority raises no objections to the proposal, subject to the inclusion of pre-commencement conditions. It is recommended that a condition requiring the submission and approval of a Flood Risk Assessment covering Phase 2 for the final layout and design be included.

Given that an FRA and Flood Warning and Evacuation Plan have both been submitted with the application, the Council's Emergency Planning Officer has no comments to make. It would be necessary to condition both documents to ensure that the development is implemented and operated in accordance with these documents.

The Environment Agency have provided comments in relation to flood risk matters initially stating that the submitted FRA lack details relating to possible flood depths on site should a breach occur, and therefore raised a holding objection. An updated FRA has since been submitted and reviewed by the Environment Agency (EA) and the holding objection removed given that an adequate level of information on the actual risk and residual risk has now been provided and therefore no objections are raised from the EA. In addition, the finished floor levels of the headhouse of the shaft would be set 0.5 metres above ground level meaning they are set at or above breach level. However, the Environment Agency have suggested that consideration is to be given to the installation of a freeboard to ensure that the flood risk for the development remains acceptable for longer.

Whilst the above comments are appreciated, it is not considered necessary that such a design feature would be readily required for this development, at this time. The 0.5 metre raised floor level, along with the data relating to the lifespan of the development being assessed in excess of the years specified by the applicant, as previously set out, are considered to be adequate measures. Furthermore, once operational, the development would not require regular staffing. This would reduce the overall risk to the vulnerability of its future users.

Surface Water and Drainage

An Outline Drainage Management Plan has been submitted in conjunction with the FRA which includes a Surface Water Drainage Design Strategy. The document sets out that with the removal of a significant portion of hardstanding the overall impact on the drainage ditch and the volume of run-off from the site are likely to reduce. It is noted that reference is made to the adjacent existing compound which benefits from a surface water outfall. It is detailed that a similar outfall would not be appropriate for

the application site due to its location further away from the river and the gradient of the outfall pipe would not be feasible.

With regard to specific surface water details, the Council's Lead Local Flood Authority raises no objections to the development, subject to the inclusion of a pre-commencement condition. This would require the applicant to submit a surface water drainage scheme covering full component details of the surface water drainage system, including locations, gradients, invert levels, cover levels and construction details; calculations confirming compliance with the Non-Statutory Standards for Sustainable Drainage; details of maintenance arrangements relating to the surface water system; and infiltration tests to be carried out where SuDS are proposed. The surface water drainage scheme shall then be required to be implemented in accordance with the approved details. The above mentioned condition is considered acceptable.

Furthermore, the Environment Agency has recommended that the applicant utilises the EA pre-application service for advice on this matter as a water discharge environmental permit will be required. An informative will be added.

Water Environment

The ES submitted provides a chapter on the Water Environment at the Thurrock site setting out the likely effects the proposed development would have on the water environment during the construction, operational and decommissioning phases. The existing baseline status of the water environment has been taken into account including surrounding relative factors such as flood risk, surface water and groundwater. The study area included up to 1km outside of the application boundary.

The Outline Drainage Management Plan, referred to above, proposes a system which would direct roof and road surface waters towards filtration trenches collecting water in piped drainage systems. SuDs are stated as not being possible in the area of the SEC enclosure due to limited space. However, the biodiverse brown roof proposed to the Headhouse building would be capable of reducing flow, and treatment measures are proposed further upstream. It is noted that during periods of heavy rain or flooding the system could get surcharged. The current systems on site have the capacity to store up to one day storage without flooding, even if the system becomes surcharged. This capacity is set out in the ES as being sufficient. No foul sewers exist in site meaning that drainage will consist of a 9,000 litre cess pit, subject to amendment based on previous comments, situated close to the road for ease of maintenance.

A Water Framework Directive (WFD) screening and scoping has been produced based on a combination of studies. It is acknowledged that the proposed development has the potential to cause some degree of deterioration in ecological status including water bodies; prevent water bodies from meeting their objective of

'good' ecological status; and prevent or compromise the WFD objectives being met in other water bodies in proximity of the site.

The ES report goes on to state that spoil material from the site is contamination free, and it is assumed that the launch of the jetties would continue using their standard procedures and mitigation measures to prevent any further water pollution risks. This remark is in relation to the spoil being removed via the river Thames. This spoil would be relocated to suitable site receivers such as the RSPB site of Cliffe Pools which would provide ecological benefit to such locations.

Cumulative effects, by virtue of other committed developments and granted permissions, have been considered. These are collectively deemed as not being likely to result in any significant changes to the baseline conditions set out above.

ES Assessment

Environmental impacts have not been raised by the applicant within Chapter 4 (EIA Methodology) of Volume II of the ES. Nor have impacts been raised by statutory consultees in relation to flood risk matters and surface water drainage, notwithstanding the recommended conditions set out in the above sections. The ES therefore identifies that there would not be any significant effects from the construction and operation phases of the development.

Conclusion to this section

No objections have been raised from the Environment Agency, Lead Local Flood Advisor or Emergency Planner as the proposal would not increase flood risk or impact upon drainage. On this basis, the proposal is considered acceptable with regard to policies CSTP27 and PMD15 and with regard to paragraphs 159 to 169 of the NPPF and the guidance contained within the PPG.

VI. NOISE AND VIBRATION

Policy PMD1 seeks to safeguard amenity from noise and vibration pollution. Paragraph 184 of the NPPF advises that 'decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment...and in doing so they should mitigate and reduce to a minimum potential adverse impact resulting from noise from new development, and avoid noise giving rise to significant adverse impacts on health and the quality of life'. The PPG also offers guidance on noise with links to the Noise Policy Statement for England (NSPE), World Health Organisation (WHO) Guidelines and various British Standards.

A Baseline Noise and Vibration Report has been submitted as part of the ES, along with a Noise and Vibration Calculations and Modelling Report. A Human Hearing and Acoustic Terminology Report has also been submitted in order to assess the

proposed development's impact upon noise.

Volume VI, Appendix 11.2 of the ES identifies the extent of baseline conditions to be considered, including movements at the nearby Port and other movements along the river Thames. Day and night noise levels have been considered with ambient noise levels assessed. Baseline monitoring was undertaken during April and June 2023 comprising of unattended continuous noise monitoring over a 2 month period, and attended noise and vibration measurements over a 1 day period. Sensitive receptors have been identified around the crossing site which could be impacted during construction or operational phases.

It is noted that table 5.1 setting out the measurements recorded for unattended noise levels is present and demonstrates that the ambient noise levels during daytime periods range between 48 and 68dB. Evening noise levels range between 44 and 68dB, with nighttime noise levels ranging between 42 and 62dB.

In summary, the main sources of noise observed within the vicinity of the application site was site operations from Tarmac and Euromix Concrete industrial sites, the National Grid substation and the nearby Hyundai car park. It is acknowledged that the construction phase of the development would give rise to increased sound levels in the region of 10dB. The vibration survey results demonstrate no significant sources of existing vibration prior to the commencement of the construction works.

The applicant's ES has modelled noise levels from piling and excavation works, tunnelling, slurry treatment, installation, reinstatement and impact piling, all during the construction phase. Calculations have been modelled considering the worst case scenario, so may therefore be overestimated. The ES recognises that construction activities are likely to cause some noise increases to sensitive receptors. An Outline Construction Environmental Management Plan has been submitted and a full version would be secured and implemented as a planning condition to mitigate and manage on site construction activities. In addition, the location of the site in an industrial context must be taken into consideration in this instance. Noise associated with the construction phase would only be for a temporary period and the ES assessed this and noise from the operational phase to not result in any 'significant effects'.

The Council's Environmental Health Officer has confirmed that operational noise from overhead lines and pylons would replace the existing infrastructure and have therefore been scoped out of the ES, which is acceptable from a planning perspective. Predicted construction noise levels submitted are below the threshold of LOAEL and are not considered as significant. Whilst impact piling would result in an exceedance of the LOAEL, control measures are proposed to mitigate the effects through the adoption of BPM. The Environmental Health Officer agrees that the methodology and findings set out in Chapter 11 of the ES would result in no significant noise or vibration during both construction and operational phases. This is providing mitigation measures are secured within the final CEMP.

Conclusion to this section

Given that no objections have been raised by the Council's Environmental Health Officer in relation to noise levels, subject to securing a detailed CEMP including detailed mitigation measures, the proposal is considered acceptable with regard to policy PMD1, the criteria set out in paragraph 184 of the NPPF and guidance within the PPG.

VII. AIR QUALITY

Policy PMD1 seeks safeguard amenity from air pollution and paragraph 186 of the NPPF requires 'planning decisions to sustain and contribute towards compliance with relevant limit values or national objectives for pollutants' along with guidance within the PPG.

Air Quality was 'scoped in' for the Environmental Impact Assessment and the ES assesses the proposed development's impact upon air quality. In relation to baseline conditions, the site is not within an Air Quality Management Area (AQMA).

Operational emissions have been screened out of the ES assessment as it is anticipated that during the operational phase of the development sources of emissions to air would be limited to maintenance vehicles and small plant. Usage on site would be minimal in the phase. The ES considers that small and intermittent sources of emission would not be capable of contributing to a significant effect.

The proposed development as a whole has the potential to impact local air quality. In relation to the construction phase, dust emissions, construction phase traffic emissions and generator plant emissions activities are likely to impact amenity, human health and nature conservation receptors close to the site. Without mitigation measures there is potential for the construction to result in significant effects on local air quality.

The construction phase will be likely to result in dust emissions arising from earthworks, construction works and vehicle movements. The ES study assesses this impact in line with Institute of Air Quality Management (IAQM) guidance; site plant and non-road mobile machinery emissions to be used during the construction phase; and emissions from onsite power generation, which is to meet the energy demand for tunnel boring. The Outline CEMP details that plant and vehicles on site will be kept in good working order which will reduce emissions in terms of fumes and smoke, noise and vibration. Measures to mitigate impacts to air quality by virtue of particulate measures are also proposed. Standard measures, to ensure air quality, will be implemented on site. It is detailed that, by implementing such measures, impacts on human health, dust nuisance, and impacts to surrounding ecological habitats by limiting the deposition of dust and changing the impact from 'likely significant effects' to 'reduced effects' that are unlikely to be significant.

The ES recognises the main dust impacts across the site categorising the development into 4 types of development. The Outline CEMP also sets out that the contractor will be required to appoint a nominated person to undertake on and off site inspections where receptors will be monitored in terms of dust. These findings will be recorded in a log and will be made available to the LPA when requested. Other mitigation measures are also suggested such as wheel washing facilities and strategic planning of the assembly of plant machinery on site. A Construction Environmental Management Plan would be secured and implemented as a planning condition to mitigate and manage dust and air quality controls arising from soil/ground conditions and vehicle emissions from construction activities.

The Council's Environmental Health Air Quality Officer has confirmed that the mitigation measures included within the ES (Chapter 12) and associated Appendix would be adequate to alleviate any potential air quality impacts.

Conclusion to this section

Given that the Council's Environmental Health Officer raises no objections, subject to air quality mitigation measures being secured through a Construction Environment Management Plan, Officers are satisfied that the proposal would not result in significant impacts upon air quality when considering the surrounding existing uses. For this reason, the proposal is considered acceptable with regard to policy PMD1, the criteria set out in paragraph 186 of the NPPF and guidance within the PPG.

VIII. LAND CONTAMINATION

Policy PMD1 seeks to minimise pollution and impacts upon amenity and the natural environment with a requirement for suitable mitigation measures to be imposed through planning condition or obligation. Similarly paragraphs 196 to 201 of the NPPF seek to minimise the adverse impact impacts of pollution on ground conditions and the natural environment.

A Land Contamination Preliminary Risk Assessment has been submitted with the application which identifies a moderate risk to human health for both current and future site user as a consequence of the potential range of volatile and non-volatile contaminants present on site. The locality of land fill sites and the unsaturated soils and groundwater due to the site's historical use as a power station are also considered to contribute to the overall risk.

The Environment Agency have reviewed the Land Contamination Preliminary Risk Assessment and agree with the conclusion of the report. However, as recommended, site investigation works will be required in relation to the risk to the water environment and a piling risk assessment. The submission of such documents can be covered by suitable conditions as a pre-commencement requirement, which would be appropriate in this instance.

In addition to the above, the Council's Environmental Health Contaminated Land Officer has confirmed that the submitted Outline CEMP recommends that a Generic Quantitative Risk Assessment (GQRA) should be undertaken. The GQRA should be informed using data from a previous Phase II investigation. This will determine whether any of the potential risks identified are present or are of material concern. A site specific Remediation Strategy may be required if contamination is encountered and considered to pose an unacceptable risk to human health and/ or controlled waters.

If driven piles are proposed, then a piling risk assessment should be carried out to prevent the migration of any potential contaminants into the underlying aquifer.

Conclusion for this section

Based on the consultation responses received and the recommended mitigation measures, the application raises no concerns in relation to policy PMD1 and paragraphs 196 to 201 of the NPPF.

IX. ENERGY AND CLIMATE CHANGE

A number of policies within the LDF seek to improve energy efficiency and combat climate change. Policy CSTP25 seeks to address climate change and reduce CO2 emissions and policies CSTP26 and PMD13 both seek to encourage low carbon energy sources. Specifically, policy PMD13 sets a requirement for 20% of energy to come from decentralised, renewable or low carbon sources for development of more than 1,000m2 by 2020. Policy PMD12 sets a BREEAM 'outstanding' requirement by 2019. These policies are compliant with the aims of paragraphs 146 and 165 of the NPPF and guidance within the PPG. The Council's Design Strategy DPD (March 2017) indicates that 'energy efficiency measures deliver considerable savings in running costs during the life of the building.

The applicant has submitted a Sustainability Statement with the application. The document sets out their vision to make a positive contribution to the environment, whilst acknowledging day to day activities have an environmental impact. The Statement has been produced specifically to support this application covering relevant economic sustainability topics.

Study data provided outlines that the development phases most likely to result in peaked carbon emissions would be during the construction and maintenance phases, with tunnelling associated activity creating the peak increase. However, it is stated that the contractor who will carry out the project would be expected to achieve carbon reductions targets, with further opportunities being sought. Therefore, whilst some of the carbon emissions are proposed to be reduced during development, the remaining emissions should be offset in line with National Grid's target to achieve a carbon neutral development.

Although already referred to in this report, it is noted that the Biodiversity Net Gain achieved would result in a gain of +3.6 habitat units. Whilst this would not achieve the minimum of 10% BNG, this is not considered as a requirement for this application given the original submission date pre-dated the BNG coming into effect.

The applicant sets out a Sustainability Action Plan which is a live document discussed each month by the project team and updated accordingly. The action plan covers carbon; resources; the natural environment; and wider sustainability considerations. It is considered this document would suitably evaluate and regularly update where necessary and proceed to implementation. However, this document appears more of an operational process for the applicant rather than needing to be subject to a planning condition.

X. HERITAGE AND ARCHAEOLOGY

Policy PMD4 seeks to ensure that the fabric and setting of heritage assets are appropriately protected and enhanced in accordance with their significance.

The applicant has submitted an ES with a Historic Environment section (Chapter 9) assessing the general historic character of the area, the condition of known archaeological and historic building assets and their setting based on a 1km radius. Designated Heritage Assets are detailed as the single scheduled monument asset of Tilbury Fort and associated Grade II listed Officers' Barracks to the west and the Grade II listed Tilbury Clock Tower War Memorial sited to the northwest. Non-designated heritage assets are the Medieval Sea Wall to the east and Tilbury Power Station to the west.

The ES acknowledges that construction would affect in impacts upon the area as a result of plant machinery and equipment, and the change in setting they may cause when being moved around the site; construction compounds and activities within the area; and the use of traffic management and increased levels of traffic. Such impacts are considered as short term and would be removed once the development has been completed. Permanent impacts as a consequence of the development are impacts upon heritage assets arising from earthworks excavation, drainage infrastructure to be installed and the formation of compounds; changes to the landscape and surrounding historic environment as a consequence of the proposed construction works; the disturbance of deposits; visual impacts upon the heritage assets in the area.

The Council's Landscape and Ecology Advisor has confirmed that due to the level of separation from the nearby Tilbury Fort and the industrial nature of the existing landscape, once operational, the development would have no material impacts on the setting or significance of nearby designated heritage assets, or the ability to appreciate their significance. The comments also states that the proposal would conserve the special interest of the listed building in accordance with Section 66(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 and the guidance

set out in the NPPF.

Historic England have confirmed agreement to the applicant's comments in the ES with regard to the nearest designated heritage assets to the northern side of the application site. They also acknowledge that the potential harm created to these structures as a result of the proposal would be significant, as a consequence of the changes to their setting by way of the pylon arrays and permanent new structures. Whilst there would be construction impacts, it is agreed these would be temporary.

Historic England's comment also clarifies that where there is harm, whether substantial or less than substantial, any level of harm requires a clear and justifiable reason why it should be permitted, and that harm will need to be weighed appropriately against the public benefits of the proposal. Historic England have engaged in a pre-application discussion with the applicant where full consultations have taken place prior to the submission of the application. Heritage issues have been considered, as documented in the ES, where such conclusions are broadly agreed by HE.

However, the comment does go on to state there is potential for unknown archaeological or non-designated heritage assets to be present from the footprint of the tunnel head and compound. Deep excavation works for the tunnel will also likely interact with Thames side paleoenvironmental deposits which have relative significance in terms of the valuable information they contain. In context, these would be considered of equivalence to a non-designated heritage asset. The ES outlines an approach for dealing with such events, and it is recommended that the Council refer to an archaeological advisor in that regard. The Outline WSI has been reviewed, with comments made at pre-application stage being adhered to and taken on board.

Historic England therefore recommend that a suitable condition is applied securing the programme of archaeological works and geoarchaeological works. No objections have been raised on heritage grounds, and it is recommended that some safeguards outlined in their advice is addressed in order for the application to meet planning policy requirements in relation to paragraphs 208 and 209 of the NPPF.

The Council's Archaeological Advisor confirmed that the applicant has previously engaged with them through their pre-application service in conjunction with Historic England and are familiar with the proposal. In accordance with paragraph 207 of the NPPF, no objections have been raised subject to conditions stating no development or groundworks shall take place until an archaeological programme has been submitted and approved, and that a final archaeological report and post excavation assessment report and updated project design to be submitted and approved.

ES Assessment

Chapter 9 of the ES sets out the historic baseline of the area (1km radius) and the applicants proposed mitigation measures regarding embedded mitigation to be used

during construction and continuing on site once operational, and additional mitigation measures such as implementing a CEMP, trial trench evaluations and written scheme of investigation (WSI). The ES assesses the residual effects and concludes that 'no residual significant effects' to the historic environment at Tilbury.

Conclusion for this section

Based on the above, it is considered that any impacts upon the surrounding heritage assets would be outweighed by the significance of the proposed infrastructure project. In addition, it has been acknowledged by all consulted parties that the majority of impact would only remain prior to the development being operational. Once the operational phase has been reached the impacts would be considered as similar to that currently experienced. Weighting must be given to the context of the surrounding area, including the existing industrial use which occupies much of the landscape when viewing the south of the site. The proposal is therefore in accordance with policy PMD4 and the NPPF.

XI. AMENITY IMPACTS

Policy PMD1 seeks to minimise impacts upon amenity from new development. Whilst noise and air quality have been covered in earlier sections of this report, additional impacts upon the surrounding area should also be considered to ascertain whether the impacts would be above those already experienced to a detrimental degree.

Disturbances as a result of tunnelling, and also from the additional port use has been considered. Noise and air quality mitigation measures have been proposed and assessed accordingly. Residential neighbours are a considerable distance from the application site with other uses in between. The increased movement and activity would take place as a result of the construction phase of this development would therefore not lead to any significant detrimental impacts upon amenity. The proposal would comply with policy PMD1 in that regard.

XII. OTHER MATTERS

The Port of Tilbury (PoTLL) have provided a comment on the application raising several points and objections. Whilst most comments have been addressed in the above sections, remarks refer to a lack of planning notice being received as landowner, in accordance with Article 13 of The Town and Country Planning (Development Management Procedure) Order 2015 whereby a holding objection was requested to be placed on the application. However, following the receipt of these comments contact was made with the applicant requesting confirmation be provided relating to any notice served to landowners whose land falls within the red lined location plan. The subsequent information provided by the applicant details that all landowners were suitably informed of the intention to submit this application, in accordance with the above legislation. Therefore, in this instance, and in addition

with the duration the application has been under assessment, the Council are satisfied that the correct procedure has been followed by the applicant.

Network Rail have provided comment strongly recommending the developer complies with their comments and requirements to maintain the safe operation of the railway in order to protect rail infrastructure. Comments request that development does not encroach onto Network Rail land or adversely affect railway land or structures. An informative has been added listing these requirements in full.

Anglian Water have confirmed that the application site offers no connection to the Anglian Water sewers and therefore have no comments to make.

National Gas Transmission assets would not be affected in this area.

Gravesham Borough Council have acknowledged the consultation request, and based on the application being determined by them which is connected to the proposed scheme, it has been recommended that local and national planning policies be referred to in this instance.

The Port of London Authority have provided comment following review of the application. Use of the Berth 5 at Tilbury Port is welcomed, and it is noted that the use of the Berth would not be required over the weekend or during nighttime hours meaning additional external lighting would not be required. It is also remarked that movement of materials and spoil through utilising the river Thames could result in a reduction of approximately 11,400 HGV movements on the road network. A River Works License will be required with regard to the proposed use of the river Thames and will be added as an informative.

The Council's Public Rights of Way Officer has commented that the development would run to the north of Public Footpath 146 and National Cycleway Route 13 initially requesting clarification as to whether the proposal would result in impact upon these routes. The applicant has since confirmed that these routes would be unaffected.

A query was also raised in relation to the ventilation system to be used as this appears to be facing towards the public highways and could impact the enjoyment of these routes. The applicant has since advised that the details of the final ventilation system has not yet been agreed or finalised. However, the Headhouse would be acoustically insulated to ensure that operational noise is acceptable. The proposed modelled approach to be used is similar to that assessed for residential development where a rating of no more than 10db above baseline is recorded. It would therefore be reasonable to include the submission of ventilation details as a pre-commencement condition.

As the site is set within the vicinity of an HSE controlled explosive zone, likely to relate to the immediate Tilbury Port area, a consultation was carried out with HSE resulting in a 'no interest' response to the development. It is therefore considered that

further consultation with HSE is not required.

7.0 CONCLUSIONS AND REASON(S) FOR APPROVAL

The proposed development is considered as an essential electricity infrastructure upgrade. The resulting and visible development would be similar to the existing SEC present within proximity of the proposed location. The industrial setting of the area, along with the reasonable scale of the headhouse building, would be acceptable whereby the impacts upon the area and the parts of the site within the Green Belt, in terms of visual appearance, design, layout and landscaping impacts would be acceptable.

Highways impacts and vehicle movements associated with the construction and operational phase have been suitably addressed, where it is considered that impacts upon the surrounding strategic and local road networks would be acceptable based on the evidence submitted.

Ecology and biodiversity impacts have been addressed, and are covered by relevant planning conditions, where necessary. In addition, it has been necessary to consider the EIA impacts of the proposed development. All statutory consultees have provided comment where matters of concern have been addressed by the applicant. It is now considered that the revised and updated Environmental Statement submitted with this application satisfactorily addresses all relevant matters with regard to the EIA element of the proposal.

In this instance, the applicant provided a document to inform the HRA, which has been reviewed and agreed by the Council's Landscape and Ecology Advisor. This document has now been adopted forming part of the permission being granted.

8.0 RECOMMENDATION

Approve, subject to the following conditions:

TIME LIMIT

- 1 The development hereby permitted shall be begun before the expiration of three years from the date of this permission.

Reason: To comply with Section 91(1) of The Town & Country Planning Act 1990 as amended by Section 51 of the Planning and Compulsory Purchase Act 2004.

APPROVED PLANS

- 2 The development hereby permitted shall be carried out in accordance with the following approved plans:

Plan Number(s):

Reference	Name	Received
PDD-100116-LAY-049 P01	Tilbury Headhouse – Planning – Proposed Roof Floor Plan	15th January 2024
PDD-100116-LAY-047 P01	Tilbury Headhouse – Planning – Proposed Ground Floor Plan	15th January 2024
PDD-100116-LAY-180 REV 2	Tilbury Headhouse – Planning – Proposed Site Sections	22nd December 2023
PDD-100116-ELE-003 REV 1	Tilbury Headhouse – Planning – Proposed Elevations	22nd December 2023
PDD-100116-LAY-050 REV 1	Tilbury Headhouse – Planning – Outline Sections	22nd December 2023
TKRE/60677311	Site Location Plan – Tilbury (Revision 1)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1) (Section 1)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1) (Section 2)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1) (Section 3)	12th August 2024
TKRE/60677311	Site Location Plan – Tilbury (Revision 1) (Section 4)	12th August 2024
PDD-100116-LAY-046 REV 2	Block Plan	22nd December 2023

Reason: For the avoidance of doubt and to ensure that the development is carried out in accordance with the details as approved with regard to policies PMD1 and PMD2 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

DETAILS OF MATERIALS TO BE SUBMITTED

- 3 Notwithstanding the information on the approved plans, no development of permanent structures shall commence above ground level until written details or samples of all materials to be used in the construction of the external surfaces of the development hereby permitted have been submitted to and approved in writing by the local planning authority. The development shall be carried out using the materials and details as approved.

Reason: In the interests of visual amenity and to ensure that the proposed development is integrated with its surroundings in accordance with policy PMD2 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

DETAILS OF BOUNDARY SCREENING

- 4 No above ground development of permanent structures shall take place until details of the siting, height, design and materials of the treatment of all boundaries including gates, fences, walls, railings and piers have been submitted to and approved in writing by the local planning authority. The screening as approved shall be completed prior to the first use of the development and shall be retained and maintained as such thereafter.

Reason: In the interests of the visual amenity of the area and to ensure that the proposed development, in the Green Belt, does not have a detrimental effect on the environment as required by policies PMD1, PMD2 and policy PMD6 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

CONSTRUCTION HOURS

- 5 No demolition or construction works in connection with the development shall take place on the site at any time on any Sunday or Bank / Public Holiday, nor on any other day except between the following times:

Monday to Sunday 0800 – 1900 hours

Unless in association with an emergency or the prior written approval of the local planning authority has been obtained. If impact piling is required, these operations shall only take place between the hours of 0900 - 1800 hours on weekdays.

Notwithstanding the above, upon completion of the shaft construction phase the tunnelling phase shall be permitted to be constructed up to 24 hours per day, seven days per week.

Reason: In the interest of nearby amenity and nearby ecology and biodiversity in accordance with policies PMD1 and PMD7 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN [CEMP]

- 6 No demolition or construction works shall commence until a Construction Environmental Management Plan [CEMP] has been submitted to and approved in writing by the local planning authority in writing. The CEMP should contain or address the following matters:

- (a) Water management including wastewater and surface water drainage;
- (b) Location and size of on-site compounds including the design layout of any proposed temporary artificial lighting systems;
- (c) Details of the method for the control of noise with reference to BS5228 together with a monitoring regime;
- (d) Measures to reduce vibration and mitigate the impacts on sensitive receptors together with a monitoring regime;
- (e) Measures to reduce dust with air quality mitigation and monitoring;
- (f) A method statement for the prevention of contamination of soil and

- groundwater and air pollution, including the storage of fuel, chemicals and other hazardous materials;
- (g) Details of a procedure to deal with any unforeseen contamination, should it be encountered during development;
 - (h) A Site Waste Management Plan,
 - (i) Details of method to control windblown dust;
 - (j) Details of security measures including lighting layout and design;
 - (k) Details of the duration of the tunnel construction and phasing over the lifecycle of the project
 - (l) Details of the contractor appointed to undertake the construction works, including contact details;
 - (m) Contact details for site managers including information about community liaison including a method for handling and monitoring complaints;
 - (n) Contact details for Ecological Clerk of Works (ECoW) appointed for the duration of the development ensuring pre-commencement checks are completed;

Works on site shall only take place in accordance with the approved CEMP.

Reason: In order to minimise any adverse impacts arising from the construction of the development and in the interests of ecology and biodiversity, the environment, and safety and amenity in accordance with policies PMD1 and PMD2 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

CONTAMINATED LAND IN ACCORDANCE WITH APPROVED DETAILS

- 7 The development hereby approved shall be carried out in accordance with the Land Contamination Preliminary Risk Assessment Tilbury document submitted and approved through this planning permission, and shall be used to inform the required site investigation and associated risk assessment in accordance with the requirements of conditions 8 and 9.

Reason: To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors in accordance with policies PMD1 and PMD7 of the adopted Thurrock Core Strategy and Policies for the Management of Development [2015].

SITE REMEDIATION SCHEME

- 8 Where identified as necessary in accordance with the requirements of condition 7, no development shall commence, other than that required to carry out remediation, until a detailed remediation scheme to bring the site to a condition suitable for the intended use by removing unacceptable risks to human health, buildings and other property and the natural and historical environment has been submitted to and approved in writing by the local planning authority. The scheme must include all

works to be undertaken, proposed remediation objectives and remediation criteria, timetable of works and site management procedures. The scheme must ensure that the site will not qualify as contaminated land under Part 2A of the Environmental Protection Act 1990 in relation to the intended use of the land after remediation. The development hereby permitted shall not commence until the measures set out in the approved scheme have been implemented. The Local Planning Authority must be given two weeks written notification of commencement of the remediation scheme works.

Reason: To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors in accordance with policy PMD1 of the adopted Thurrock Core Strategy and Policies for the Management of Development [2015].

VERIFICATION OR VALIDATION REPORT

- 9 Following completion of measures identified in the approved remediation scheme from Condition 8, verification or validation report that demonstrates the effectiveness of the remediation carried out shall be submitted to and approved in writing of the Local Planning Authority.

Reason: To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors in accordance with policy PMD1 of the adopted Thurrock Core Strategy and Policies for the Management of Development [2015].

IMPACT PILING

- 10 No impact piling shall take place without the applicant submitting an assessment of the impact of such works and a scheme of mitigation [including the hours and duration of works] and it being approved in writing by the Local Planning Authority. Development shall only take place in accordance with the agreed scheme and mitigation and the terms of any such approval.

Reason: To ensure that the development does not have an unduly detrimental effect on the amenities and enjoyment of residential properties or other commercial operators in the vicinity in accordance with Policy PMD1 of the adopted Thurrock Local Development Framework Core Strategy and Policies for the Management of Development [2015].

SURFACE WATER DRAINAGE – PERMANENT WORKS

- 11 Prior to operation, a surface water drainage scheme for the operation phase of the

development, based on the submitted sustainable drainage strategy, shall be submitted to and approved in writing by the Local Planning Authority. Details shall include:

- (a) Full details of all components of the proposed surface water drainage system including dimensions, locations, gradients, invert levels, cover levels and relevant construction details.
- (b) Supporting calculations confirming compliance with the Non-statutory Standards for Sustainable Drainage, and confirmation of the agreed discharge rate (currently stated as 0.4 l/s however the potential risk of blockage based on this rate is noted), and the attenuation volumes to be provided.
- (c) Details of the maintenance arrangements relating to the proposed surface water drainage system, confirming who will be responsible for its maintenance and the maintenance regime to be implemented.
- (d) The surface water drainage system shall be implemented and maintained in accordance with the approved details thereafter.
- (e) Infiltration tests to be carried out in line with BRE 365 for the locations where SUDS are proposed.

The surface water drainage scheme shall be constructed and completed in accordance with the details as approved prior to the first operational use of the development hereby permitted.

Reason: To ensure the incorporation of an appropriate drainage scheme and to avoid pollution of the water environment and to minimise flood risk in accordance with policies PMD1 and PMD15 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015] and to ensure compliance with the National Planning Policy Framework and the Non-Statutory Technical Standards for Sustainable Drainage Systems, and to ensure the proposed development is safe from flooding and does not cause flooding elsewhere.

FLOOD WARNING AND EVACUATION PLAN [FWEP] – IN ACCORDANCE WITH THE APPROVED DETAILS

- 12 Prior to the commencement of the development hereby approved the requirements of the Flood Warning and Evacuation Plan [FWEP] dated December 2023 which forms part of this planning permission shall be implemented, shall be made available for inspection by all users of the site and shall be displayed in a visible location all times thereafter.

Reason: To ensure that adequate flood warning and evacuation measures are available for all users of the development in accordance with policy PMD15 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

FLOOD RISK ASSESSMENT

- 13 The measures contained within the Flood Risk Assessment, which forms part of this planning permission, shall be fully implemented and in place prior to the first

operational use of the development and shall be retained and maintained as such thereafter.

Reason: To ensure that adequate flood protection measures are installed for the safety of the building and for the safety of all users of the development in accordance with policy PMD15 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

CONSTRUCTION TRAFFIC MANAGEMENT PLAN

- 14 No demolition or construction works shall commence until a Construction Traffic Management Plan [CTMP] incorporating a Construction Worker Travel Plan [CWTP] has been submitted to and approved in writing by the local planning authority. The CTMP shall contain or address the following matters as a minimum;
- (a) Details of the contractor appointed to undertake the construction works, including contact details;
 - (b) Construction traffic routing;
 - (c) Construction traffic vehicle type and quantum of movements;
 - (d) Details of an indicative site layout shall be provided;
 - (e) Wheel washing and sheeting of vehicles transporting loose aggregates or similar materials on or off site,
 - (f) Details of construction access or temporary access;
 - (g) Details of temporary hardstanding;
 - (h) Details of temporary hoarding/ fencing;
 - (i) Road condition surveys before demolition and after construction is completed; with assurances that any degradation of existing surfaces will be remediated as part of the development proposals. Extents of road condition surveys to be agreed as part of this CEMP;
 - (j) Details of the duration of the tunnel construction and phasing over the lifecycle of the project;
 - (k) Details regarding worst-case assumptions for vehicles trips (employee and operational movements) including details of their distribution and assignment through the Thurrock Highway network during the sensitive weekday peak hours 0700-0900 and 1600-1800. These are to be presented as turning flow diagrams with suitable commentary;
 - (l) Details of any changes to vehicle trips or construction assumptions different to those presented at full planning application stage;
 - (m) Details regarding the location of the satellite offices;
 - (n) Measures to manage down the impact of construction traffic on the Thurrock Highway during peak hours;
 - (o) Measures to encourage sustainable and active transport journeys for employee movements;
 - (p) Details of any abnormal load vehicle movements to be specified and agreed in advance with Thurrock Highways;

Thereafter, all construction activity in respect of the consented development shall be undertaken in full accordance with an approved CTMP and CWTP.

Reason: In order to mitigate any adverse impacts arising from the construction of the development on the M25, A13 (part) and A1089 in accordance with DfT Circular 01/2022 and in the interest of highway efficiency, safety and amenity in accordance with policy PMD1 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

CONSTRUCTION WORKER TRAVEL PLAN

- 15 Prior to commencement of the development hereby permitted, a Construction Worker Travel Plan shall be submitted to and agreed in writing with the local planning authority. The Construction Worker Travel Plan shall include detailed and specific measures to reduce the number of journeys made by car to the site and shall include specific details of the operation and management of the proposed measures. The commitments explicitly stated in the Construction Worker Travel Plan shall be binding on the applicants or their successors in title. The measures shall be implemented upon the first operational use of the development hereby permitted and shall be permanently kept in place. Upon written request, the applicant or their successors in title shall provide the local planning authority with written details of how the agreed measures contained in the Travel Plan are being undertaken at any given time.

Reason: To reduce reliance on the use of private cars, in the interests of sustainability, highway safety and amenity in accordance with Policy PMD10 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

SPOIL REMOVAL

- 16 The spoil arising at the site by virtue of the development hereby approved shall only be removed from site and taken to a barge vessel where it will be transported along the river Thames to another site for disposal. No other means of spoil removal shall be used.

Reason: To minimise the impacts upon the highway network and in the interests of sustainable transport methods in accordance with Policies PMD10 and CSTP18 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

BARGE MOVEMENTS

- 17 Prior to the removal of any spoil from site, in conjunction with the requirements of condition 16, details of barge movements including dates, times and number of vessels shall be submitted to and agreed in writing with the local planning authority.

Reason: To minimise the impacts upon the highway network and in the interests of sustainable transport methods and to utilise the nearby port infrastructure in accordance with Policies PMD10 and CSTP18 of the adopted Thurrock LDF.

LANDSCAPE AND ENVIRONMENT MANAGEMENT PLAN (LEMP)

- 18 No development shall commence until a detailed landscape and environment management plan has been submitted to and approved in writing by the local planning authority in consultation with Natural England. In addition, to the details included within the Outline Landscape and Environment Management Plan submitted with the application the document shall also include the following:
- (a) Details of spoil type to be removed from site and location/s for its disposal;
 - (b) Details of landscaping including planting species and planting schedule;
 - (c) Mitigation strategy for Tall Fescue Planthopper;
 - (d) Mitigation strategy for pollution prevention to protect designated sites;
 - (e) Construction monitoring schedule for invertebrates to ensure the long term presence of notable species and habitats;
 - (f) Post-construction monitoring schedule including the monitoring of invertebrates;
 - (g) Detailed design information relating to the biodiverse brown roof, including structural details to ensure necessary substrates can be supported;
 - (h) Details of any spoil being re-used across the site, particularly in the substrate of the brown roof
 - (i) Details of the establishment maintenance (0-5 years), medium management (5-10 year) and outline the long term management that will be required, identifying who will be responsible for the long term management of the landscape and ecology features

During the tunnelling phase of the development the applicant shall undertake a review of the approved LEMP to consider whether there are opportunities for further ecological enhancements to the development which shall be submitted to and approved in writing by the local planning authority. If this review concludes there are reasonable further enhancements that can be implemented these enhancements shall be implemented as agreed.

The landscape and environment management plan shall be implemented in accordance with the details as approved and retained thereafter. The development shall then be carried out and maintained in accordance with these approved details.

Reason: To protect and improve the appearance of the site and the surrounding area in the interests of visual amenity and to protect the existing ecology of the area and to provide biodiversity enhancement opportunities, in accordance with policies PMD1, PMD2, PMD6 and PMD7 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

ARCHAEOLOGICAL TRIAL TRENCHING/ EXCAVATION/ MONITORING

- 19 No development or preliminary groundworks of any kind shall take place until a programme of archaeological investigation by trial trenching and excavation has been secured in accordance with a written scheme of investigation which has been submitted by the applicant and approved in writing by the local planning authority.

Reason: To ensure that investigation and recording of any remains takes place prior to commencement of development in accordance with Policy PMD4 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

VENTILATION DETAILS

- 20 Prior to the commencement of the tunnelling phase details of the ventilation of the tunnel and head house building with regard to its location in close proximity to the adjacent Public Right of Way shall be submitted to and approved in writing by the local planning authority. This is to ensure that there is no impact upon the adjacent Public Right of Way or the users of the Public Right of Way. The ventilation system shall only be constructed in accordance with the approved details and shall be maintained and retained at all times thereafter.

Reason: In the interests of the visual amenity and users to the Public Right of Way in accordance with by policy PMD1 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

TEMPORARY EXTERNAL LIGHTING

- 21 Notwithstanding the details on the approved plans, prior to the commencement of development details of the means of temporary external lighting shall be submitted to and agreed in writing with the local planning authority. The details shall include the siting and design of lighting together with details of the spread and intensity of the light sources and the level of luminance. The lighting shall be installed in accordance with the agreed details and be removed prior to first operational use of the development, unless otherwise agreed in writing by the local planning authority.

Reason: In the interests of ecology and biodiversity and to ensure that the development can be integrated within its immediate surroundings in accordance with Policies PMD1 and PMD2 of the adopted Thurrock LDF Core Strategy and Policies for the Management of Development [2015].

Informatives:

- 1 Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended) - Positive and Proactive Statement:

The Local Planning Authority has acted positively and proactively in determining this application by identifying matters of concern within the application (as originally submitted) and negotiating, with the Applicant/Agent, acceptable amendments to the proposal to address those concerns. As a result, the Local Planning Authority has been able to grant planning permission for an acceptable proposal, in accordance with the presumption in favour of sustainable development, as set out within the National Planning Policy Framework.

- 2 River Works Licence

A River Works Licence is required with the Port of London Authority. The applicant is advised to contact the Port of London of Authority to discuss this requirement prior to commencing the development.

3 Public Footpath

Public Rights of Ways and Footpaths must remain open at all times during the development. Should any diversions be required these must be discussed and agreed by the PROW team.

Documents:

All background documents including application forms, drawings and other supporting documentation relating to this application can be viewed online: <http://regs.thurrock.gov.uk/online-applications>

	Report Author	Checked	Sign off
Initials	NH	CP	NJH/JK
Date	09.12.2024	13.12.2024 & 22.01.2025	24.01.25

Application: 20231313

**TOWN AND COUNTRY PLANNING ACT 1990
THE TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE)
(ENGLAND) ORDER 2015 (AS AMENDED)**

NOTIFICATION OF GRANT OF PERMISSION TO DEVELOP LAND
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To: **Kate McGregor, National Grid
1-3 Strand
London
WC2N 5EH
United Kingdom**

TAKE NOTICE that the **GRAVESHAM BOROUGH COUNCIL**, the Local Planning Authority under the Town and Country Planning Acts, has **GRANTED PERMISSION** for development of land situate at:

**Eastcourt Marshes Electricity Distribution Site
Mark Lane
Gravesend
Kent
DA12 2HN**

and being **Proposed construction of a new cable tunnel beneath the River Thames between Gravesend and Tilbury to provide additional transmission capacity. Above-ground infrastructure in the form of a new Cable Sealing End compound and a new head house building along with associated electricity infrastructure, access, parking, boundary treatment and two overhead gantry structures for future overhead lines. Temporary compound for the duration of the project to provide parking, staff welfare facilities, delivery vehicle parking, and equipment and machinery storage, including boundary treatment and lighting.** Your application dated 24th January 2024 is permitted subject to the following:-

Time Limit

1. The development hereby approved shall be begun not later than 3 years following the date of this decision.

Reason: In pursuance of Section 91 of the Town and Country Planning Act 1990, as amended by Section 51 of the Planning and Compulsory Purchase Act 2004.

Approved Plans & Documents

2. The development hereby permitted shall be carried out in accordance with the following schedule of approved plans:
 - Drawing no. 30003364-BHK-XX-XX-DR-A-01400 Rev. P03 - Gravesend Headhouse- Planning - Site Plan;
 - Drawing no. 30003364-BHK-XX-XX-DR-A-01402 Rev. P03 - Gravesend Headhouse- Planning - Proposed Site Sections;
 - Drawing no. 30003364-BHK-XX-XX-DR-A-01403 Rev. P03 - Gravesend Headhouse- Planning - Proposed Ground Floor Plan;

- Drawing no. 30003364-BHK-XX-XX-DR-A-01405 Rev. P03 - Gravesend Headhouse - Planning - Proposed Roof Floor Plan;
- Drawing no. 30003364-BHK-XX-XX-DR-A-01406 Rev. P03 - Gravesend Headhouse- Planning - Proposed Elevations;
- Drawing no. 30003364-BHK-XX-XX-DR-A-01407 Rev. P03 - Gravesend Headhouse - Planning - Proposed Sections;
- Drawing no. 30003364-BHK-XX-XX-DR-A-01408 Rev. P01 - Gravesend Headhouse Compound Block Plan - Existing (Planning Drawing);
- Drawing no. 30003364-BHK-XX-XX-DR-A-01409 Rev. P01 - Gravesend Headhouse Compound Block Plan - Proposed (Planning Drawing);
- Pack with drawing no. TKRE/60677311 - Site Location Plan - Gravesend x4 and three un-numbered drawings;
- TKRE Drainage Management Plan Ref. 30003364-BHK-XX-XX-RP-C-02060_TKRE DRAINAGE MANAGEMENT PLAN, dated 11 June 2024, Revision P03;
- Design and Access Statement Gravesend, December 2023;
- Planning Statement - Gravesend, December 2023;
- Flood Risk Assessment, Ref. 30003364-BHK-XX-XX-RA-C-02002_FLOOD RISK ASSESSMENT, dated 23/07/2024, Revision P04;
- Arboricultural Impact Assessment (AIA) Part 1, December 2023;
- BNG Metric;
- Biodiversity Net Gain Assessment and Strategy Report (Revision 1), July 2024;
- Report to inform Habitats Regulations Assessment, December 2023;
- Outline Landscape and Ecological Management Plan, December 2023;
- Ecology Technical Note Revision 02 - Response to Ecological Points Raised in KCC Advice to Gravesham BC Dated 27 February 2024;
- Sustainability Statement, December 2023, Revision 1;
- BNG Clarification Letter dated 06 January 2025;

Reason: For the avoidance of doubt and in the interests of proper planning.

Construction Environmental Management Plan (CEMP)

3. No development approved by this permission shall be commenced until a comprehensive Construction Environmental Management Plan (CEMP) and all associated appendices covering all environmental impacts of this development is submitted to and approved in writing by the Local Planning Authority in consultation with the Environment Agency, Local Highway Authority and GBC Environmental Protection. The development hereby permitted shall be carried out in accordance with the approved Construction Environmental Management Plan (CEMP). For the avoidance of doubt the Construction Environmental Management Plan (CEMP) shall, where practical, include but not exclusively cover the following:

Contaminated Land Strategy

4. Prior to shaft excavation works commencing a scheme that includes the following components to deal with the risks associated with contamination of the site shall each be submitted to and approved, in writing, by the Local Planning Authority:
 - A) A preliminary risk assessment which has identified:
 - (i) all previous uses
 - (ii) potential contaminants associated with those uses
 - (iii) a conceptual model of the site indicating sources, pathways and receptors potentially unacceptable risks arising from contamination at the site.
 - B) A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site.

C) The results of the site investigation and detailed risk assessment referred to in (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken.

D) A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in the remediation strategy in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.

The scheme shall be implemented as approved.

Reason: To protect and prevent the pollution of the water environment (particularly the Secondary (undifferentiated) and Principal aquifers) from potential pollutants associated with current and previous land uses in accordance with Policy CS19 of the Gravesham Local Plan Core Strategy (2014) and paragraphs 187, 196 and 197 of the National Planning Policy Framework (2024), the EU Water Framework Directive, Anglian River Basin Management Plan and Environment Agency Groundwater Protection Position Statements (2017) A4 - A6, J1 - J7 and N7.

Groundwater Monitoring and Maintenance Plan - Contamination

5. No development approved by this permission shall take place until a groundwater monitoring and maintenance plan in respect of contamination, including a timetable of monitoring (pre-, during and post-construction) and submission of reports to the local planning authority, has been submitted to, and approved in writing by, the Local Planning Authority. Reports as specified in the approved plan, including details of any necessary contingency action arising from the monitoring, shall be submitted to, and approved in writing by, the Local Planning Authority. The development shall be carried out in accordance with the approved details.

Reason: To ensure that the site does not pose any further risk to the water environment by managing any ongoing contamination issues and completing all necessary long-term remediation measures in accordance with Policy CS19 of the Gravesham Local Plan Core Strategy (2014) and paragraph 187 of the National Planning Policy Framework (2024).

Construction Traffic Management Plan

6. Prior to the commencement of the development hereby permitted a comprehensive Construction Traffic Management Plan shall be submitted to and approved in writing by the Local Planning Authority (in consultation with the Highway Authority). The plan shall include as a minimum:
- a. routing of construction and delivery vehicles to and from site,
 - b. parking and turning areas for construction and delivery vehicles and site personnel,
 - c. timing of deliveries,
 - d. wheel washing facilities,
 - e. temporary traffic management/signage,
 - f. a pre-condition survey of the local roads to be used,
 - g. a Sustainable Travel Plan to reduce the number of employees traveling by private car and parking in nearby public roads,
 - h. timings of HGV movements to cause minimum disruption,
 - i. liaison with the Lower Thames Crossing Team,
 - j. loading/unloading areas within the site compound,
 - k. waiting areas to avoid conflicting HGV movements,
 - l. particularly on the Thames and Medway Canal Road;
 - m. safe pedestrian access to the site;
 - n. the impact on highway trees and shrubs of the abnormal loads,

- o. construction phasing,
- p. construction routing plans and
- q. permitted construction traffic arrival and departure times.

Thereafter all construction activity in respect of the development shall be undertaken in full accordance with such approved details unless otherwise approved in writing by the Local Planning Authority in consultation with the Highway Authority.

Reason: To ensure the development would have no adverse impact to the safe and free flow of traffic on the highway network in accordance with Policy CS11 of the Gravesham Local Plan Core Strategy (2014) and section 9 of the National Planning Policy Framework (2024).

Archaeology

7. To evaluate and mitigate the impacts of development on heritage assets with archaeological and palaeo-environmental interest:

A) Prior to any development ground works the applicant (or their agents or successors in title) shall secure and have reported a programme of archaeological field evaluation works, in accordance with a Specification and written timetable which has been submitted to and approved in writing by the Local Planning Authority.

B) Following completion of archaeological field evaluation works, no development groundworks shall take place until the applicant or their agents or successors in title, has secured the implementation of any safeguarding measures to ensure preservation in situ of important archaeological remains and/or archaeological mitigation excavation and recording in accordance with a Specification and timetable which has been submitted to and approved by the local planning authority.

C) The archaeological safeguarding measures, mitigation excavation and recording shall be completed in accordance with the agreed Specification and timetable.

D) Within 6 months of the completion of archaeological works a Post-Excavation Assessment Report shall be submitted to and approved in writing by the local planning authority. The Post-Excavation Assessment Report shall be in accordance with Kent County Council's requirements and include:

- i. a description and assessment of the results of all archaeological investigations that have been undertaken in that part (or parts) of the development;
- ii. an Updated Project Design outlining measures to analyse, report and disseminate the findings of the archaeological investigations, together with an implementation strategy and timetable for the same;
- iii. a scheme detailing the arrangements for providing and maintaining an archaeological site archive and its deposition following completion.

E) The measures outlined in the Post-Excavation Assessment Report shall be implemented in full and in accordance with the agreed timings.

Reason: To ensure that features of archaeological and palaeo-environmental interest are properly examined and recorded in accordance with saved Policy TC7 of the Gravesham Local Plan First Review (1994) and section 16 of the National Planning Policy Framework (2024).

Sustainable Surface Water Drainage

8. No above-ground permanent development approved by this permission shall take place until a detailed sustainable surface water drainage scheme for the site operation has been submitted to and approved in writing by the Local Planning Authority. The detailed drainage scheme shall be based where practical upon the TKRE Drainage Management Plan prepared by Baker Hicks dated 11.06.2024 and shall demonstrate that the surface water generated by this development (for all rainfall durations and intensities up to and including the climate change adjusted critical 100 year storm) can be accommodated and disposed of without increase to flood risk on or off-site.

The drainage scheme shall also demonstrate (with reference to published guidance):

- a. that silt and pollutants resulting from the site use can be adequately managed to ensure there is no pollution risk to receiving waters.
- b. appropriate operational, maintenance and access requirements for each drainage feature or SuDS component are adequately considered, including any proposed arrangements for future adoption by any public body or statutory undertaker.

The drainage scheme shall be implemented in accordance with the approved details.

Reason: To ensure the development is served by satisfactory arrangements for the disposal of surface water and to ensure that the development does not exacerbate the risk of on/off site flooding in accordance with Policies CS18 and CS19 of the Gravesham Local Plan Core Strategy (2014) and section 14 of the National Planning Policy Framework (2024).

Foul Water Drainage

9. No above-ground permanent development approved by this permission shall take place until a strategy to deal with foul water drainage during operation is submitted to, and approved in writing by, the Local Planning Authority. The development shall be carried out in accordance with the approved details.

Reason: To ensure that the development does not contribute to, or is not put at unacceptable risk from, or adversely affected by, unacceptable levels of water pollution in accordance with Policy CS19 of the Gravesham Local Plan Core Strategy (2014) and paragraph 187 of the National Planning Policy Framework (2024).

Construction Ecological Management Strategy (CEMS) - Biodiversity/Biodiversity Method Statement

10. No development approved by this permission shall take place (including any site/vegetation clearance) before a construction ecological management strategy (CEMS - biodiversity) has been submitted to and approved in writing by the local planning authority. The CEMS - biodiversity shall be based on the avoidance, mitigation and compensation measures indicated within the ecological information submitted with the planning application. The CEMS - biodiversity shall include the following:
 - a. Risk assessment of potentially damaging construction activities;
 - b. The identification of biodiversity protection zones and the use of protective fences, exclusion barriers and warning signs. This shall include a suitable buffer zone(s) (as set out by a suitably qualified ecologist) for relevant protected and priority species;
 - c. Extent and location of proposed works shown on appropriate scale maps and plans for all relevant species and habitats;
 - d. Practical measures (both physical measures and sensitive working practises) to avoid or reduce impacts during construction (may be provided as a set of species or habitat-specific method statements);
 - e. The location and timing of sensitive works to avoid harm to biodiversity features;
 - f. Timetable for implementation, demonstrating that works are aligned with the proposed phasing of construction;
 - g. The times during construction when specialist ecologists need to be present on site to oversee works;
 - h. Details of any necessary protected species licences or reference to other relevant documents as required (e.g., Arboricultural Method Statement/ updated species survey reports/ecological design strategy);
 - i. Responsible persons and lines of communication; and
 - j. The role and responsibilities on site of an ecological clerk of works (ECoW) or similarly competent person.

The approved CEMS - biodiversity will be adhered to and implemented throughout the construction period (and beyond if required) in accordance with the approved details.

Reason: To ensure that construction of the development does not cause harm to biodiversity or ecology including protected species in accordance with Policies CS12 and CS19 of the Gravesham Local Plan Core Strategy (2014) and section 15 of the National Planning Policy Framework (2024).

Landscape Ecological Management Plan (LEMP)

11. No development approved by this permission shall take place until a Landscape Ecological Management Plan (LEMP), including long-term design objectives, management responsibilities and maintenance schedules for all wetland and ditch habitats has been submitted to, and approved in writing by, the Local Planning Authority.

The LEMP shall be carried out as approved and any subsequent variations shall be agreed in writing by the local planning authority.

The LEMP shall include the following:

- a. Details of treatment of operational site boundaries and/or buffers around water bodies; an adequate buffer zone extent (i.e. to provide good forage and shelter for water voles) to be identified and demarked on a scaled map;
- b. Details demonstrating how the buffer zone will be protected during development;
- c. Details of how any permanent proposed footpaths, fencing, lighting, and other aspects of the development may interact with the wetland or ditch habitats; the applicant should note that artificial light spill should be directed away from ecological receptors, sensitive lighting design guidance can be accessed via the Bat Conservation Trust;
- d. No light spill from permanent external artificial lighting into the watercourse or adjacent river corridor habitat. To achieve this the specifications, location and direction of external artificial lights should be such that the lighting levels within 8.5 metres of the top of bank of the watercourse are maintained at background level (background levels are considered to be a Lux level of 0-2);
- e. Details of maintenance regimes; including specific treatment of the ditch buffer zone and new wetland habitats;
- f. Details of any new wetland and ditch habitat created on-site, including any proposed planting scheme should be provided. Planting schemes should use native species, suited to the catchment character and management responsibilities should be provided.

Reason: To ensure the protection of wildlife and the supporting habitat and to secure opportunities for enhancing the site's nature conservation value, promoting positive conservation status for water vole in the area and to complement achievement of the proposed Biodiversity Net Gain ambition in accordance with Policy CS12 of the Gravesham Local Plan Core Strategy (2014) and section 15 of the National Planning Policy Framework (2024).

Ecological Design Strategy

12. No development approved by this permission shall take place (including any site/vegetation clearance) before an Ecological Design Strategy (EDS) has been submitted to and approved in writing by, the Local Planning Authority. The EDS shall ensure that on-site compensatory habitat is provided for relevant protected and priority species (as determined by a suitably qualified ecologist). The EDS shall ensure that both on and off-site compensatory habitat is provided for the projected permanent and temporary loss of reptile habitat (as identified in the AECOM Technical Note: Response to Ecological Points Raised in KCC Advice to Gravesham BC Dated 27th February 2024 (24th July 2024 Rev02). The EDS shall ensure the mitigation and compensation measures with regards to habitat improvements proposed, and the area of land required,

are based on available scientific research and government standing advice. If the proposed compensation site already has an existing population of the relevant species and/or is already proposed as compensation for other development, evidence shall be provided to demonstrate that the measures proposed are additional. The EDS shall include where practical the following:

- a. Up-to-date survey data carried out in accordance with best practice for the both the development site and the proposed off-site compensation site(s);
- b. Purpose and conservation objectives for the proposed works;
- c. Review of site potential and constraints;
- d. Description and evaluation of features to be managed;
- e. Detailed design(s) and/or working method(s) to achieve stated objectives. This shall include a detailed methodology for the movement of reptiles and measures to prevent reptiles returning to the site prior to and during the development. This shall also include details of how any receptor sites will be enhanced and be in a suitable condition to support the likely number of animals which will be moved, prior to any animals being moved, and details of the management of the compensation site(s) in perpetuity.
- f. Full details of soft landscape works, to include species, size and location of new habitats (e.g., trees, shrubs, hedges and grassed areas to be planted) with the extent and location/area of proposed works shown on appropriate scaled maps and plans;
- g. Full details of the proposed ecological features. For habitat boxes details shall include numbers, make and model, locations to include height, aspect and mounting location shown on scaled landscaping plans suitable for construction. For log piles and hibernacula details shall include materials, size, shape and construction methodology. Locations shall be shown on scaled landscaping plans suitable for construction;
- h. Extent and location/area of proposed works on appropriate scale maps and plans;
- i. Full details of the extent of appropriate buffers (as set out by a suitably qualified ecologist) for protected and priority species;
- j. Type and source of building materials to be used where appropriate, e.g. native species of local provenance;
- k. Timetable for implementation demonstrating that works are aligned with the proposed phasing of development;
- l. Details of the body or organisation(s) responsible for implementing the EDS and the mechanisms for securing the mitigation/compensation land and its management for the lifetime of the development;
- m. Details of initial aftercare and appropriate management prescriptions for relevant protected and priority species and habitats (as identified by a suitably qualified ecologist and in accordance with information submitted as part of the application) for the lifetime of the development within a Landscape and Ecological Management Plan;
- n. Preparation of a work schedule (including an annual work plan capable of being rolled forward over a five-year period);
- o. Details for monitoring (to be undertaken by a suitably qualified ecologist(s)) and remedial measures.

The EDS shall be implemented in accordance with the approved details. All features shall be retained as approved thereafter, unless remedial measures are required. Approval for any remedial measures shall be sought from the Local Planning Authority in writing and thereafter implemented as approved.

Reason: To ensure that construction of the development does not cause harm to species including protected species and their habitat in accordance with Policies CS12 and CS19 of the Gravesham Local Plan Core Strategy (2014) and section 15 of the National Planning Policy Framework (2024).

13. Notwithstanding the details shown on the approved plans, submitted documents and application form, before any permanent above ground works commence details and samples of all the external facing materials to be used in the construction of the development hereby permitted shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall then be constructed in accordance with these approved details and completed, in its entirety, prior to first use of the development.

Reason: In the interests of visual amenity and to protect the character and appearance of the area in accordance with Policy CS19 of the Gravesham Local Plan Core Strategy (2014) and section 12 of the National Planning Policy Framework (2024).

Hard Surface Treatments & Boundary Treatments

14. Prior to permanent above ground works, a scheme detailing the proposed hard surface treatments and boundary treatments including fencing shall be submitted to and approved, in writing, by the Local Planning Authority. This information shall include the means for surfacing and drainage. The scheme shall then be constructed in accordance with these approved details and completed, in its entirety, prior to first use of the development. Thereafter the surfacing and boundary treatments shall be retained and not subsequently altered.

Reason: To ensure an acceptable standard of development upon completion, in accordance with adopted Policy CS19 of Gravesham Local Plan Core strategy (2014) and section 12 of the National Planning Policy Framework (2024).

Verification Report – Surface Water Drainage

15. Prior to first use of the development hereby permitted a Verification Report, pertaining to the surface water drainage system and prepared by a suitably competent person, has been submitted to and approved by the Local Planning Authority. The Report shall demonstrate that the drainage system constructed is consistent with that which was approved. The Report shall contain information and evidence (including photographs) of details and locations of inlets, outlets and control structures; landscape plans; full as built drawings; information pertinent to the installation of those items identified on the critical drainage assets drawing; and, the submission of an operation and maintenance manual for the sustainable drainage scheme as constructed.

Reason: To ensure that flood risks from development to the future users of the land and neighbouring land are minimised, together with those risks to controlled waters, property and ecological systems, and to ensure that the development as constructed is compliant with and subsequently maintained pursuant to the requirements of Policies CS18 and CS19 of the Gravesham Local Plan Core Strategy (2014) and paragraph 182 of the National Planning Policy Framework (2024).

Off-site Biodiversity Measures

16. Prior to first use of development a mechanism shall be secured for the provision of ecological enhancements on land outside of the red line boundary based upon the approved Biodiversity Net Gain Assessment and Strategy Report (revision 1 July 2024) the mechanism shall be submitted to and approved in writing by the Local Planning Authority. The approved strategy shall be carried out in accordance with the approved details.

Reason: To ensure the development provides sufficient off-site biodiversity measures so that there is no net loss of biodiversity in the Borough in accordance with Policy CS12 of the Gravesham Local Plan Core Strategy (2014) and section 15 of the National Planning Policy Framework (2024).

Flood Risk

17. Prior to commencing operation, a scheme to show that the development is appropriately resilient to flooding shall be submitted to, and approved in writing, by the Local Planning Authority in consultation with the Environment Agency. The submitted scheme shall include:-
- a. Details and drawings of the proposed headhouses showing all openings through which flood water could flow including threshold levels, dimensions and any closures at such openings.
 - b. Plans and drawings should be based on the 1:1000-year breach flood event, using the latest data available from the Environment Agency.
 - c. A technical assessment detailing the flood risk reduction measures including the freeboard applied relative to the modelled flood level for each opening. Justification for the inclusion and adequacy of any active flood measures such as flood doors should be provided together with explanation why it is not possible to achieve full passive flood protection.
 - d. An operation and maintenance plan for any active flood risk reduction features such as flood doors. This should include details of when and how the active measures will be triggered. The scheme shall be fully implemented and subsequently maintained, in accordance with the scheme's timing/phasing arrangements, or within any other period as may subsequently be agreed, in writing, by the local planning authority.

Reason: To ensure the power supply infrastructure remains operational and safe for users in times of flood including in the event of a breach failure of the Thames Tidal Flood Defences in accordance with Policy CS18 of the Gravesham Local Plan Core Strategy (2014) and section 14 of the National Planning Policy Framework (2024).

Long Term Monitoring & Maintenance Plan - Contamination

18. Prior to first operation of the development a long-term monitoring and maintenance plan in respect of contamination including a timetable of monitoring and submission of reports to the Local Planning Authority, shall be submitted to and approved in writing by the Local Planning Authority. Reports as specified in the approved plan, including details of any necessary contingency action arising from the monitoring, shall be submitted to and approved in writing by the Local Planning Authority. Any necessary contingency measures shall be carried out in accordance with the details in the approved reports. On completion of the monitoring specified in the plan a final report demonstrating that all long-term remediation works have been carried out and confirming that remedial targets have been achieved shall be submitted to and approved in writing by the Local Planning Authority.

Reason: To protect and prevent the pollution of the water environment (particularly the Secondary (undifferentiated) and Principal aquifers) from potential pollutants associated with current and previous land uses in accordance with Policy CS19 of the Gravesham Local Plan Core Strategy (2014) and paragraphs 187, 196 and 197 of the National Planning Policy Framework (2024), the EU Water Framework Directive, Anglian River Basin Management Plan and Environment Agency Groundwater Protection Position Statements (2017) A4 - A6, J1 - J7 and N7.

Wildlife Sensitive Lighting

19. Prior to first use of the development hereby permitted, a lighting design plan for biodiversity shall be submitted to and approved in writing by the Local Planning Authority. The plan shall include the following:
- a. The identification of areas/features on-site where disturbance could occur to bat and invertebrate roosting/nesting/sheltering sites and/or foraging/commuting routes;

- b. The provision of an appropriate plan(s) to show how and where external lighting will be installed;
- c. The provision of technical specifications for the external lighting;
- d. The provision of lighting contour plans to show expected lux levels, so that it can be clearly demonstrated that areas to be lit will not disturb bat/invertebrate activity.

All external lighting shall be installed prior to first operation of the development in accordance with the specifications and locations set out in the plan, and these shall be maintained thereafter in accordance with the plan.

Reason: To ensure there is no harm caused to biodiversity from lighting in accordance with Policy CS12 of the Gravesham Local Plan Core Strategy (2014) and section 15 of the National Planning Policy Framework (2024).

Verification Report – Land Contamination

20. Prior to first use of the development hereby permitted a verification report demonstrating completion of works set out in the approved remediation strategy (Condition 4 - Land Contamination) and the effectiveness of the remediation shall be submitted to and approved, in writing, by the Local Planning Authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met. It shall also include any plan (a "long-term monitoring and maintenance plan") for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action, as identified in the verification plan. The long-term monitoring and maintenance plan shall be implemented as approved.

Reason: To protect and prevent the pollution of the water environment (particularly the Secondary (undifferentiated) and Principal aquifers) from potential pollutants associated with current and previous land uses in accordance with Policy CS19 of the Gravesham Local Plan Core Strategy (2014) and paragraphs 187, 196 and 197 of the National Planning Policy Framework (2024), the EU Water Framework Directive, Anglian River Basin Management Plan and Environment Agency Groundwater Protection Position Statements (2017) A4 - A6, J1 - J7 and N7.

Watching Brief

21. If, during development, contamination not previously identified is found to be present at the site then no further development (unless otherwise agreed in writing with the Local Planning Authority) shall be carried out until the developer has submitted a remediation strategy to the Local Planning Authority detailing how this unsuspected contamination shall be dealt with and obtained written approval from the Local Planning Authority. The remediation strategy shall be implemented as approved.

Reason: To protect and prevent the pollution of the water environment (particularly the Secondary (undifferentiated) and Principal aquifers) from potential pollutants associated with current and previous land uses in accordance with Policy CS19 of the Gravesham Local Plan Core Strategy (2014) and paragraphs 187, 196 and 197 of the National Planning Policy Framework (2024), the EU Water Framework Directive, Anglian River Basin Management Plan and Environment Agency Groundwater Protection Position Statements (2017) A4 - A6, J1 - J7 and N7.

Piling/Penetrative Ground Improvement Methods

22. Piling and tunnel shaft construction using penetrative methods shall not be permitted other than with the express written consent of the Local Planning Authority, which may be given for those parts of the site where it has been demonstrated that there is no resultant unacceptable risk to groundwater. The development shall be carried out in accordance with the approved details.

Reason: Piling or other penetrative ground improvement methods can increase the risk to the water environment by introducing preferential pathways for the movement of contamination into the underlying aquifer and/or impacting surface water quality therefore to avoid any harm to the water environment in accordance with Policy CS19 of the Gravesham Local Plan Core Strategy (2014) and section 15 of the National Planning Policy Framework (2024).

INFORMATIVES:-

1 REASON FOR IMPOSITION OF PRE-COMMENCEMENT CONDITIONS

Pursuant to Articles 35 (1) and (2) of the Town and Country Planning (Development Management Procedure) (England) Order 2015, the Local Planning Authority is satisfied that the requirements of condition nos. 3, 5, 6,7,10,11 and 12 including the timing of compliance) are so fundamental to the development permitted that such details must be submitted prior to the works commencing on site. The reasons for this are to ensure the proposed development does not harm the free flow of traffic on the highway, the environment or the amenity of residents and businesses, protect and prevent the pollution of the water environment from potential pollutants, to ensure that the site does not pose any further risk to the water environment, to ensure the construction impacts from the development including construction dust, site plant and equipment emissions and onsite construction power emissions would not impact on air quality or the amenity of local residents and businesses, to ensure that features of archaeological and palaeo-environmental interest are properly examined and recorded, to ensure the power supply infrastructure remains operational and safe for users in times of flood, to ensure that the structure of the flood defences are not impacted upon by the proposed work, to ensure that the development does not contribute to, or is not put at unacceptable risk from, or adversely affected by, unacceptable levels of water pollution, to ensure that construction of the development does not cause harm to biodiversity or ecology, to ensure the protection of wildlife and the supporting habitat and to secure opportunities for enhancing the site's nature conservation value, in order to ensure that construction of the development does not cause harm to species including protected species and their habitat and to ensure the development provides sufficient on-site biodiversity measures so that there is no net loss of biodiversity in the Borough. Due to the importance attached to these details, it is reasonable and necessary to seek full approval in advance of works commencing

2 DEVIATION FROM APPROVED PLANS

It is possible that any proposed deviation from the approved plans could be classed as a 'material' change requiring a further application/permission. In the event that any change is proposed, applicants are advised to seek advice from the Local Planning Authority [as proceeding without the necessary permissions could nullify this permission].

3 STATEMENT OF POSITIVE AND PROACTIVE APPROACH TO DECISION-MAKING

In accordance with Article 35 (2) of the Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended), and paragraph 39 of the National Planning Policy Framework (NPPF) 2024, the Local Planning Authority has approached the assessment and determination of this application in a positive and creative way and, where appropriate, has worked pro-actively with the applicant to secure a development that is sustainable and that improves the economic, social and environmental conditions of the area, and that is in accordance with the Development Plan for the area.

4 BUILDING REGULATIONS AND PARTY WALL ACT

This decision DOES NOT imply any consent which may be required under the Building Regulations or under any other enactment or provision. Nor does it override any private rights which any person may have relating to the land affected by this decision, including the provisions of the Party Wall etc. Act 1996.

5 ENVIRONMENTAL PERMITTING REGULATIONS - FLOOD RISK ACTIVITIES

The applicant may need an environmental permit for flood risk activities if they want to do work in, under, over or within 8 metres (m) from a fluvial main river and from any flood defence structure or culvert or 16m from a tidal main river and from any flood defence structure or culvert. Application forms and further information can be found at: <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>. Anyone carrying out these activities without a permit where one is required, is breaking the law.

6 KCC HIGHWAYS

Any changes to or affecting the public highway in Kent require the formal agreement of the Highway Authority, Kent County Council (KCC), and it should not be assumed that this will be a given because planning permission has been granted. For this reason, anyone considering works which may affect the public highway, including any highway-owned street furniture, is advised to engage with KCC Highways and Transportation at an early stage in the design process.

Across the county there are pieces of land next to private homes and gardens that do not look like roads or pavements but are actually part of the public highway. Some of this highway land is owned by Kent County Council whilst some is owned by third party owners. Irrespective of the ownership, this land may have highway rights over the topsoil.

Works on private land may also affect the public highway. These include works to cellars, to retaining walls which support the highway or land above the highway, and to balconies, signs or other structures which project over the highway. Such works also require the approval of the Highway Authority.

Kent County Council has now introduced a formal technical approval process for new or altered highway assets, with the aim of improving future maintainability. This process applies to all development works affecting the public highway other than applications for vehicle crossings, which are covered by a separate approval process.

Should the development be approved by the Planning Authority, it is the responsibility of the applicant to ensure, before the development is commenced, that all necessary highway approvals and consents have been obtained and that the limits of the highway boundary have been clearly established, since failure to do so may result in enforcement action being taken by the Highway Authority. The applicant must also ensure that the details shown on the approved plans agree in every aspect with those approved under the relevant legislation and common law. It is therefore important for the applicant to contact KCC Highways and Transportation to progress this aspect of the works prior to commencement on site.

Guidance for applicants, including information about how to clarify the highway boundary and links to application forms for vehicular crossings and other highway matters, may be found on Kent County Council's website: <https://www.kent.gov.uk/roads-and-travel/highway-permits-and-licences/highways-permissions-and-technical-guidance>. Alternatively, KCC Highways and Transportation may be contacted by telephone: 03000 418181

7 KENT FIRE & RESCUE

Applicants should be aware that the Fire and Rescue Service would require emergency access, as required under the Building Regulations 2010, to be established.

Fire Service access and facility provisions are a requirement under B5 of the Building Regulations 2010 and must be complied with to the satisfaction of the Building Control Authority. A full plans submission should be made to the relevant building control body who have a statutory obligation to consult with the Fire and Rescue Service.

8 MARINE MANAGEMENT ORGANISATION

Please be aware that any works within the Marine area require a licence from the Marine Management Organisation. It is down to the applicant themselves to take the necessary steps to ascertain whether their works will fall below the Mean High Water Springs mark <https://www.gov.uk/guidance/make-a-marine-licence-application>

The surface water discharge to a watercourse will require land drainage consent in line with the Board's Byelaws (specifically Byelaw 3 available at https://lowermedwayidb.co.uk/wp-content/uploads/2023/02/NKMIDB_Byelaws_DEFRA-approved.pdf).

10 UK POWER NETWORKS

Please note there are HV underground cables on the site running within close proximity to the proposed development.

Prior to commencement of work accurate records should be obtained from our Plan Provision Department at UK Power Networks, Fore Hamlet, Ipswich, IP3 8AA.

All works should be undertaken with due regard to Health & Safety Guidance notes HS(G)47 (Avoiding Danger from Underground services). This document is available from local HSE office.

Should any diversion works be necessary as a result of the development then enquiries should be made to our Customer Connections department. The address is UK Power Networks, Metropolitan house, Darkes Lane, Potters Bar, Herts, EN6 1AG.

You can also find support and application forms on our website [Moving electricity supplies or equipment | UK Power Networks](#)

Dated: 4 March 2025

Civic Centre
Windmill Street
Gravesend
Kent
DA12 1AU

Shazad Ghani
MPhil, MA, BA (Hons)
Head of Planning
Planning Service

NOTIFICATION TO APPLICANT

APPEALS TO THE SECRETARY OF STATE

- If you are aggrieved by the decision of your Local Planning Authority to refuse permission for the proposed development or to grant it subject to conditions, then you can appeal to the Secretary of State under Section 78 of the Town and Country Planning Act 1990.
- If this is a **householder application*** which has been refused and you want to appeal against your Local Planning Authority's decision then you must do so within **12 weeks of the date of this notice**.
- For all other applications, refused or permitted, if you want to appeal against your Local Planning Authority's decision then you must do so within 6 months of the date of this notice.
- **For further information regarding Appeals and to make an application please click the relevant link:**
<https://www.gov.uk/appeal-householder-planning-decision>
<https://www.gov.uk/appeal-planning-decision>
- The Secretary of State can allow a longer period for giving notice of an appeal, but he will not normally be prepared to use this power unless there are special circumstances which excuse the delay in giving notice of appeal.
- The Secretary of State need not consider an appeal if it seems to him that the Local Planning Authority could not have granted planning permission for the proposed development or could not have granted it without the conditions they imposed, having regard to the statutory requirements, to the provisions of any development order and to any

directions given under a development order.

- In practice, the Secretary of State does not refuse to consider appeals solely because the Local Planning Authority based their decision on a direction given by him.

***Householder applications**

These are:

- (a) applications for planning permission for development of an existing dwellinghouse, or development within the curtilage of such a dwellinghouse for any purpose incidental to the enjoyment of the dwellinghouse, or
- (b) an application for any consent, agreement or approval required by or under a planning permission, development order or local development order in relation to such development

but does **not** include –

- (i) an application for change of use;
- (ii) an application to change the number of dwellings in a building.

PURCHASE NOTICES

If either the Local Planning Authority or the Secretary of State for the Environment refuses permission to develop land or grants it subject to conditions, the owner may claim that he/she can neither put the land to a reasonably beneficial use in its existing state nor can he/she render the land capable of a reasonably beneficial use by the carrying out of any development which has been or would be permitted.

In these circumstances, the owner may serve a purchase notice on the Council (District Council, London Borough Council or Common Council of the City of London) in whose area the land is situated. This notice will require the Council to purchase his interest in the land in accordance with the provisions of Part VI of the Town and Country Planning Act 1990.

Delegated Report

Major Planning Application (EIA)

Planning Application No: 20231313

Location: Eastcourt Marshes Electricity Distribution Site Mark Lane Gravesend Kent

Description: Proposed construction of a new cable tunnel beneath the River Thames between Gravesend and Tilbury to provide additional transmission capacity. Above-ground infrastructure in the form of a new Cable Sealing End compound and a new head house building along with associated electricity infrastructure, access, parking, boundary treatment and two overhead gantry structures for future overhead lines. Temporary compound for the duration of the project to provide parking, staff welfare facilities, delivery vehicle parking, and equipment and machinery storage, including boundary treatment and lighting.

Applicant: Kate McGregor, National Grid

Site Visit Date: 7 March 2024

Submitted Documents/Plans

Cover Letter dated 18 December 2023 (Fees);

Cover Letter dated 2 August 2024;

Application form;

Drawing no. 30003364-BHK-XX-XX-DR-A-01400 Rev. P03 - Gravesend Headhouse - Planning - Site Plan;

Drawing no. 30003364-BHK-XX-XX-DR-A-01402 Rev. P03 - Gravesend Headhouse - Planning - Proposed Site Sections;

Drawing no. 30003364-BHK-XX-XX-DR-A-01403 Rev. P03 - Gravesend Headhouse - Planning - Proposed Ground Floor Plan;

Drawing no. 30003364-BHK-XX-XX-DR-A-01405 Rev. P03 - Gravesend Headhouse - Planning - Proposed Roof Floor Plan;

Drawing no. 30003364-BHK-XX-XX-DR-A-01406 Rev. P03 - Gravesend Headhouse - Planning - Proposed Elevations;

Drawing no. 30003364-BHK-XX-XX-DR-A-01407 Rev. P03 - Gravesend Headhouse - Planning - Proposed Sections;

Drawing no. 30003364-BHK-XX-XX-DR-A-01408 Rev. P01 – Gravesend Headhouse Compound Block Plan – Existing (Planning Drawing);

Drawing no. 30003364-BHK-XX-XX-DR-A-01409 Rev. P01 - Gravesend Headhouse Compound Block Plan – Proposed (Planning Drawing);

Pack with drawing no. TKRE/60677311 – Site Location Plan – Gravesend x4 and three un-numbered drawings;

TKRE Drainage Management Plan Ref. 30003364-BHK-XX-XX-RP-C-02060_TKRE DRAINAGE MANAGEMENT PLAN, dated 11 June 2024, Revision P03;

Design and Access Statement Gravesend, December 2023;

Planning Statement – Gravesend, December 2023;

Flood Risk Assessment, Ref. 30003364-BHK-XX-XX-RA-C-02002_FLOOD RISK ASSESSMENT, dated 23/07/2024, Revision P04;

Flood Warning and Evacuation Plan, December 2023;
 Arboricultural Impact Assessment (AIA) Part 1, December 2023;
 Land Contamination Preliminary Risk Assessment Gravesend, December 2023;
 Construction Traffic Management Plan (includes Construction Worker Travel Plan) dated 18 July 2024, Revision J;
 BNG Metric;
 Biodiversity Net Gain Assessment and Strategy Report (Revision 1), July 2024;
 Report to inform Habitats Regulations Assessment, December 2023;
 Outline Landscape and Ecological Management Plan, December 2023;
 Ecology Technical Note Revision 02 – Response to Ecological Points Raised in KCC Advice to Gravesham BC Dated 27 February 2024;
 Statement of Community Involvement, December 2023;
 Sustainability Statement, December 2023, Revision 1;
 Environmental Statement Volume I Non-Technical Summary, December 2023;
 Environmental Statement Volume II Chapter 1 Introduction, December 2023;
 Environmental Statement Volume II Chapter 2 Alternatives, December 2023;
 Environmental Statement Volume II Chapter 3 Protect Description, December 2023;
 Environmental Statement Volume II Chapter 4: EIA Methodology, December 2023;
 Environmental Statement Volume II Chapter 5 Consultation, December 2023;
 Environmental Statement Volume II Chapter 6 Planning Policy, December 2023;
 Environmental Statement Volume III Chapter 7 Biodiversity – Tilbury, December 2023;
 Environmental Statement Volume III Chapter 8: Landscape and Visual – Tilbury, December 2023;
 Environmental Statement Volume III Chapter 9 Historic Environment – Tilbury, December 2023;
 Environmental Statement Volume III Chapter 10 Traffic and Transport – Tilbury, December 2023;
 Environmental Statement Volume III Chapter 11 Noise and Vibration – Tilbury, December 2023;
 Environmental Statement Volume III Chapter 12 Air Quality – Tilbury, December 2023;
 Environmental Statement Volume III Chapter 13 Water Environment – Tilbury, December 2023;
 Environmental Statement Volume III Chapter 14 Materials and Waste – Tilbury, November 2023;
 Environmental Statement Volume IV Chapter 15 Biodiversity – Gravesend, December 2023;
 Environmental Statement Volume IV Chapter 16: Landscape and Visual – Gravesend, December 2023;
 Environmental Statement Volume IV Chapter 17 Historic Environment - Gravesend, December 2023;
 Environmental Statement Volume IV Chapter 18 Traffic and Transport – Gravesend, Revision 1, July 2024;
 Environmental Statement Volume IV Chapter 19 Noise and Vibration – Gravesend, December 2023;
 Environmental Statement Volume IV Chapter 20 Air Quality – Gravesend, December 2023;
 Environmental Statement Volume IV Chapter 21 – Water Environment – Gravesend, December 2023;
 Environmental Statement Volume IV Chapter 22 Materials and Waste – Gravesend, November 2023;
 Environmental Statement Volume VI Appendix 3.1: Outline Construction Environmental Management Plan, December 2023;
 Environmental Statement Volume VI Appendix 4.1 EIA Screening Opinions, December 2023;
 Environmental Statement Volume VI Appendix 4.2: EIA Screening Opinion Project Responses, December 2023;
 Environmental Statement Volume VI Appendix 4.3: Competent Expert Evidence, December 2023;
 Environmental Statement Volume VI Appendix 7.1 Preliminary Ecological Appraisal, December 2023;
 Environmental Statement Volume VI Appendix 7.2 Ornithological Baseline Report, December 2023;
 Environmental Statement Volume VI Appendix 7.3: Gear Crested Newt eDNA Surveys, December 2023;
 Environmental Statement Volume VI Appendix 7.4: Bat Survey Report, December 2023;
 Environmental Statement Volume VI Appendix 7.5: Otter & Water Vole Survey Report, December 2023;
 Environmental Statement Volume VI Appendix 7.6: Badger Survey Report, December 2023;
 Environmental Statement Volume VI Appendix 7.7: Reptile Survey Report, December 2023;

Environmental Statement Volume VI Appendix 7.8 – Invertebrate Report, December 2023;
 Environmental Statement – Volume VI Appendix 7.9: National Vegetation Classification Survey Report, December 2023;
 Environmental Statement Volume VI Appendix 7.10 Marine Assessment Screening, December 2023;
 Environmental Statement Volume VI Appendix 8.1 Landscape Character Assessment Tables – Tilbury, December 2023;
 Environmental Statement Volume VI Appendix 8.2 Visual Assessment – Tilbury, December 2023;
 Environmental Statement Volume VI Appendix 9.1: Historic Environment Desk Based Assessment, December 2023;
 Environmental Statement Volume VI Appendix 9.2: Desk-based Geoarchaeological Deposit Modelling Report, December 2023;
 Environmental Statement Volume VI Appendix 9.3: Written Scheme of Investigation for Geoarchaeological Deposit Modelling and Borehole Survey, December 2023;
 Environmental Statement Volume VI Appendix 10.1 Outline Construction Traffic Management Plan, December 2023;
 Environmental Statement Volume VI Appendix 10.2: Abnormal Load Assessment Report, December 2023;
 Environmental Statement Volume VI Appendix 10.3 Transport Statement Note (Tilbury), December 2023;
 Environmental Statement Volume VI Appendix 10.4: Transport Scoping Meeting Minutes (Tilbury), December 2023;
 Environmental Statement Volume VI Appendix 10.5 Receptor Sensitivity Levels (Tilbury), December 2023;
 Environmental Statement Volume IV Appendix 10.6 Baseline Traffic Movements (Tilbury), December 2023;
 Environmental Statement Volume VI Appendix 10.7 Preliminary Highway Impact Assessment (Tilbury), December 2023;
 Environmental Statement Volume VI Appendix 10.8 Magnitude of Change (Tilbury), December 2023;
 Environmental Statement Volume VI Appendix 10.9 Assessment of Construction and Decommissioning Phases (Tilbury), December 2023);
 Environmental Statement Volume VI Appendix 10.10 Cumulative Assessment (Tilbury), December 2023;
 Environmental Statement Volume VI Appendix 11.1 Human Hearing and Acoustic Terminology, December 2023;
 Environmental Statement Volume VI Appendix 11.2 Baseline Noise And Vibration Monitoring Report, December 2023;
 Environmental Statement Volume VI Appendix 11.3 Noise and Vibration Calculations and Modelling, December 2023;
 Environmental Statement Volume VI Appendix 12.1 Detailed Air Quality Assessment Methodology, December 2023;
 Environmental Statement Volume VI Appendix 12.2: Detailed Dispersion Modelling Methodology, December 2023;
 Environmental Statement Volume VI Appendix 13.1 Water Framework Directive Assessment, December 2023;
 Environmental Statement Volume VI Appendix 16.1 Landscape Character Assessment Tables (Gravesend), December 2023;
 Environmental Statement Volume VI Appendix 16.2 Visual Assessment Tables – Gravesend, December 2023;
 Environmental Statement Volume VI Appendix 18.1: Transport Statement Note – Gravesend, December 2023;
 Environmental Statement Volume VI Appendix 18.2 Transport Scoping Meeting Minutes – Gravesend, December 2023;

Environmental Statement Volume VI Appendix 18.3 Receptor Sensitivity Levels – Gravesend, December 2023;
Environmental Statement Volume VI Appendix 18.4 Baseline Traffic Movements (Gravesend), December 2023;
Environmental Statement Volume VI Appendix 18.5 Construction Worker Trip Distribution (Gravesend), December 2023;
Environmental Statement Volume VI Appendix 18.6 Preliminary Highway Impact Assessment (Gravesend), Revision 1, July 2024;
Environmental Statement Volume VI Appendix 18.7 Magnitude of Change (Gravesend), December 2023;
Environmental Statement Volume VI Appendix 18.8 Assessment of Construction and Decommissioning Phases (Gravesend), December 2023;
Environmental Statement Volume VI Appendix 18.9 Cumulative Assessment (Gravesend), Revision 1, July 2024;
Environmental Statement Volume V Chapter 23: Cumulative Effects Assessment, December 2023;
Environmental Statement Volume VI Appendix 23.1 Cumulative Assessment Long and Short List of Other Developments, December 2023;
Environmental Statement Volume V Chapter 24 Summary, December 2023.
Reptile Enhancement Strategy - Approach for Ensuring Local Reptile Population is Maintained During Works;
Photos of Existing Reptile Habitats;
BNG Clarification Letter dated 06 January 2025; and
Letter on National Planning Policy Framework (2024) changes.

Superseded

- ~~Environmental Statement Volume VI Appendix 18.6 Preliminary Highway Impact Assessment (Gravesend), December 2023;~~
- ~~Environmental Statement Volume VI Appendix 18.9 Cumulative Assessment (Gravesend), December 2023;~~
- ~~Flood Risk Assessment Reference: 30003364-BHK-XX-XX-RA-C-02002_FLOOD RISK ASSESSMENT dated 20 September 2023, Revision P02;~~
- ~~Environmental Statement Volume IV Chapter 18 Traffic and Transport – Gravesend, December 2023;~~
- ~~Biodiversity Net Gain Assessment and Strategy Report December 2023;~~
- ~~Biodiversity Net Gain Assessment and Strategy Report Part 2 of 2; and~~
- ~~TKRE Drainage Management Plan Reference 30003364-BHK-XX-XX-RP-C-02060_TKRE DRAINAGE MANAGEMENT PLAN.~~

Relevant Planning History

Reference	Description	Decision	Decision Date
20240063	Electricity Act 1989 - Overhead Lines- Consultation - Works at Gravesend: one existing terminal tower will be removed, and one new tower will be erected to facilitate a realignment. The new span will be 325m long, replacing an existing span of 400m and provide a net loss of approximately 78m of overhead line. To facilitate this replacement tunnel project, new cables in the replacement	Observations sent	14.06.2024

	tunnel must be connected to the existing high voltage 400kV overhead line network and a planning application under the Town and Country Planning Act 1990 has been submitted alongside this application.		
20230668	Request for a screening opinion in accordance with The Town and Country Planning Act (Environmental Impact Assessment) Regulations 2017 in respect of the one new shaft headhouse and one new cable sealing end compound.	Environmental Impact Assessment Is Required	03.08.2024

Development Plan

Gravesham Local Plan Core Strategy (2014)

- CS01 – Sustainable Development
- CS02 – Scale & Distribution of Development
- CS04 – Gravesend Riverside East and North East Gravesend Opportunity Area
- CS10 – Physical and Social Infrastructure
- CS11 – Transport
- CS12 – Green Infrastructure
- CS18 – Climate Change
- CS19 – Development & Design Principles
- CS20 – Heritage and the Historic Environment

Gravesham Local Plan: First Review (1994)

- P3 – Vehicle Parking Standards
- T1, T3, T4 – Impact of Development on Highway Network
- T5 – Access to the Identified Highway Network
- TC7 – Other Archaeological Sites

Paragraph 33 of the NPPF (2024) sets out that policies within adopted local plans should be reviewed to assess whether they need updating at least once every five years, and should then be updated as necessary. Such reviews are also a legal requirement as set out in Regulation 10A of the Town and Country Planning (Local Planning) England Regulations 2012.

The Council undertook such a review in September 2019 and found that the adopted Local Plan Core Strategy is in need of a partial review in terms of Policy CS02, due to the increased need for housing since the Local Plan Core Strategy was adopted and the need to ensure that a sufficient land supply exists to meet this need. Whilst saved policies from the Local Plan 1st Review (1994) generally conform with the NPPF (2024), the Council will also seek to replace these.

National Planning Policy Framework (2024) (Reflects February 2025 changes)

- Section 2 – Achieving Sustainable Development
- Section 4 – Decision-making
- Section 8 – Promoting healthy and safe communities
- Section 9 – Promoting sustainable transport
- Section 10 – Supporting high quality communications
- Section 12 – Achieving well-designed places
- Section 13 – Protecting Green Belt land
- Section 14 – Meeting the challenge of climate change, flooding and coastal change

- Section 15 – Conserving and enhancing the natural environment
- Section 16 – Conserving and enhancing the historic environment

Supplementary Planning Guidance

- SPG 2 – Residential layout guidelines including Housing Standards Policy Statement October 2015 Adopted 1996 – amended June 2020
- SPG 4 – KCC Parking Standards (2006)
- Design for Gravesham – Design Code (2024)
- Gravesham Landscape Character Assessment (2009)

South-East Inshore Marine Plan (2021)

- Policy SE-CAB-1
- Policy SE-CAB-2
- Policy SE-CAB-3

Consultations, Publicity and Representations

Consultees

*It is prudent to note that at the time the consultee comments were made the NPPF (2023) was in place and so consultees refer to that in their comments. However, it is not considered that the changes to the NPPF made in 2024 affect the comments made and so re-consultation was not considered required.

Buglife

Although Buglife has previously discussed the proposals with National Grid, this submission represents the first time that Buglife has been able to view substantial information regarding the application site that provides greater insights into its wildlife value.

Impacts to invertebrate assemblages within Thames Estuary South Important Invertebrate Area network

The Invertebrate Report written by Mark G Telfer (revised date, 13th November 2023) has assessed the invertebrate populations at the Gravesend site to be of county value. 307 species were recorded in just three survey visits from late July into September, indicating a diverse assemblage. Although the results would likely have been more impressive still with suitable spring and early summer surveys to capture the remaining interest on site the value of the site has been properly recognised and confirm that the site is in good condition for invertebrates.

The site is adjacent to the current mapped area of the Thames Estuary South Important Invertebrate Area (IIA), a network of sites that provide nationally or internationally significant places for the conservation of invertebrates and the habitats upon which they rely.¹ With new invertebrate data available as a result of this application, the Gravesend site will now be incorporated into the Thames Estuary South IIA, recognising the important habitat it provides in the wider landscape, including being functionally linked to the South Thames Estuary and Marshes Site of Special Scientific Interest (SSSI). The site also falls entirely within the Canal and Grazing Marsh, Highnam Local Wildlife Site (LWS) designated for its Coastal Floodplain Grazing Marsh Priority Habitat.

The construction phase will result in the permanent loss of just under 0.96 ha of Coastal Floodplain Grazing Marsh, with approximately 4.5 ha subject to temporary impacts for up to four years. All the site ditches will be retained along with a '*minimum buffer of 5m*'. As this is the only habitat to be retained on site, Buglife

would hope to see this buffer increased and ideally a phased approach to loss or modification of habitats rather than the whole area being cleared within a short time frame. It would also like to see a clear commitment to reinstating habitats as soon as possible after their initial disturbance.

Landscape proposals

Overall, the Outline Landscape and Ecological Management Plan (OLEMP) written by AECOM (dated December 2023) details proposals that in the long-term will replace much of the habitat lost, however, every effort must be taken to provide suitable habitats and features for the current invertebrate interest of the site. Buglife provides some additional recommendations below.

Wetland Features

New wetland features are to be created on the site that will link in with the existing ditch network. Buglife is unclear why the ditch network was not surveyed as part of the invertebrate assessment, and it would be recommended for a survey to be undertaken before works commence to help inform new ditch and reedbed creation to maximise their value for invertebrates.

Restoring Habitats

The OLEMP states that *"Where practicable, seed will be obtained from a local source for the purpose of maintaining continuity with local coastal and floodplain grazing marsh"*, however, the document also suggests the use of commercial seed mixes. Buglife would like to highlight that sowing commercial seed mixes near a SSSI is not best practice. The document 'Creating habitat for pollinators in Britain & Ireland' 2 sets out best practice guidance which should be followed to avoid impacts on South Thames Estuary Marshes SSSI.

Brown Roof creation

A brown roof is proposed and when constructed to a high standard, they can provide habitat of high ecological value to invertebrates. Buglife is pleased to see that only locally sourced seed and natural regeneration will be used to establish vegetation. Buglife has created a detailed guidance document 'Creating Green Roofs for Invertebrates'³ which provides some general principles on how to create biodiverse roofs.

Hornet Robberfly

Hornet Robberfly (*Asilus crabroniformis*) is a Priority Species under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 found on the site. Of this species, the Invertebrate Report states *"preferring sites with high abundance and diversity of dung beetle prey associated with horse dung"*. Horse grazing is the desired management for the southern fields. Buglife would like to highlight that the dosing of livestock with broad-spectrum de-wormers is damaging to insect development and alternative treatments should be used wherever possible. Dosing the livestock off-site and keeping them off such land of conservation value for at least 10 days after treatment will reduce the impact of worming treatments on the invertebrate dung fauna.

De-commissioned infrastructure

The OLEMP does not detail proposals for the current infrastructure on the site when it is de-commissioned at the end of the project. Details should be provided in the full LEMP, with opportunities taken to create habitats that will restore similar grazing marsh conditions to those currently found on site that support its diverse assemblage of invertebrates.

Buglife would urge these recommendations presented here to be taken forward into the more detailed LEMP and Construction Environmental Management Plans to help reduce the impacts from the proposals on invertebrates and provide the best opportunities in the future to maintain the sites invertebrate interest.

Environment Agency – 24/09/2024 (Latest comment)

Following the submission of our previous letter, dated 3 September 2024, referenced KT/2024/131375, we have undertaken further meetings with National Grid, as well as a series of internal discussions, concerning the proposed development and our flood risk objection. As a result of these discussions we are now in a position to **remove the previous objection** detailed in that response, on the basis the following **planning conditions** are included in any future planning permission.

The proposed development will only be acceptable if the following conditions are included.

Flood Risk Condition

Prior to commencing operation, the applicant will submit a scheme to show that the development is appropriately resilient to flooding. The scheme should be agreed in writing by the local planning authority, in consultation with the Environment Agency. The submitted scheme shall include:-

- Details and drawings of the proposed headhouses showing all openings through which flood water could flow including threshold levels, dimensions and any closures at such openings.
 - Plans and drawings should be based on the 1:1000-year breach flood event, using the latest data available from the Environment Agency
 - A technical assessment detailing the flood risk reduction measures including the freeboard applied relative to the modelled flood level for each opening. Justification for the inclusion and adequacy of any active flood measures such as flood doors should be provided together with explanation why it is not possible to achieve full passive flood protection.
 - An operation and maintenance plan for any active flood risk reduction features such as flood doors. This should include details of when and how the active measures will be triggered.
- The scheme shall be fully implemented and subsequently maintained, in accordance with the scheme's timing/phasing arrangements, or within any other period as may subsequently be agreed, in writing, by the local planning authority.

Reason

To ensure the power supply infrastructure remains operational and safe for users in times of flood including in the event of a breach failure of the Thames Tidal Flood Defences.

Advice to Local Planning Authority

Whilst we are willing to remove our objection to this application, we would still request that the conditions detailed in our response of 20 February 2024, referenced KT/2024/131375/01-L01 are included on any future planning permission (repeated below for ease of reference).

Condition 1

Pre and post development surveys are undertaken in regards to the flood defences on the northern shore of the development site.

Reason for condition 1

To ensure that the structure of the flood defences are not impacted upon by the proposed work and the level of flood defence protection they provide is maintained. Any damage caused by the development should be repaired at the developers cost.

Condition 2

Prior to each phase of development approved by this planning permission no development / No development approved by this planning permission (or such other date or stage in development as may be agreed in writing with the Local Planning Authority), shall take place until a scheme that includes the following components to deal with the risks associated with contamination of the site shall each be submitted to and approved, in writing, by the local planning authority:

1) A preliminary risk assessment which has identified:

- all previous uses
 - potential contaminants associated with those uses
 - a conceptual model of the site indicating sources, pathways and receptors
- potentially unacceptable risks arising from contamination at the site.

2) A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site.

3) The results of the site investigation and detailed risk assessment referred to in (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken.

4) A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in the remediation strategy in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.

Any changes to these components require the express written consent of the local planning authority. The scheme shall be implemented as approved.

Advice to LPA

This condition has been recommended as we are satisfied that there are generic remedial options available to deal with the risks to controlled waters posed by contamination at this site. However, further details will be required in order to ensure that risks are appropriately addressed prior to development commencing.

The Local Planning Authority must decide whether to obtain such information prior to determining the application or as a condition of the permission. Should the Local Planning Authority decide to obtain the necessary information under condition we would request that this condition is applied.

Condition 3

No occupation of any part of the permitted development / of each phase of development shall take place until a verification report demonstrating completion of works set out in the approved remediation strategy and the effectiveness of the remediation shall be submitted to and approved, in writing, by the local planning authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met. It shall

also include any plan (a "long-term monitoring and maintenance plan") for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action, as identified in the verification plan. The long-term monitoring and maintenance plan shall be implemented as approved.

Condition 4

No development should take place until a long-term monitoring and maintenance plan in respect of contamination including a timetable of monitoring and submission of reports to the Local Planning Authority, shall be submitted to and approved in writing by the Local Planning Authority. Reports as specified in the approved plan, including details of any necessary contingency action arising from the monitoring, shall be submitted to and approved in writing by the Local Planning Authority. Any necessary contingency measures shall be carried out in accordance with the details in the approved reports. On completion of the monitoring specified in the plan a final report demonstrating that all long-term remediation works have been carried out and confirming that remedial targets have been achieved shall be submitted to and approved in writing by the Local Planning Authority.

Condition 5

If, during development, contamination not previously identified is found to be present at the site then no further development (unless otherwise agreed in writing with the local planning authority) shall be carried out until the developer has submitted a remediation strategy to the local planning authority detailing how this unsuspected contamination shall be dealt with and obtained written approval from the local planning authority. The remediation strategy shall be implemented as approved.

Reasons for conditions 2, 3, 4 and 5

To protect and prevent the pollution of the water environment (particularly the Secondary (undifferentiated) and Principal aquifers) from potential pollutants associated with current and previous land uses in line with National Planning Policy Framework (NPPF 2023; paragraphs 180, 189 and 190), EU Water Framework Directive, Anglian River Basin Management Plan and Environment Agency Groundwater Protection Position Statements (2017) A4 – A6, J1 – J7 and N7.

Condition 6

The development hereby permitted may not commence until such time as a Detailed Construction Environmental Management Plan (CEMP) and all associated appendices has been submitted to, and approved in writing by, the Environment Agency and Local Authority.

Reasons for condition 6

To ensure that the proposed development, including tunnel shafts and the boring of the tunnel, does not harm the water environment in line with National Planning Policy Framework (NPPF 2023; paragraphs 180).

Condition 7

Piling and tunnel shaft construction using penetrative methods shall not be permitted other than with the express written consent of the Local Planning Authority, which may be given for those parts of the site where it has been demonstrated that there is no resultant unacceptable risk to groundwater. The development shall be carried out in accordance with the approved details.

<http://webarchive.nationalarchives.gov.uk/20140328084622/http://cdn.environment->

Reasons for condition 7

Piling or other penetrative ground improvement methods can increase the risk to the water environment by introducing preferential pathways for the movement of contamination into the underlying aquifer and/or impacting surface water quality.

For development involving piling or other penetrative ground improvement methods on a site potentially affected by contamination, where aquifer units are connected or where groundwater is present at a shallow depth, a suitable Foundation Works Risk Assessment based on the results of the site investigation and any remediation should be undertaken. This assessment should underpin the choice of founding technique and any mitigation measures employed, to ensure the process does not cause, or create preferential pathways for, the movement of contamination into the underlying aquifer, or impacting surface water quality.

Condition 8

The development hereby permitted shall not commence until a groundwater monitoring and maintenance plan in respect of contamination, including a timetable of monitoring (pre-, during and post-construction) and submission of reports to the local planning authority, has been submitted to, and approved in writing by, the local planning authority. Reports as specified in the approved plan, including details of any necessary contingency action arising from the monitoring, shall be submitted to, and approved in writing by, the local planning authority.

Reason for condition 8

To ensure that the site does not pose any further risk to the water environment by managing any ongoing contamination issues and completing all necessary long-term remediation measures. This is in line with paragraph 180 of the National Planning Policy Framework.

Condition 9

No development shall commence until a strategy to deal with foul water drainage is submitted to, and approved in writing by, the local planning authority.

Reason for condition 9

To ensure that the development does not contribute to, or is not put at unacceptable risk from, or adversely affected by, unacceptable levels of water pollution in line with paragraph 180 of the National Planning Policy Framework.

The CEMP appears to satisfactorily cover the main pollution prevention points we'd expect to see identified. General guidance can be found at Pollution prevention for businesses - GOV.UK (www.gov.uk).

Condition 10

No development shall take place until a Landscape Ecological Management Plan, including long-term design objectives, management responsibilities and maintenance schedules for all wetland and ditch habitats has been submitted to, and approved in writing by, the local planning authority.

The Landscape Ecological Management Plan (LEMP) shall be carried out as approved and any subsequent

variations shall be agreed in writing by the local planning authority.

The LEMP shall include the following:

- details of treatment of site boundaries and/or buffers around water bodies; we request for an adequate buffer zone extent (i.e. to provide good forage and shelter for water voles) to be identified and demarked on a scaled map.
- details demonstrating how the buffer zone will be protected during development.
- Details of how any proposed footpaths, fencing, lighting, and other aspects of the development may interact with the wetland or ditch habitats; The applicant should note that artificial light spill should be directed away from ecological receptors, sensitive lighting guidance can be accessed via the Bat Conservation Trust.
- no light spill from external artificial lighting into the watercourse or adjacent river corridor habitat. To achieve this the specifications, location and direction of external artificial lights should be such that the lighting levels within 8/5 metres of the top of bank of the watercourse are maintained at background levels. We considers background levels to be a Lux level of 0-2.
- details of maintenance regimes; including specific treatment of the ditch buffer zone and new wetland habitats.
- details of any new wetland and ditch habitat created on-site, including any proposed planting scheme should be provided. Planting schemes should use native species, suited to the catchment character. Management responsibilities should be provided.

Reason for condition 10

To ensure the protection of wildlife and the supporting habitat. Also, to secure opportunities for enhancing the site's nature conservation value in line with national planning policy, promoting positive conservation status for water vole in the area and to complement achievement of the proposed BNG ambition.

Informative: Environmental Permitting Regulations – Flood Risk Activities

The applicant may need an environmental permit for flood risk activities if they want to do work in, under, over or within 8 metres (m) from a fluvial main river and from any flood defence structure or culvert or 16m from a tidal main river and from any flood defence structure or culvert.

Application forms and further information can be found at: <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>. Anyone carrying out these activities without a permit where one is required, is breaking the law.

GBC Environmental Protection

The submitted information has been reviewed and the following comments are made with regards to areas relevant to Environmental Protection:

Noise and vibration

ES IV Chapter 19 covers noise and vibration for the Gravesend area. An appropriate noise assessment has been undertaken including background noise measurement and consideration of noise levels at the nearest sensitive receptors (both residential and non-residential) to the proposed operational headhouse (structure providing access to the tunnel shaft once operational). Of relevance to the Gravesend area, consideration has been given to construction noise/vibration and construction road traffic noise. In terms of vibration, the impact of piling activities has been assessed.

Due to the fact that the majority of the tunnelling work will be carried out underground, it is not envisaged that noise from this will be an issue during the construction.

As recommended by Environmental Protection previously, reference has been made to appropriate guidance and British Standards. Mitigation by way of standard best practicable means as provided in the relevant guidance and standards for noise and vibration will be included within the construction phase. These can be addressed by way of Construction Environmental Management Plan (CEMP) - see comments below on the outline plan submitted. Overall, due to the distance between the Gravesend site and the sensitive receptors, there are not predicted to be any significant noise or vibration impact during the construction or operation phases.

Air Quality

ES IV Chapter 20 deals with air quality for Gravesend and covers the Air Quality Assessment undertaken. It was agreed previously that there will be no air quality impact in the operation phase, as in Gravesend activity will be limited to maintenance only, so only impacts during the construction phase need to be looked at. For Gravesend, 3 Air Quality Management Areas near to the site have been noted and considered. One of these – the Northfleet Industrial Area AQMA (declared for exceedances of PM10) has recently been revoked. In reference to this area, the report confirms that HGV's will not be routed this way.

In terms of construction phase impacts, these have been appropriately assessed with regards to ecological receptors as well as human sensitive receptors. Construction impacts assessed include construction dust, site plant and equipment emissions and onsite construction power emissions. A baseline survey was undertaken at the Gravesend site for 3 months measuring NO2, PM2.5 and PM10 and local air quality monitoring results have also been referenced.

Mitigation measures have been identified where needed and relate to in the main to construction dust emissions and traffic emissions. Mitigation follows IAQM guidance, and the proposals put forward are acceptable. An Outline Traffic Management Plan and Outline Construction Environmental Management Plan has been produced and a Dust Management Plan is proposed.

Mitigation during the construction phase will follow IAQM guidance and the proposals put forward in section 20.8.2 of the Air Quality chapter are acceptable.

Although there is the potential for an impact on air quality during the construction phase (including construction traffic), with the mitigation measures in place, the risk is reduced such that the impact are unlikely to be significant.

Outline Construction Environmental Management Plan (CEMP)

ES VI Appendix 3.1 details the outline CEMP. This has been reviewed and the mitigation measures detailed in Table 8.1 are deemed appropriate for this proposal in terms of the Gravesend site. The Dust Management Plan is referred to in this table, but it would be more appropriate for this to be covered by a separate condition as this will be a detailed document.

Traffic, transport, deliveries etc are dealt with separately in the Outline Construction Traffic Management Plan

and matters relating to the routing of these are more for the Highways Officer/KCC to comments on.

Land Contamination

A Land Contamination Preliminary Risk Assessment for Gravesend has been submitted as a separate document to the EIA documents. The methodology and findings of this report are accepted. The report concludes that although overall there is a low risk to human health for current and future site users, there may be the presence of ground gas due to the made/infilled ground at the site. In addition, there is the potential for ground water to have been impacted through leaching of the any made ground contaminants. Piling could exacerbate this. To assess the above the report advises that a quantitative assessment (intrusive site sampling) is undertaken, and a remediation strategy drawn up as appropriate. This is agreed with and can be dealt with by way of a condition.

To address the above and other matters, the following conditions and informatives are recommended:

Construction Environmental Management Plan

A condition requiring a detailed CEMP using the outline CEMP submitted in the Environmental Statement to be submitted for approval is recommended.

Dust Management Plan – Air Quality

A condition requiring a detailed Dust Management Plan as outlined in the Environmental Statement to be submitted for approval is recommended.

Contaminated Land

No development approved by this permission shall be commenced prior to a contaminated land assessment (in accordance with the CLEA guidelines and CLR 11 methodology) and if necessary, an associated remedial strategy, together with a timetable of works, being submitted to the Local Planning Authority for approval.

- a) A site investigation strategy based on the relevant information discovered by the 'Land Contamination Preliminary Risk Assessment' dated December 2023 by AECOM Limited shall be carried out by a suitably qualified and accredited consultant/contractor in accordance with a Quality Assured sampling and analysis methodology.
- b) A site investigation report detailing all investigative works and sampling on site, together with the results of analysis, risk assessment to any receptors and a proposed remediation strategy shall be submitted to the Local Planning Authority. The Local Planning Authority shall approve such remedial works as required prior to any remediation commencing on site. The works shall be of such a nature so as to render harmless the identified contamination given the proposed end-use of the site and surrounding environment including any controlled waters.
- c) Approved remediation works shall be carried out in full on site under a quality assurance scheme to demonstrate compliance with the proposed methodology and best practice guidance). If during any works contamination is encountered which has not previously been identified then the additional contamination shall be fully assessed and an appropriate remediation scheme agreed with the Local Planning Authority.
- d) Upon completion of the works, this condition shall not be discharged until a closure report has been submitted to and approved by the Local Planning Authority. The closure report shall include details of the proposed remediation works and the quality assurance certificates to show that the works have been carried out in full in accordance with the approved methodology. Details of any post remediation sampling and analysis to show the site has reached the required clean-up criteria shall be included in the closure report together with the necessary documentation detailing what waste materials have been removed from the site.

e) Where applicable, a monitoring and maintenance scheme to include monitoring the long-term effectiveness of the proposed remediation over an agreed period of time, and the provision of reports on the same, must be prepared and approved in writing by the local planning authority.

Following completion of the measures identified in that scheme, and when the remediation objectives have been achieved, reports that demonstrate the effectiveness of the monitoring and maintenance carried out must be produced and submitted to the local planning authority.

Watching brief

The applicant shall undertake a watching brief during construction in case any contamination issue is encountered. If during development any contamination is found, the local planning authority should be informed as soon as practical and the work shall not continue until written agreement is provided by the LPA as to the appropriate measures to be taken to resolve the matter and they are satisfied that those measures have been carried out.

Lighting

Artificial lighting can cause a statutory nuisance under the Environmental Protection Act 1990. It is important that the applicants are not permitted to install external lighting that illuminate anything other than the ground within the curtilage of the development in order to assist in preventing a nuisance from occurring.

GBC Highways Development Management Officer

I have no objections; traffic generation can be considered to be insignificant as most of the construction works will be located in Tilbury. However, the removal of the tunnel boring machine does raise some concern, and this may require some form of control as it would appear to involve 5 abnormal loads which may have difficulty negotiating the Milton Road/Ordnance Road junction. For this reason, it is suggested any abnormal load movements should be restricted to Sundays only and ideally between the hours of 3 and 9 am to minimise traffic conflict for any abnormal vehicle movement using the A226.

The applicant should note that the A226 at Galley Hill Swanscombe, commonly used for abnormal loads, is currently closed due to the chalk spine partially collapsing and no details are available on when it may reopen.

KCC Biodiversity – 21/11/2024 (Latest comment)

SUMMARY

We have reviewed the additional ecological information submitted in support of this application (not yet available on the public register) and advise that sufficient ecological information has been provided.

Under section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 and paragraphs 180 and 186 of the National Planning Policy Framework (NPPF) 2023, biodiversity should be maintained and enhanced through the planning system. Enhancement refers to providing net benefits for biodiversity over and above requirements for avoidance, mitigation and compensation. As such, if planning permission is granted, we advise the conditions below are included.

Construction Ecological Management Plan

We suggest that the below wording is included as a condition for a Construction Ecological Management Plan (CEMP – biodiversity) if planning permission is granted. This will mitigate for impacts to biodiversity and help ensure compliance with relevant legislation.

We advise that the below suggested wording does not cover all aspects usually covered within a Construction Environmental Management Plan (CEMP) (such as pollution control, noise, lighting etc. during

construction). Therefore, this wording should either form part of any larger CEMP / Construction Management Plan (CMP) condition required or should form a separate stand-alone condition for a Biodiversity Method Statement.

Suggested Condition Wording:

No development shall be undertaken (including any site/vegetation clearance) before a construction ecological management plan (CEMP - biodiversity) has been submitted to and approved in writing by the local planning authority. The CEMP - biodiversity shall be based on the avoidance, mitigation and compensation measures indicated within the ecological information submitted with the planning application. The CEMP – biodiversity shall include the following:

- *Risk assessment of potentially damaging construction activities;*
- *The identification of biodiversity protection zones and the use of protective fences, exclusion barriers and warning signs. This shall include a suitable buffer zone(s) (as set out by a suitably qualified ecologist) for relevant protected and priority species;*
- *Extent and location of proposed works shown on appropriate scale maps and plans for all relevant species and habitats;*
- *Practical measures (both physical measures and sensitive working practises) to avoid or reduce impacts during construction (may be provided as a set of species or habitat-specific method statements);*
- *The location and timing of sensitive works to avoid harm to biodiversity features;*
- *Timetable for implementation, demonstrating that works are aligned with the proposed phasing of construction;*
- *The times during construction when specialist ecologists need to be present on site to oversee works;*
- *Reference to or inclusion of a minimum 10-year Japanese knotweed management and removals plan;*
- *Details of any necessary protected species licences or reference to other relevant documents as required (e.g., Arboricultural Method Statement/ updated species survey reports/ecological design strategy);*
- *Responsible persons and lines of communication; and*
- *The role and responsibilities on site of an ecological clerk of works (ECoW) or similarly competent person.*

The approved CEMP - biodiversity will be adhered to and implemented throughout the construction period (and beyond if required) in accordance with the approved details.

Ecological Design Strategy

No development shall be undertaken (including any site/vegetation clearance) before an Ecological Design Strategy (EDS) has been submitted to and approved in writing by, the local planning authority. The EDS shall ensure that on-site compensatory habitat is provided for relevant protected and priority species (as determined by a suitably qualified ecologist). The EDS shall ensure that both on and off-site compensatory habitat is provided for the projected permanent and temporary loss of reptile habitat (as identified in the AECOM Technical Note: Response to Ecological Points Raised in KCC Advice to Gravesham BC Dated 27th February 2024 (24th July 2024 Rev02). The EDS shall ensure the mitigation and compensation measures with regards to habitat improvements proposed, and the area of land required, are based on available scientific research and government standing advice. If the proposed compensation site already has an existing population of the relevant species and/or is already proposed as compensation for other development, evidence shall be provided to demonstrate that the measures proposed are additional. The EDS shall include the following:

- *Up-to-date survey data carried out in accordance with best practice for the both the development site and the proposed off-site compensation site(s);*

- Purpose and conservation objectives for the proposed works;
- Review of site potential and constraints;
- Description and evaluation of features to be managed;
- Detailed design(s) and/or working method(s) to achieve stated objectives. This shall include a detailed methodology for the movement of reptiles and measures to prevent reptiles returning to the site prior to and during the development. This shall also include details of how any receptor sites will be enhanced and be in a suitable condition to support the likely number of animals which will be moved, prior to any animals being moved, and details of the management of the compensation site(s) in perpetuity.
- Full details of soft landscape works, to include species, size and location of new habitats (e.g., trees, shrubs, hedges and grassed areas to be planted) with the extent and location/area of proposed works shown on appropriate scaled maps and plans;
- Full details of the proposed ecological features. For habitat boxes details shall include numbers, make and model, locations to include height, aspect and mounting location shown on scaled landscaping plans suitable for construction. For log piles and hibernacula details shall include materials, size, shape and construction methodology. Locations shall be shown on scaled landscaping plans suitable for construction;
- Extent and location/area of proposed works on appropriate scale maps and plans;
- Full details of the extent of appropriate buffers (as set out by a suitably qualified ecologist) for protected and priority species;
- Type and source of materials to be used where appropriate, e.g. native species of local provenance;
- Timetable for implementation demonstrating that works are aligned with the proposed phasing of development;
- Details of the body or organisation(s) responsible for implementing the EDS and the mechanisms for securing the mitigation/compensation land and its management for the lifetime of the development;
- Details of initial aftercare and appropriate management prescriptions for relevant protected and priority species and habitats (as identified by a suitably qualified ecologist and in accordance with information submitted as part of the application) for the lifetime of the development within a Landscape and Ecological Management Plan;
- Preparation of a work schedule (including an annual work plan capable of being rolled forward over a five-year period);
- Details for monitoring (to be undertaken by a suitably qualified ecologist(s)) and remedial measures.

The EDS shall be implemented in accordance with the approved details. All features shall be retained as approved thereafter, unless remedial measures are required. Approval for any remedial measures shall be sought from the local planning authority in writing and thereafter implemented as approved.

Wildlife Sensitive Lighting

Prior to operation of the development, a lighting design plan for biodiversity shall be submitted to and approved in writing by the local planning authority. The plan shall include the following:

- The identification of areas/features on-site where disturbance could occur to bat and invertebrate roosting/nesting/sheltering sites and/or foraging/commuting routes;
- The provision of an appropriate plan(s) to show how and where external lighting will be installed;
- The provision of technical specifications for the external lighting;
- The provision of lighting contour plans to show expected lux levels, so that it can be clearly demonstrated that areas to be lit will not disturb bat/invertebrate activity.

All external lighting shall be installed prior to first operation of the development in accordance with the specifications and locations set out in the plan, and these shall be maintained thereafter in accordance with

the plan.

Detailed comments and explanation for the suggested conditions are provided below.

Detailed Comments

Reptiles

Reptiles are protected through the Wildlife and Countryside Act 1981 (as amended). All British reptiles are also listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act (2006) and local planning authorities are required to have regard for the conservation of Section 41 species as part of planning decisions under their biodiversity duty.

We note that the project ecologists indicate that 1.1 ha of moderate quality reptile habitat will be retained, protected and enhanced during construction. There will be a permanent loss of 2.6ha of reptile habitat in 2024/2025 (1.2 ha of moderate quality) and a further 3.2 ha of reptile habitat (of which 2.6 ha has been assessed to be of moderate quality by the project ecologists) temporarily lost due to the works to the overhead line in 2028. The temporary habitat clearance is expected to take around 12 weeks to complete, and the project ecologists indicate the habitat will return to its original condition within 6-24 months. Together this habitat loss could have a profound impact on the reptile population on-site in the short to medium term as a minimum.

The applicant has now provided proposals for an on and off-site reptile mitigation strategy. ~0.56 ha of largely unsuitable reptile habitat has been proposed for improvement, and ~0.78ha of suitable reptile habitat enhanced off-site. This totals ~1.34 ha of land. This falls short of the 2.6 ha of reptile habitat to be lost permanently and 3.2 ha to be temporarily lost. We understand that not all of the habitat to be lost permanently or temporarily is optimal for use by reptiles. If the 0.6 ha of less suitable habitat to be temporarily lost is improved in the long-term to benefit reptiles, then 1.94 ha of land will have been created or improved as compensation for the loss of reptile habitat. This is still short of the 2.6 habitat to be permanently lost, although greater than the estimated 1.2 ha of moderate quality habitat to be permanently lost. Based on the rough estimates of habitats to be lost, created and improved, we consider that sufficient information is available to conclude that over the long-term, the local reptile population can be safeguarded. A detailed reptile mitigation strategy should be secured by condition if planning permission is granted. This strategy can be included within a wider ecological design strategy to ensure a holistic approach to protected and priority species mitigation and compensation.

Non-statutory Designated Sites and Biodiversity Net Gain

Local Wildlife Sites (LWSs) are important for the conservation of wildlife at the county level. These are non-statutory designations which are generally recognised by local authorities and given weight and protection by inclusion in development plan policies in accordance with paragraphs 181 and 185 of the National Planning Policy Framework (NPPF) 2023.

Proposals lie within the Canal and Grazing Marsh, Higham Local Wildlife Site (LWS). This LWS has been designated for its managed and unmanaged grazing marsh, dykes, sea wall, salt marsh and a long stretch of the Thames and Medway Canal. The site lies adjacent to the South Thames Estuary & Marshes Site of Special Scientific Interest (SSSI) and adds to the overall importance of this stretch of the North-West Kent Marshes.

The NPPF 2023 states under paragraph 180 that: *“Planning policies and decisions should contribute to and enhance the natural and local environment by: a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); ...d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future*

pressures”.

Where applicants choose to provide a quantitative assessment of biodiversity net gain, but are not required to under legislation, appeal decisions¹ have clarified that:

- *“Paragraph 174 [now 180] of the Framework [the NPPF encourages applicants to], ... seek a net gain in biodiversity without identifying a specific percentage...”*
- The relevant Core Strategy may *“...seek a net gain in biodiversity without identifying a specific percentage...”*; and
- *“A net gain of just 1% would be policy compliant....”*

Therefore, in line with planning policy, the aim would be to achieve simply a biodiversity net gain, with no specific % target, in line with the NPPF. We acknowledge that the applicant has internal policies for at least a 10% biodiversity net gain.

Gravesham Borough Council's Local Plan states within Policy CS12: Green Infrastructure:

“5.7.23 Sites designated for their biodiversity value will be protected, with the highest level of protection given to internationally designated Special Protection Areas, Special Areas of Conservation and Ramsar sites, followed by nationally designated Sites of Special Scientific Interest, followed by Local Wildlife Sites and then by other areas of more local importance for biodiversity.

5.7.24 There will be no net loss of biodiversity in the Borough, and opportunities to enhance, restore, re-create and maintain habitats will be sought, in particular within the Biodiversity Opportunity Areas shown on the Strategic Green Infrastructure Network map and within new development.

5.7.25 Where a negative impact on protected or priority habitats/species cannot be avoided on development sites and where the importance of the development is considered to outweigh the biodiversity impact, compensatory provision will be required either elsewhere on the site or off-site, including measures for ongoing maintenance.”

Based on the current plans for the Site, the proposed development (including Tilbury), with habitat compensation at two off-site areas in Kent, is predicted to result in a biodiversity net gain of 11.88%.

We note that Policy CS12: Green Infrastructure indicates that ‘there will be no net loss of biodiversity in the Borough’. The applicant has clarified that proposals meet this policy through off-site compensation at the Shorne Reedbeds within Gravesham Borough.

If planning permission for proposals is granted, the on-site biodiversity measures (including detailed soft landscaping plans), and off-site net gain site should be secured through planning obligation/condition. We can provide some suggested wording on request.

A detailed landscape and ecological management plan for both the on-site and off-site habitats should also be secured by a suitably worded condition/planning obligation if planning permission is granted to ensure that the proposed habitats can be effectively created and managed into the future. This Plan could be secured as part of a condition for an ecological design strategy if planning permission is granted to ensure a holistic approach to protected and priority species mitigation and compensation.

Water Voles

We are satisfied that effects on water vole can be adequately dealt with through conditions for a

construction ecological management plan and ecological design strategy, attached to any granted planning permission.

Invertebrates and Birds

A number of invertebrate (hornet robberfly, shrill carder-bee; brown-banded carder-bee, and small heath butterfly) and bird species found at the Gravesend site,^{2,3} are listed under Section 41 of the Natural Environment and Rural Communities Act (2006) and local planning authorities are required to have regard for the conservation of Section 41 species as part of planning decisions under their biodiversity duty⁴. Paragraph 84 of the ODPM Circular 06/2005 states that "...The potential effects of a development, on habitats or species listed as priorities... ..are capable of being a material consideration in the ... making of planning decisions".

The applicant should take appropriate measures to avoid, mitigate and, as a last resort, compensate for any negative effects on Section 41 species in the development proposal, in accordance with relevant government standing advice.

Submitted information appears to indicate that there will be a permanent reduction in semi-natural habitats as a result of proposals. Submitted information indicates that in the long-term, taking into consideration mitigation and compensation measures, this is expected to result in a negligible effect on the invertebrate populations of District importance, and bird populations of District and Local importance. The comments from Buglife suggest that the project ecologists have undervalued the site's importance for invertebrates. Buglife stated in its comments dated 27th February 2024 that survey data available for the site has led to the site being incorporated into the Thames Estuary South Important Invertebrate Area (IIA). This indicates that the site is nationally^{5,6} important for its invertebrate assemblage, and linkages to the wider landscape, including South Thames Estuary and Marshes Site of Special Scientific Interest (SSSI).

We note that Buglife has made the following comments: "*All the site ditches will be retained along with a 'minimum buffer of 5m'. As this is the only habitat to be retained on-site, Buglife would hope to see this buffer increased and ideally a phased approach to loss or modification of habitats rather than the whole area being cleared within a short time frame. It would also like to see a clear commitment to reinstating habitats as soon as possible after their initial disturbance*".

Buglife has also indicated that commercial seed mixes should not be used at the site to avoid any potential negative effects on the nearby SSSI.

Under section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 and paragraphs 180 and 186 of the National Planning Policy Framework (NPPF) 2023, biodiversity should be maintained and enhanced through the planning system. If planning permission is granted for the project, we recommend that conditions for a construction ecological management plan and ecological design strategy is included to ensure invertebrate and bird populations at the site are not only protected in the long-term, but also to ensure that the project is able to deliver net gains to the local invertebrate and bird populations.

Statutory Designated Sites, Bats, Badgers, Protected/Notable Plant Species, Japanese Knotweed, Marine Mammals, Veteran Tree

Following a review of the submitted information, we are satisfied that should planning permission be granted, that a detailed Construction Environmental Management Plan (CEMP) secured by condition, and including noise fencing around the construction site, will be sufficient to avoid and mitigate for impacts upon bats, badgers, protected/notable plant species, Japanese knotweed, marine mammals, veteran trees, the Thames Estuary and Marshes SSSI, SPA and Ramsar and the Medway Estuary and Marshes SPA and Ramsar during construction.

Lighting and Biodiversity

We note that operational lighting has the potential to have adverse impacts upon biodiversity (e.g., bats and invertebrates). Local authorities have a duty to ensure impacts upon legally protected species are avoided and impacts upon bats are a material consideration in any planning permission under the NERC Act 2006 and through the NPPF 2023.

Therefore, to mitigate against potential adverse effects on biodiversity, the Bat Conservation Trust/Institute of Lighting Professional's '*Guidance Note 08/23 Bats and Artificial Lighting at Night*'⁷ and Buglife's '*Bug-Friendly Lighting*'⁸ advice should be consulted in the lighting design of the development.

We advise that the incorporation of sensitive lighting design for biodiversity is submitted to the local planning authority and secured via an attached condition with any planning permission. Dark buffer zones should be used to separate habitats or features from lighting. Where 'complete darkness' on a feature or buffer is required, we will consider this to be where illuminance is below 0.2 lux on the horizontal plane and below 0.4 lux on the vertical plane.

We note that the project ecologists have indicated that they consider that no dark buffer zones will be required for this development. We would disagree with this position. Although, the project ecologists have indicated that they do not consider the site of significant importance for bats, the site has been identified to be of national importance for invertebrates which can also be adversely affected by artificial lighting^{9,10}. Based on submitted information, achieving darkness throughout most of the site for most of the time seems very possible.

Health & Safety Executive

Thank you for your email of 30th January 2024 regarding the above planning application. From the information provided it appears that the development is at approximately 4.302 RB from the licensed site i.e. at a greater distance than the 3 RB currently expected for this type of development. Given the nature and the location of this type of development I would not expect there to be a significant impact on the outcomes of the original casualty survey. As the proposed developments fall outside of SD2, but within SD3, of the nearby licensed explosive port. Provided that the proposed developments do not constitute as a 'vulnerable' buildings HSE has no comment to make.

"Vulnerable building" means a building or structure of vulnerable construction, that is to say—

- (a) a building of more than three storeys above ground or 12m in height constructed with continuous non-load bearing curtain walling with individual glazed or frangible panels larger than 1.5m² and extending over more than 50% or 120m² of the surface of any elevation;
- (b) a building of more than three storeys above ground or 12m in height with solid walls and individual glass panes or frangible panels larger than 1.5m² and extending over at least 50% of any elevation;
- (c) a building of more than 400m² plan area with continuous or individual glazing panes larger than 1.5m² extending over at least 50% or 120m² of the plan area; or
- (d) any other structure that, in consequence of an event such as an explosion, may be susceptible to disproportionate damage such as progressive collapse.

Historic England

Historic England can confirm we have given advice to the applicant at the pre-application stage with

regards to the options appraisal and the design approach

Summary

The project proposes the construction of a new cable tunnel beneath the River Thames between Gravesend and Tilbury to provide additional electricity transmission capacity. Above-ground infrastructure will include a new Cable Sealing End compound, head house building, and associated electricity infrastructure including overhead gantry structures.

Historic England Advice

Significance and Impact

As set out in the Environment Statement (Vol III, Chapter 9 Historic Environment - Gravesend: dated December 2023) the nearest designated heritage assets to the development are a small number of Grade II listed vernacular dwellings along Lower Higham Road in Chalk.

These are essentially older dwellings, cottages and farmsteads that pre-existed the widespread development in this area in the late C20. For example, Filborough Farmhouse and barns to the east of the study area. These buildings represent and reflect the pre-industrial rural land use. A range of non-designated heritage assets have been recorded from all periods, and include the Milton Rifle range to the east of the development area.

The potential harm here would be to the significance of the designated heritage assets through changes to their setting. In this case changes to the existing pylon array, and from new permanent structures at the substation and tunnel head. There will also be construction impacts during the development with the potential to recover archaeological material.

We also note construction impacts in terms of changes to the setting of the designated heritage assets but accept these will be temporary for the duration of the project.

Policy

In policy terms we note the application is being considered under both National Planning Statement (EN_1) and the NPPF

Broadly speaking the avoidance of conflicts between the conservation of a heritage asset's and the impact of an application are at the heart of the policies of the NPS and are mirrored in the policies of both EN_1 (e.g. 5.9.22) and NPPF (Para 201). This includes the contribution made to the significance of a heritage asset from its setting.

In all cases where there is harm, whether or not this is substantial or less than substantial, the policy is still clear that 'any' harm requires a clear and convincing justification (EN_1 5.9.26 and NPPF 206) and that harm will need to be weighed appropriately by the decision maker against the public benefits of the proposal (EN_1 5.9.30 and NPPF 208). This is mindful that 'great weight' needs to be given to a designated heritage asset's conservation, and that the more important the asset the greater the weight should be (EN_1 5.9.25 and NPPF 205).

In relation to non-designated heritage assets planning policy (EN_1 Para 5.9.7 and NPPF 209) direct the decision maker to consider the impacts on non-designated heritage assets and where an application will directly affect non-designated heritage assets, a balanced judgement will be required with regards to harm and any loss significance. (see EN_1 5.9.31 and NPPF 209)

Historic England's Position

Historic England have been in pre-application discussion with the applicant and confirm we have been fully consulted prior to this application for planning permission. We have no in principle objection to the scheme and we have supported the tunnel option.

We acknowledge the study area was limited in scope, but we are aware a substation which includes sealing end compounds and pylons already exist at this location.

As set out above we are however aware the development would bring several changes to the existing substation and would add new permanent structures at the tunnel head. There will also be construction impacts during the development.

We can also confirm that heritage issues have also been considered at all stages of the scheme, and this is documented in the ES provided with the application. We support the provision of an Environmental Statement (ES) to support the planning application and can confirm that the ES has not identified any significant effects for either designated or non-designated heritage assets from the permeant changes. We broadly agree with the conclusions and do not have any additional comments.

We agree with the applicant that the development has the potential to have an adverse effect during the development phase, however the final operations phase of the development will only have a relatively modest overall change to the setting of those designated heritage assets. Given the affected assets are all Grade II listed buildings we would therefore defer to your conservation advisors.

We note and confirm the construction effects will be temporary for the duration of the project and we have not considered these issues further.

The proposal does however have the potential for unknown archaeology or non-designated heritage assets to be present from the footprint of the tunnel head and compound. We note the ES outlines an approach for dealing with both non-designated heritage and archaeological matters and we would defer to your archaeological advisors in that regard.

The deep excavation for the tunnel will also likely interact with important Thames side palaeoenvironmental deposits (ref: ES Volume VI Appendix 9.2: Desk-Based Geo-archaeological Deposit Modelling Report). These deposits have relative significance in term of the valuable information they contain, and, in this context, we would consider them to be of equivalence to a non-designated heritage asset.

The application has made provision for managing and investigation the deeper Thames side deposits. This includes the provision of a deposit model, and an outline WSI for the geo-archaeological works. We reviewed the Geo-archaeological WSI at the pre-application stage and confirm our comments have been taken on board and incorporated in the document.

We therefore confirm our view that this would be suitable to underpin mitigation against likely impacts and we support this approach.

We recommend the local planning authority take advice from their archaeological advisors with regards to non-designated and archaeological matters. We also recommend a suitable condition or other mechanism is applied to the permission to secure the programme of archaeological and geoarchaeological works. This would also address policy considerations in both EN-1 and NPPF for non-designated heritage assets.

Recommendation

Historic England has no objection to the application on heritage grounds. There are however some safeguards outlined in our advice that need to be addressed in order for the application to meet planning

policy requirements (See paragraphs 5.9.30 and 31 of NPS EN_1, and 208 and 209 of the NPPF), specifically with regards to the mechanism for securing a programme of archaeological and geo-archaeological work.

KCC Flood & Water Management (Latest comment)

Kent County Council as Lead Local Flood Authority have reviewed the TKRE Drainage Management Plan prepared by BakerHicks dated 11.06.2024 and have the following comments:

We appreciate the clarification and information provided and have no objections to the proposals for managing the surface water for the site in principle at this stage. However as part of the detailed design condition we require for the following points to be addressed:

1. The arrangement of water treatment measures should ensure that pollution is suitably mitigated, taking into account that a factor of 0.5 is used to account for the reduced performance of secondary or tertiary components associated with already reduced inflow concentrations. Section 2 of the report suggests that the proposed drainage does not suitably meet the mitigation requirements for TSS when these factors are taken into account.

2. The site is within Flood Zone 2 and 3, with a proposed connection into a main river. Consultation with the Environment Agency early in the planning process is recommended to identify any constraints or specific requirements in this area that may impact the proposed SuDs methods.

3. We note that the area falls within the jurisdiction of the North Kent Marshes internal Drainage Board therefore we would advise that they are consulted with regards to the proposals also.

Should the Local Planning Authority be minded to grant permission, we would recommend for the following conditions are attached to any approval:

Condition:

Development shall not begin in any phase until a detailed sustainable surface water drainage scheme for the site has been submitted to (and approved in writing by) the local planning authority. The detailed drainage scheme shall be based upon the TKRE Drainage Management Plan prepared by BakerHicks dated 11.06.2024 and shall demonstrate that the surface water generated by this development (for all rainfall durations and intensities up to and including the climate change adjusted critical 100 year storm) can be accommodated and disposed of without increase to flood risk on or off-site.

The drainage scheme shall also demonstrate (with reference to published guidance):

- that silt and pollutants resulting from the site use can be adequately managed to ensure there is no pollution risk to receiving waters.
- appropriate operational, maintenance and access requirements for each drainage feature or SuDS component are adequately considered, including any proposed arrangements for future adoption by any public body or statutory undertaker.

The drainage scheme shall be implemented in accordance with the approved details.

Reason: To ensure the development is served by satisfactory arrangements for the disposal of surface water and to ensure that the development does not exacerbate the risk of on/off site flooding. These details and accompanying calculations are required prior to the commencement of the development as they form an intrinsic part of the proposal, the approval of which cannot be disaggregated from the carrying out of the rest of the development.

Condition:

No building on any phase (or within an agreed implementation schedule) of the development hereby permitted shall be occupied until a Verification Report, pertaining to the surface water drainage system and prepared by a suitably competent person, has been submitted to and approved by the Local Planning

Authority. The Report shall demonstrate that the drainage system constructed is consistent with that which was approved. The Report shall contain information and evidence (including photographs) of details and locations of inlets, outlets and control structures; landscape plans; full as built drawings; information pertinent to the installation of those items identified on the critical drainage assets drawing; and, the submission of an operation and maintenance manual for the sustainable drainage scheme as constructed.

Reason: To ensure that flood risks from development to the future users of the land and neighbouring land are minimised, together with those risks to controlled waters, property and ecological systems, and to ensure that the development as constructed is compliant with and subsequently maintained pursuant to the requirements of paragraph 175 of the National Planning Policy Framework.

KCC Heritage

The part of the proposed development site south of the Thames, lies within an area of multi-period archaeological potential and is underlain by alluvial, waterlogged deposits with archaeological and palaeo-environmental interest dating from the late glacial to the post-medieval period. It also lies within the western end of the non-designated 19th century Milton Rifle Range. The range consists of a succession of low earthen mound firing points, a target mound and markers' gallery, as well as a weather shelter. The butts were modified in the 1890s and perhaps afterwards and part of the range is still in use today. The range saw continuous use, including for rifle practice during the First and Second World Wars as well as mortar firing practice. Although the formation of the Metropolitan Police Training Facility has involved further modifications to the southern end of the butts and firing points, there are substantial survivals of the original range structures.

The application has been made with an Environmental Statement (ES Volume IV – Chapter 17). This chapter is supported by appendices (ES Volume VI) and figures:

- Appendix 9.1: Historic Environment Desk Based Assessment
- Appendix 9.2: Desk-Based Geoarchaeological Deposit Modelling Report
- Appendix 9.3: Written Scheme of Investigation for Geoarchaeological Deposit Modelling and Borehole Investigation
- Figure 17-1: Designated Heritage Assets
- Figure 17-2: Non-designated Heritage Assets; and
- Figure 17-3: Previous Archaeological Investigations

My comments and recommendations focus on matters related to non-designated archaeology and the paleo-environmental interest of the site. No doubt your Conservation Officer, as well as Historic England, will comment on the application in relation to matters related to the built heritage and designated heritage assets.

The studies undertaken by the applicant in support of the ES are helpful and include the over-arching Historic Environment Desk-Based Assessment and the site-specific Desk-Based Geoarchaeological Deposit Modelling. The results of these desk-based studies highlight the archaeological and palaeo-environmental interest of the site and the potential for groundworks associated with the proposed development to impact on both surface-level, and belowground features and deposits of archaeological and palaeo-environmental interest.

To further understand the surface-level archaeological interest (likely to be, but not exclusively, related to the use of the site as a rifle range) detailed earthwork survey, LiDAR survey and archaeological trial trenching is recommended. A detailed, interpretative record of the rifle range, combining the results of

fieldwork with documentary research (involving relevant specialists) should be produced to mitigate development impacts. Mitigation of impacts to the rifle range should also include the provision and dissemination of heritage information about the site.

To understand the deeper, below-ground archaeological and palaeo-environmental interest of the site, two geoarchaeological boreholes are proposed, one in each of the two areas of deeper below-ground development impacts. The application is supported by a Written Scheme of Investigation for Geoarchaeological Deposit Modelling and Borehole Investigation, the results of which would provide information about the deeper deposit sequence and its archaeological and palaeo-environmental potential and significance.

I am supportive of the proposed approach to site-specific field evaluation, which acknowledges the limitation to the present basis for our understanding of the archaeological and palaeo-environmental interest of the site. It is recognised that the results of field evaluation will be used to agree detailed mitigation, which could include options for preservation *in situ*, mitigation by design refinements and/or through detailed archaeological excavation and recording, analysis, reporting, dissemination and archiving of the results for public benefit.

It is recognised that the development would impact surface-level and belowground deposits with archaeological and palaeo-environmental interest, the non-designated Milton Rifle Range and other, presently unidentified archaeological remains and I therefore recommend that if planning permission is granted the following condition is applied to any forthcoming consent:

To evaluate and mitigate the impacts of development on heritage assets with archaeological and palaeo-environmental interest:

A) Prior to any development ground works the applicant (or their agents or successors in title) shall secure and have reported a programme of archaeological field evaluation works, in accordance with a Specification and written timetable which has been submitted to and approved in writing by the local planning authority.

B) Following completion of archaeological field evaluation works, no development groundworks shall take place until the applicant or their agents or successors in title, has secured the implementation of any safeguarding measures to ensure preservation in situ of important archaeological remains and/or archaeological mitigation excavation and recording in accordance with a Specification and timetable which has been submitted to and approved by the local planning authority.

C) The archaeological safeguarding measures, mitigation excavation and recording shall be completed in accordance with the agreed Specification and timetable.

D) Within 6 months of the completion of archaeological works a Post-Excavation Assessment Report shall be submitted to and approved in writing by the local planning authority. The Post-Excavation Assessment Report shall be in accordance with Kent County Council's requirements and include:

a. a description and assessment of the results of all archaeological investigations that have been undertaken in that part (or parts) of the development;

b. an Updated Project Design outlining measures to analyse, report and disseminate the findings of the archaeological investigations, together with an implementation strategy and timetable for the same;

c. a scheme detailing the arrangements for providing and maintaining an archaeological site archive and its deposition following completion.

E) The measures outlined in the Post-Excavation Assessment Report shall be implemented in full and in accordance with the agreed timings.

Reason: To ensure that features of archaeological and palaeo-environmental interest are properly examined and recorded in accordance with relevant Local and the National Planning Policy.

KCC Highways – 28/02/2024 (First Response)

This application was supported by a large number of documents, some of which are relevant to the highway impact of the proposal in Gravesham District. These documents are considered to be robust and include the following:

- ES Volume IV Chapter 18 Traffic and Transport – Gravesend
- ES Volume VI Appendix 10.1 Outline Construction Traffic Management Plan
- ES Volume VI Appendix 18.6 Preliminary Highway Impact Assessment (Gravesend)
- ES Volume VI Appendix 18.5 Construction Worker Trip Distribution (Gravesend)
- ES Volume VI Appendix 18.4 Baseline Traffic Movements (Gravesend)
- ES Volume VI Appendix 18.2 Transport Scoping Meeting Minutes – Gravesend
- ES Volume VI Appendix 18.1: Transport Statement Note – Gravesend

This proposal was subject to pre-applications discussions with KCC Highways at which a number of issues were discussed and included in the submitted documents.

It should be noted that the Thames and Medway Canal Road is not a public highway maintained by Kent Highways and, whilst there are concerns regarding the use of this narrow road by HGVs, it is not of concern to the Local Highway Authority but would need to be managed by the owners – Network Rail.

The level of traffic generated by the proposal during construction stage is not considered to be significant and during the following operational stage very low and of no concern.

The level of HGV movements to and from the site is managed in a Construction Traffic Management Plan which has been submitted in outline form and a Condition should be applied to any consent granted that a full CTMP should be submitted and approved by the LPA prior to any works commencing. It is essential that a detailed condition survey of the roads to be used to access the site is undertaken before any works commence, and that a Sustainable Travel Plan is included in the CTMP to minimise the number of employees traveling by private car and parking in the nearby roads which are already heavily parked in some places. Other issues that should be included in the CTMP (but not exclusively) are the timings of HGV movements to cause minimum disruption; liaison with the Lower Thames Crossing Team; loading / unloading areas within the site compound; waiting areas to avoid conflicting HGV movements, particularly on the Thames and Medway Canal Road; safe pedestrian access to the site; the impact on highway trees and shrubs of the abnormal loads.

I therefore raise no objection on highway grounds to this proposal provided the following Conditions are applied to any consent granted:

1 The applicant shall submit and obtain approval to a full Construction Traffic Management Plan to the LPA prior to any works commencing. Such a CTMP shall include a pre-condition survey of the local roads to be used, and a Sustainable Travel Plan to reduce the number of employees traveling by private car and parking in nearby public roads.

KCC Highways – 30/08/2024 (Second Response)

I note that the applicant has now submitted revised Highway Impact Assessment and Construction Traffic Management Plans since my previous consultation response dated 28th February 2024 in which I raised no objection but recommended a Condition in respect of the CTMP being submitted before any work commences. This is still the case although I would like to note that I still have concerns about the outline CTMP submitted that would need to be addressed in the full document when it is submitted:

- Section 5.2 has changed slightly. Added in some paragraphs including two more bullet points stating “TBM and tunnelling hours: 24-hrs per day / 7-days per week” and “Deliveries: 08:00 – 18:00 Monday to Friday (with exception of TBM)”. It should be clear that deliveries should be undertaken outside of the peak hours. A table has been added showing shift patterns. As well as still stating 40 employees for the Gravesend site, it also states “Tilbury and Gravesend – 30 no. staff [per shaft] for the shaft construction”, so is there 70 in total?
- Section 5.7. The Shaft and tunnel construction movements appear to have reduced quite a lot although it is not clear as to whether this is in Gravesham, or all in Tilbury (4922 two way movements over 8 months to 2468). However, whilst table 5.4 is set out differently to the previous version, it looks like the traffic in Gravesham is slightly reduced overall, but that doesn't include staff. Figure 5.4 'Gravesend – needs clarification
- Section 8 (page 57 of the PDF) is the Framework Construction Worker Travel Plan.
 - 8.3 describes walking, cycling and public transport to the site, but only for Tilbury! What about Gravesend? The Full CTMP needs to include Gravesend.
 - A temporary car park will be provided at both sites and “Construction staff parking at these sites will be monitored, controlled and recorded to ensure that single occupancy car use is minimised”. Doesn't say how or what will be done. No details of temporary car park at Gravesend.
 - It says “The Contractor would be encouraged to provide minibuses /coaches for transporting construction staff between the temporary car park (or local train stations) and the site”. ‘Encouraged’ is not a commitment but should be re-worded to make it such.
 - Section 8.6 ‘Targets’ doesn't actually have a target! There should be a proposed % reduction (usually 10% but could be different for construction workers) from the predicted traffic generation figures. It should at least state the predicted car based flows in the Travel Plan section and say there is a target to reduce them.
 - The Full CTMP needs more detail on how numbers will monitor and what remedial measures will be put into place if targets are breached.
- The full CTMP should include tracking?
- Nothing is said about possibly having to remove the traffic lights at the Ordnance Rd junction.

It is important to note that Local Planning Authority (LPA) permission does not convey any approval to carry out works on or affecting the public highway.

Any changes to or affecting the public highway in Kent require the formal agreement of the Highway Authority, Kent County Council (KCC), and it should not be assumed that this will be a given because LPA planning permission has been granted.

For this reason, anyone considering works which may affect the public highway, including any highway-owned street furniture or landscape assets such as grass, shrubs and trees, is advised to engage with KCC Highways and Transportation at an early stage in the design process.

Across the county there are pieces of land next to private homes and gardens and near the highway that do not look like roads or pavements but are actually part of the public highway.

Some of this highway land is owned by Kent County Council whilst some is owned by third party owners. Irrespective of the ownership, this land may have 'highway rights' over the topsoil.

Works on private land may also affect the public highway. These include works to cellars, to retaining walls which support the highway or land above the highway, and to balconies, signs or other structures which project over the highway. Such works also require the approval of the Highway Authority.

Kent County Council has now introduced a pre-application advice service in addition to a full formal technical approval process for new or altered highway assets, with the aim of improving future maintainability. Further details are available on our website below:

<https://www.kent.gov.uk/roads-and-travel/highway-permits-and-licences/highways-permissions-and-technical-guidance>.

This process applies to all development works affecting the public highway other than applications for vehicle crossings, which are covered by a separate approval process. Further details on this are available on our website below:

<https://www.kent.gov.uk/roads-and-travel/highway-permits-and-licences/apply-for-a-dropped-kerb/dropped-kerb-contractor-information>

Once planning approval for any development has been granted by the LPA, it is the responsibility of the applicant to ensure that before development commences, all necessary highway approvals and consents have been obtained, and that the limits of the highway boundary have been clearly established, since failure to do so may result in enforcement action being taken by the Highway Authority.

The applicant must also ensure that the details shown on the approved plans agree in every aspect with those approved under the relevant legislation and common law. It is therefore important for the applicant to contact KCC Highways and Transportation to progress this aspect of the works prior to commencement on site.

Further guidance for applicants, including information about how to clarify the highway boundary and links to application forms for vehicular crossings and other highway matters, may be found on Kent County Council's website:

<https://www.kent.gov.uk/roads-and-travel/highway-permits-and-licences/highways-permissions-and-technical-guidance>. Alternatively, KCC Highways and Transportation may be contacted by telephone: 03000 418181.

KCC Public Rights of Way - 03 September 2024

With regard to pedestrian use we are happy for the diversion via NG1 Saxon Shore Way. I have sent this application onto the KCC Cycle Team so they can comment on the diversion route for NCN1. As such we have nothing to add from our comments from the earlier response.

KCC Public Rights of Way – 08/02/2024

I can confirm that I do not have any objections to the above planning application at Eastcourt Marshes, Marks Lane. Public Right of Way Footpath NG1 lays to the north of the proposed site and Public Right of Way Footpath NG2 lays to the south. I enclose a copy of the Public Rights of Way network map showing the line of the path for your information.

The granting of planning permission confers no other permission or consent on the applicant. It is therefore important to advise the applicant that no works can be undertaken on a Public Right of Way without the express consent of the Highways Authority. In cases of doubt the applicant should be advised to contact this office before commencing any works that may affect the Public Right of Way. Should any temporary closures be required to ensure public safety then this office will deal on the basis that:

- The applicant pays for the administration costs.
- The duration of the closure is kept to a minimum.
- Alternative routes will be provided for the duration of the closure.
- A minimum of six weeks notice is required to process any applications for temporary closures.

This means that the Public Right of Way must not be stopped up, diverted, obstructed (this includes any building materials or waste generated during any of the construction phases) or the surface disturbed. There must be no encroachment on the current width, at any time now or in future and no furniture or fixtures may be erected on or across Public Rights of Way without consent.

Kent Fire & Rescue Services (Latest comment)

Although the Gravesend Headhouse - Planning - Site Plan PDD-100116-LAY-053 Rev P03 does appear to show access roads to and within the site with dimensions at or above the required 3.7m, and that access roads are either stone surfaced, or tarmac surfaced. Please ensure these roads have the minimum carrying capacity for our pump appliances meeting the typical fire and rescues service vehicle access route specification.

The above plans also show turning facilities at the end of the new maintenance road adjacent to the Headhouse. Please confirm the Headhouse can be reached from this area from a suitable route for laying hose.

Kent Police

Applicants/agents should consult us as Designing out Crime Officers (DOCO's) to address CPTED and incorporate Secured By Design (SBD) as appropriate. We use details of the site, relevant crime levels/type and intelligence information to help design out the opportunity for Crime, Fear of Crime, Anti-Social Behaviour (ASB), Nuisance and Conflict.

There is a carbon cost for crime and new developments give an opportunity to address it. Using CPTED along with attaining an SBD award using SBD guidance, policies and academic research would be evidence of the applicants' efforts to design out the opportunity for crime.

We recommend SBD guidance is utilised to address designing out crime to show a clear audit trail for Designing Out Crime, Crime Prevention and Community Safety and to meet our Local Authority statutory duties under Section 17 of the Crime and Disorder Act 1998. The points below identify my recommendations for the layout and design of this scheme.

1. We strongly recommend that the applicant take this opportunity to review their general security arrangements regarding the existing buildings, including perimeter security, alarm

systems, lighting and CCTV.

2. Perimeter security of the site, including gates, should be reviewed to control site permeability and prevent theft of property. A good standard of building security is very important in rural areas, especially for outbuildings that may not be visited for weeks at a time. Each site should be fully enclosed within a minimum 2m security fencing system or higher (we note the Indicative Fencing proposal). It is, however, important that the gap between the base of any fencing and the ground is minimal, so that any equipment, such as the PV panels themselves or copper cable, cannot be easily passed underneath by thieves. Additional defensive planting of natural hedging should be considered around the boundary and along the existing footpath as an added layer of security

3. Consideration should be given regarding property boundary for any potential places where it could be made more secure:

- Densely planted buffers can be used to enhance boundaries. There are plenty of suitable native (non-toxic) prickly species.
- digging deep ditches to control and deter unwanted vehicle access
- if possible, having a single-gated access point to each site. Please refer to the Commercial 2015 Guide, Section 2: Physical Security Specifications for gates on SBD Design Guides

4. We recommend that all photovoltaic (PV) panels are individually security marked and all serial numbers recorded within a site inventory. In addition, the PV panels should be installed using one way security clutch head security bolts/screws or similar, as an added layer of security and in order to make removal more difficult for thieves. Copper cable, transformers, inverters, switch gear and any other equipment of high value should also be security marked. This can be achieved by using unique identifiers, such as serial numbers on the insulation sheathing and with the use of forensic marking solutions. A full equipment inventory should be kept.

5. All string inverters, substations, transformer stations and buildings/ storage containers should be fully alarmed with a monitored system and covered by CCTV. All CCTV should comply with the Information Commissioner's Office guidance. Appropriate security locks and devices should be installed on all equipment cabinets and associated buildings. Locking device screws/bolts should not be easily accessible when closed, to deter by-passing of the locks themselves by a determined offender. One way security clutch head security bolts/screws or similar can also be utilised to prevent easy removal.

6. We note CCTV cameras are proposed for this development "Cabling would also be required for power and data transfer associated with the CCTV system described below. This would generally follow the perimeter fence lines where the CCTV cameras would be located", which is greatly encouraged. We recommend monitored CCTV and alarms systems to be installed and operational to cover vulnerable elevations and site entrances in addition to point 5. Appropriate crime prevention/security signage warning of the use of CCTV and forensic marking solutions should be installed on the exterior face of the security fencing and any gates.

7. Doorsets and windows should meet PAS 24:2022 as a minimum-security standard. All external doors should have a minimum of two locking points with locks that meet the British Standard. All doors and windows that are not part of a designated fire escape route, should be closed and locked. Glazing for windows should be laminated rather than just toughened for security purposes. Please refer to the Commercial 2015 Guide, Section 2: Physical Security Specifications on SBD Design Guides (securedbydesign.com) for doorsets and windows.

Please note, site security is required for the construction phase. There is a duty for the principle contractor "to take reasonable steps to prevent access by unauthorised persons to the construction site" under the Construction (Design and Management) Regulations 2007. The site security should incorporate plant, machinery, supplies, tools and other vehicles and be site specific to geography and site requirements.

We welcome a discussion with the applicant/agent about site specific designing out crime. If the points above are not addressed, they can affect the development and local policing.

This information is provided by Kent Police DOCO's and refers to situational crime prevention. This advice focuses on CPTED and Community Safety with regard to this specific planning application.

Marine Management Organisation

Please be aware that any works within the Marine area require a licence from the Marine Management Organisation. It is down to the applicant themselves to take the necessary steps to ascertain whether their works will fall below the Mean High Water Springs mark.

Response to your consultation

The Marine Management Organisation (MMO) is a non-departmental public body responsible for the management of England's marine area on behalf of the UK government. The MMO's delivery functions are; marine planning, marine licensing, wildlife licensing and enforcement, marine protected area management, marine emergencies, fisheries management and issuing European grants.

Marine Licensing

Works activities taking place below the mean high water mark may require a marine licence in accordance with the Marine and Coastal Access Act (MCAA) 2009.

Such activities include the construction, alteration or improvement of any works, dredging, or a deposit or removal of a substance or object below the mean high water springs mark or in any tidal river to the extent of the tidal influence.

Applicants should be directed to the MMO's online portal to register for an application for marine licence

<https://www.gov.uk/guidance/make-a-marine-licence-application>

You can also apply to the MMO for consent under the Electricity Act 1989 (as amended) for offshore generating stations between 1 and 100 megawatts in English waters.

The MMO is also the authority responsible for processing and determining Harbour Orders in England, together with granting consent under various local Acts and orders regarding harbours.

A wildlife licence is also required for activities that that would affect a UK or European protected marine species.

The MMO is a signatory to the coastal concordat and operates in accordance with its principles. Should the activities subject to planning permission meet the above criteria then the applicant should be directed to the follow pages: check if you need a marine licence and asked to quote the following information on any resultant marine licence application:

- local planning authority name,
- planning officer name and contact details,
- planning application reference.

Following submission of a marine licence application a case team will be in touch with the relevant planning officer to discuss next steps.

Environmental Impact Assessment

With respect to projects that require a marine licence the EIA Directive (codified in Directive 2011/92/EU) is

transposed into UK law by the Marine Works (Environmental Impact Assessment) Regulations 2007 (the MWR), as amended. Before a marine licence can be granted for projects that require EIA, MMO must ensure that applications for a marine licence are compliant with the MWR.

In cases where a project requires both a marine licence and terrestrial planning permission, both the MWR and The Town and Country Planning (Environmental Impact Assessment) Regulations <http://www.legislation.gov.uk/ukxi/2017/571/contents/made> may be applicable.

If this consultation request relates to a project capable of falling within either set of EIA regulations, then it is advised that the applicant submit a request directly to the MMO to ensure any requirements under the MWR are considered adequately at the following link

<https://www.gov.uk/guidance/make-a-marine-licence-application>

Marine Planning

Under the Marine and Coastal Access Act 2009 ch.4, 58, public authorities must make decisions in accordance with marine policy documents and if it takes a decision that is against these policies it must state its reasons. MMO as such are responsible for implementing the relevant Marine Plans for their area, through existing regulatory and decision-making processes.

Marine plans will inform and guide decision makers on development in marine and coastal areas. Proposals should conform with all relevant policies, taking account of economic, environmental and social considerations. Marine plans are a statutory consideration for public authorities with decision making functions.

At its landward extent, a marine plan will apply up to the mean high water springs mark, which includes the tidal extent of any rivers. As marine plan boundaries extend up to the level of the mean high water spring tides mark, there will be an overlap with terrestrial plans which generally extend to the mean low water springs mark.

A map showing how England's waters have been split into 6 marine plan areas is available on our website. For further information on how to apply the marine plans please visit our Explore Marine Plans service.

Planning documents for areas with a coastal influence may wish to make reference to the MMO's licensing requirements and any relevant marine plans to ensure that necessary regulations are adhered to. All public authorities taking authorisation or enforcement decisions that affect or might affect the UK marine area must do so in accordance with the Marine and Coastal Access Act and the UK Marine Policy Statement unless relevant considerations indicate otherwise. Local authorities may also wish to refer to our online guidance and the Planning Advisory Service soundness self-assessment checklist. If you wish to contact your local marine planning officer you can find their details on our gov.uk page.

Minerals and waste plans and local aggregate assessments

If you are consulting on a mineral/waste plan or local aggregate assessment, the MMO recommend reference to marine aggregates is included and reference to be made to the documents below;

- The Marine Policy Statement (MPS), section 3.5 which highlights the importance of marine aggregates and its supply to England's (and the UK) construction industry.
- The National Planning Policy Framework (NPPF) which sets out policies for national (England) construction minerals supply.
- The Managed Aggregate Supply System (MASS) which includes specific references to the role of marine aggregates in the wider portfolio of supply.
- The National and regional guidelines for aggregates provision in England 2005-2020 predict likely

aggregate demand over this period including marine supply.

The NPPF informed MASS guidance requires local mineral planning authorities to prepare Local Aggregate Assessments, these assessments have to consider the opportunities and constraints of all mineral supplies into their planning regions - including marine. This means that even land-locked counties, may have to consider the role that marine sourced supplies (delivered by rail or river) play - particularly where land based resources are becoming increasingly constrained.

If you require further guidance on the Marine Licencing process, please follow the link <https://www.gov.uk/topic/planning-development/marine-licences>

National Highways (Latest comment)

Recommend that conditions should be attached to any planning permission that may be granted:
Reasons

We will be concerned with proposals that have the potential to impact on the safe and efficient operation of the SRN, in this case, particularly within the vicinity of the A2.

We have reviewed the submitted information and have concluded that the proposal would not have a material impact on the SRN.

Lower Thames Crossing

We note that the construction programme would overlap that for the Lower Thames Crossing (LTC) and the project teams for LTC and National Grid are already working together to identify and work through project interfaces so that both projects are managed appropriately. We encourage further discussion between the project teams to ensure they can be delivered successfully. The final Construction Traffic Management Plan should be informed by and take account of the construction strategy for the LTC when there is a prospect of the construction phases for both projects overlapping.

Construction Traffic Management Plan

We have noted and reviewed the updated Construction Traffic Management Plan (CTMP) (July 2024) which was uploaded to the planning application webpage on 14 August 2024. The final version of the CTMP, addressing the matter of the construction strategy for the LTC, will need to be prepared, agreed and implemented prior to work commencing.

Planning application to Thurrock Council ref: 23/01502/FUL

We are mindful that this strategic proposal impacts on two local planning authority areas: Gravesham Borough Council and Thurrock Council. This response is to the planning application made to Gravesham Borough Council (ref: 20231313). We are responding separately to the application made to Thurrock Council.

Having assessed application 20231313, we are content that the proposal, if permitted, would not have an unacceptable impact on the safety, reliability, and/or operational

efficiency of the Strategic Road Network in the vicinity of the site (A2) provided that the following condition is imposed, reflecting DfT Circular 01/2022 and NPPF 2023 paras. 114-117:

1. Construction Traffic Management Plan

Condition: Prior to the commencement of the development hereby permitted a comprehensive

Construction Traffic Management Plan shall be submitted to and approved in writing by the Local Planning Authority (in consultation with the Highway Authority for the A2). The plan shall include as a minimum:

- Construction phasing
- Construction routing plans
- Permitted construction traffic arrival and departure times.

Thereafter all construction activity in respect of the development shall be undertaken in full accordance with such approved details unless otherwise approved in writing by the Local Planning Authority in consultation with the Highway Authority.

Reason: To mitigate any adverse impact from the development on the A2 in accordance with DfT Circular 01/2022.

Standing advice to the local planning authority

The Climate Change Committee's 2022 Report to Parliament notes that for the UK to achieve net zero carbon status by 2050, action is needed to support a modal shift away from car travel. The NPPF supports this position, with paragraphs 74 and 109 prescribing that significant development should offer a genuine choice of transport modes, while paragraphs 108 and 114 advise that appropriate opportunities to promote walking, cycling and public transport should be taken up.

Moreover, the build clever and build efficiently criteria as set out in clause 6.1.4 of PAS2080 promote the use of low carbon materials and products, innovative design solutions and construction methods to minimise resource consumption.

These considerations should be weighed alongside any relevant Local Plan policies to ensure that planning decisions are in line with the necessary transition to net zero carbon.

Natural England

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Further information on when to consult Natural England on planning proposals is here- [Planning and transport authorities: get environmental advice on planning - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/planning-and-transport-authorities-get-environmental-advice-on-planning)

Natural England is not able to provide specific advice on this application and therefore has no comment to make on its details. Although we have not been able to assess the potential impacts of this proposal on statutory nature conservation sites or protected landscapes, we offer the further advice and references to Standing Advice.

Natural England advises Local Planning Authorities to use the following tools to assess the impacts of the proposal on the natural environment:

Impact Risk Zones:

Natural England has provided Local Planning Authorities (LPAs) with Impact Risk Zones (IRZs) which can be used to determine whether the proposal impacts statutory nature conservation sites. Natural England recommends that the LPA uses these IRZs to assess potential impacts. If proposals do not trigger an Impact Risk Zone then Natural England will provide an auto-response email.

Standing Advice:

Natural England has published Standing Advice. Links to standing advice are in Annex A

If after using these tools, you consider there are significant risks to statutory nature conservation sites or protected landscapes, please set out the specific areas on which you require Natural England's advice.

Further information on LPA duties relating to protected sites and areas is here- [Protected sites and areas: how to review planning applications - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/protected-sites-and-areas-how-to-review-planning-applications)

Further guidance is also set out in Planning Practice Guidance on the natural environment [Natural environment - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/natural-environment) and on Habitats Regulations Assessment [Appropriate assessment - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/appropriate-assessment)

Non detailed advice from Natural England does not imply that there are no impacts on the natural environment. It is for the local planning authority to determine whether or not the proposal is consistent with national and local environmental policies. Other bodies and individuals may provide information and advice on the environmental value of this site and the impacts of the proposal on the natural environment to assist the decision making process.

Network Rail

The developer must ensure that their proposal, both during construction and after completion does not:

- encroach onto Network Rail land
- affect the safety, operation or integrity of the company's railway and its infrastructure
- undermine its support zone
- damage the company's infrastructure
- place additional load on cuttings
- adversely affect any railway land or structure
- over-sail or encroach upon the air-space of any Network Rail land
- cause to obstruct or interfere with any works or proposed works or Network Rail development both now and in the future

Network Rail strongly recommends the developer complies with the following comments and requirements to maintain the safe operation of the railway and protect Network Rail's infrastructure.

Future maintenance

The applicant must ensure that any construction and subsequent maintenance can be carried out to any proposed buildings or structures without adversely affecting the safety of/or encroaching upon Network Rail's adjacent land and air-space. Therefore, any buildings are required to be situated at least **2 metres (3m for overhead lines and third rail)** from Network Rail's boundary.

This requirement will allow for the construction and future maintenance of a building without the need to access the operational railway environment. Any less than **2m (3m for overhead lines and third rail)** and there is a strong possibility that the applicant (and any future resident) will need to utilise Network Rail land and air-space to facilitate works as well as adversely impact upon Network Rail's maintenance teams' ability to maintain our boundary fencing and boundary treatments. Access to Network Rail's land may not always be granted and if granted may be subject to railway site safety requirements and special provisions with all associated railway costs charged to the applicant.

As mentioned above, any works within Network Rail's land would need approval from the Network Rail Asset Protection Engineer. This request should be submitted at least 20 weeks before any works are due to commence on site and the applicant is liable for all associated costs (e.g. a l l possession, site safety, asset protection presence costs). However, Network Rail is not required to grant permission for any third-party access to its land.

Plant & Materials

All operations, including the use of cranes or other mechanical plant working adjacent to Network Rail's property, must at all times be carried out in a "fail safe" manner such that in the event of mishandling, collapse or failure, no plant or materials are capable of falling within 3.0m of the boundary with Network Rail.

Drainage

Storm/surface water must not be discharged onto Network Rail's property or into Network Rail's culverts or drains except by agreement with Network Rail. Suitable drainage or other works must be provided and maintained by the Developer to prevent surface water flows or run-off onto Network Rail's property. Proper provision must be made to accept and continue drainage discharging from Network Rail's property; full details to be submitted for approval to the Network Rail Asset Protection Engineer. Suitable foul drainage must be provided separate from Network Rail's existing drainage. Soakaways, as a means of storm/surface water disposal must not be constructed within **20 metres** of Network Rail's boundary or at any point which could adversely affect the stability of Network Rail's property. After the completion and occupation of the development, any new or exacerbated problems attributable to the new development shall be investigated and remedied at the applicants' expense.

Scaffolding

Any scaffold which is to be constructed within 10 metres of the railway boundary fence must be erected in such a manner that at no time will any poles over-sail the railway and protective netting around such scaffold must be installed. The applicant/applicant's contractor must consider if they can undertake the works and associated scaffold/access for working at height within the footprint of their property boundary.

Piling

Where vibro-compaction/displacement piling plant is to be used in development, details of the use of such machinery and a method statement should be submitted for the approval of the Network Rail's Asset Protection Engineer prior to the commencement of works and the works shall only be carried out in accordance with the approved method statement.

Fencing

In view of the nature of the development, it is essential that the developer provide (at their own expense) and thereafter maintain a substantial, trespass proof fence along the development side of the existing boundary fence, to a minimum height of 1.8 metres. The 1.8m fencing should be adjacent to the railway boundary and the developer/applicant should make provision for its future maintenance and renewal without encroachment upon Network Rail land. Network Rail's existing fencing / wall must not be removed or damaged and at no point during or post construction should the foundations of the fencing or wall or any embankment therein, be damaged, undermined or compromised in any way. Any vegetation within Network Rail's land boundary must not be disturbed. Any fencing installed by the applicant must not prevent Network Rail from maintaining its own fencing/boundary treatment.

Lighting

Any lighting associated with the development (including vehicle lights) must not interfere with the sighting of signalling apparatus and/or train drivers' vision on approaching trains. The location and colour of lights must not give rise to the potential for confusion with the signalling arrangements on the railway. The developers should obtain Network Rail's Asset Protection Engineer's approval of their detailed proposals regarding

lighting.

Noise and Vibration

The potential for any noise/vibration impacts caused by the proximity between the proposed development and any existing railway should be made aware to the future occupiers of the site. It must also be assessed in the context of the National Planning Policy Framework which holds relevant national guidance information.

The current level of usage may be subject to change at any time without notification including increased frequency of trains, night-time train running and heavy freight trains. The appropriate building materials should be used to reduce any potential noise disturbance from the railway.

Vehicle Incursion

Where a proposal calls for hard standing area/parking of vehicles area near the boundary with the operational railway, Network Rail would recommend the installation of a highways approved vehicle incursion barrier or high kerbs to prevent vehicles accidentally driving or rolling onto the railway or damaging lineside fencing.

Landscaping

Any trees/shrubs to be planted adjacent to the railway boundary these shrubs should be positioned at a minimum distance greater than their predicted mature height from the boundary. Certain broad leaf deciduous species should not be planted adjacent to the railway boundary as the species will contribute to leaf fall which will have a detrimental effect on the safety and operation of the railway. Network Rail wish to be involved in the approval of any landscaping scheme adjacent to the railway. Any hedge planted adjacent to Network Rail's boundary fencing for screening purposes should be so placed that when fully grown it does not damage the fencing or provide a means of scaling it. No hedge should prevent Network Rail from maintaining its boundary fencing. If required, Network Rail's Asset Protection team are able to provide more details on which trees/shrubs are permitted within close proximity to the railway.

Existing Rights

Whilst not a planning matter, we would like to remind the applicant of the need to identify and comply with all existing rights on the land. Network Rail request all existing rights, covenants and easements are retained unless agreed otherwise with Network Rail.

Property Rights

notwithstanding the above, if any property rights are required from Network Rail in order to deliver the development, Network Rail's Property team will need to be contacted.

North Kent Marshes Internal Drainage Board

The site is within the North Kent Marshes Internal Drainage Board's district; however, this development has been comprehensively reviewed by the Environment Agency and Kent County Council acting as Lead Local Flood Authority (LLFA), and some of the latest submissions are in direct response to these authorities' previous comments. As such, the Board has very little to add other than it would be prudent to condition any permission to ensure no development takes place prior to a detailed drainage scheme being submitted to and approved by the LPA together with details of the scheme's operation and maintenance and it should be verified on-site once completed by a competent engineer and prior to operation.

Furthermore, the LPA may wish to consider a planning condition to ensure a site-specific Flood Risk Assessment addressing construction/temporary works, including emergency response measures for construction activities in flood risk areas is submitted to and approved by the LPA. In addition, a drainage management strategy should be included for the construction phase that addresses the temporary drainage

design including construction water management and protection of watercourses during the works. The submission states that discharge consents will be required for surface water discharges from the Environment Agency, Essex County Council (Tilbury), and Kent County Council (Gravesend), however, the Board would like to take this opportunity to reiterate that, land drainage consent is required from the Board for the discharge of surface water into the Board's district in line with the Board's Byelaws (specifically Byelaw 3 available at https://lowermedwayidb.co.uk/wpcontent/uploads/2023/02/NKMIDB_Byelaws_DEFRA-approved.pdf). Any consent granted will likely be conditional, and a Surface Water Development Contribution fee is normally required to cover the increased flow and volume in its maintained drainage network. However, this application is proposing to discharge to 'main river' and it is then only a short distance before the discharge will reach the tidal Thames as such, it seems unlikely that the Board will require such a payment.

Port of London Authority – 15/02/2024

Within the application documents the depth of the proposed tunnel is proposed to be approximately -34m Above ordnance Datum (AoD) to - 32mAoD, and approximately three to four tunnel widths below the river bed. The diameter of the tunnel is proposed to be 4m in internal diameter (4.5m external diameter) and the depth of the drive tunnel shaft is expected to be approximately 42.5m. To confirm the PLA has no in principle concern with the proposed depth of the proposed tunnel as part of this development although it is requested whether the applicant could provide some further information with regard to the depth of the existing tunnel and a comparison with the depth of the proposed tunnel, and the reason for any significant difference. It is also noted that as part of the development no works are required in the marine environment of the river itself with regard to the tunnel works.

With regard to transport, section 5.5 of the submitted Outline Construction Traffic Management Plan (OCTMP) states that the spoil is planned for removal from both Gravesend and Tilbury sites, by which a number of methods could be utilised including:

- Removal by barge (via River Thames) – Tilbury only; and, - Removal by road – Tilbury and Gravesend.

For Tilbury specifically, two options are described within the application documents with regard to river use.

- the OCTMP and Environmental Statement (ES) state that the use of the Port of Tilbury via berth 5 is being investigated and could be utilised which based on a 1,000m³ tonne barge could result in 86 barges being utilised as part of the development.

- Within the ES there is also an option to utilise the existing and working jetty to the south-east of the proposed Tilbury SEC, delivering the tunnel and Tilbury shaft spoil to the jetty via HGV and transferring to barge. There is an existing road extending to the jetty, however the application states that some upgrading of the existing road will be required. As part of this option there may also be a requirement to carry out enabling works at the jetty itself. If so this will need to be considered as part of a River Works Licence application with the PLA. Within the ES it is also stated that there will be no requirement to use the jetty or berth during weekend or night-time hours, as spoil from the 24 hour tunnelling will be stored in the muck away areas (see Figure 3-5) overnight and during the weekend and therefore the jetty will not require additional lighting during night-time hours. To highlight as part of this option it is likely that a Navigational Risk Assessment (NRA) to consider the use of this jetty.

In principle the use of the Tidal Thames is welcomed, and this must continue to be robustly considered, including for the delivery of materials as well as removal of spoil and be specifically highlighted within a appropriately worded condition for a detailed Construction Traffic Management Plan as part of any forthcoming planning permission. This would be in line with Local Plan policy PMD11 (Freight Movement)

as the application states that the use of the Thames could result in approximately 11,440 HGV movements being taken off the roads and onto the river.

With regard to these works to highlight this will require a River Works Licence with the PLA. This must be added as an informative as part of any forthcoming planning permission and the PLA's Statutory Consents and Compliance Team contacted at lic.app@pla.co.uk. It is welcomed that this requirement is recognised in the submitted Construction Environmental Management Plan (CEMP) in table 7-1 (Required Consents and Licenses).

Furthermore, with regard to the excavation of spoil, it is noted that National Grid are exploring opportunities to transport the spoil to habitat enhancement projects in the local vicinity such as the RSPB site at Cliffe Pools which would provide benefits to aquatic invertebrates and wading birds. This is in principle welcomed particularly with regard to linking river movements. As an alternative the RSPB owned and Land & Water operated site at Rainham Marshes may also be an option for the disposal of spoil. It is therefore considered that this opportunity continues to be investigated and this should also be highlighted within a relevant planning condition as part of any forthcoming planning permission.

Lastly it is noted that the decommissioning of the existing tunnel and associated infrastructure does not form part of this application / project. To confirm the PLA must be consulted on this aspect of the overall development once further details are available.

Port of London Authority – 03/09/2024

Thank you for consulting the Port of London Authority (PLA) on the re-consultation of the above-mentioned planned application, for the proposed Cable Tunnel between Tilbury and Gravesend. I have now had the opportunity to review the updated documents and have the following comments to make, in addition to those raised in the PLA's original response dated 15 February 2024.

As part of the amended documents an Outline Construction Traffic Management Plan (OCTMP) has been provided which on page 36 commits to the removal of tunnelled spoil by barge via the River Thames from the Tilbury side (totalling approximately 85,000m³ of material). Whilst this is in principle welcomed it is noted that for the Gravesend side, the removal of spoil has not been investigated and is considered unlikely to be feasible due to the difficulty of accessing a jetty in this location. Whilst this is noted, including that the proposals comprise most of the work being conducted from the Tilbury side of the river, with the spoil from one shaft and the tunnel being removed via the north portal, it is still considered that the potential use of the river through the supply chain on the Gravesend side must still form a consideration as part of the detailed CTMP, including further consideration of potential landing points in the borough. It is therefore considered that this forms a requirement of a detailed CTMP, via an appropriately worded planning condition as part of any forthcoming planning permission.

As noted previously the proposed development will also require a River Works Licence with the PLA. This must be added as an informative as part of any forthcoming planning permission. For information the applicant is in continuing discussions with the PLA with regard to this requirement.

Shorne Parish Council

A Parish Council representative previously attended a webinar about this project. While understanding and accepting the need for this work, the Parish Council has some concerns about the secondary effects of the proposals:

Increase in traffic on A226:

There will be an increase in traffic due to the works.

The A226 is increasingly busy and this is contributing to adverse safety issues at Shorne Crossroads where pedestrians and vehicles need to cross (and turn across) the stream of traffic.

The additional project traffic will exacerbate this situation.

Abnormal loads:

The project will require the widest and heaviest loads ever seen in the area to use a variety of local roads.

We have concerns about whether these roads are structurally able to support such loadings. In particular, at Gads Hill Higham where the Dickens tunnel runs under the A226 roadway, and at Mark Lane/the Canal towpath (please also see below).

Potential damage to the Canal towpath, and bank/walls:

Mark Lane runs along the first part of the Canal bank heading east from Gravesend. It is in poor condition with many linear cracks, which we understand indicate deficient underlying structure. This is to be expected as it was not constructed as a road normally would be but runs along the former northside canal bank and towpath dating from the early 1800's. It is narrow with soft verges, and it was never envisaged that vast weights would traverse it.

We therefore have significant concerns that damage will result from such use, and request that full repair and remediation must be included as a Condition, in the event of any damage occurring to the Canal walls and bank as well as to the towpath itself.

Thames and Medway Canal Association (TMCA):

The TMCA maintain the Canal and should be consulted on the proposals. They will require maintenance access.

Closure of Footpath NG2 and Sustrans cycle route 1:

The Canal towpath is a footpath and National cycle route, it has an all-weather type surface. We are very concerned about the proposed closure of these for the long duration of the works, so causing severance, and request that the need for full closure should be reviewed - e.g. could it be only closed during peak construction activity or remain open at weekends/bank holidays when recreational use is greatest.

Diversion routes for Footpath NG2 and Sustrans cycle route 1:

The suggested footpath diversion route is to use NG1/Saxon Shore Way to the north, however this becomes extremely muddy and rutted in winter and poor weather, as well as being much longer, so it is not an equivalent or always a viable route.

The suggested cycling diversion is also longer, being to use either Lower Higham Road or the A226. Both of these are extremely busy with traffic of all kinds and pose much greater hazards than the official cycle route. Commercial traffic on the narrow winding lanes, and blind corners and the blind summit on the Lower Higham Road are particularly hazardous. The alternative routes would certainly result in "fear and intimidation" for cyclists. Solving hazard creation for the project will create many others.

We disagree with some of the impact assessments, the impacts being greater than suggested.

Post-project repair and remediation:

Full remediation of all temporary construction areas, and repair of all damage caused by the project must be required by Condition.

Southern Water

Foul and Surface Water Drainage

The Environment Agency should be consulted directly by the applicant regarding the use of a cess pit.

The Council's technical staff and the relevant authority for land drainage should comment on the adequacy of the proposals to discharge surface water to the local watercourse.

It is possible that a sewer now deemed to be public could be crossing the development site. Therefore, should any sewer be found during construction works, an investigation of the sewer will be required to ascertain its ownership before any further works commence on site.

Thurrock Council

Thurrock Council are currently considering their own planning application (under the above quoted reference) for the associated development to the north side of the River Thames, which Gravesham Borough Council have already been consulted on, and response provided on 14 February 2024. The description of our proposal reads as follows:

'Proposed construction a new cable tunnel beneath the River Thames between Tilbury and Gravesend to provide additional transmission capacity. Above-ground infrastructure in the form of a new Cable Sealing End compound and a new head house building along with associated electricity infrastructure, access, parking, boundary treatment and two overhead gantry structures for future overhead lines. Temporary compound for the duration of the project to provide parking, staff welfare facilities, delivery vehicle parking, and equipment and machinery storage, including boundary treatment and lighting.'

It is noted that documents submitted with Thurrock's planning application also include details of works taking place within Gravesham. Thurrock will consider this when assessing the proposed development whilst also considering relevant local and national policies, along with responses received from consultees. However, given the scale of the development, including its distance across the Thames, it is considered that the proposed development within Gravesham including associated infrastructure would not have any adverse impacts upon the administrative area of Thurrock.

UK Power Networks

Please note there are HV underground cables on the site running within close proximity to the proposed development.

Prior to commencement of work accurate records should be obtained from our Plan Provision Department at UK Power Networks, Fore Hamlet, Ipswich, IP3 8AA.

All works should be undertaken with due regard to Health & Safety Guidance notes HS(G)47 (Avoiding Danger from Underground services). This document is available from local HSE office.

Should any diversion works be necessary as a result of the development then enquiries should be made to our Customer Connections department. The address is UK Power Networks, Metropolitan house, Darkes Lane, Potters Bar, Herts, EN6 1AG.

You can also find support and application forms on our website [Moving electricity supplies or equipment | UK Power Networks](#)

Neighbouring properties

First round of consultation

1 neighbour was consulted with an overall expiry date of 27/02/2024 – 2 responses received (both objections), the comments of which can be summarised as follows:

- Any impact on access to their site would be severely detrimental to their business;
- Concerned at the impact on the production and distribution of what they produce in their business;
- Concerned at the proposed works may adversely affect the operation of their business;
- The application fails to give sufficient detail for them to provide detailed comment or to fully understand the potential impact on their businesses.
- They require the following information so they can commission expert evidence to properly understand the impact on their business:- they require information on the extent of the proposed site works, details of how construction traffic will access the development site, including volumes and timing of traffic and any planned road closures, details of how traffic will access the development site after construction (inc. for maintenance) and details of any impact on river traffic or our client's conveyor system;
- Whilst any approval would be likely subject to approval of a Construction Management Plan, at this stage the Council at least needs to understand the reasonable worst case likely impact of the proposed development on the operation of their business in order that it can be satisfied that a Construction Management Plan is in fact capable of adequately mitigating that impact.
- Should the Council grant planning permission subject to a condition requiring a Construction Management Plan, our clients would wish to be consulted on the detail of that Plan before the Council decides whether or not to approve it;
- Proposal involves diverting existing overhead power lines, part of this over their land – concerned that the land's use will be disrupted by the proposed development;
- There are no details on when access will be needed, whether this will conflict with the use of their site, how this will impact their National training requirements, how access will be agreed and the methodology for any works within the site boundary;
- The application should clearly set out these details and then be subject a planning condition to require compliance with the submitted details;
- National Grid have indicated that the overhead lines could be put up either at weekends, or other days when the shooting range is not operational. If this is the case, then this should be stated in the planning application and subject to an appropriate planning condition to ensure compliance;
- They require constant access to their site via Mark Lane, the road is in very poor condition. Questions whether it is in sufficiently good condition to safely accommodate the proposed construction traffic, the planning application should contain provisions for this to be dealt with before construction commences.
- The planning application should also require that the road condition is addressed once again after construction has taken place;
- Access Road - National Grid have indicated verbally that their vehicles would be unobstructed

throughout the construction and would have priority over construction traffic however, no mention of this is made in the planning application and it should commit to this and this should be subject to a planning condition;

- The planning application does not appear to commit as to whether marshals would be used to ensure constant and safe access and egress down Mark Lane, the planning application should commit to this and this should be subject to a planning condition;
- Lower Thames Crossing - Although National Grid believes that the Lower Thames Crossing would not commence until after the National Grid works are complete, the planning application does not appear to consider the impact if both this and the Lower Thames Crossing projects were to proceed simultaneously, this is a particular concern in relation to the access road. The application should either address the impact of both projects happening simultaneously, unless more certainty can be provided that the two projects would not happen simultaneously;
- Electric and Magnetic Radiation (EMR) – Staff are employed who would work under the proposed overhead power lines on a daily basis. The planning application does not confirm what level of EMR would be associated with the proposed overhead power lines or whether it would be safe for staff. They understand that National Grid may have considered impacts on users of the nearby footpath, but they consider this is not the same as staff permanently employed under the lines. They therefore believe that National Grid should supply this information as part of the planning application and if any mitigation is necessary as a result, this should be subject to a planning condition.

Second round of consultation

2 neighbours were consulted with an overall expiry date of 13/09/2024– 1 response received (objection), the comments of which can be summarised as follows:

- The Construction Management Traffic Plan states that removal of spoil from the Gravesend site has not been investigated and unlikely to be feasible due to the difficulty of accessing a jetty in this location however, under application ref. 20240691 the Council issued a decision to state they had no objections to the proposal by the PLA to replace three pontoons at Denton Wharf and highway access to the site at Denton Wharf is adequate for HGV movements.

Officer's Analysis

The proposal is made by the National Grid which owns and operates the national high-voltage electricity system throughout England and Wales and who are obligated to develop and maintain an efficient, co-ordinated and economical system of electricity transmission.

National Grid have a proposal to replace a cabled section of the Tilbury to Grain and Tilbury to Kingsnorth (TKRE) 400kV circuits under the River Thames. The existing Grain to Tilbury 400 kV circuits are mostly overhead lines however, a section is cabled within a deep tunnel underneath the River Thames. It is said that the tunnel in its current state would not safely accommodate an upgrade to the new cables. The TKRE Cable Tunnel Replacement Project relates only to the tunnelled section of the circuits and the infrastructure required to transition from overhead line to underground cables.

The TKRE replacement project consists of the following elements.

A new bored tunnel under the River Thames.

Then in order for the overhead lines to transition to a cable under the River Thames the following above-ground components are required at both ends of the new tunnel at Tilbury and Gravesend:

- A new cable sealing end compound consisting of:-
 - a new tunnel headhouse which will cover the shaft into the tunnel;
 - a new overhead line gantry structure which will connect the overhead line downlead conductors and transfer them to six sealing end structures; and
- Modifications to the existing overhead line (OHL) with the new OHL conductors connected to the existing TKRE 400kV OHL conductors via new terminal pylons.

Planning permission is required for the proposed development with applications being submitted to both Thurrock Council for the development north of the River Thames in Tilbury and Gravesham Borough Council for the development south of the River Thames in Gravesend. Thurrock have the larger site area so are the Lead Planning Authority.

The section of the tunnel which falls below Mean Low Water Spring is within the Marine Management Organisation's jurisdiction; National Grid state in their submission that the boring of the tunnel is exempt from marine licensing.

The alterations to the pylons and overhead line are stated in the submission to be consented under the Electricity Act 1989, with the Department for Energy Security and Net Zero being the determining body so those works do not need to be considered in this application.

For reference the below table shows the various elements of the project and the determining Authority:

Project Compound	Primary Consent	Determining Authority
Permanent Work at Tilbury		
New Cable Tunnel, Sealing End Compound and Tunnel Headhouse	Full Planning Permission, Town and Country Planning Act 1990 (TCPA) (as amended) (Ref 1-10)	Thurrock Council
Permanent Work at Gravesend		
New Cable Tunnel, Sealing End Compound and Tunnel Headhouse	Full Planning Permission, Town and Country Planning Act 1990 (TCPA) (as amended) (Ref 1-10)	Gravesham Borough Council
New Bored Tunnel		
New Bored Tunnel	Full Planning Permission, Town and Country Planning Act 1990 (TCPA) (as amended) (Ref 1-10)	Thurrock Council jurisdiction
	Full Planning Permission, Town and Country Planning Act 1990 (TCPA) (as amended) (Ref 1-10)	Gravesham Borough Council
	No consent required (Section 35 of The Marine Licensing (Exempted Activities) Order 2011 (Ref 1-11)).	Marine Management Organisation (MMO)
Overhead Line Works and reconfiguration (at Tilbury and Gravesend)		
Overhead Line Works and reconfiguration	Section 37 Consent under the Electricity Act 1989 (Ref 1-11)	Department of Energy Security and Net Zero (DESNZ)

The red line boundary of the entire development project site is shown below and relates to areas in both Gravesham Borough Council and Thurrock Borough Council with the divide between the two Authorities being in the centre of the River Thames:



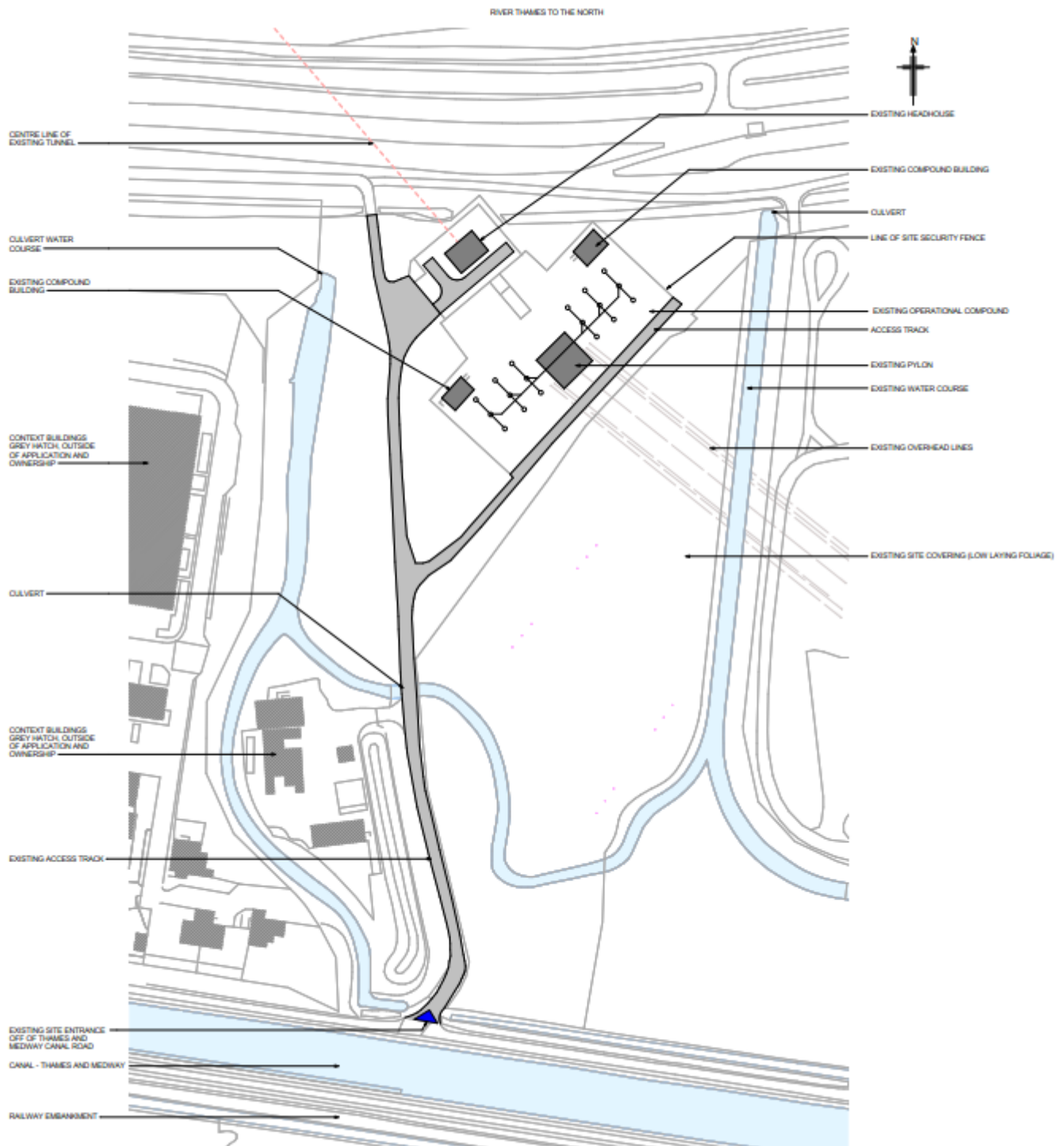
In 2023 the applicant submitted a request screening opinion under application ref. 20230668 in respect of one new shaft headhouse and one new cable sealing end compound. It was determined that the

development was considered EIA development.

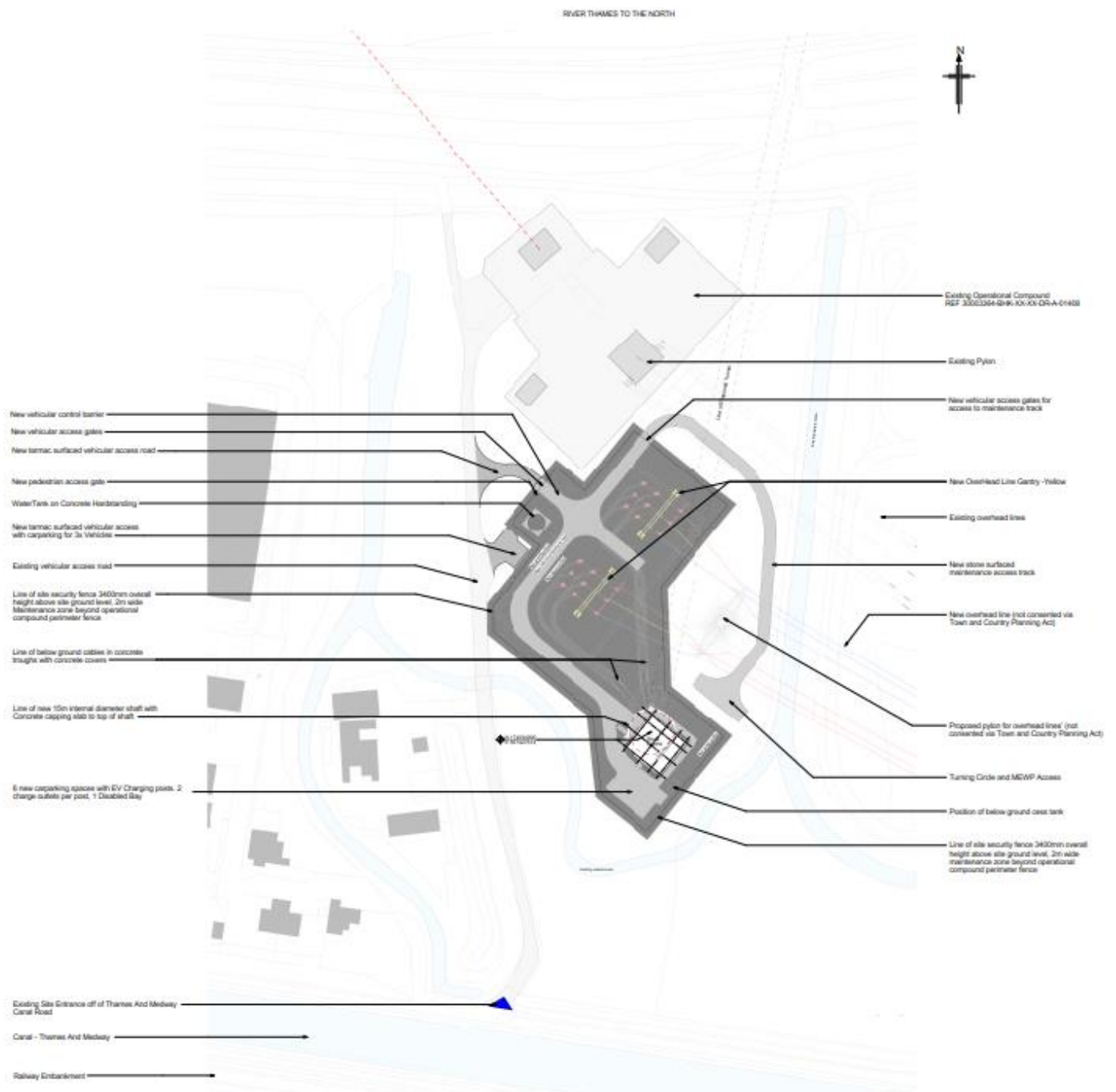
For Gravesham the development consists of the new cable tunnel, the Sealing End Compound and Tunnel Headhouse. It does not include anything to do with the pylons or overhead power lines as the Department for Energy Security & Net Zero (DESNEZ) is the determining authority for those elements.

The application is supported by an Environmental Statement which describes the proposed development, documents the assessment of its likely significant effects on the environment, and details the mitigation measures proposed to prevent, reduce or offset significant adverse effects.

The existing block plan on the Gravesend land-based area of the site is as follows:



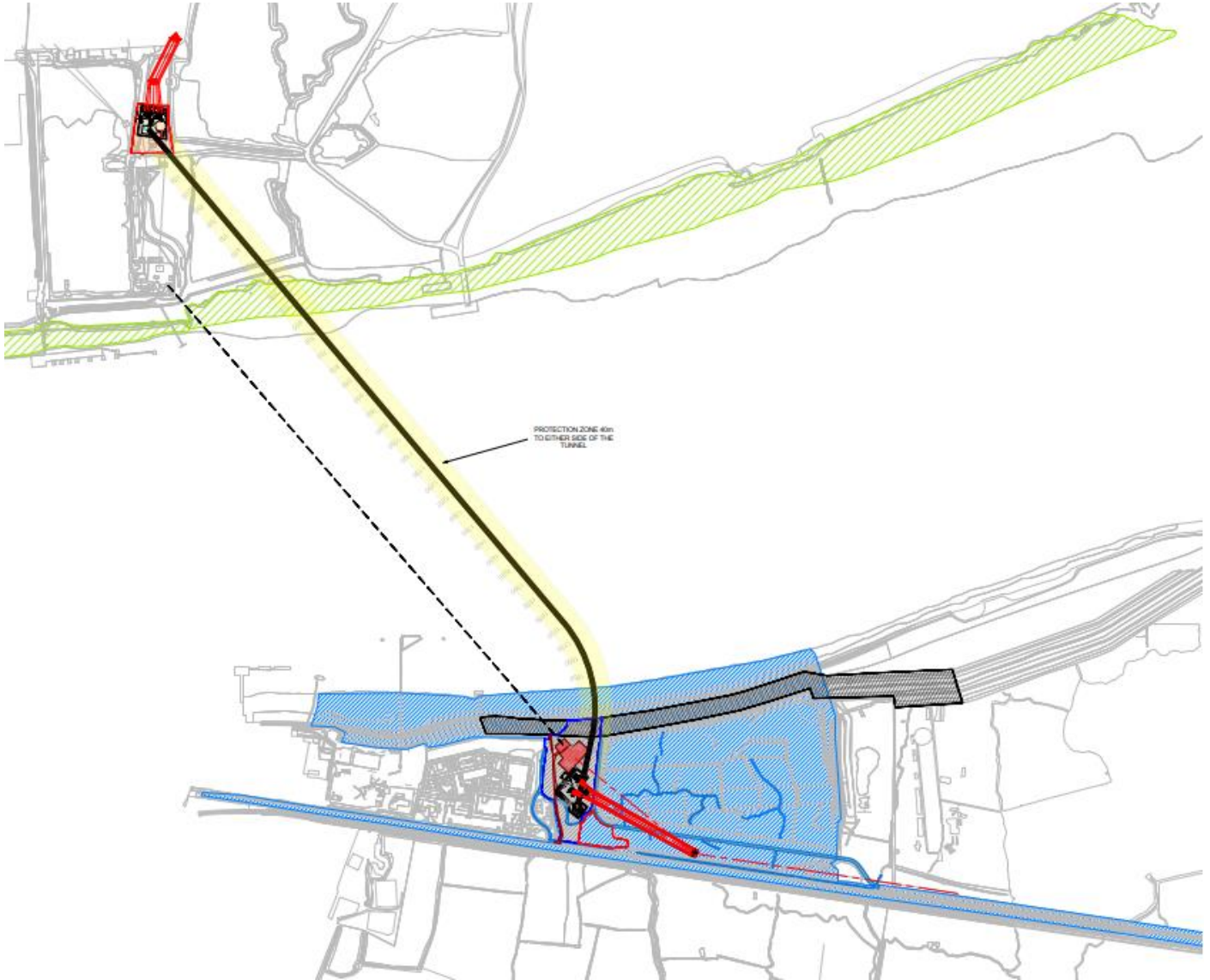
The proposed block plan is as follows:



As can be seen the existing Sealing End Compound with existing headhouse, two existing compound buildings and existing pylon will remain. The proposed new Sealing End Compound will be constructed to the south of the existing compound.

Cable Tunnel

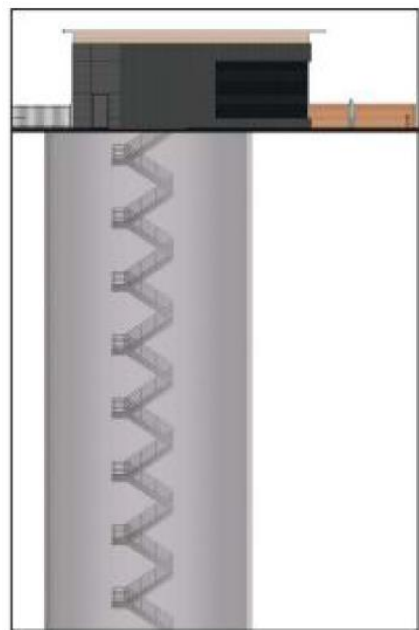
The new cable tunnel will be approximately 2.2km long (from headhouse to headhouse), 4.5m in external diameter, at a depth of approximately 34-32 metres (m) above Ordnance Datum (above mean sea level). The tunnel will follow the alignment as shown below:



Once installed there will be twelve new cross linked polyethylene (XLPE) cables installed in the tunnel which is a modern cable requiring less maintenance and doesn't contain any fluids. Each cable will be well-spaced from the other cables so they do not overheat; an example of how the inside of the tunnel will appear is as follows:



In order to construct the new cable tunnel, vertical shafts will need to be constructed that will be around 15m in diameter and 40m deep, a cross-section of the tunnel shaft with stair access is as follows:



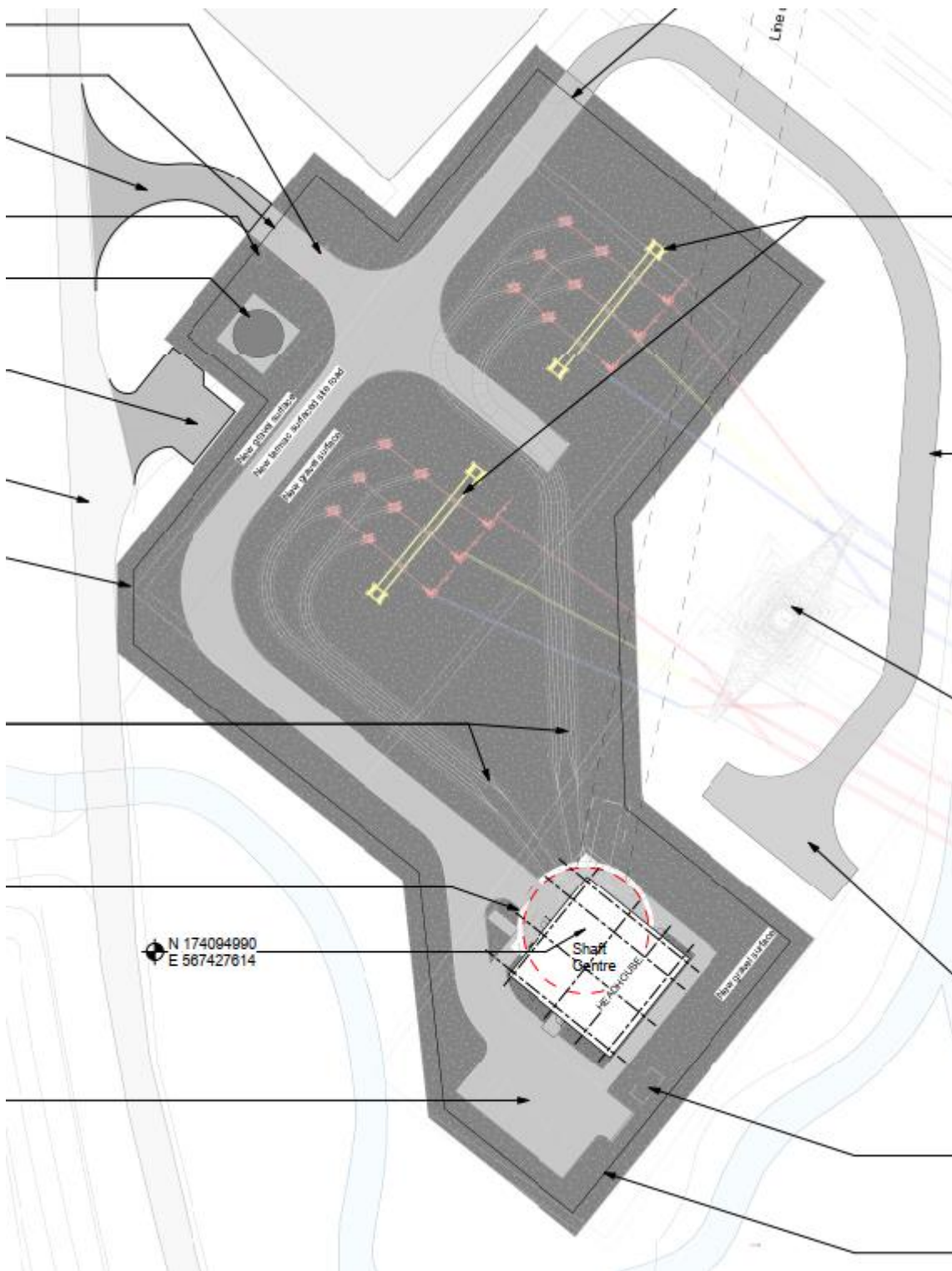
The new tunnel will be created between the two shafts using a tunnel boring machine which will be launched from the Tilbury side and be received at the shaft on the Gravesend side. A tunnel boring machine excavates and inserts a concrete lining using a rotating head with cutting parts running on motors. Tunnelling works are expected to take place for approximately eight months.

The excavated material from the construction of the tunnel will be approximately 72,700m³. The excavated material from the construction of the Tilbury shaft will be approximately 13,000m³. This results in a total of approximately 85,700m³ of spoil which would be removed from the Tilbury site. The composition of the spoil from the tunnel will be chalk. The composition of the shaft spoil will be a mix of chalk, made ground, alluvium and river terrace deposits. The excavated material from the construction of the shaft at Gravesend will be approximately 12,850m³. The composition of the shaft spoil at Gravesend will be a mix of chalk, made ground, alluvium and river terrace deposits same as Tilbury. As there is no suitable jetty on the Gravesend side of the river, the shaft spoil will be removed via HGV. However, National Grid will direct this to a suitable reuse destination as would the spoil from the Tilbury side also. The tunnel and shaft spoil will be removed at the Tilbury end via the River Thames.

Gravesend Sealing End Compound (SEC)

The proposed SEC will contain the equipment required to transition the cables out of the tunnel and up onto the overhead lines supported by pylons. The SEC will be located within a vegetated area to the south of the existing Sealing End Compound which is to remain. It will be 6,328 sq. m in area but during construction a wider area of approximately 37,000 sq. m will be required to accommodate construction equipment and storage areas. The gantry structure for the overhead lines within the SEC will have a maximum height of approximately 13m. The SEC will be surrounded by a 2.4m mesh or palisade security topped with an electric pulse fence to a height of 3.4m. There will be nine new car parking spaces, six to the west of the new headhouse and three to the north just outside of the SEC. The roads within the SEC will be laid with tarmac however, all other surfacing will comprise of gravel or other free draining stone material with a Type 3 sub-base.

The proposed SEC is shown in the below close up extract:

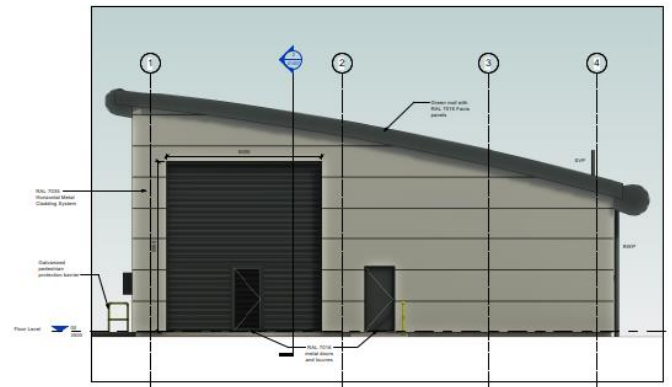
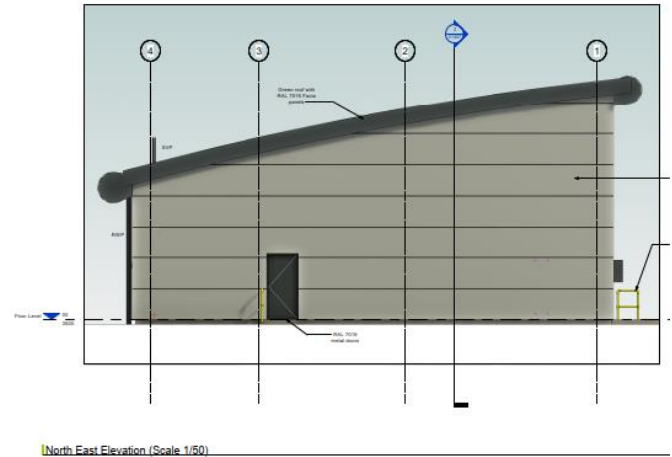


Gravesend Tunnel Headhouse

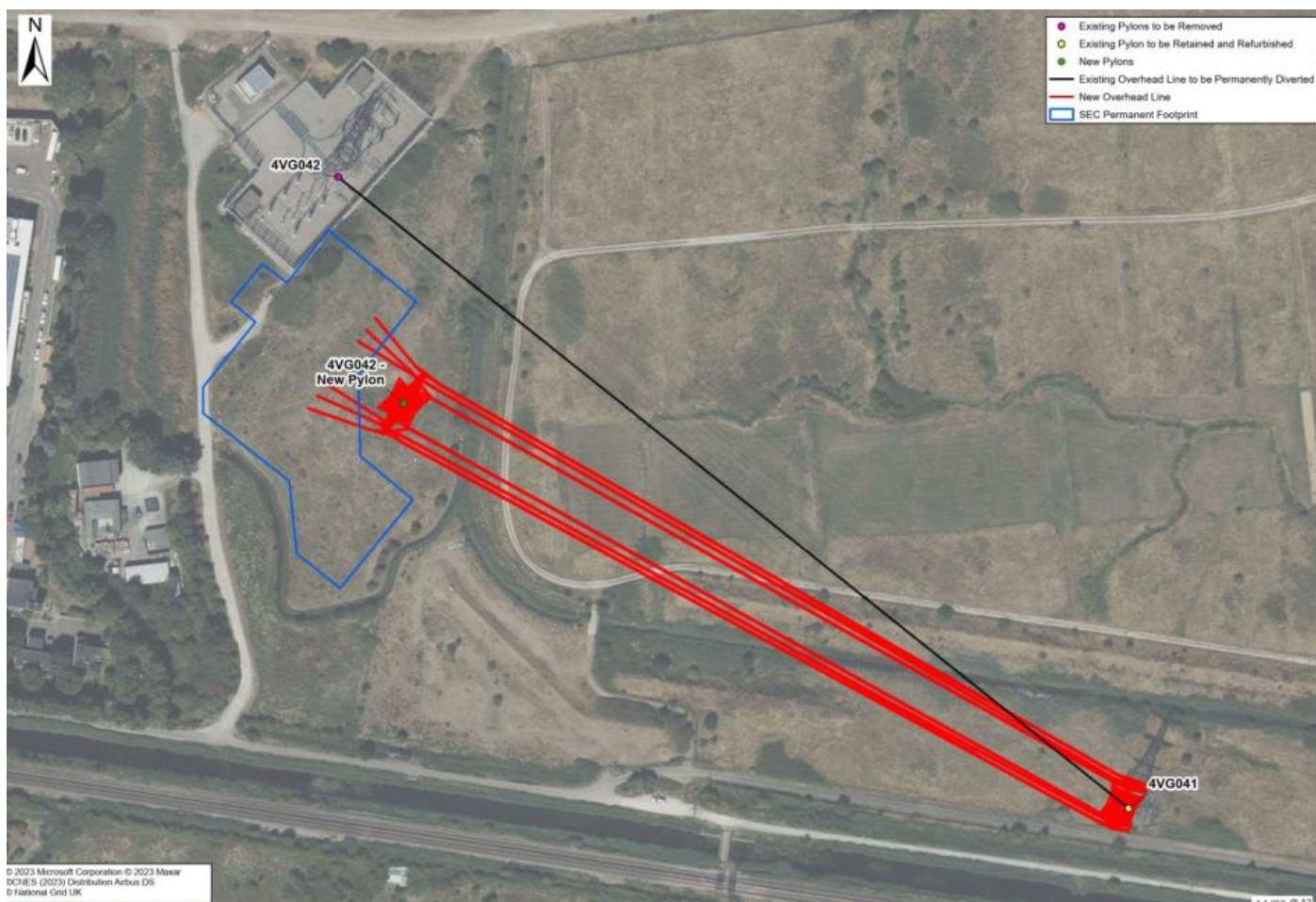
The headhouse will be located within the SEC and will sit above the tunnel shaft. Its purpose is to:

- allow controlled safe and secure access into the tunnel shafts;

- The headhouse will occupy an area of approximately 230 sq. m based on a footprint of 15m x 16m and have a building height of 8m.



Although not being dealt with in this application it is prudent to state that the modification works required to the overhead lines (all pylon and overhead line works will be dealt with by Department of Energy Security and Net Zero (DESNZ)). At Gravesend approximately 400m of single span overhead line will be permanently removed and approximately 330m new double span overhead line will be installed between pylons 4VG041 and new pylon 4VG042. The existing pylon 4VG042 will be removed. Pylon 4VG042 will be replaced by a new terminal pylon which will be erected to the east of the new Sealing End Compound. The existing Pylon 4VG041 to the south east will be refurbished. This is shown below:



Again, it is prudent to note that DESNZ are the determining Authority for any of the works relating to the pylons and overhead lines but they are mentioned here for completeness.

The application site is located in the Green Belt as defined in the LPCS Proposal Map, in the Canal and Grazing Marsh Higham Local Wildlife Site, Area of Archaeological Potential, Biodiversity Opportunity Area, Explosives Storage, Flood Zone 3, Shorne and Higham Marshes Landscape Character Area and the Lower Thames Crossing Safeguarding Zone. The southern margin of the site is approximately 30m from the Thames Estuary and Marshes SSSI and Ramsar Site, a site of international importance.

The principle issues in the consideration of the application are:

- Green Belt
- Grey Belt
- Landscape Character
- Biodiversity & Ecology
- Neighbouring/Public Amenity
- Highway Safety
- Public Right of Way
- Flooding & Drainage
- Heritage
- Design, Character & Appearance

- Other Matters
- Planning Balance & Conclusion

Green Belt

The NPPF (2024) states at Paragraph 142 that Government attaches great importance to Green Belts and that fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open and that the essential characteristics of Green Belts are their openness and their permanence.

At Paragraph 153 of the NPPF (2024) it is stated that, when considering any planning application, local planning authorities should ensure that substantial weight is given to any harm to the Green Belt, including harm to its openness.

Paragraph 154 of the NPPF (2024) states that development in the Green Belt is inappropriate unless one of the exceptions given in 154 (a) – (h) applies. Furthermore, paragraph 154 states that the development of homes, commercial and other development in the Green Belt should also not be regarded as inappropriate where all of the criteria listed in 154 (a) – (d) are met.

Whether the proposal is inappropriate development in the Green Belt

Paragraph 154 of the NPPF (2024) states that development in the Green Belt is inappropriate unless one of the following exceptions applies

a) buildings for agriculture and forestry;

b) the provision of appropriate facilities (in connection with the existing use of land or a change of use), including buildings, for outdoor sport, outdoor recreation, cemeteries and burial grounds and allotments; as long as the facilities preserve the openness of the Green Belt and do not conflict with the purposes of including land within it;

c) the extension or alteration of a building provided that it does not result in disproportionate additions over and above the size of the original building;

d) the replacement of a building, provided the new building is in the same use and not materially larger than the one it replaces;

e) limited infilling in villages;

f) limited affordable housing for local community needs under policies set out in the development plan (including policies for rural exception sites); and

g) limited infilling or the partial or complete redevelopment of previously developed land (including a material change of use to residential or mixed use including residential), whether redundant or in continuing use (excluding temporary buildings), which would not cause substantial harm to the openness of the Green Belt.

h) Other forms of development provided they preserve its openness and do not conflict with the purposes of including land within it. These are:

i. mineral extraction;

- ii. engineering operations;*
- iii. local transport infrastructure which can demonstrate a requirement for a Green Belt location;*
- iv. the re-use of buildings provided that the buildings are of permanent and substantial construction;*
- v. material changes in the use of land (such as changes of use for outdoor sport or recreation, or for cemeteries and burial grounds); and*
- vi. development, including buildings, brought forward under a Community Right to Build Order or Neighbourhood Development Order.*

Clearly (a), (b), (c), (d), (e), (f) (g) and (h) do not apply in this instance as the proposal is not for agriculture or forestry, is not appropriate facilities for outdoor sport, outdoor recreation, cemeteries, burial grounds or allotments, is not extension or alteration of an existing building, is not a replacement building, is not limited infilling in a village, is not affordable housing, is not limited infilling or the partial or complete redevelopment of previously developed land, is not mineral extraction, is not engineering operations, is not local transport infrastructure, is not the re-use of buildings, is not a material change in the use of the land and is not development, brought forward under a Community Right to Build Order or Neighbourhood Development Order.

It is therefore considered that the proposal does not meet any of the exceptions of paragraph 154 of the NPPF (2024) and therefore the proposal represents 'inappropriate' development in the Green Belt which is by definition harmful.

Grey Belt

Having concluded the development does not meet any of the exceptions of paragraph 154 of the NPPF (2024) consideration of paragraph 155 of the NPPF (2024) now needs to be considered which discusses grey belt land and states:

"The development of homes, commercial and other development in the Green Belt should also not be regarded as inappropriate where all the following apply:

- a. The development would utilise grey belt land and would not fundamentally undermine the purposes (taken together) of the remaining Green Belt across the area of the plan;*
- b. There is a demonstrable unmet need for the type of development proposed;*
- c. The development would be in a sustainable location, with particular reference to paragraphs 110 and 115 of this Framework; and*
- d. Where applicable the development proposed meets the 'Golden Rules' requirements set out in paragraphs 156-157 below."*

(A) The development would utilise grey belt land and would not fundamentally undermine the purposes (taken together) of the remaining Green Belt across the area of the plan

The definition of 'grey belt land' is set out in the Glossary of the NPPF (2024) and is defined as:

"Grey belt: For the purposes of plan-making and decision-making, 'grey belt' is defined as land in the Green Belt comprising previously developed land and/or any other land that, in either case, does not strongly contribute to any of purposes (a), (b), or (d) in paragraph 143. 'Grey belt' excludes land where the application of the policies relating to the areas or assets in footnote 7 (other than Green Belt) would provide a strong reason for refusing or restricting development."

The site is not previously developed land.

It therefore needs to be considered whether the site can be defined as constituting grey belt land by assessing whether the site strongly contributes to purposes (a), (b) and (d) of the Green Belt or not.

The application site is not considered to play an important role in ensuring that development in the urban area does not sprawl further east along the River Thames, there would still be a large gap between Gravesend, Shorne and Higham which are the nearest built up areas to the east of the site. It is therefore considered that the application site does not strongly constitute to purpose (a) of the Green Belt (checking the unrestricted sprawl of large built up areas).

The application site on its own is not considered to play an important role in ensuring Gravesend and Strood (which is the nearest neighbouring town to the east) do not merge into one another as there would still be a large gap between the two. It is therefore considered that the application site does not strongly constitute to purpose (b) of the Green Belt (preventing neighbouring towns merging into one another).

Gravesend is an old town in origin and has a number of historic buildings however, the application site itself is not considered to play an important role in preserving the setting and special character of the town. It is therefore considered that the application site does not strongly contribute to purpose (d) of the Green Belt (preserving the setting and special character of historic towns).

As such the site is not considered to strongly contribute to any of purposes (a), (b) or (d) in paragraph 143 of the NPPF (2024). In addition, the proposal would not affect areas or assets in foot note 7 of the NPPF (2024) (other than Green Belt). The development is therefore considered to be on grey belt land.

The proposed development would result in a new building for the head house, a gantry structure, fencing and hardstanding spread across the site and the spatial and visual impacts of the proposed development would result in a small loss of Green Belt openness. However, the development would utilise grey belt land and would not fundamentally undermine the purposes, taken together, of the remaining Green Belt across Gravesham. Therefore, the proposal would comply with criterion (a) of paragraph 155 of the NPPF (2024).

(B) There is a demonstrable unmet need for the type of development proposed

The applicant highlights how the Tilbury to Grain and Tilbury to Kingsnorth (TKRE) replacement project is related to the Government's commitment to tackle climate change and its targets to become net-zero in all greenhouse gases by 2050 for England and Wales; to meet these targets the UK will need to move away from traditional forms of energy generation with a greater need for cleaner, greener energy.

The applicant states how the Future Energy Scenarios (FES) (Ref 2-2) and Electricity Ten Year Statement (ETYS) 2020 (Ref 2-3) forecast a large amount of renewable and low carbon generation, including offshore wind and nuclear, together with three interconnectors from the continent connecting into the transmission system in the east coast of England. Through these forecasts, National Grid Electricity System Operator (ESO) has identified that the Tilbury to Grain and Tilbury to Kingsnorth 400 kilovolt (kV) circuits (which are predominantly overhead line with a cable section installed within the tunnel crossing the River Thames) will be significantly overloaded in their current capacity. The ESO has recommended investment in upgrading these 400kV circuits.

The applicant therefore identifies a national need for the proposed development. This would both ensure energy security and assist the Country in achieving a net zero economy. The proposed development is required to ensure the transmission system in the east Coast of England can meet the future anticipated

demands of renewable and low carbon energy.

Therefore, whilst the proposed electricity infrastructure itself is not a renewable energy or low carbon project *per se* it would provide the infrastructure for enhanced energy security in the National Grid which over time would provide greater support for renewable or low carbon energy production.

A material consideration in the determination of planning proposals for renewable energy and associated facilities are the National Policy Statements (NPS) for the delivery of major energy infrastructure. Both the existing and proposed NPSs state that these can be material considerations in decision making on applications that both exceed or sit under the thresholds for nationally significant projects. The NPSs recognise that large scale energy generating projects will inevitably have impacts, particularly if sited in rural areas.

The NSPs recognise that to meet the Government's objectives and targets for net zero by 2050, significant large and small scale energy infrastructure is required.

The NPS for Electricity Networks Infrastructure (EN-5) states that:

1.1.1 The security and reliability of the UK's current and future energy supply is highly dependent on having an electricity network which will enable the new electricity generation, storage, and interconnection infrastructure that our country needs to meet the rapid increase in electricity demand required to transition to net zero, while maintaining energy security.

1.1.2 A significant amount of new network infrastructure is required in the near term to directly support the government's ambition to deploy up to 50GW of offshore wind capacity (including up to 5GW floating wind) by 2030. There is an expectation that there will be a need for substantially more installed offshore capacity beyond this to achieve net-zero by 2050.

1.1.3 The electricity network infrastructure to support the government's offshore wind ambition is as important as the offshore wind generation infrastructure. Without the development of the necessary networks to carry offshore wind power to where it is needed in the UK, the offshore wind ambition cannot be achieved.

1.1.4 In addition to offshore wind, new networks infrastructure is needed in support of the development of generation by other technologies, including those in EN-3.

1.1.5 As identified in EN-1, government has concluded that there is a critical national priority (CNP) for the provision of nationally significant low carbon infrastructure. This includes: for electricity grid infrastructure, all power lines in scope of EN-5 including network reinforcement and upgrade works, and associated infrastructure such as substations. This is not limited to those associated specifically with a particular generation technology, as all new grid projects will contribute towards greater efficiency in constructing, operating and connecting low carbon infrastructure to the National Electricity Transmission System. These are viewed by the government as being CNP infrastructure and should be progressed as quickly as possible.

1.1.6 To support the above, the network must be effectively planned to ensure that the appropriate investment and right kind of technology is brought online at the right time, in the right places.

Accordingly, it is considered the case that the proposal would provide the infrastructure which would directly support energy provision which will be increasingly delivered from renewable and low carbon energy sources and would therefore be compliant with the national policy for electricity networks infrastructure as

set out in NPS-5.

The UK Government has declared a climate emergency and set a statutory target of achieving net zero emissions by 2050, and this is also a material consideration. Since the declaration, the Sixth Assessment Report of the Intergovernmental Panel on Climate Change has indicated that there is a greater than 50% chance that global temperature increases will exceed 1.5 degrees Celsius above pre-industrial levels. The report indicates that delay in global action to address climate change will miss a rapidly narrowing window of opportunity to secure a liveable and sustainable future for all.

The UK Energy White Paper, Powering our Net Zero Future (2020), describes the costs of inaction as follows:

"We can expect to see severe impacts under 3°C of warming. Globally, the chances of there being a major heatwave in any given year would increase to about 79%, compared to a 5% chance now. Many regions of the world would see what is now considered a 1-in-100-year drought happening every two to five years.

At 3°C of global warming, the UK is expected to be significantly affected, seeing sea level rise of up to 0.83 m. River flooding would cause twice as much economic damage and affect twice as many people, compared to today, while by 2050, up to 7,000 people could die every year due to heat, compared to approximately 2,000 today. And, without action now, we cannot rule out 4°C of warming by the end of the century, with real risks of higher warming than that. A warming of 4°C would increase the risk of passing thresholds that would result in large scale and irreversible changes to the global climate, including large-scale methane release from thawing permafrost and the collapse of the Atlantic Meridional Overturning Circulation. The loss of ice sheets could result in multi-metre rises in sea level on time scales of a century to millennia."

Overall it is considered that there is a demonstrable unmet need at a national level for the electricity infrastructure which is proposed. Therefore, the proposal would comply with criterion (b) of paragraph 155 of the NPPF (2024).

(C) The development would be in a sustainable location, with particular reference to paragraphs 110 and 115 of the Framework.

The application site is located to the south of the National Grid's existing Sealing End Compound site immediately adjacent to it. It would not be a new National Grid Electricity Distribution Site located some distance from the existing site but would be located right next to the existing one which is to remain. The development would be confined to this one area. As such the site is considered to be in a sustainable location. Therefore, the proposal would comply with criterion (c) of paragraph 155 of the NPPF (2024).

(D) Where applicable the development proposed meets the 'Golden Rules requirements set out Paragraphs 156-157

The proposed development is not major development involving the provision of housing and therefore criterion (d) is not applicable to this proposal.

As the proposal meets the requirements of (a), (b) and (c) of paragraph 155 (and (d) does not apply) it is not inappropriate development.

It is now necessary to assess all of the other principle considerations in the assessment of the proposal.

Landscape Character

The application site is within a field which has grass and vegetation and is used for grazing as are the surrounding fields. The application site is bordered to the north by the existing SEC with hardsurfacing and containing a Headhouse, two compound buildings, overhead line gantry and one electricity pylon.

The site is located in the Shorne and Higham Marshes. This is defined as in good condition with high sensitivity and a guideline to focus on the long term conservation of the area. Its key characteristics are flat grazing marsh with a lack of vegetation, a sense of remoteness with extensive views across the marshes, network of ditches and meandering waterways divide the marshes in an irregular pattern leaving parcels of land of a medium scale, no roads and limited development, features of historic interest including Shornemead Fort and extensive views across the River Thames and to higher ground to the south. The proposal would replace an existing area with grass and vegetation and introduce development of 13m height for the overhead gantry element and 8m for the headhouse to house the tunnel shaft. The site would be located next to an existing SEC so the development would not be out of keeping with the character of this particular locality which is heavily dominated by the existing SEC and pylons and overhead power lines. As such although there would be a degree of harm caused by the proposed increase in the electricity infrastructure in the area given that the proposed development would be located adjacent to the existing SEC it is considered this impact would be less than if the proposed SEC was constructed in a field some distance from the existing SEC. Given the context of the immediate locality it is considered the impact on the landscape would be moderate.

In respect of landscape character the proposal is therefore considered compliant with Policy CS12 (LPCS).

Biodiversity & Ecology

The site is located in the Canal and Grazing Marsh, Higham Local Wildlife Site (LWS) which is a non-statutory site of County importance. In addition, the southern margin of the site is approximately 30m from the Thames Estuary and Marshes SSSI and Ramsar Site, a site of International importance.

The fields to the west of the site consist of pony grazed grassland forming a mosaic with areas of scrub, reed, and tall ruderals. Fields to the south of the Milton Rifle Range and within the range itself are generally unmanaged and less diverse. All of these areas are considered by KCC Biodiversity to meet the definition to be considered Coastal and Floodplain Grazing Marsh, a Habitat of Principal Importance.

Surveys identified that the site supports notable populations of common reptiles (slow worm, common lizard and grass snake) and water vole. In addition, it has been found to support a diverse assemblage of invertebrates of County Importance, including hornet robberfly.

Intertidal bird surveys identified very low levels of use by the species for which the Thames Estuary and Marshes SPA/Ramsar site are designated. In addition, the number of species and number of birds recorded during the breeding and non-breeding bird surveys suggests these areas are of no more than Local importance for these species groups.

Paragraph 187 of the (NPPF, 2024) requires that planning policies and decisions should contribute to and enhance the local environment in a number of ways, including the provision of a net gain for biodiversity. Policy CS12 (LPCS) states that there should be no net loss of biodiversity in the Borough and that opportunities to enhance, restore, re-create and maintain habitats will be sought, in particular within the Biodiversity Opportunity Areas.

Chapter 15 of the Environmental Statement sets out that a range of embedded mitigation measures have been included in the design to avoid and/or reduce impacts on important ecological features. This includes minimising vegetation clearance, and creation of a range of biodiverse habitats following construction

including reinstatement of the southern fields to grazed pasture. In addition, a range of Construction Environmental Management Plan (CEMP) measures will be employed to reduce/avoid impacts including sensitive timing of works and maintaining buffer zones around all ditches. Close-boarded noise fencing will be erected around the construction site to limit noise disturbance.

Chapter 15 identifies that based on the low numbers of SPA/Ramsar species utilising the Gravesend Site, and the offset of the proposed Gravesend SEC from the intertidal habitats no significant effect on the structure/function of the Thames Estuary & Marshes SPA and Ramsar are expected.

It is stated that the proposal will result in the loss of approximately 2.4ha of existing grazed pasture, but that this impact will be partially offset by the creation of approximately 2ha of new grassland dominated habitats and a biodiverse brown roof (350 sq. m). In parallel, there will be temporary modification of habitat to facilitate overhead line realignment works. It is said this will result in a temporary adverse effect (approx. 4 years) on conservation status at the local level that is not considered significant by the applicant.

Chapter 15 identifies that embedded mitigation measures are expected to reduce impacts on intertidal birds, however low-level impacts are likely to remain due to disturbance and temporary habitat losses. The proposal would result in a temporary adverse effect (approx. 4 years) on the intertidal bird assemblage at the site level which is not considered significant. For both breeding and non-breeding birds there would similarly be a temporary adverse effect (approx. 4 years) at the site level that is not considered significant by the applicant.

A precautionary method of works will be employed as part of the CEMP in order to sensitively clear areas of suitable reptile habitat and displace reptiles into areas of adjacent habitat. With these measures in place a temporary adverse effect (approx. 4 years) at the site level that is not considered significant is expected.

The site is known to support a diverse range of invertebrate species. Habitat loss during construction is expected to result in a significant temporary (approx. 4 years) adverse effect on conservation status at the District level. However, based on the similar areas of suitable habitat within the surrounding marshes, this effect is expected to be reversible and following completion of construction this is expected to reduce to a long term effect that is not considered significant by the applicant.

KCC Biodiversity advise that overall they have no objections to the proposal subject to conditions. These include a Construction Ecological Management Plan (CEMP – biodiversity), an Ecological Design Strategy and Wildlife Sensitive Lighting.

Reptiles

As stated, the applicant's surveys have identified that the site supports notable populations of common reptiles there are a number of reptiles on the site. Reptiles are protected through the Wildlife and Countryside Act 1981 (as amended) and are also listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act (2006).

KCC Biodiversity note that the project ecologists indicate that 1.1 ha of moderate quality reptile habitat will be retained, protected and enhanced during construction but that there will be a permanent loss of 2.6ha of reptile habitat in 2024/2025 (1.2 ha of moderate quality) and a further 3.2 ha of reptile habitat (of which 2.6 ha has been assessed to be of moderate quality by the project ecologists) temporarily lost due to the works to the overhead line in 2028. The temporary habitat clearance is expected to take around 12 weeks to complete, and the project ecologists indicate the habitat will return to its original condition within 6-24 months. Together this habitat loss could have a profound impact on the reptile population on-site in the short to medium term as a minimum.

In response to comments from KCC Biodiversity in the application the applicant has now submitted a reptile strategy which provides proposals for on and off-site reptile mitigation. ~0.56 ha of largely unsuitable reptile habitat has been proposed for improvement, and ~0.78ha of suitable reptile habitat enhanced off-site. This totals ~1.34 ha of land. KCC Biodiversity advise that this falls short of the 2.6 ha of reptile habitat to be lost permanently and 3.2 ha to be temporarily lost but that they understand that not all of the habitat to be lost permanently or temporarily is optimal for use by reptiles. They advise that if the 0.6 ha of less suitable habitat to be temporarily lost is improved in the long-term to benefit reptiles, then 1.94 ha of land will have been created or improved as compensation for the loss of reptile habitat. They advise this is still short of the 2.6 habitat to be permanently lost, although greater than the estimated 1.2 ha of moderate quality habitat to be permanently lost and that based on the rough estimates of habitats to be lost, created and improved, they consider that sufficient information is available to conclude that over the long-term, the local reptile population can be safeguarded. KCC Biodiversity advise that a detailed reptile mitigation strategy should be secured by condition if planning permission is granted and this strategy can be included within a wider ecological design strategy to ensure a holistic approach to protect and prioritise species mitigation and compensation.

Non-statutory Designated Sites and Biodiversity Net Gain

The site lies within the Canal and Grazing Marsh, Higham Local Wildlife Site (LWS). Local Wildlife Sites (LWSs) are important for the conservation of wildlife at the county level. These are non-statutory designations which are generally recognised by local authorities and given weight and protection by inclusion in development plan policies in accordance with paragraphs 194 and 198 of the NPPF (2024).

This LWS has been designated for its managed and unmanaged grazing marsh, dykes, sea wall, salt marsh and a long stretch of the Thames and Medway Canal. The site lies adjacent to the South Thames Estuary & Marshes Site of Special Scientific Interest (SSSI) and adds to the overall importance of this stretch of the North-West Kent Marshes.

The NPPF (2024) states under paragraph 187 that: *“Planning policies and decisions should contribute to and enhance the natural and local environment by: a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); ...d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures and incorporating features which support priority or threatened species such as swifts, bats and hedgerows”*.

In this case as the application was submitted in December 2023 Biodiversity Net Gain (BNG) is not mandatory (which was introduced for major planning applications in February 2024). The proposal therefore stands to be considered against Policy CS12 (LPCS) which states that there shall be no net loss of biodiversity in the Borough.

National Grid proposes both onsite and off-site biodiversity measures. At Gravesend there is a 167m line of trees proposed for creation which would deliver 0.35 hedgerow units. The off-site biodiversity measures would be at Shorne Reedbed in the Gravesham Brough and Cliffe Pools in the Medway Borough.

At Shorne Reedbed there will be areas of moderate condition reedbeds enhanced to good condition which will deliver 48.47 habitat units. There will be 7.31 habitat units delivered from habitat creation. Of the total 122.49 Off-site Post Intervention Habitat Units delivered overall approximately 94 of these units come from Shorne Reedbeds following habitat loss, retention creation and enhancement. The remaining habitat units (approximately 28) would be delivered from Cliffe Pools.

Based on the current plans for the site, the proposed development (including Tilbury) is predicted to result in a biodiversity loss of 13.50% and a biodiversity gain of 25.38%. Overall, this provides a biodiversity net gain of 11.88%.

With both the on and off-site mitigation the proposal would have no net loss of biodiversity in the Borough. KCC Biodiversity have confirmed they are satisfied with this and that the on-site biodiversity measures (including detailed soft landscaping plans) and off-site net gain site should be secured by planning obligation/condition. The off-site biodiversity measures would ordinarily need to be secured by a legal agreement. However, on this occasion the applicant's personal timetable for the project does not allow for the period of time that a legal agreement would take. The applicant discussed with their legal team and they have suggested a way forward being a Grampian condition to secure the off-site biodiversity measures. The Team Leader checked with GBC Legal and suggested condition wording. GBC Legal advised a condition would be acceptable but made some amendments to the condition wording. The condition would have a timeframe of prior to commencement of the development and would request a mechanism be secured for the provision of ecological enhancements on land outside of the red line boundary in accordance with the approved Biodiversity Net Gain Assessment and Strategy Report. The use of a condition would therefore be an acceptable way forward to deal with the off-site biodiversity measures.

KCC Biodiversity also advise that a detailed landscape and ecological management plan for both the on-site and off-site habitats should also be secured by a suitably worded condition/planning obligation if planning permission is granted to ensure that the proposed habitats can be effectively created and managed into the future. They advise that this plan could be secured as part of a condition for an ecological design strategy if planning permission is granted to ensure a holistic approach to protected and priority species mitigation and compensation.

Water Voles

KCC Biodiversity have advised that they are satisfied that effects on water vole can be adequately dealt with through conditions for a construction ecological management plan and ecological design strategy, attached to any granted planning permission.

Invertebrates and Birds

KCC Biodiversity advise that a number of invertebrate (hornet robberfly, shrill carder-bee; brown-banded carder-bee, and small heath butterfly) and bird species found at the Gravesend site are listed under Section 41 of the Natural Environment and Rural Communities Act (2006).

They advise that the submitted information appears to indicate that there will be a permanent reduction in semi-natural habitats as a result of the proposals and that in the long term taking into consideration mitigation and compensation measures, this is expected to result in a negligible effect on the invertebrate populations of District importance, and bird populations of District and Local importance.

KCC Biodiversity reference Buglife's comments who state that the project ecologists have undervalued the site's importance for invertebrates. Buglife stated in its comments dated 27th February 2024 that survey data available for the site has led to the site being incorporated into the Thames Estuary South Important Invertebrate Area (IIA) and that this indicates that the site is nationally important for its invertebrate assemblage and linkages to the wider landscape, including South Thames Estuary and Marshes Site of Special Scientific Interest (SSSI).

KCC Biodiversity note that Buglife has made the following comments: “*All the site ditches will be retained along with a ‘minimum buffer of 5m’. As this is the only habitat to be retained on-site, Buglife would hope to see this buffer increased and ideally a phased approach to loss or modification of habitats rather than the whole area being cleared within a short time frame. It would also like to see a clear commitment to reinstating habitats as soon as possible after their initial disturbance*”.

Buglife has also indicated that commercial seed mixes should not be used at the site to avoid any potential negative effects on the nearby SSSI.

KCC Biodiversity advise that if planning permission is granted for the project, they recommend that conditions for a construction ecological management plan and ecological design strategy are included to ensure invertebrate and bird populations at the site are not only protected in the long-term, but also to ensure that the project is able to deliver net gains to the local invertebrate and bird populations.

Statutory Designated Sites, Bats, Badgers, Protected/Notable Plant Species, Japanese Knotweed, Marine Mammals, Veteran Tree

KCC Biodiversity advise that they are satisfied that should planning permission be granted, that a detailed Construction Environmental Management Plan (CEMP) secured by condition, and including noise fencing around the construction site, will be sufficient to avoid and mitigate for impacts upon bats, badgers, protected/notable plant species, Japanese knotweed, marine mammals, veteran trees, the Thames Estuary and Marshes SSSI, SPA and Ramsar and the Medway Estuary and Marshes SPA and Ramsar during construction.

Lighting and Biodiversity

KCC Biodiversity advise that operational lighting has the potential to have adverse impacts upon biodiversity (e.g., bats and invertebrates) and therefore, to mitigate against potential adverse effects on biodiversity, the Bat Conservation Trust/Institute of Lighting Professional's ‘*Guidance Note 08/23 Bats and Artificial Lighting at Night*’ and Buglife’s ‘*Bug-Friendly Lighting*’ advice should be consulted in the lighting design of the development.

They advise that the incorporation of sensitive lighting design for biodiversity is submitted to the Local Planning Authority and secured via an attached condition with any planning permission. Dark buffer zones should be used to separate habitats or features from lighting. Where ‘complete darkness’ on a feature or buffer is required, we will consider this to be where illuminance is below 0.2 lux on the horizontal plane and below 0.4 lux on the vertical plane.

KCC Biodiversity advise that they disagree with the project ecologists view that no dark buffer zones will be required for this development. They advise that although, the project ecologists have indicated that they do not consider the site of significant importance for bats, the site has been identified to be of national importance for invertebrates which can also be adversely affected by artificial lighting and that based on the submitted information, achieving darkness throughout most of the site for most of the time seems very possible.

As such it is considered that subject to conditions the proposal would be compliant with biodiversity and ecology and in respect of these matters the proposal is compliant with Policy CS12 and section 15 of the NPPF (2024).

Neighbouring/Public Amenity

There are no neighbouring properties close to the site. The nearest neighbouring properties are located in

Dalefield Way to the south some 730m away with properties in Lower Higham Road even further away than this. Due to the significant distance of these properties from the application site it is not considered there would be any impact on any neighbouring amenity from the proposed development.

Noise and Vibration

Chapter 19 of the Environmental Statement covers noise and vibration for the Gravesend area. An appropriate noise assessment has been undertaken, consideration has been given to construction noise/vibration and construction road traffic noise. In terms of vibration, the impact of piling activities has been assessed. GBC Environmental Protection advise that due to the fact that the majority of the tunnelling work will be carried out underground, it is not envisaged that noise from this will be an issue during the construction. Mitigation is proposed by way of standard best practicable means and GBC Environmental Protection advise that this can be addressed by way of Construction Environmental Management Plan (CEMP). GBC Environmental Protection consider that there would not be any significant noise or vibration impact during the construction or operation phases.

Air Quality

Chapter 20 of the Environmental Statement deals with air quality for Gravesend and covers the Air Quality Assessment undertaken.

In terms of construction phase impacts, which include construction dust, site plant and equipment emissions and onsite construction power emissions, mitigation measures have been proposed and relate to construction dust emissions and traffic emissions. GBC Environmental Protection consider the proposed mitigation measures acceptable and advise that although there is the potential for an impact on air quality during the construction phase (including construction traffic), with the mitigation measures in place, the risk is reduced such that the impact are unlikely to be significant.

Land Contamination

A Land Contamination Preliminary Risk Assessment for Gravesend has been submitted. GBC Environmental Protection advise that they accept its methodology and findings and that the report concludes that although overall there is a low risk to human health for current and future site users, there may be the presence of ground gas due to the made/infilled ground at the site. In addition, there is the potential for ground water to have been impacted through leaching of the any made ground contaminants and piling could exacerbate this. To assess the above the report advises that a quantitative assessment (intrusive site sampling) is undertaken, and a remediation strategy drawn up as appropriate. GBC agree and advise this can be dealt with by condition. This is agreed with and can be dealt with by way of a condition.

Electric and Magnetic Fields

Within the submission it is stated that all equipment that generates, distributes or uses electricity produces Electric and Magnetic Fields (EMFs), that the exposure limits for EMFs in the UK are set by the Government on advice from Public Health England and the electricity industry strictly follows these limits. It is stated that the proposed development would be designed to comply with the guidelines for exposure to EMFs.

Therefore, subject to conditions concerning a Construction Environmental Management Plan, Dust Management Plan – Air Quality, contaminated land, watching brief and lighting it is considered the proposal would not impact on neighbouring/public amenity and in regard to this the proposal is compliant with Policy CS19 (LPCS).

Highway Safety

The proposed development would generate some construction traffic. The tunnelling phase will involve the busiest period of construction activity and so will see the most traffic generation during the whole of the proposed development. At Tilbury the shaft and tunnel spoil will be removed via the River Thames meaning approximately 11,440 HGV movements would be removed from the local and strategic highway network. This equates to approximately 42% of total HGV movements for the Proposed Development at Tilbury. At Gravesend the construction works required are less intensive than at Tilbury. This is because the tunnelling will be driven from the Tilbury side. The busiest period of construction activity at Gravesend will be during the sinking of the tunnel shaft. During this period, there would be approximately 2,462 HGV movements spread over 24 weeks.

An Outline Construction Traffic Management Plan has been submitted which identifies a safe and efficient transport route for vehicles to access both the Gravesend and Tilbury sites during the construction period, whilst minimising impacts on the local highway network.

In terms of the operational phase once the construction phase is completed and the new tunnel is commissioned and in operation, it is expected that visits will mirror those of the existing sealing end compounds. The Sealing End Compounds will be unmanned, and infrequent maintenance visits required as detailed below:

- Bi-monthly visits (Tilbury) / monthly visits (Gravesend) with a light van or car for e.g., safety checks on such equipment as fire alarms; inspection or minor maintenance of electrical and ventilation equipment; and
- Maintenance work on electrical/ventilation equipment or buildings involving five to ten light good vehicles visits once every two to five years.

Once completed the facility would therefore require minimal supervision during operation resulting in limited visits from the National Grid. As such, disturbance to local residents and traffic impact during construction and operation of the proposal would be limited. Furthermore, construction issues could be managed through the imposition of a construction management condition to further limit local disturbance. On this basis, the proposal would have a negligible effect on traffic levels in the local area resulting in no impact on highway safety, a conclusion supported by Kent Highways. They have reviewed the revised Highway Impact Assessment and Construction Traffic Management Plan (CTMP) submitted with the application and they recommend that a condition is required to request a full CTMP. Subject to this it is considered the proposal would be acceptable in respect of highway safety matters and this regard the proposal would be compliant with Policy CS11 (LPCS).

Public Right of Way (PROW)

At Gravesend the Thames & Medway Canal Road hosts the National Cycle Network (NCN) Route 1, managed by Sustrans (custodian of the NCN in the UK) and a Public Right of Way (NS317). For health and safety reasons, both of these would need to be diverted during appropriate phases of construction. Pedestrians will be diverted onto nearby Public Right of Way NS318 and NG1 (Sanon Shore Way / England Coast Path). Whereas, cyclists would be diverted onto Chequers Street (at Lower Higham) – Chalk Road – Lower Road – Lower Higham Road – A226 (Rochester Road) – Raphael Road – subway – Prospect Grove – Norfolk Road. KCC PROW raise no objections to the proposal, therefore in respect of the PROW it is considered the proposal is compliant with Policy CS11 (LPCS).

Flooding & Drainage

The site is in the Flood Zone 3. A Flood Risk Assessment has been submitted with the application. The Environment Agency (EA) originally objected to the application as they considered that more information

was required. The EA had queries regarding the modelled data referred to in the FRA and required clarification on the Finished Floor Level (FFL) and the exact mitigation proposed. Following discussions between National Grid and the EA, the EA now advise that they remove their previous objection subject to a number of planning conditions.

Subject to conditions on drainage KCC Flood & Water Management raise no objections to the proposal.

As such subject to conditions it is considered that in respect of flood risk and drainage the proposal would be compliant with Policy CS18 (LPCS).

Heritage

Chapter 9 of the Environmental Statement covers an assessment on the Historic Environment. It does not identify any significant effects for either designated or non-designated heritage assets from the permanent changes and Historic England advise that they broadly agree with the conclusions and do not have any additional comments. The nearest designated heritage assets to the development are a small number of Grade II listed buildings along Lower Higham Road in Chalk. Historic England advise that there would be a modest overall change to the setting of those listed buildings; they state that the construction effects will be temporary for the duration of the project. Overall it is considered that given the distance of the proposal from the designated heritage assets in Lower Higham Road, there would be no impact on the setting of those listed buildings. It is prudent to note that the high level work such as the pylons and overhead lines is not part of the assessment of this application as those elements come under the jurisdiction of DESNZ. In respect of heritage matters the proposal is considered compliant with Policy CS20 (LPCS) and saved Policy TC2 (LPFR).

Archaeology

An Historic Environment Desk-Based Assessment and a Desk-Based Geoarchaeological Deposit Modelling Report have been submitted with the application. These highlight that the proposal would impact surface-level and belowground deposits with archaeological and palaeo-environmental interest, the non-designated Milton Rifle Range and other, presently unidentified archaeological remains. KCC Heritage recommend that subject to conditions the proposal would not harm archaeology. In respect of archaeology the proposal would be compliant with saved Policy TC7 (LPFR).

Design, Character and Appearance

The site is next to the existing SEC at Eastcourt Marshes. The proposal would expand the electricity infrastructure in this local area but given the context of the surroundings this would not be out of keeping. The headhouse is of a modest scale and acceptable design and the appearance of the gantry is bound by its practical purpose. The tunnel under the Thames would not be visible. Overall it is considered the proposal is acceptable in respect of design, character and appearance and in this regard the proposal is compliant with Policy CS19 (LPCS).

Other Matters

Alternative Options

The applicant sets out how three options were considered to address the identified issue of the existing Tilbury to Grain and Tilbury to Kingsnorth 400 kilovolt (kV) circuits not being able to meet the future demand there will be from renewable and low carbon energy. Option 1 was to remove the existing fluid filled cables (FFCs) within the existing tunnel and retrofitting new cross-linked polyethylene (XLPE) cables. However,

option 1 was not considered viable as it carried significant health and safety concerns which could not be eliminated by design or mitigation; this included the work needing to take place in a confined space where the working area would be extremely limited and the work needing to take place adjacent to live equipment as at least one 400kV circuit would need to remain live to maintain electricity supply. Also, during cable replacement, each circuit would need to be switched out for a full outage season. The maximum outage duration that could be facilitated for the refurbishment of the tunnel and shafts would be two, six-month outages, in 2026 and 2028; an uninterrupted 18-month outage per circuit would not be possible for the Kingsnorth-Tilbury and Grain-Tilbury circuits with consecutive outages required per year between 2029 and 2033 for the cable replacement. Given the minimum construction programme to replace a single circuit is 13 months, it was not considered feasible to remove each existing circuit, supporting concrete and install new cables within the outages provided.

Option 2 was to construct a new tunnel under the River Thames parallel to the existing tunnel with (XLPE) cables with associated infrastructure including cable sealing compounds, shaft headhouses and mechanical and electrical services and modifications to the existing overhead lines. This option is the one that was chosen and forms this application. This option posed a higher risk of potentially significant adverse environmental effects but complied with all health and safety and the National Grid's technical requirements and standards and would not impact on the existing circuits for most of the construction phase, with only outages required during the permanent overhead line diversions.

Option 3 was to install a new overhead line across the River Thames to replace the cables in the existing tunnel. This option would have complied with all health and safety, and with all National Grid technical requirements and standards, would have been cheaper and quicker than Option 2 to construct and have fewer traffic movements than option 2. It was not considered a viable option however, as it would have met the criteria of a Nationally Significant Infrastructure Project (NSIP) and require a Development Consent Order (DCO) application meaning a consenting programme which would be considerably more extensive than options 1 and 2. It was also considered it would have been likely to receive substantial stakeholder challenge, particularly in regard to the size of 4VG pylons required (245m) and that there would have likely been long-term significant landscape and visual effects as a result of the required pylon height. Additionally, the fact that the indicative proposed alignment of this option passed through sites of international and national importance for ornithological (birds) features. It is stated that ornithological species susceptible to collision risk are present within this project area and wider zone of influence, including qualifying species of the Thames Estuary and Marshes Special Protection Area / Ramsar. Given the highly migratory nature of many of the species present, significant numbers of species flying at risk heights could not be ruled out. The applicant states the risk is said to be variable according to the species, but in the worst case could be significant, including for species listed as qualifying features for designated sites. There may also have been habitat loss of functionally linked land used by bird species listed as qualifying species of European designated sites.

Any Other Material Planning Considerations

None.

Conclusion

The application site is considered to be a suitable location for the type of development proposed, in view of it being on Grey Belt land and would not fundamentally undermine the purposes, taken together, of the remaining Green Belt across Gravesham; that there is an unmet need for the electricity infrastructure nationally in order to support renewable and low carbon energy demand for the future and site is considered to be in a sustainable location.

It has also been found after an assessment of all other matters that the proposal is acceptable in respect of landscape character, biodiversity and ecology, neighbouring/public amenity, highway safety, public right of way, flooding and drainage, heritage, archaeology and design, character and appearance. The applicant has also demonstrated that alternative options have been considered.

It is therefore concluded that subject to the imposition of conditions, the proposal would not conflict with local and national planning policy.

Recommendation

Permission

(For detailed conditions and informatives, see draft Decision)

Case Officer:	Ms Rebecca Harrison	Team Leader:	Richard Hart
Signed:	<i>Rebecca Harrison</i>	Signed:	<i>R Hart</i>
Dated:	3 rd March 2025	Dated:	3 rd March 2025



The Great Grid Upgrade

Grain to Tilbury

Grain to Tilbury

Statement of Community Involvement

December 2023

nationalgrid

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Executive summary

To help achieve net zero National Grid is embarking on The Great Grid Upgrade, which will play a critical role in the UK government's plan to power all homes with green energy by 2030. The Great Grid Upgrade is the largest overhaul of the electricity grid in generations. Our infrastructure projects across England and Wales are helping to connect more renewable energy to homes and businesses. The Grain to Tilbury project is one of many schemes across the country that will see electricity infrastructure upgraded to support the low carbon needs of tomorrow.

The Grain to Tilbury project also forms part of the Accelerated Strategic Transmission Investment (ASTI), a programme targeted at unlocking the government's 2030 50 GW offshore wind target. These are key projects, approved by Ofgem, which have been identified and brought forward to deliver on National Grid's net zero commitments.

This Statement of Community Involvement has been prepared as part of National Grid Electricity Transmission's (NGET) planning application to replace the Thames Cable Tunnel between Tilbury and Gravesend. The applications, which will be consented under the Town and Country Planning Act 1990 (TCPA), also includes the construction of two new headhouses – one at either end of the tunnel. The proposed development will be referred to as 'the proposed tunnel replacement in this document'.

The proposed tunnel replacement falls within the administrative boundaries of Gravesham Borough Council and Thurrock Council. The existing tunnel was built in the 1960s and houses 400 kilovolt (kV) transmission cables between Tilbury and Gravesend as part of National Grid's high voltage transmission network. The new proposed tunnel will replace this and help reinforce the network.

Two new headhouses, and sealing end compounds, will be required at either end of the tunnel at Gravesend and Tilbury. This infrastructure is required to connect the existing overhead line route to the new cable in the tunnel, to the rest of the electricity network, and act as access points. It will also be necessary to later install a new pylon at both the Gravesend and Tilbury headhouse sites and remove three existing pylons in Tilbury. This overhead line refurbishment work is planned for 2027/2028 and therefore did not form part of this consultation. As the pylons and overhead lines are existing infrastructure, the refurbishment is not included as part of this Town and Country Planning Act application, and further engagement will take place when this work is due to take place.

The proposed Gravesend site is located to the east of the town centre, adjacent to the Metropolitan Police training centre. The new headhouse will be located directly south of the existing headhouse, and a new pylon is proposed to be constructed next to the new headhouse. RSPB land is located to the east of the proposed site.

The proposed Tilbury site is located within an industrial area to the east of the Tilbury2 port and Tilbury Fort. The proposed site is located to the southeast of Tilbury town centre.

Extensive engagement was carried out with stakeholders and the community as part of this project, and this Statement of Community Involvement provides details of this programme of engagement. NGET engaged with key stakeholders prior to the launch of the public consultation to introduce the project and offer an opportunity to meet with the project team to discuss the proposals and ask questions. Engagement with relevant stakeholders continued throughout the consultation process and following the close of the public consultation.

Two in-person public exhibition events and two webinars were held to introduce the proposals to residents in Gravesend and Tilbury. Their aim was to provide the local communities and key stakeholders with an opportunity to speak to the project team. These events were advertised extensively via a newsletter which was sent to over 11,000 households and businesses in the local areas surrounding the two proposed sites. The events were also advertised on the dedicated project website, and through social media advertisements. The public consultation period ran from 27 September to 29 October 2023.

1. Introduction

- 1.1.1 This Statement of Community Involvement has been prepared to accompany an application by NGET for planning permission under the Town and Country Planning Act 1990, for the proposed replacement of the existing Thames Cable Tunnel between Tilbury and Gravesend. The tunnel falls within the administrative boundaries of Gravesham Borough Council and Thurrock Council.
- 1.1.2 The Statement of Community Involvement seeks to provide the local planning authorities, and other interested parties, with details of the programme of stakeholder and community engagement carried out by NGET in relation to the proposed development. This Statement of Community Involvement should be read alongside the documents and plans submitted in support of this application.
- 1.1.3 This Statement of Community Involvement is structured as follows:
- Chapter 1: Introduction
 - Chapter 2: The Site and Local Context
 - Chapter 3: Public Consultation
 - Chapter 4: Post-Consultation Engagement
 - Chapter 5: Summary
 - Chapter 6: Appendices

2. The Site and Local Context

2.1 Site Context



- 2.1.1 The project will involve the replacement of the existing 1960s Thames Cable Tunnel which runs beneath Thames, between Tilbury and Gravesend. A headhouse is also needed at both ends of the tunnel. The Gravesend headhouse will be located within Gravesham Borough Council's boundaries, and the Tilbury headhouse will be located within Thurrock Council's boundary.
- 2.1.2 The proposed site of the Gravesend headhouse is located to the east of Gravesend Town Centre, just south of the bank of the river Thames.
- 2.1.3 The site neighbours the Metropolitan Police training centre and the Milton Rifle Range, with the Saxon Shore Way to the north and a railway line to the south. The new headhouse will be constructed to the south of the existing Eastcourt Marshes electricity substation and will connect the cable through the new Thames tunnel to a new terminal pylon to the south of the headhouse.
- 2.1.4 The proposed site of the Tilbury headhouse is located within an industrial area to the south-east of Tilbury Town Centre and Tilbury Sewage Treatment Works and to the east of the Tilbury2 port.
- 2.1.5 The site neighbours unused land, with the Tilbury substation to the north, Power Station Road to the west and Ash Field Road to the south.

2.2 Policy Context

- 2.2.1 NGET has complied with the Government's National Planning Policy Framework (NPPF) which states that *"early engagement has significant potential to improve the efficiency and effectiveness of the planning application system for all parties"*. The NPPF also highlights that *"good quality pre-application discussion enables better coordination between public and private resources and improved outcomes for the community"*.
- 2.2.2 A planning application for the full replacement tunnel will be submitted to both Gravesham Borough Council and Thurrock Council. Individual applications for each headhouse will also be submitted to the respective councils.
- 2.2.3 Gravesham Borough Council's Statement of Community Involvement (SCI) (2019) makes the following recommendations in relation to consultation surrounding major developments:
- *The Council strongly encourages applicants to undertake public pre-application consultation with potentially interested/affected parties to identify and resolve issues in advance of submission. Such front-loading should be seen as an opportunity to overcome delays within the planning process, reducing the risk of refusal or the need to deal with such issues at the application stage.*
 - *For major planning application proposals, the Council will seek to discuss the form of any such developer consultation with the applicant as part of its pre-application advice service.*

- *Such early consultation should be as open as possible and provide a genuine opportunity for the local community to influence the design and form of the development proposed. The extent of consultation will depend on the nature of the proposal itself and its likely impact - including impact on the local highway network and demands that may be placed on local services. Factors such as scale, location prominence, proximity and sensitivity of adjoining development are all likely to be relevant.*

2.2.4 Thurrock Council's draft updated SCI (2022) makes the following recommendations in relation to consultation surrounding major developments:

- *The Council strongly encourages applicants of large-scale development proposals to involve local communities before the formal application stage begins. This enables local communities to put forward initial constructive comments and suggestions and may lead to fewer objections being made further down the line, which are then material to the determination of the application.*
- *It is recommended that pre-application consultation carried out by applicants with local communities should be in the form of meetings, presentations and/or exhibitions. Applicants are encouraged to speak with the Council before arranging these events, so that they can be undertaken in a manner that is sensitive to the local community's concerns. However, any pre-application engagement undertaken with the community is done so by the applicant, independently of the council.*

2.2.5 NGET sought to incorporate these points into its engagement programme. Government guidance and the Councils' SCIs encourage pre-application discussions and community involvement at an early stage in the design process.

2.2.6 NGET has adhered to the guidance provided by both councils and has delivered a comprehensive consultation which has sought to engage with a wide variety of potential stakeholders.

3. Public Consultation

3.1 Overview

- 3.1.1 The design and siting of the proposed tunnel replacement was presented during a four-week public consultation period between 27 September and 29 October 2023. During this time, residents and stakeholders were given the opportunity to provide feedback regarding the proposals via a consultation website (featuring a virtual exhibition), two in-person exhibitions at local venues in Gravesend and Tilbury, and two virtual webinar events. A freephone information line and a feedback email address were also made available throughout the course of the pre-application consultation, to allow interested parties to receive further information and enable people to provide their feedback to the project team.
- 3.1.2 The consultation sought to gather feedback to inform the ongoing design of the project, and invited views on the proposals, including the proposed tunnel replacement, two new headhouses, the layout and design of the buildings, ecology and landscaping, and construction traffic management. We also included information on the overhead line refurbishment works as part of this consultation, however we did not seek feedback on this work at this stage as further engagement will be undertaken when this work is being prepared.
- 3.1.3 A public consultation event for the Gravesend site was held on 11 October 2023, and a public event for the Tilbury site was held on 13 October 2023. Alongside these events, a virtual consultation was also hosted on the project website, and the project team held two webinars to present the proposals for each location.
- 3.1.4 To raise awareness of the consultation within the local community:
- NGET distributed an invitation newsletter to over 11,000 homes and businesses in Tilbury and Gravesend, together with other identified stakeholders including elected representatives, local authorities, and third-party and community interest groups. The two-page newsletter included a QR code with a direct link to the project website, as well as information on the two public exhibitions and two webinar events.
 - Paid-for Facebook adverts ran, directing Facebook users in the vicinity of the project to the dedicated project website.
 - A press-release was issued to the following news outlets:
 - Thurrock Gazette

- Daily Gazette
- Essex County Standard
- Kent Live
- Gravesend Messenger
- Essex Live
- News Shopper

- Briefing sessions were held with a range of elected representatives and community interest groups, including the political leadership at Thurrock Council and BugLife. The list of consultees is set out in section 3.2 below.
- NGET also approached Gravesham Borough Council, Thurrock MP Jackie Doyle-Price, Gravesham MP Adam Holloway, and other relevant third-party groups but received no requests to meet from these stakeholders thus far.

3.1.5 A total of 16 feedback responses were received from members of the public and interested parties. From the number of feedback forms received, nine were submitted online and seven were submitted as paper copy. Six emails were also received regarding the proposals. NGET has reviewed the feedback received to date, and the main comments raised by the local community have been addressed within this document and the wider material submitted as part of the planning application.

3.1.6 Following submission of the application, NGET will ensure that interested parties and key stakeholders remain informed and updated regarding the proposals.

3.2 Engagement

Consultation process

3.2.1 Prior to submitting the formal planning applications for the two sites, NGET undertook a detailed programme of community consultation. A public consultation event for the Gravesend site was held on 11 October 2023, and a public event for the Tilbury site was held on 13 October 2023. A virtual webinar event for Gravesend was also held on 18 October 2023, and for Tilbury on 19 October 2023. These events provided an opportunity for the team to share the proposals for submission with residents and invite the public to meet the team and have their questions answered. These events were supported by a consultation website which could be viewed at any time online. The website was made publicly available from 27 September 2023, feedback was then accepted until 11:59pm on 29 October 2023.

Stakeholder engagement

- 3.2.2 Ahead of the launch of the public consultation, NGET engaged with key stakeholders to introduce the proposals and offer an opportunity to meet with the team to discuss the project in more detail. The project team also offered stakeholders the opportunity to ask questions on the proposals ahead of the main public consultation period. Introductory letters and prior notice of the consultation were sent to members of Gravesham and Thurrock Councils, local MPs, and key third-party groups in Gravesend and Tilbury.
- 3.2.3 Conversations were also had with relevant stakeholders throughout the public consultation period. This included briefings with members of Thurrock Council, including Leader Cllr Andrew Jefferies, and with BugLife charity. A virtual meeting was arranged for 12 December with Thurrock Councillor John Allen, however the councillor did not attend. Several opportunities for engagement were also offered to members of Gravesham Borough Council and other third-party groups, however no request for a meeting was received.
- 3.2.4 NGET has also had extensive ongoing engagement with the Port of London Authority. In 2023, 18 meetings have been held with the authority between January and October. This included face-to-face meetings, two site visits, and virtual meetings to discuss the Grain to Tilbury proposals.
- 3.2.5 NGET remains committed to engaging with all interested parties and stakeholders and discussions remain ongoing with stakeholders across both Thurrock and Gravesham.
- 3.2.6 Below is a full list of the stakeholders identified during the consultation process who were invited to participate in the consultation activity. Advanced notification of the community consultation process was issued to these stakeholders in the week commencing 25 September 2023. The letter provides recipients with information about the proposals and offered a meeting with the project team should they be unable to attend:

Gravesham Borough Council

- Cllr John Burden - Leader of the Council
- Cllr Shane Mochrie-Cox - Deputy Leader of the Council (and Strategic Environment portfolio holder)
- Cllr Emma Morley - Operational Services portfolio holder
- Cllr Jenny Wallace - Housing Services portfolio holder
- Cllr Lauren Sullivan - Community and Leisure portfolio holder
- Cllr Deborah Croxton - Ward member
- Cllr Lee Croxton - Ward member
- Cllr Leslie Hills - Neighbouring ward member
- Cllr Lyn Milner - Neighbouring ward member
- Cllr Gurdip Ram Bungar - Neighbouring ward member

- Cllr Jenny Wallace - Neighbouring ward member
- Cllr Lee Croxton - Chair of Planning Committee
- Cllr Rajinder Atwal - Vice-chair of Planning Committee
- Cllr Ejaz Aslam - Planning Committee member
- Cllr Gary Harding - Planning Committee member
- Cllr Samir Jassal - Planning Committee member
- Cllr Alan Metcalf - Planning Committee member
- Cllr Lyn Milner - Planning Committee member
- Cllr Peter Scollard - Planning Committee member
- Cllr Alison Williams - Planning Committee member
- Cllr Jordan Meade – Gravesend East (Kent County Council)
- Cllr Alan Ridgers – Gravesend East (Kent County Council)
- Angela Coull – Kent County Council Principal Transport and Development Planner

Thurrock Council

- Cllr Andrew Jefferies - Leader of the Council
- Cllr Deborah Arnold - Deputy Leader of the Council
- Cllr Susan Little - Mayor of Thurrock
- Cllr Ben Maney - Cabinet Member for Regeneration and Highways
- Cllr Luke Spillman - Planning, Transport, Regeneration Overview and Scrutiny Committee
- Cllr Cici Manwa - Ward member
- Cllr John Allen - Ward member
- Cllr Fraser Massey - Neighbouring ward member
- Cllr Sue Sammons - Neighbouring ward member
- Cllr Kairen Raper - Neighbouring ward member
- Cllr Steve Liddiard - Neighbouring ward member
- Cllr Tom Kelly - Chair of the Planning Committee
- Cllr Georgette Polley - Vice-chair of the Planning Committee
- Cllr Jacqui Maney - Planning committee member
- Cllr Paul Arnold - Planning committee member
- Cllr Terry Piccolo - Planning committee member
- Cllr Sue Shinnick - Planning committee member
- Cllr Steve Liddiard - Planning committee member
- Cllr Lee Watson - Planning committee member

- Cllr Steve Taylor - Planning committee member
- Dave Smith - Chief Executive
- Chris Purvis - Major Applications Manager
- Louise Reid - Strategic Lead Development Services
- Chris Stratford - Consents and DCO Senior Consultant
- Nina Hicks – Thurrock Planning Department Case Officer

MPs

- Jackie Doyle-Price - Thurrock
- Adam Holloway - Gravesham

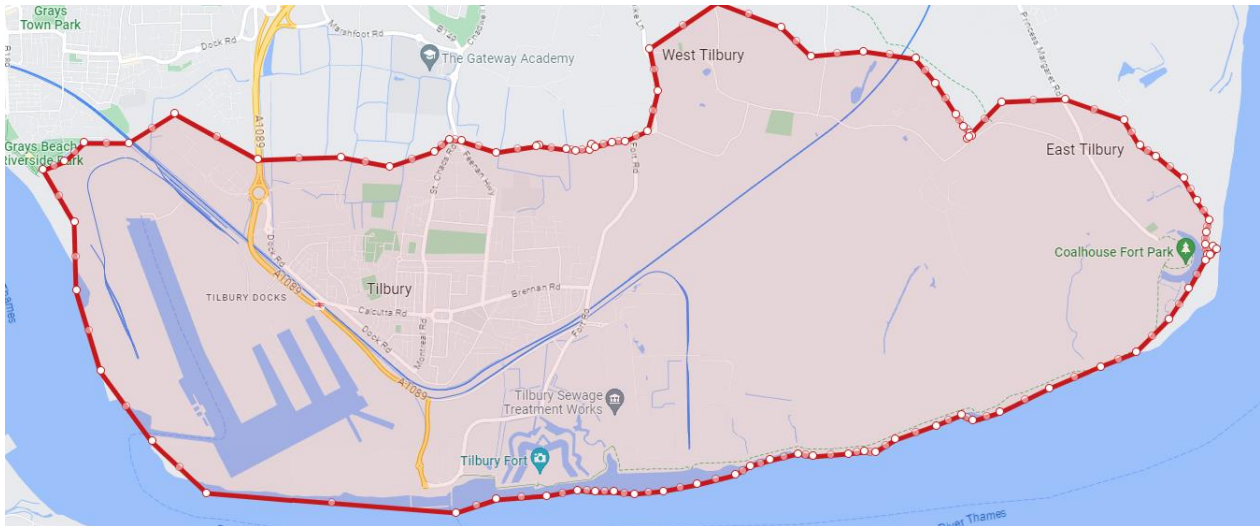
Key groups

- BugLife
- Port of Tilbury
- Metropolitan Police training centre
- Albion Homes
- East of England Sustrans
- SELEP
- Essex Chambers of Commerce
- Lower Thames Crossing
- Port of London
- Environment Agency
- Natural England
- Historic England
- Essex Wildlife Trust
- Department for Energy Security & Net Zero (DESNZ)
- Marine Management Organisation
- National Highways, and the Kent County Council highways and Thurrock Council highways teams
- RSPB
- Natural England
- Port of London Authority

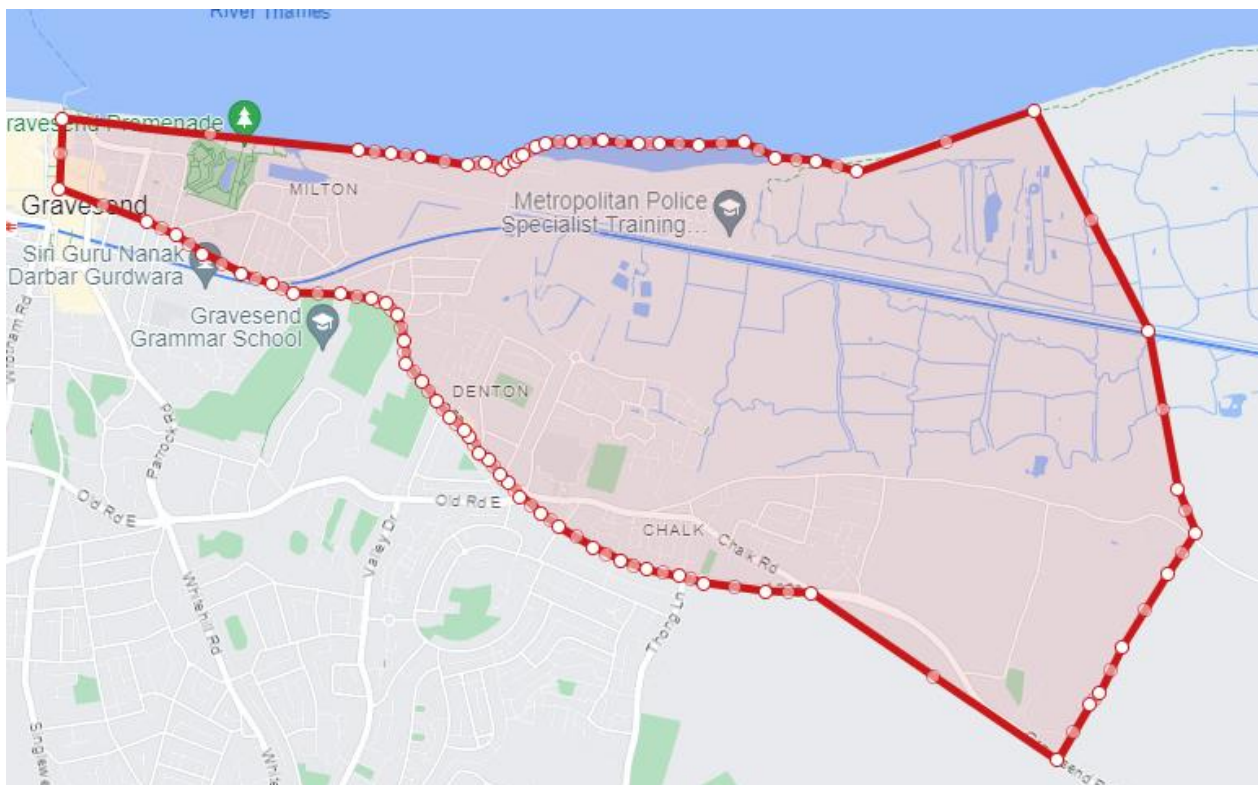
3.2.7 A copy of the notification letter can be found at Appendix 6.1

Invitation newsletter

- 3.2.8 The consultation was promoted via an A4 flyer and included information about NGET's proposals, the consultation website, and information on the public and virtual consultation events. The invitation was posted to over 11,000 households and businesses in Gravesend and Tilbury in the week commencing 25 September 2023. The following maps illustrate the distribution areas in Gravesend and Tilbury.



- 3.2.9 The two-page A4 invitation newsletter contained the following information:



- An overview of the proposals
- An overview of the need for the project
- Indicative site location plans

- Details of the project website and virtual consultation (including a QR code to directly link to the webinar sign-up page)
- Invitation to attend the public exhibitions and webinars, with details of each
- Details of the proposed tunnel replacement
- Email and freephone contact information
- Details of how to respond to the consultation

3.2.10 **A copy of the invitation newsletter can be found at Appendix 6.2**

In-person exhibition events

- 3.2.11 Two public drop-in exhibition events were held to present the proposals and provide residents with an opportunity to speak to the project team.
- 3.2.12 The first event was held in Gravesend on 11 October 2023, at the Clarendon Royal Community Hotel from 3:00-7:00pm. 17 people attended over the session.
- 3.2.13 The second event was held in Tilbury on 13 October 2023, at the Tilbury Community Association from 3:00-7:00pm. Seven people attended over the session.

Webinar events

- 3.2.14 Two webinar events were also held to provide people with an opportunity to engage with the proposals and ask questions to the project team virtually.
- 3.2.15 The first webinar was held on 18 October 2023 to present the Gravesend proposals. 12 people registered for this event.
- 3.2.16 The second webinar was held on 19 October 2023 to present the Tilbury proposals. Nine people registered for this event.

Press release

- 3.2.17 To ensure the wider community was aware of the consultation, a detailed press release was issued to several local media publications:
- Thurrock Gazette
 - Daily Gazette
 - Essex County Standard
 - Kent Live
 - Gravesend Messenger
 - Essex Live
 - News Shopper

- 3.2.18 The press release contained the following information:
- An overview of the proposals
 - An overview of the need for reinforcement
 - Details of the in-person and virtual consultation events
 - Benefits of the proposed tunnel replacement
 - Contact information including the freephone information line and project website address
- 3.2.19 **A copy of the press release can be found at appendix 4.3**

Feedback form

- 3.2.20 A feedback form allowing residents to share their views on the proposals was available at the in-person events and published online via the consultation website. Those without access to the internet were also able to request a paper copy of the feedback form to be sent to their home address.
- 3.2.21 The form asked five questions covering different aspects of the proposals with a mixture of question formats, including multiple-choice and open-ended questions. The feedback obtained from the forms is shown in the next chapter.
- 3.2.22 Both the online and print feedback were identical in content and design.
- 3.2.23 **A copy of the feedback form can be found at Appendix 6.4**

Pre-paid post, email address and freephone number

- 3.2.24 During the consultation, access to a freephone line was offered to those who wished to find out more about the proposals, request hard copy materials, or to register their comments via the telephone.
- 3.2.25 The telephone number was in operation Monday-Friday between the hours of 9:00am and 5:30pm. Outside of these hours a voicemail facility was available for messages to be left.
- 3.2.26 An email address (contact@graintotilbury.nationalgrid.com) was made available for residents to contact the project team and submit queries. Six emails were received containing feedback and other comments and queries for the project team. These were monitored and replied to in coordination with the project team.
- 3.2.27 A pre-paid freepost envelope was available at the public exhibitions, allowing feedback forms to be posted back free of charge.

3.3 Analysis of feedback

- 3.3.1
- The following review includes all comments received up to the closure of the public consultation on 29 October 2023, including online, public exhibition and postal responses. A total of 24 visitors attended the two in-person exhibition events.
- 3.3.2
- During the consultation period, a total of 16 feedback forms were received. In addition to this, the project team also received six emails from residents and local businesses. These emails ranged from providing feedback, as well as asking questions to the wider project team.
- 3.3.3
- Overall, the feedback received was broadly positive, with the majority of respondents stating that they were in favour of the proposals. 66% of respondents strongly supported or supported the proposal to upgrade the existing cable tunnel. 56.5% of respondents strongly supported or supported the construction process plan, including the proposal to move spoil via barge on the Thames.

Question 1: Our proposals will reinforce the electricity network and aid our transition to net zero. To what extent do you support our plans to upgrade the electricity infrastructure between Grain and Tilbury, via the construction of a new tunnel, the installation of new cabling, and the construction of two headhouses at either end of the tunnel?

Strongly Support	Support	Unsure	Oppose	Strongly Oppose
8	2	4	0	1

Example comments:

- A great scheme supporting the need to keep the lights on which is desperately needed
- Would be good for local jobs
- We have concerns about heavy vehicles using and potentially damaging the northside canal towpath/footpath/cycling route

- *It will make a huge difference for the local and national economy and ease the traffic in the area*

Question 2: During construction we intend to move as much of the rock, soil, and debris offshore as possible via barges on the Thames. Where this isn't possible, we will use HGVs to move materials as described in our construction management plan which will be submitted as part of the application. To what extent do you support this plan for our construction process?

Strongly Support	Support	Unsure	Oppose	Strongly Oppose
6	3	5	0	2

Example comments:

- *The river in this area is very busy, obviously want as little disruption as possible, both traffic wise and noise*
- *Barge movements are one key to the success as the existing road infrastructure will not be able to sustain significant HGV movements*

Question 3: We have been undertaking an extensive range of ecological and environmental surveys to reduce the impact of our works on the local area. Our planning application will set out these plans in detail. Are there any further environmental issues you would like to make us aware of?

- *You are aware of the environmental risks and constraints, just need to avoid or minimise them during the works. The headhouse should be as unobtrusive as possible*
- *Main issue is to reduce the noise from the traffic for the locals*
- *Many species including water voles live in the canal. The pumping system for canal top-up draws water from an adjacent dyke. We would need assurances that any works would not pollute the intake in any way.*

Question 4: Are there any local groups or community organisations that you believe should be engaged with as part of our proposals or who may benefit from National Grid’s local incentives?

- *Shorne Parish Council – we may be able to come up with some ideas once we have more information about what grants/funds are available and how to apply*
- *Business unions*
- *The Thames and Medway Canal Association who manage the canal and pump top-up system. Sustrans who manage the towpath which is designated Cycle Route 1*

Question 5: Do you have any further comments that you would like to make?

- *The project should be delivered immediately as it is overdue.*

3.3.4 A summary of the consultation feedback received, and NGET’s responses, are detailed in the table below:

Table 2.1: Analysis of consultation feedback from Gravesham residents

Matter Raised	NGET’s Response
The Thames and Medway Canal Association has infrastructure adjacent to the proposed site area. We would need assurances that the works will in no way affect either the canal route and towpath or the pumping system located in the adjacent field.	-

Many species including water voles live in the canal. The pumping system for canal top-up draws water from an adjacent dyke. We would need assurances that any works would not pollute the intake in any way.	As part of the planning process, NGET has carried out extensive surveys to establish the baseline for the Environmental Statement and ensure we design the most suitable mitigation against any potential impact on local wildlife. These surveys include reptile, great crested newt, and water vole surveys. A Construction Environmental Management Plan will also be submitted detailing any mitigation measures required.
Do not want any HGVs to clog the road and pollute the air. With Lower Thames Crossing happening during that period congestion on the roads will be so bad.	Where possible, NGET intends to move spoil from the construction sites via barge movements on the Thames to reduce the impact on the road network. Some construction movements will need to take place via HGV, which has been outlined in the Construction Traffic Management Plan that will support the planning applications submitted to each council.
Ensure the environment is not affected by dust, noise, or light nuisance.	As part of the planning process, NGET has been carrying out environmental surveys, including a detailed Environmental Impact Assessment, habitat surveys and protected species surveys. Our planning applications will include a detailed EIA which will set out the findings of our surveys and the mitigations we plan to put in place during construction to minimise the impact of our works.
Ensure that the projects are awarded to British firms and delivery of equipment is sourced from United Kingdom, and local people are employed in the project.	-
Support as stated to be tunnelling from north to south, so spoil is not generated within the North Kent Marshes interconnected ecosystem. Need to minimise footprint of works and impact on ditch patterns and functions. We have concerns about heavy vehicles using, and potentially damaging, the northside canal towpath/footpath/cycling route as it is not constructed for taking very heavy weights. Rail transport could also be considered as nearby.	Where possible, NGET will use barge movements to transport construction materials and spoil, reducing the impact of construction works on the road network. Some HGV movements will be required, as set out in our Construction Traffic Management Plan.

Many issues already raised and discussed at the webinar, which was very helpful. You are aware of the environmental risks and constraints, just need to avoid or minimise them during the works. The headhouse should be as unobtrusive as possible.	The new headhouses at Tilbury and Gravesend will be located close to the existing buildings to minimise additional impact on the local area. The headhouses will also have biodiverse roofs to support biodiversity net gain and provide a rainwater buffer.
I am pleased to hear that the work will not prevent walking along the shore. However, I am dismayed to hear that construction will cause closure of the canal footpath at times. Walking from the riverside area, central Gravesend has been disrupted for years due to Kent County Council closure of public footpaths to the west and east. Any further pedestrian restrictions are totally unacceptable.	-
Care needs to be taken with narrow roads in the current plan. Our experience during the Lower Thames Crossing enabling works was that there were many complains of noise, soiling of roads, debris, movements of traffic etc. Water tankers were constantly moving through these narrow roads and transporting tens of thousands of litres of water to support the drilling activities – something that locals were very vocal about.	NGET's priority is to move spoil from our construction sites via the Thames to reduce our impact on the road network. To support our planning applications, we will submit a Construction Traffic Management Plan which will set out the good practice measures we propose to carry out in order to minimise the impact of our works locally.
What is the impact on and within the river ecosystems?	Our planning applications will include a detailed Environmental Impact Assessment. This will set out the finding of our survey works and the mitigations we plan to put in place during construction to help minimise the impact of our works. A Construction Environmental Management Plan will also be submitted detailing any mitigation measures required.
The TBM slurry discharge needs to be considered as the existing sewer network cannot take any further flow.	-
The works are in the RAMSAR and as such need to be carefully planned as this area is a haven for wild birds.	Extensive surveys have been carried out to establish the baseline for the Environmental Statement and ensure we design the most suitable mitigation against any potential impact on local wildlife.

I would like to see National Grid insist on the engagement of local SMEs to promote economic growth in the area.	-
The traffic impact needs to be carefully reviewed as the infrastructure cannot cope with the looming Lower Thames Crossing project, the disruption for a significant amount of time for the residents will be untenable.	NGET's priority is to move spoil from our construction sites via the Thames to reduce our impact on the road network. To support our planning applications, we will submit a Construction Traffic Management Plan which will set out the good practice measures we propose to carry out in order to minimise the impact of our works locally.
I would be interested to know what the old tunnel would be put to. I did suggest the cable tunnels with cabled buried could double up as cycle tunnels.	-
Concerned about cost and who will pay.	-
Seals on the mud areas of both sides and lots of migrating birds using Gravesend waterside, however I'm sure you know this from your surveys.	Our planning applications will include a detailed Environmental Impact Assessment. This will set out the finding of our survey works and the mitigations we plan to put in place during construction to help minimise the impact of our works. A Construction Environmental Management Plan will also be submitted detailing any mitigation measures required.
The river in this area is very busy. We'd obviously want as little disruption as possible, both traffic-wise and noise.	-

Table 2.2: Analysis of consultation feedback from Thurrock residents

Matter Raised	NGET's Response
Don't want any harm to come to wildlife.	Our planning applications will include a detailed Environmental Impact Assessment which will set out the findings of our environmental survey works

	and the mitigations we plan to put in place during construction to help minimise the impact of our works. A Construction Environmental Management Plan will also be submitted detailing any mitigation measures required. NGET is working with Natural England and county biodiversity officers to further develop our environment protection measures.
It will make a huge difference for the local and national economy. Barge movements will also ease traffic in the area.	-
The main issue is to reduce noise from the traffic for the locals.	NGET's priority is to move spoil from our construction sites via the Thames to reduce our impact on the road network. To support our planning applications, we will submit a Construction Traffic Management Plan which will set out the good practice measures we propose to carry out in order to minimise the impact of our works locally.
The damage to wildlife and the countryside is not clear, so far, the works adjacent to the crossing have brought the area of East Tilbury to a standstill twice.	As part of the planning process, NGET has been carrying out environmental surveys, including a detailed Environmental Impact Assessment, habitat surveys and protected species surveys. The result of this work will help inform the design and decision-making process as we finalise our plans. The new headhouses at Tilbury and Gravesend will have biodiverse roofs to support biodiversity net gain and provide a rainwater buffer. We will also plant native vegetation around both sites to further encourage local wildlife and habitat creation. A Construction Environmental Management Plan will also be submitted detailing any mitigation measures required as a result of our survey works.

4. Post-consultation engagement

- 4.1.1 The consultation email address, phone information line, Freepost address and website for the project will remain active throughout the application process and into construction if planning permission is granted. During this phase we will continue to have a communications strategy in place to update the community about our works.
- 4.1.2 Any correspondence received following the closure of the consultation period will not be included as feedback, however NGET will respond to inbound questions and continue to monitor feedback.
- 4.1.3 Feedback submitted after the consultation end date (29 October 2023) will be monitored by the project team.
- 4.1.4 NGET will update residents that have provided feedback with updates and information on the proposals and application.
- 4.1.5 The dedicated project website will remain live, and residents will be able to submit questions via email.
- 4.1.6 The project website feedback page has been updated to allow users to register for updates on the project.
- 4.1.7 A post-consultation letter was sent to key stakeholders including members of Gravesham Borough Council, Thurrock Council, key third party groups and local MPs. The project team offered stakeholders a further opportunity to meet to discuss the proposals following the consultation period.
- 4.1.8 **A copy of the post-consultation stakeholder letter can be found at Appendix 6.5**

5. Summary

- 5.1.1 This Statement of Community Involvement has been produced with the aim of clearly and concisely highlighting the community consultation undertaken by NGET in respect of its proposals for the replacement of the existing Thames Cable Tunnel. It provides an account of the consultation activity that has been undertaken within the pre-application stage of the planning application, and the feedback received from interested parties during the consultation period.
- 5.1.2 Feedback from the public consultation period will help to inform the environmental, engineering, and economic details of the proposals, prior to the submission of TCPA planning applications to Gravesham and Thurrock Councils in Winter 2023.
- 5.1.3 Following submission of the applications, NGET will ensure that interested parties and key stakeholders remain informed and updated regarding the proposals.

6. Appendices

6.1 Notification letter

nationalgrid



28 September 2023

Dear Councillor,



The Great Grid Upgrade: Grain to Tilbury

Further to our introductory letter earlier in the year, setting out the background to the Grain to Tilbury project, I am writing to let you know that we have now launched the public consultation, which will last until the 29 October.

Our proposals comprise a new high-voltage electricity cable between Tilbury and Gravesend under the river Thames replacing the existing cable tunnel which is at the end of its useful life.

This project, which will upgrade the local network, is also being brought forward to reinforce the wider network, as part of The Great Grid Upgrade - the largest overhaul of the electricity grid in generations. This is essential to support the connection of more sustainable sources of energy, such as offshore wind, as part of the Government's plan to power all homes with renewable energy by 2030.

Our proposals also include the construction of two headhouses – one at Tilbury and the other at Gravesend, as well as new cable sealing end compounds to connect the cable to the overhead line. The works, which will require planning permission under the Town and Country Planning Act, are planned to start in summer 2024, with the construction process expected to last four years. An existing overhead line between Tilbury, Kingsnorth and the Isle of Grain in Kent, will also need refurbishing. However, this is not planned until 2028 and does not form part of this consultation.

We are holding two in-person, public consultation events:

Clarendon Royal Community
Royal Peir Road
Gravesend, DA12 2BE
Wednesday 11 October
3:00pm-7:00pm

Tilbury Community Association
Civic Square
Tilbury, RM18 8AA
Friday 13 October
3:00pm-7:00pm

There will also be webinar sessions the following week:

Gravesham webinar
Wednesday 18 October
7:00pm-8:00pm
[Sign up here](#)

Thurrock webinar
Thursday 19 October
7:00pm-8:00pm
[Sign up here](#)

We would love for you to attend any of these sessions, or alternatively, we would be happy to hold a briefing session with yourself and members of the project team, should you wish.

Residents will have the option to engage and provide feedback both in-person and online, during our four week consultation period. We have contacted over 11,000 households to make them aware of our consultation.

For more information you can also visit our project website: www.nationalgrid.com/GrainToTilbury

If you would like to meet, or have any questions, please do not hesitate to get in contact.

Kind regards,



Bryan Truscott
Project Manager
National Grid

6.2 Invitation newsletter



The Great Grid Upgrade

Grain to Tilbury

Public consultation invitation

October 2023

As part of our work to decarbonise the energy system, National Grid Electricity Transmission is consulting on proposals to upgrade the electricity infrastructure between Grain and Tilbury. Our plans will involve building a new tunnel, installing new electricity cables and the construction of a headhouse at either end of the tunnel.

The need for reinforcement

National Grid is working to build a cleaner, fairer, and more affordable energy system that serves everyone, powering the future of our homes, transport and industry.

We sit at the heart of Britain's energy system, connecting millions of people and businesses to the energy they use every day.

The UK has set a world leading target to tackle climate change, which is to achieve net zero greenhouse gas emissions by 2050. Put simply, this means that we will remove the same amount of greenhouse gas from the atmosphere as we produce.

In response to this, we are embarking on The Great Grid Upgrade: The largest overhaul of the electricity grid in generations.

The Great Grid Upgrade will play a significant part in meeting the UK government's plan to power all homes and businesses with greener energy by 2030, ensuring our electricity network is fit for the future.

As part of this, alongside the Grain to Tilbury project, we are developing a number of other improvements in the wider region. These include Sea Link - an offshore link between Suffolk and Kent - and Norwich to Tilbury - a proposal for 180 km of new overhead line from Norwich to Tilbury.

Why Grain to Tilbury?

The existing Thames Cable Tunnel, beneath the river Thames, between Grain and Tilbury, is coming to the end of its useful life. Therefore, the proposed new tunnel will replace this and help to reinforce the network.

Grain to Tilbury also forms part of the 'Accelerated Strategic Transmission Investment' programme which is targeted at unlocking the government's target to connect 50 gigawatts (GW) of offshore wind by 2030. These are key projects, approved by Ofgem, which have been identified to deliver on National Grid's net zero commitments.

Our proposals

As part of our plans to upgrade the network in the Tilbury and Gravesend area we propose to:

- construct a new tunnel underneath the Thames which will house upgraded cables which will deliver cleaner electricity. This will require planning permission under the Town and Country Planning Act in Thurrock and Gravesham
- build two new 'headhouses' at either end of the tunnel at Gravesend and Tilbury. These headhouses are buildings which are needed to connect the tunnel and act as access points for National Grid workers. Both headhouses will also require planning permission from both Thurrock and Gravesham Council
- deliver and install a new pylon at both the Gravesend and Tilbury headhouses. This is planned for 2027/2028
- refurbish the existing overhead line between Tilbury, Kingsnorth, and the Isle of Grain. This phase of works is not planned until 2028 and does not form part of this consultation.



Public consultation events

We want to hear the views of local people. Knowing what matters to you, matters to us, so please get in touch and let us know what you think of our proposals.

We will carefully consider all feedback, which will help to inform our plans, before we send our planning applications to Thurrock Council and Gravesham Council.

Join us in person:

- **Clarendon Royal Community**
Royal Pier Road
Gravesend, DA12 2BE
Wednesday 11 October 3:00pm-7:00pm
- **Tilbury Community Association**
Civic Square
Tilbury, RM18 8AA
Friday 13 October 3:00pm-7:00pm

Join us online:



- **Gravesham webinar**
Wednesday 18 October
7:00pm-8:00pm
- **Thurrock webinar**
Thursday 19 October
7:00pm-8:00pm

Sign up to attend using the QR Code or visit our project website; nationalgrid.com/GrainToTilbury

Our project team will be available at all events to answer any questions you may have. You can also find out more about the project on our project website or you can speak to our community relations team using these contact details.

How do I respond to the consultation?

Please provide your feedback by Sunday 29 October 2023.

You can do this by:

Completing our online feedback form at nationalgrid.com/GrainToTilbury

Sending a completed paper copy of the feedback form or a letter to FREEPOST Grain to Tilbury project

Emailing your comments to: contact@graintotilbury.nationalgrid.com

Should you wish to receive hard copies of our materials, please contact our project team via 020 3398 1599 or by email: contact@graintotilbury.nationalgrid.com

nationalgrid

6.3 Press release



Press Release

Date: 29 September 2023

National Grid launches consultation on planned Grain to Tilbury infrastructure upgrades

- The Grain to Tilbury project will see the replacement of the existing Thames Cable Tunnel, linking Tilbury and Gravesend, alongside the delivery of a new headhouse at each end of the tunnel
- The existing Thames Cable Tunnel between Tilbury and Gravesend is over 50 years old and is coming to the end of its useful life. The proposed new tunnel will replace this and help to reinforce the local network
- Grain to Tilbury will help the UK achieve its net zero target for 2050 by connecting more offshore wind power
- National Grid will consult communities for four weeks as part of a public consultation which includes in person and online events. The deadline for feedback is Sunday 29 October

National Grid is holding a public consultation on its plans to upgrade electricity infrastructure between Grain and Tilbury. The consultation is now live and will run for four weeks until Sunday 29 October 2023.

As part of its plans, National Grid Electricity Transmission propose to build a new cable tunnel underneath the Thames which will deliver cleaner electricity to the area. This will require planning permission under the Town and Country Planning Act, in both Thurrock and Gravesham.

Two new 'headhouses' will also be built at either end of the tunnel at Gravesend and Tilbury. These headhouses are buildings which are needed to connect the tunnel and act as access points for National Grid workers. Both headhouses will also require planning permission from both Thurrock and Gravesham Council.

Additionally, a new pylon at each headhouse site will need installing at a later date in 2027 or 2028.

National Grid is also planning the later refurbishment of the existing overhead line between Tilbury, Kingsnorth, and the Isle of Grain, though this phase of works is not planned until 2028 and does not form part of this consultation.

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The Grain to Tilbury proposal forms part of a wider suite of infrastructure upgrades and reinforcements planned by National Grid as part of The Great Grid Upgrade, the largest overhaul of the electricity grid in generations. The Great Grid Upgrade will play a big part in the UK government's plan to power all homes and businesses with green energy by 2030.

Grain to Tilbury also forms part of the 'Accelerated Strategic Transmission Investment' programme which is targeted at unlocking the government's target to connect 50 gigawatts (GW) of offshore wind by 2030. These are key projects, approved by Ofgem, which have been identified to deliver on National Grid's net zero commitments.

Bryan Truscott, Lead Project Manager, commented: "The Grain to Tilbury project is essential to upgrade the energy network in Kent and Essex to ensure that we can continue to carry more clean energy to homes and businesses, and help the country reach Net Zero by 2050.

"Local people can take part in the consultation and speak with our team by attending one of our public consultation events, joining an online webinar, or by visiting the project website."

Details of the events are:

Clarendon Royal Community

Royal Pier Road, Gravesend, DA12 2BE
Wednesday, 11 October, 3:00pm-7:00pm

Tilbury Community Association

Civic Square, Tilbury, RM18 8AA
Friday 13 October, 3:00pm-7:00pm

The consultation is also being hosted on a project website where residents may also register to attend a webinar session.

Webinars

Gravesham Webinar
Wednesday 18 October
7:00pm-8:00pm

Thurrock Webinar
Thursday 19 October
7:00pm-8:00pm

All information about the consultation and how to give feedback can be found on the project website, nationalgrid.com/GraintoTilbury.

Residents who prefer to respond to the consultation via post can receive a printed copy of the feedback form and freepost envelope by calling the telephone information line on **020 3398 1599**.

nationalgrid

Residents within the immediate vicinity of the proposed project will also receive a newsletter with more information on the consultation.

ENDS

Notes to editors

Contact for media information only:

Helen Blake
External affairs manager
National Grid Electricity Transmission
nationalgrid
07790 824788

About National Grid

National Grid sits at the heart of Britain's energy system. The individual companies in our group run the networks and infrastructure that connect millions of people to the electricity they use every day.

Our regulated businesses own and develop the high voltage **electricity transmission** (ET) network in England and Wales, and the **electricity distribution** (ED) network in the Midlands, South West England and South Wales. The **electricity system operator** (ESO) is the legally separate (and in the process of becoming fully independent) arm of our group which manages supply and demand on Britain's electricity transmission networks. Operating separately from these core regulated units, **National Grid Ventures** (NGV) focusses on competitive markets, investing in energy projects, technologies and partnerships such as electricity interconnectors.

We bring energy to life, with an ambition to serve our customers well, support the communities in which we operate, and make possible a clean, affordable and resilient energy network of the future.

Facts about our networks in England and Wales

- Our transmission network takes electricity generated from different power sources and carries it at high voltage via our 4,500 miles of overhead line, 1,500 miles of underground cable and 350 substations.
- Our distribution network delivers electricity at lower voltage from our transmission network to where it's needed in the regions we serve, via 60,000 miles of overhead line and 83,900 miles of underground cable.
- Find out more on our website about the [difference between our networks](#).

Background

National Grid is working to build a cleaner, fairer, and more affordable energy system that serves everyone, powering the future of our homes, transport and industry.

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We sit at the heart of Britain's energy system, connecting millions of people and businesses to the energy they use every day. The UK has set a world leading target to tackle climate change, which is to achieve net zero greenhouse gas emissions by 2050. Put simply, this means that we will remove the same amount of greenhouse gas from the atmosphere as we produce.

In response to this, we are embarking on The Great Grid Upgrade: The largest overhaul of the electricity grid in generations. The Great Grid Upgrade will play a significant part in meeting the UK government's plan to power all homes and businesses with greener energy by 2030, ensuring our electricity network is fit for the future.

As part of this, alongside the Grain to Tilbury project, we are developing a number of other improvements in the wider region. These include Sea Link – an offshore link between Suffolk and Kent - and Norwich to Tilbury - a proposal for 180 km of new transmission infrastructure from Norwich to Tilbury.

6.4 Feedback form



Overview

We are seeking your views on our proposals to upgrade the electricity infrastructure between Grain and Tilbury. Our plans will involve building a new tunnel, installing new electricity cables and the construction of a headhouse at either end of the tunnel.

The feedback we receive at this consultation will help inform our plans before we submit our planning applications to Thurrock and Gravesham councils in winter 2023. The deadline for submitting your response to our consultation is Sunday 29 October 2023.

How to provide your feedback

We'd like to know if there are any other issues you think are important that we should consider. You are welcome to answer all or only some of the questions in this feedback form, depending on the issues that are most important to you.

All feedback received will be considered as we develop our proposals further.

So that we can make the most of your feedback, please give as much detail as possible in your response.

You can share your feedback with us by:

- completing and returning a feedback form at one of our consultation events
- completing a feedback form online at nationalgrid.com/graintotilbury
- emailing us your completed feedback form at contact@graintotilbury.nationalgrid.com
- returning this feedback form using the freepost envelope provided at a consultation event, or by writing **FREEPOST GRAIN TO TILBURY PROJECT** on any envelope and posting it free of charge.

Grain to Tilbury proposals

1. Our proposals will reinforce the electricity network and aid our transition to net zero. To what extent do you support our plans to upgrade the electricity infrastructure between Grain and Tilbury, via the construction of a new tunnel, the installation of new cabling, and the construction of two headhouses at either end of the tunnel?

Please select one option

☐ Strongly support ☐ Support ☐ Unsure ☐ Oppose ☐ Strongly oppose

2

2. During construction we intend to move as much of the rock, soil and debris offsite as possible via barges on the Thames. Where this isn't possible, we will use HGVs to move materials as described in our construction management plan which will be submitted as part of the application. To what extent do you support this plan for our construction process?

Please select one option

☐ Strongly support ☐ Support ☐ Unsure ☐ Oppose ☐ Strongly oppose

Add your comments here:

3. We have been undertaking an extensive range of ecological and environmental surveys to reduce the impact of our works on the local area. Our planning application will set out these plans in detail.

Are there any further environmental issues you would like to make us aware of?

Add your comments here:

3

4. Are there any local groups or community organisations that you believe should be engaged with as part of our proposals or who may benefit from National Grid's local incentives?

Add your comments here:

5. Do you have any further comments that you would like to make?

Add your comments here:

4

About you

Your contact details

We will only use these details to contact you and update you on the proposals. You don't have to fill in this section if you'd rather we didn't contact you.

Title:

First Name:

Surname:

Organisation/group (if responding on behalf of an organisation):

Address:

Postcode:

Email:

☐ Please tick here if you would like us to keep you updated about our proposals

How would you describe your interest in Grain to Tilbury?

- ☐ Local resident
☐ Local representative (e.g. parish councillor)
☐ Potentially affected landowner or occupier – please insert your landowner reference number if known
☐ Local business owner or supplier/contractor
☐ Regular visitor
☐ Local interest group member (please specify in the text box below)
☐ Other (please specify in the text box below)

5

6.5 Post-consultation stakeholder letter



XX November 2023

Dear Councillor,

The Great Grid Upgrade: Grain to Tilbury

As the new project manager for the Grain to Tilbury project, I would like to update you on our proposals following our recent public consultation, which concluded at the end of October.

As you may recall from previous letters, this project, which will upgrade the local network, is being brought forward to reinforce the wider network as part of The Great Grid Upgrade – the largest overhaul of the electricity grid in generations. This is essential to support the connection of more sustainable sources of energy, such as offshore wind, as part of the Government's plan to power all homes with renewable energy by 2030.

Our proposals comprise a new high-voltage electricity cable between Tilbury and Gravesend under the river Thames, replacing the existing cable tunnel which is at the end of its useful life. Our proposals also include the construction of two headhouses – one at Tilbury and the other at Gravesend. An existing overhead line will also need to be refurbished between Tilbury, Kingsnorth, and the Isle of Grain however, this phase of works is not planned until 2028.

We contacted over 10,000 homes and businesses in Gravesend and Tilbury, inviting them to attend our consultation events, which included a mix of online and in-person exhibitions, where locals could find out about our plans and speak to the project team. We also briefed members of Thurrock Council and local charity, bug life, who were particularly interested in our biodiversity measures.

Following the consultation, we are now carefully considering local feedback before we submit our planning application to Thurrock and Gravesham Councils at the end of this year. The response from residents is largely positive, with many recognising the need for the project.

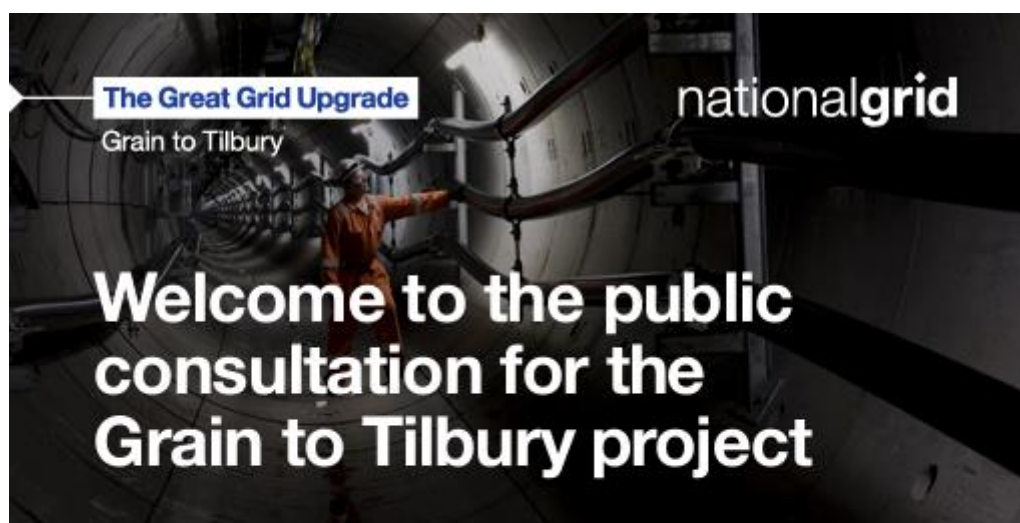
Some concerns were raised about the environmental impact of the scheme however, we have carried out extensive surveys, including a detailed Environmental Impact Assessment, habitat surveys and protected species surveys, to ensure suitable mitigations are put in place to protect the local environment and species.

Ahead of our submission, I would like to offer you a briefing about our proposals. If you would like to meet, or have any questions, please do not hesitate to get in contact.

Kind regards,

Lee Driscoll
Project Manager
National Grid

6.6 Exhibition boards



The Grain to Tilbury project is a proposed electricity infrastructure upgrade, involving the replacement of the existing 1960s Thames Cable Tunnel, beneath the Thames, between Tilbury in Thurrock and Gravesend in Gravesham. A headhouse is also needed at both ends of the tunnel.

We are sharing information about this essential project with you today and we would value your feedback to help inform our proposals.

Please review the exhibition boards and speak with the team if you have any questions. You can provide feedback either by completing a feedback form, by posting one to us later via the **FREEPOST** envelopes provided, or by going online at nationalgrid.com/graintotilbury

This project will be a vital upgrade of the electricity transmission system in Kent and Essex and forms part of the Great Grid Upgrade. The Great Grid Upgrade, which is the largest overhaul of the electricity grid in generations, will play a significant part in meeting the UK government's plan to power all homes and businesses with greener energy by 2030, ensuring our electricity network is fit for the future.

The project consists of the replacement of the existing Thames Cable Tunnel between Tilbury and Gravesend and the construction of two new headhouses – one at either end of the tunnel. Headhouses are needed to connect the tunnel and act as access points. The tunnel and the headhouses will require planning permission under the Town and Country Planning Act.

An existing overhead line between Tilbury, Kingsnorth, and the Isle of Grain in Kent, will also need refurbishing however, this is not planned until 2028 and does not form part of this consultation.



The Great Grid Upgrade

Grain to Tilbury

nationalgrid

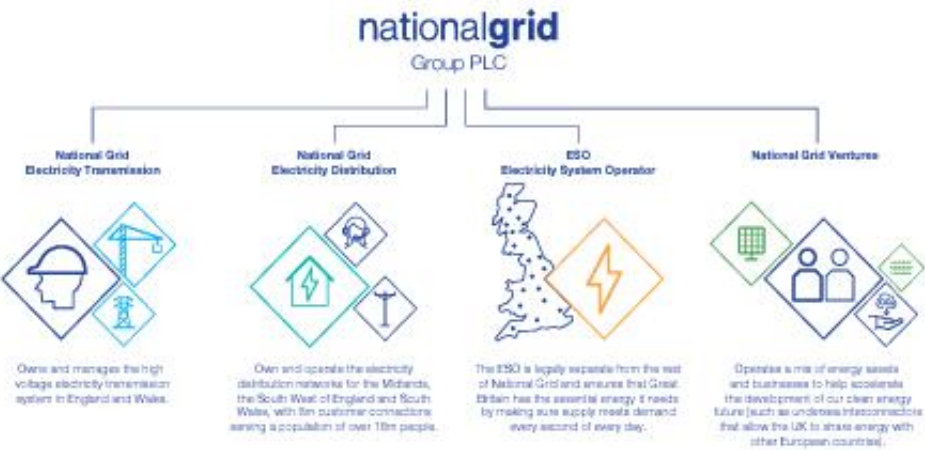
About National Grid

National Grid is working to build a cleaner, fairer, and more affordable energy system that serves everyone, powering the future of our homes, transport and industry.

We sit at the heart of Britain's energy system, connecting millions of people and businesses to the energy they use every day.

We bring energy to life – in the heat, light and power we bring to our customers' homes and businesses; in the way that we support our communities and help them to grow; and in the way we show up in the world.

National Grid Electricity Transmission (NGET) owns, builds and maintains the electricity transmission network in England and Wales. It is **NGET** that is developing plans for Grain to Tilbury.





The decisions we take now to make our energy system cleaner, directly impact the future of our planet.

National Grid has a critical role to play in the acceleration towards a cleaner future. Our businesses lie at the heart of the energy system connecting millions of people to the energy they use.



Cleaner energy

The UK has set a world-leading target to tackle the defining challenge of this generation: climate change. The UK is aiming to be powered by clean electricity by 2035 and achieve net zero by 2050.



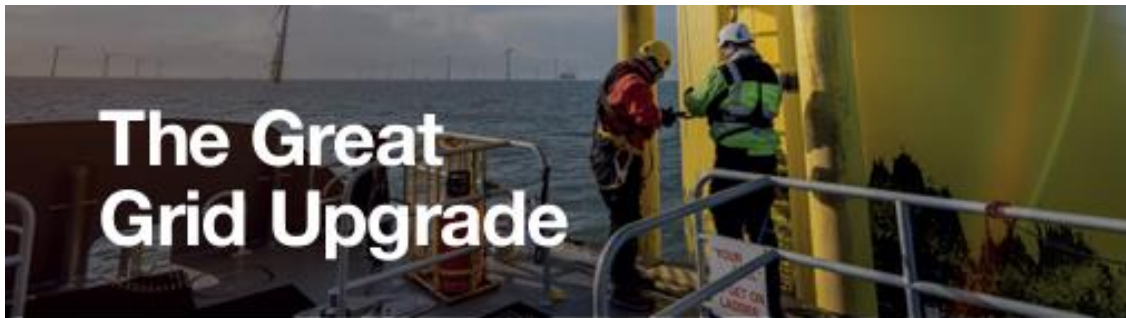
Energy security

The Government's British Energy Security Strategy aims to connect up to 50 gigawatts (GW) of homegrown offshore wind by 2030 – enough to power every home in the UK.



Costs to consumers

The Office of Gas and Electricity Markets (Ofgem) works with government, industry and consumer groups to deliver a net zero economy, at the lowest cost to consumers.



To help achieve net zero National Grid is embarking on The Great Grid Upgrade, which will play a big part in the UK government's plan to boost homegrown power.

The Great Grid Upgrade is the largest overhaul of the electricity grid in generations. Our infrastructure projects across England and Wales are helping to connect more renewable energy to your homes and businesses.

Grain to Tilbury is one of many projects across the country that will see electricity infrastructure upgraded and will support the low carbon energy needs of tomorrow.



Find out more about The Great Grid Upgrade here:



Grain to Tilbury also forms part of the **Accelerated Strategic Transmission Investment**, a programme targeted at unlocking the government's 2030 50 GW offshore wind target.

These are key projects, approved by Ofgem, which have been identified and brought forward to deliver on National Grid's net zero commitments.

Why we need to upgrade Grain to Tilbury

The Thames Cable Tunnel is an existing high-voltage electricity cable beneath the Thames between Tilbury and Gravesend.

It was built in the 1960s and houses 400 kilovolt (kV) transmission cables between Tilbury and Gravesend as part of National Grid's high voltage transmission network.

Therefore, the proposed new tunnel will replace this and help reinforce the network, aiding our transition to net zero.



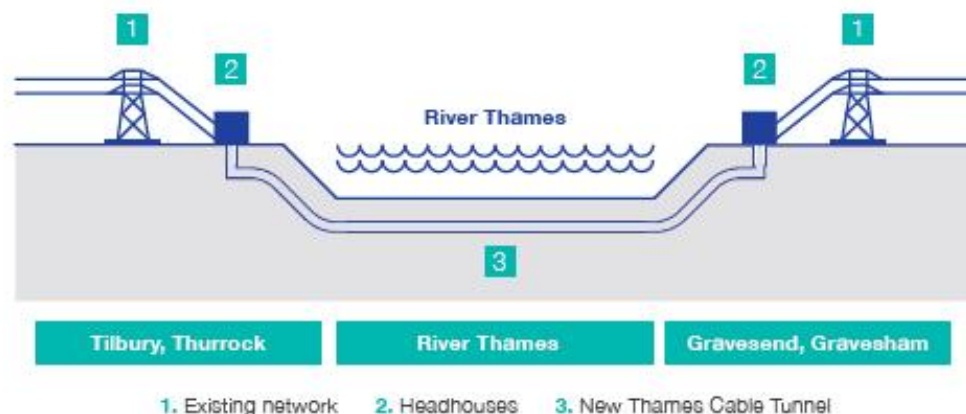
A new tunnel is the most effective way to deliver a long-term upgrade to the local network.

A number of options were considered as an alternative to building a new tunnel. These included maintaining the existing tunnel, or replacing it with a crossing tower and overhead line over the Thames.

Both options present challenges, including impacts on important and sensitive bird habitats, and a lengthy consenting process required to secure the works, particularly with the existing overhead line which would require a development consent order (DCO). The outages needed to facilitate the refurbishment of the existing tunnel also mean that it would take a considerable amount of time to deliver.

Therefore, a new tunnel is being developed as this is considered to be the most effective and safest option. The tunnel will help to ensure a continued safe and reliable supply of electricity to the area.

Grain to Tilbury project: Cross-section



Our proposals

Grain to Tilbury involves the replacement of the existing Thames Cable Tunnel between Tilbury, Thurrock, and Gravesend, Gravesham, as well as the delivery of associated infrastructure to support the new connection.

National Grid will be required to carry out an Environmental Impact Assessment (EIA) to demonstrate the works will not adversely impact the local environment.

Tunnel replacement

The tunnel will be 2.3 kilometres in length and will run beneath the Thames between Tilbury and Gravesend. This will require planning permission, along with the headhouses and overhead line alterations, to be granted under the Town and Country Planning Act by Gravesham and Thurrock Council.

Headhouses and cable sealing ends

Two headhouses, and sealing end compounds, will be required as part of the development, at either end of the tunnel at Gravesend and Tilbury. This infrastructure is required to connect the existing overhead line route to the new cable in the tunnel, to the rest of the electricity network, and act as access points. It will also be necessary that we later deliver and install a new pylon at both the Gravesend and Tilbury headhouse sites and remove three existing pylons at Tilbury. This is planned for 2027/2028.

Overhead line refurbishment

The scheme also includes the full refurbishment of the existing overhead line between Tilbury, Kingsnorth, and the Isle of Grain. As this is existing infrastructure, it is not included as part of this Town and Country Planning Act application, and further engagement will take place when this work is being prepared.



Our proposals in Tilbury

The construction site for the Tilbury section of this project is located within an industrial area to the east of the Tilbury2 port.

The new headhouse building is expected to be a similar size to the existing headhouse to the south of the site and will be eight metres high. This building will connect the cable through the new Thames tunnel to a new pylon which will then connect to the existing electricity network in Essex. The pylon will be of a similar height and scale to the existing overhead pylons in the area and will be 45 metres high.

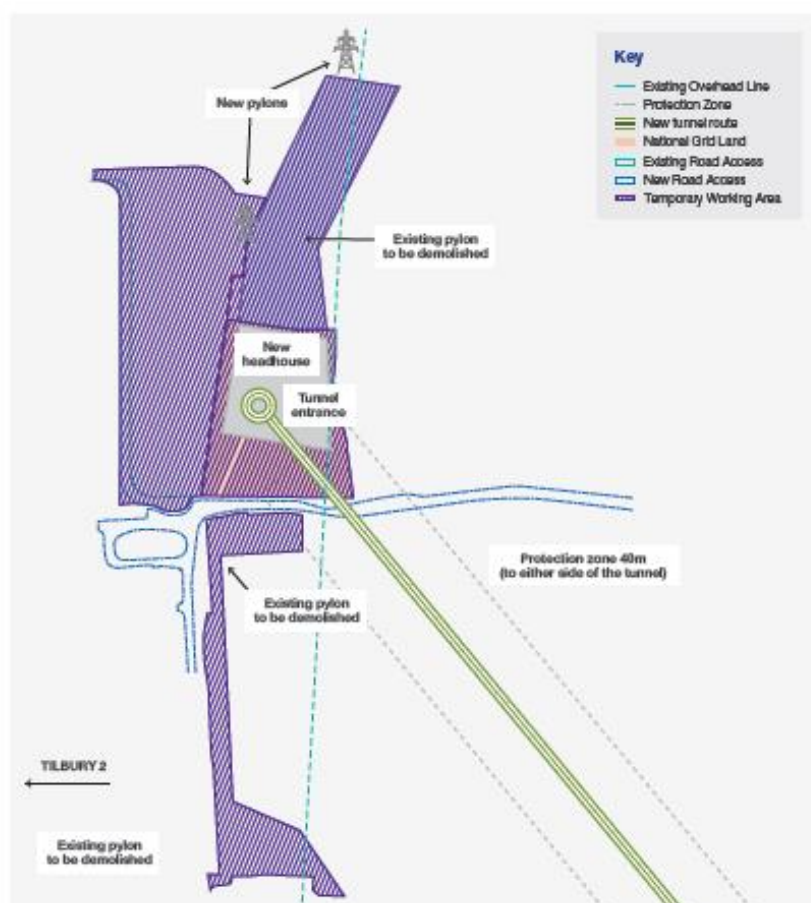
Construction

The majority of soil, rock and debris during construction of the site will be taken away via barge as set out in more detail on the 'construction' board. A small number of HGVs will be required to transport spoil from the Tilbury site to a jetty to the east of the site, where a conveyor will be used to load the barges to take the spoil away on the Thames.

This will be set out in detail in our planning application documents, but as a rough guide, around three to four daily HGV journeys to each site and a total of around 80 barge movements will be needed over the four-year life of the project to facilitate construction and move this spoil away from the area.

Next steps

In order to progress our plans we will be submitting a planning application to Thurrock Council. Our application will set out the proposals for these construction works and detail mitigation measures which will reduce the impact of our works on the local area and wildlife.



Our proposals in Gravesend

The site for the new Gravesend headhouse is located to the east of the Metropolitan police training building.

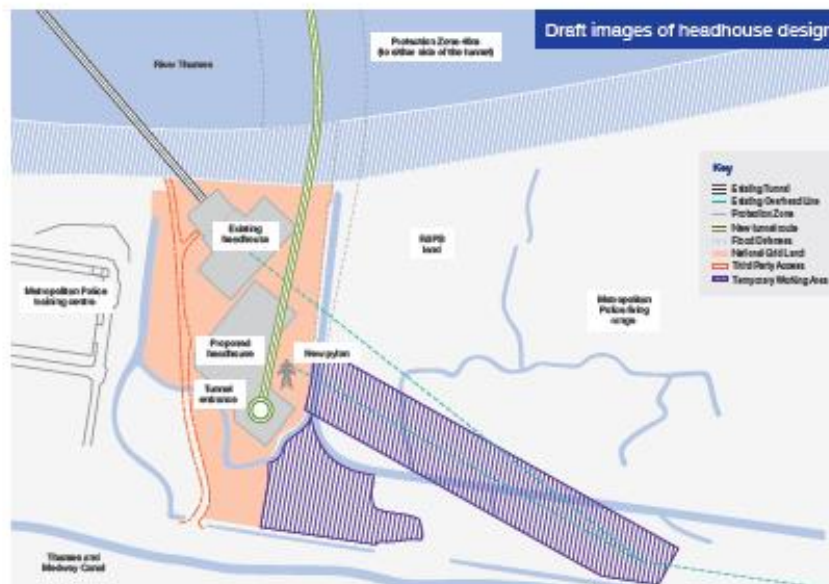
The new headhouse will be 7.8 metres high, so it will be a similar height to the buildings around it. The headhouse will connect the cable through the new Thames tunnel to a new terminal pylon just to the south of the headhouse, which will then connect to the existing electricity network in Kent. This new terminal pylon will be of a similar height and scale to the existing overhead pylons in the area and will be 45 metres high.

Construction

Construction vehicle movements into the site will be safely managed, to take account of the existing towpath and the cycle path.

Next steps

We are currently undertaking surveys to support the planning application for the site. We will submit the application to Gravesend Council at the same time that we submit an application to Thurrock Council.



Construction

To support our planning applications, we will prepare a Construction Traffic Management Plan. This will set out the good practice measures we propose to carry out in order to minimise, where possible, the impact of our vital works locally.

Our priority is to move spoil from our construction sites via the Thames to reduce our impact on the road network, and plans for this are being progressed. However, please note some construction movements will need to take place via HGV movements.

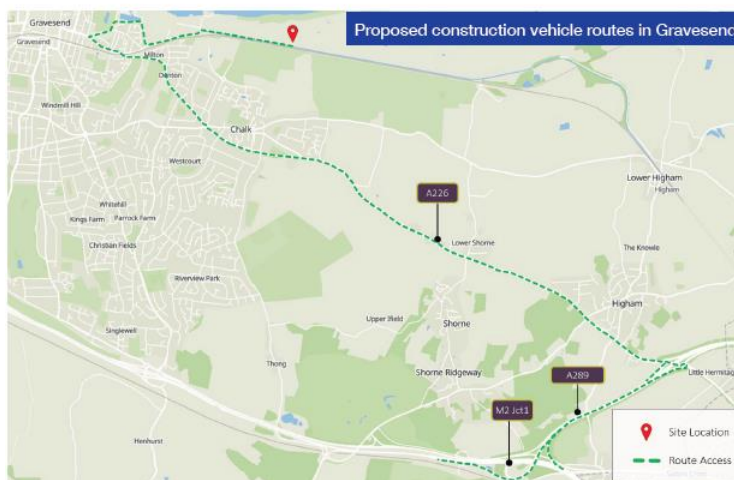
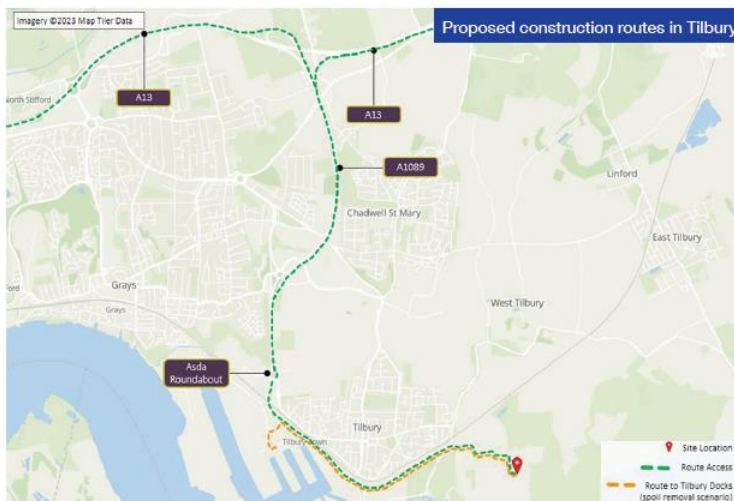
The Construction Traffic Management Plan will include information on signage to make sure our construction traffic uses the agreed routes. Construction workers will also use public transport and car share where practicable to come to and from work. Our workers will also be briefed regularly to make sure they are aware of, and comply with, speed limits on site and locally.

The duration of the entire construction programme is approximately 46 months, commencing in **summer 2024**.

The tunnel construction activities are expected to last approximately 17 months commencing in **spring 2026**, with the tunnel construction works lasting around eight months between **summer 2026** and **spring 2027**.

The below maps set out the routes that we are currently considering for our construction traffic in Tilbury and Gravesend.

We would welcome your feedback on these proposed routes.



Environmental protection

We will always consider the potential environmental impacts of our projects.

This section of the Thames is rich in wildlife and biodiversity, and contains a number of protected wildlife areas. This includes the Canal and Grazing Marsh Higham Local Wildlife Site at Gravesend; the nearby Thames Estuary & Marshes Site of Special Scientific Interest (SSI), Special Protection Area (SPA) and Ramsar site; and the Local Nature Reserve on the Tilbury banks of the Thames.

As part of the planning process, we have been carrying out environmental surveys, including a detailed Environmental Impact Assessment (EIA), habitat surveys and protected species surveys. The results of this work will help inform the design and decision-making process as we finalise our plans.

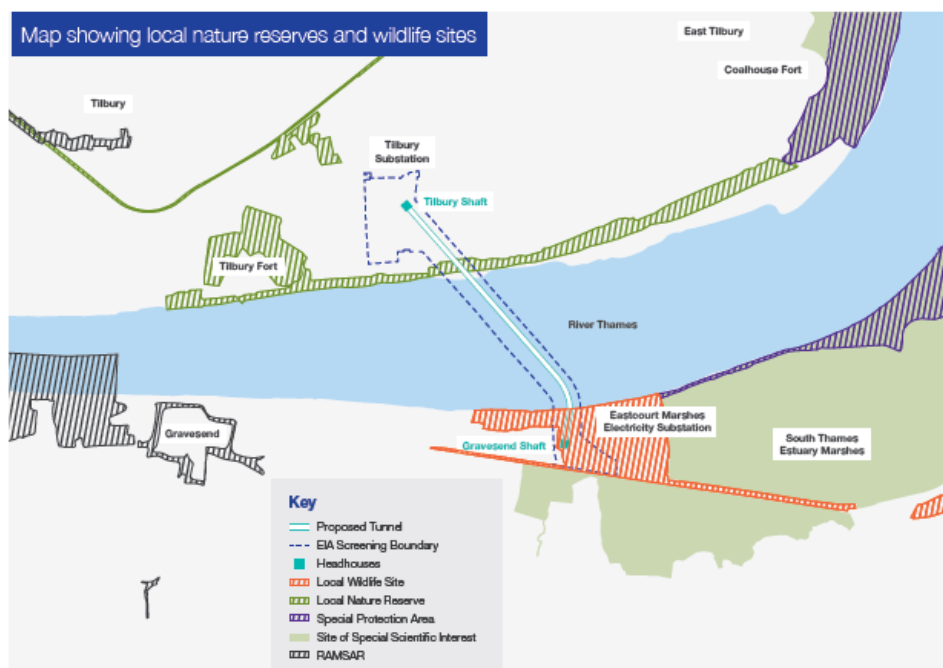
The new headhouses at Tilbury and Gravesend will have biodiverse roofs to support biodiversity net gain and provide a rainwater buffer. We will also be planting native vegetation around both sites to further encourage local wildlife and habitat creation. We are also reaching out to Kent Wildlife Trust, Natural England, and county biodiversity officers to further develop our environment protection measures.

Extensive surveys are currently being carried out to establish the baseline for the Environmental Statement and ensure we design the most suitable mitigation against any potential impact on local wildlife.

These surveys include:

- wintering, breeding and intertidal bird surveys
- botanical surveys
- invertebrate surveys
- reptile and great crested newt surveys
- bats, badger and water vole surveys

Our planning applications will include a detailed EIA. This will set out the finding of our survey works and the mitigations we plan to put in place during construction to help minimise the impact of our works. A Construction Environmental Management Plan will also be submitted detailing any mitigation measures required.





Investing in communities

We are committed to investing and leaving a positive legacy in areas where we are carrying out essential works to upgrade the network.

This includes using local suppliers and creating job opportunities where possible. We also work with local schools to promote science, technology, engineering and maths (STEM) and career opportunities in the energy industry.

Leaving a positive legacy for the community

The new tunnel, headhouses and overhead line are a key part of our nation-wide upgrade of the grid network to meet future demand.

However, we understand the concerns of the local community and are committed to leaving a positive legacy.

How do we aim to achieve this?

We believe businesses have a duty to contribute to society and the communities they serve and we look to support communities impacted by our vital infrastructure in a variety of ways.

For communities affected by construction works we also run a Community Grant Programme aimed at community organisations and charities.

This supports groups and initiative across a range of areas, from those that provide social, economic and educational benefits, to environmental and conservation projects.

Communities impacted by construction work, such as the proposals for Grain to Tilbury, can apply for grants of up to £20,000. More details on how to apply are available on our website at nationalgrid.com/responsibility/community/community-grant-programme, or please speak to a member of our team at a consultation event or via the contact details provided.

Feedback and next steps

We want to hear the views of local people. Knowing what matters to you, matters to us, so please get in touch and let us know what you think of our proposals.

The deadline for consultation responses is **Sunday 29 October 2023**.

How do I find out more about your proposals?



Online: view all information
on our project website:
nationalgrid.com/GrainToTilbury

Join us in person:

- **Clarendon Royal Community**
Royal Pier Road
Gravesend, DA12 2BE
Wednesday 11 October 3:00pm-7:00pm
- **Tilbury Community Association**
Civic Square
Tilbury, RM18 8AA
Friday 13 October 3:00pm-7:00pm

Register online to join one of our webinars:

- **Gravesham webinar** - Wednesday 18 October
- **Thurrock webinar** - Thursday 19 October

How do I respond to the consultation?

- Completing our online feedback form at:
nationalgrid.com/GrainToTilbury
- Sending a completed paper copy of the feedback form
or a letter to FREEPOST GRAIN TO TILBURY PROJECT
- Emailing your comments to: contact@graintotilbury.nationalgrid.com
- Calling us on 020 3398 1599

Should you wish to receive hard copies of our materials,
please contact our project team via phone or email.

6.7 Feedback form



Overview

We are seeking your views on our proposals to upgrade the electricity infrastructure between Grain and Tilbury. Our plans will involve building a new tunnel, installing new electricity cables and the construction of a headhouse at either end of the tunnel.

The feedback we receive at this consultation will help inform our plans before we submit our planning applications to Thurrock and Gravesham councils in winter 2023. The deadline for submitting your response to our consultation is Sunday 29 October 2023.

How to provide your feedback

We'd like to know if there are any other issues you think are important that we should consider. You are welcome to answer all or only some of the questions in this feedback form, depending on the issues that are most important to you.

All feedback received will be considered as we develop our proposals further. So that we can make the most of your feedback, please give as much detail as possible in your response.

You can share your feedback with us by:

- completing and returning a feedback form at one of our consultation events
- completing a feedback form online at nationalgrid.com/graintotilbury
- emailing us your completed feedback form at contact@graintotilbury.nationalgrid.com
- returning this feedback form using the freepost envelope provided at a consultation event, or by writing **FREEPOST GRAIN TO TILBURY PROJECT** on any envelope and posting it free of charge.

Grain to Tilbury proposals

1. Our proposals will reinforce the electricity network and aid our transition to net zero. To what extent do you support our plans to upgrade the electricity infrastructure between Grain and Tilbury, via the construction of a new tunnel, the installation of new cabling, and the construction of two headhouses at either end of the tunnel?

Please select one option

☐ Strongly support ☐ Support ☐ Unsure ☐ Oppose ☐ Strongly oppose

2

2. During construction we intend to move as much of the rock, soil and debris offsite as possible via barges on the Thames. Where this isn't possible, we will use HGVs to move materials as described in our construction management plan which will be submitted as part of the application. To what extent do you support this plan for our construction process?

Please select one option

☐ Strongly support ☐ Support ☐ Unsure ☐ Oppose ☐ Strongly oppose

Add your comments here:

3. We have been undertaking an extensive range of ecological and environmental surveys to reduce the impact of our works on the local area. Our planning application will set out these plans in detail.

Are there any further environmental issues you would like to make us aware of?

Add your comments here:

3

4. Are there any local groups or community organisations that you believe should be engaged with as part of our proposals or who may benefit from National Grid's local incentives?

Add your comments here:

5. Do you have any further comments that you would like to make?

Add your comments here:

4

About you

Your contact details

We will only use these details to contact you and update you on the proposals. You don't have to fill in this section if you'd rather we didn't contact you.

Title:

First Name:

Surname:

Organisation/group (if responding on behalf of an organisation):

Address:

Postcode:

Email:

☐ Please tick here if you would like us to keep you updated about our proposals

How would you describe your interest in Grain to Tilbury?

- ☐ Local resident
- ☐ Local representative (e.g. parish councillor)
- ☐ Potentially affected landowner or occupier – please insert your landowner reference number if known
- ☐ Local business owner or supplier/contractor
- ☐ Regular visitor
- ☐ Local interest group member (please specify in the text box below)
- ☐ Other (please specify in the text box below)

5

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National Grid

Cable Tunnel Replacement
Project

Environmental Statement

Volume I
Non-Technical Summary
(Revision 1)

| ~~December 2023~~ [July 2024](#)

Quality information

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1 Introduction

1.1 Overview

- 1.1.1 The Proposed Development is being developed by National Grid (hereafter referred to as “the Applicant”). The Applicant owns and operates the national high-voltage electricity transmission system and holds the electricity transmission license in England and Wales. The Applicant is therefore obligated to develop and maintain an efficient, co-ordinated and economical system of electricity transmission and facilitates competition in the generation and supply of electricity, as set out in the Electricity Act 1989.

1.2 Why do we need the Cable Tunnel Replacement Project?

- 1.2.1 As part of their commitments to tackling climate change, the UK Government has set legally binding targets to become net-zero in all greenhouse gases by 2050 for England and Wales. To meet these targets, the UK will need to continue to move away from traditional forms of energy generation to heat homes, charge vehicles and power businesses, and there will be a greater need for cleaner, greener energy.
- 1.2.2 A large amount of renewable and low carbon energy generation has been forecast connecting into the electricity transmission network in the east coast of England, together with three interconnectors from the continent. Through these forecasts, it has been identified that the Tilbury to Grain and Tilbury to Kingsnorth 400 kV circuits will become significantly overloaded in their current capacity and require upgrading.
- 1.2.3 Therefore, it has been recommended that investment is made in upgrading the 400kv circuits. As the Transmission Licence Holder with responsibility for the circuits, National Grid is required to upgrade the existing circuits.

1.3 Overview of the Cable Tunnel Replacement Project

- 1.3.1 The existing Grain to Tilbury 400kV circuits are mostly overhead lines, however a section is cabled within a tunnel underneath the River Thames. This tunnel in its current state would not safely accommodate an upgrade to the new cables.
- 1.3.2 Therefore, the Cable Tunnel Replacement Project (hereafter the Proposed Development) consists of a boring a new tunnel under the River Thames. In order for the overhead lines to transition to a cable under the River Thames, the following above-ground components are required at both ends of the new tunnel at Tilbury and Gravesend:
- **A new cable sealing end compound:** consisting of:
 - **a new tunnel headhouse** which will cover the shaft into the tunnel;
 - **a new overhead line gantry structure** which will connect the overhead line downlead conductors and transfer them to six sealing end structures; and
 - **Modifications to the existing overhead line (OHL):** The new OHL conductors will be connected to the existing 400kV OHL conductors via new terminal pylons. The old OHL conductors and existing pylons will be either replaced, refurbished or removed.

1.4 Planning Permission and Environmental Impact Assessment

Planning Permission

- 1.4.1 Planning permission is required for the Proposed Development under the Town and Country Planning Act 1990 (excluding overhead lines and pylon alterations). The planning applications will be examined and determined by the relevant local planning authorities - Thurrock Council for the development north of the River Thames in Tilbury, and Gravesham Borough Council for the development south of the River Thames in Gravesend.
- 1.4.2 The section of the tunnel which falls within Mean Low Water Spring is within the Marine Management Organisation's jurisdiction. The boring of the tunnel is exempt from marine licensing.
- 1.4.3 The alterations to pylons and overhead line required for the Proposed Development are consented under the Electricity Act 1989. The Department for Energy Security and Net Zero is the determining body.

Marine Management Organisation

The Marine Management Organisation (MMO) is responsible for marine licensing in English inshore and offshore waters and for Northern Ireland offshore waters.

Environmental Impact Assessment

- 1.4.4 Environmental assessment is the process of identifying, evaluating and mitigating the likely significant environmental effects of a proposed development. It promotes the early identification and evaluation of any issues which may cause negative socio-economic impacts, harm to the environment or human health, or be a source of nuisance to local people. This enables appropriate measures to avoid, reduce or offset any significant negative effects to be put in place. This can include measures incorporated into the design of the development, or commitments to implement environmentally sensitive construction methods and practices.
- 1.4.5 The results of the environmental assessment also ensure that decision makers, such as Thurrock Council and Gravesham Borough Council and statutory consultees like Natural England and the Environment Agency, as well as other interested parties including local communities, are aware the types of environmental effects which may occur and the potential scale (severity) of those effects. This allows a judgement to be made as to whether the effects may be significant or not, so that they may be properly considered when the application for planning permission is being assessed.
- 1.4.6 The Proposed Development has been Screened under The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended). This is where an opinion is requested from the Local Planning Authorities, in this case, Thurrock Council and Gravesham Borough Council, as to whether they believe the Proposed Development may cause a significant effect on the environment and whether planning applications should be accompanied during submission by an Environmental Impact Assessment (EIA).
- 1.4.7 An EIA screening report was produced in June 2023 and submitted to Thurrock Council, Gravesham Borough Council, and the Marine Management Organisation (MMO).
- 1.4.8 Gravesham Borough Council determined the Proposed Development to be EIA. Thurrock Council determined the Proposed Development to be 'not EIA Development'.
- 1.4.9 As the Proposed Development includes a new cable tunnel under the River Thames, it was also Screened under the Marine Works (Environmental Impact Assessment) Regulations 2007. The Marine Management Organisation determined the Proposed Development does not constitute a project under either Schedule A1 or A2 of the Marine Works (Environmental Impact Assessment) Regulations 2007, and therefore the screening was revoked.
- 1.4.10 The whole of the Proposed Development has been considered as EIA Development and so an Environmental Statement (ES) has been written to provide Thurrock Council, Gravesham Borough Council and the Department of Energy Security and Net Zero with information on the likely significant

environmental effects of the Proposed Development, to inform their decision in granting planning permission

- 1.4.11 It is not necessary to screen the overhead line and pylon alterations under The Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2017 because the proposed Development does not fall within Schedule 1 of the regulations and schedule 2 of the regulations only applies to development that does not provide an EIA report.
- 1.4.12 This Non-Technical Summary (NTS) forms Volume I of the ES and presents the findings, in non-technical language.

2 Consideration of Alternatives

2.1 Approach to the Consideration of Alternatives

Strategic Options Appraisal

- 2.1.1 In 2022, a Strategic Options Appraisal was undertaken. This included appraisal of the following three options:
- Option 1 - The installation of new cables within the existing tunnel;
 - Option 2 - The installation of new cables within the new tunnel; and
 - Option 3 - The installation of a new overhead line across the River Thames.
- 2.1.2 Option 1 would not be feasible due to the health and safety risks posed and therefore the choice was limited to Option 2 or Option 3.
- 2.1.3 Option 2, the installation of new cables within the new tunnel, was considered to be preferable overall. This is because the required height of the pylons for Option 3 posed a risk of potentially significant environmental effects.

Alternative Locations of the Infrastructure and Overhead Lines

- 2.1.4 Following the decision to adopt Option 2 (installation of new cables in a new tunnel), further appraisal work was carried out to identify the most suitable areas for the tunnel and the required infrastructure either side of the River Thames.
- 2.1.5 It was identified that the required infrastructure should be located to the existing tunnel and associated infrastructure as possible, to reduce the amount of permanent construction work required to divert the existing overhead line.
- 2.1.6 The land adjacent to both existing Sealing End Compound at Tilbury and Gravesend was identified as suitable for the construction of both temporary and permanent works. The land was divided into sections so compare them from an environmental and engineering constraints point of view, weighing up the pros and cons associated with each parcel of land.
- 2.1.7 At Tilbury, of the seven land parcel options identified, option 5 was determined to be the most appropriate and was taken forward for further design development.
- 2.1.8 At Gravesend, of the six land parcel options identified, option 2 was determined to be the most appropriate option and was taken forward for further design development.
- 2.1.9 More detailed information on the consideration of alternatives can be found in ES Volume II Chapter 2: Alternatives.

3 Overview of Key Components of the Proposed Development

3.1.1 The Proposed Development comprises the following above-ground components at both ends of the new tunnel:

- **A new cable sealing end compound:** consisting of:
 - a new tunnel headhouse which will cover the shaft into the tunnel;
 - a new overhead line gantry structure which will connect the overhead line downlead conductors and transfer them to six sealing end structures; and
- **Modifications to the existing overhead line:** The new overhead line conductors will be connected to the existing 400kV overhead line conductors via new terminal pylons. The old OHL conductors and existing pylons will be either replaced, refurbished or removed.

3.1.2 The Proposed Development is located in part in Tilbury, Thurrock and in part in Gravesend, Kent.

3.2 Cable Tunnel

3.2.1 A new tunnel will be bored under the River Thames. It will be approximately 2.2km in length (measured from headhouse to headhouse) and 4m in internal diameter. The depth of the tunnel will be approximately 34-32 metres above Ordnance Datum (above mean sea level).

3.2.2 Once the tunnel is installed, twelve new cross linked polyethylene (XLPE) cables will be installed. XLPE is now the preferred cable type – a modern cable requiring less maintenance and which doesn't contain any fluids, such as oils or sulphur hexafluoride, which is greenhouse gas.

3.2.3 Each cable needs to be well-spaced from the other cables so they do not over heat.

Sulphur hexafluoride (SF6) explained

Sulphur hexafluoride – also known as SF6 – is a 'greenhouse gas' that has long played a part in global warming, similar to that of carbon dioxide (CO₂).

SF6 is one of the most potent greenhouse gases we know. Around 80% of the SF6 used globally is in electricity transmission and distribution. It is not required in this Proposed Development.

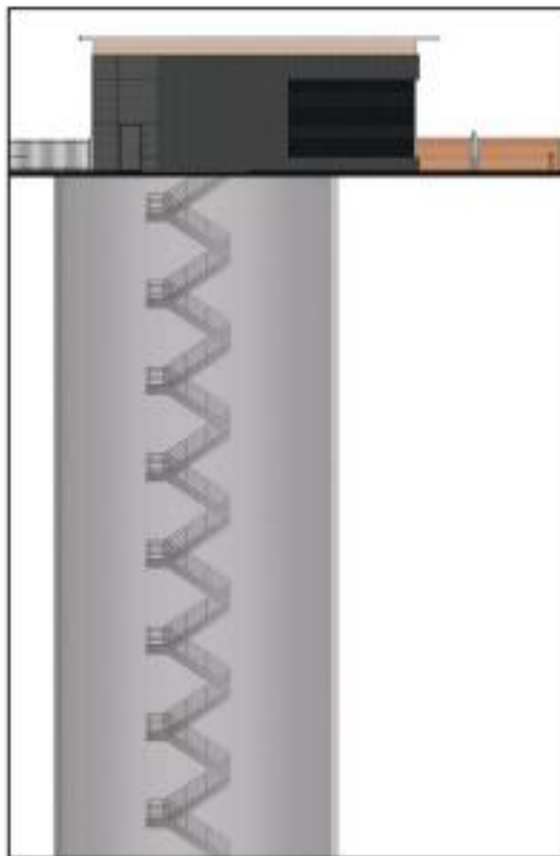
Figure 3-1: Example of XLPE Cables installed in a deep bored tunnel



3.3 Tunnel Shafts

- 3.3.1 In order to construct the new cable tunnel, vertical shafts will need to be constructed at Tilbury and Gravesend. These will be approximately 15m in diameter and around 40m deep. Once constructed, these will in place permanently.

Figure 3-2: Cross section of tunnel shaft with stair access



3.4 Sealing End Compounds

- 3.4.1 Two Sealing End Compounds are required to be constructed, one at Tilbury and one at Gravesend.
- 3.4.2 The Sealing End Compounds will contain the equipment required to transition the cables out of the tunnel and up onto to the overhead lines supported by pylons.
- 3.4.3 The Sealing End Compounds will be surrounded by a security fence and electric pulse fence at a maximum height of 3.4m.

Cable Sealing End Compounds

A plot of fenced land similar to an electricity substation that allows underground cables to join onto an overhead line.

3.5 Tunnel headhouses

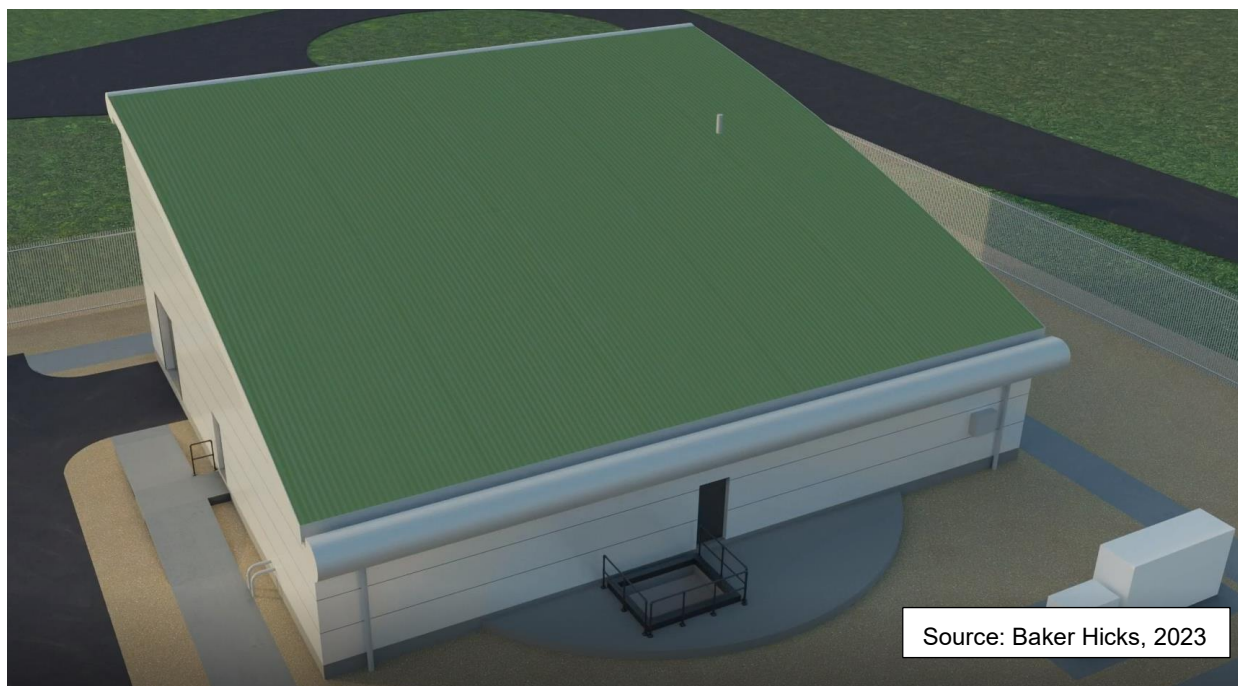
- 3.5.1 Within each Sealing End Compound, there will be a tunnel headhouse which will sit on top of the tunnel shafts. They provide controlled safe and secure access into the tunnel shafts, enclosure for ventilation fans and equipment to regulate the temperature in the tunnel, to locate associated mechanical and electrical equipment and to house control equipment for the cable circuits.
- 3.5.2 The tunnel head houses have been sized to accommodate only the required equipment for the operation of the tunnel. Each has been designed in a way to fit in with the environment and surroundings.
- 3.5.3 The new headhouse would have a biodiverse roof and would contain shaft access via staircase, welfare facilities for visiting staff, control rooms and electrical equipment.

Tunnel Headhouse and Shafts

A tunnel shaft is a cylindrical pit which provides a permanent access point to the cable tunnel via stairs.

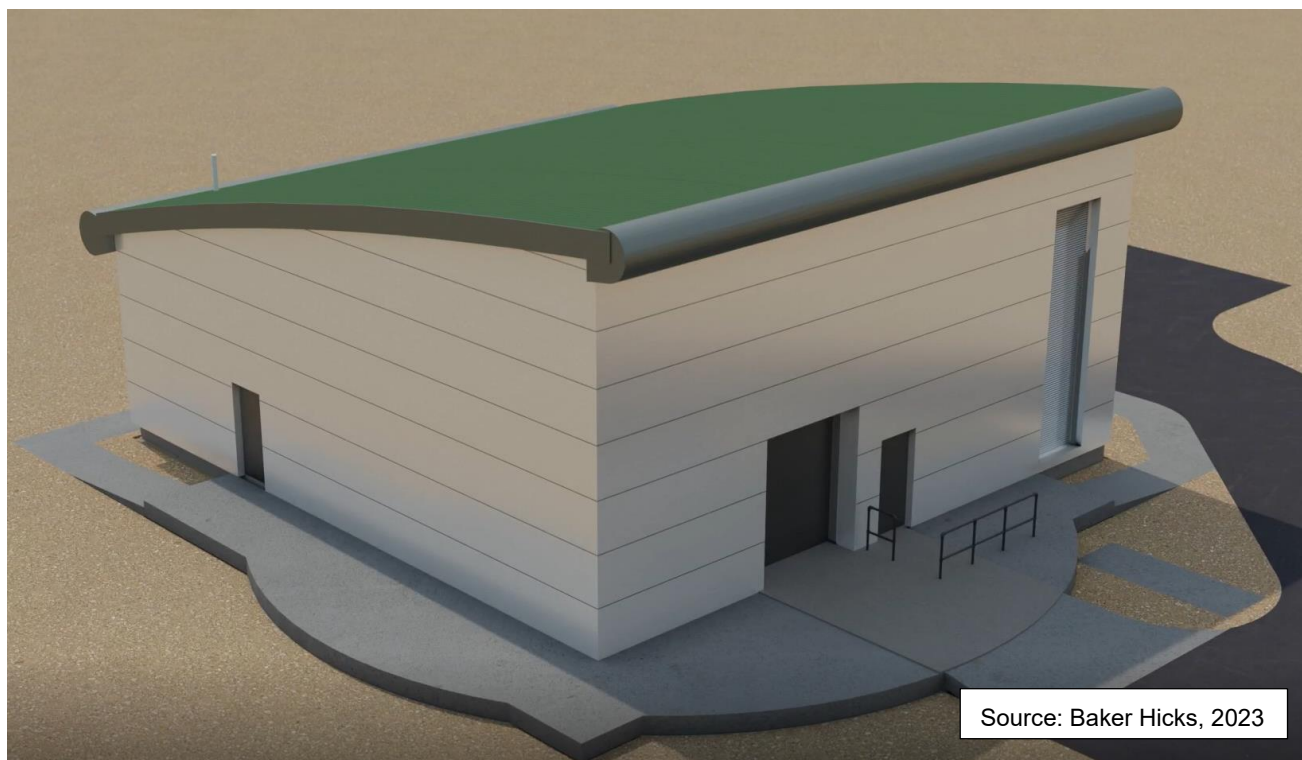
A tunnel headhouse (a building) sits on top of this to provide an access point to the shaft and cable tunnel for maintenance and houses the necessary equipment such as ventilation fans.

Figure 3-3: Tilbury headhouse (indicative)



Source: Baker Hicks, 2023

Figure 3-4: Gravesend headhouse (indicative)



3.7 Overhead Line Diversions

- 3.7.1 The new Sealing End Compounds need connecting into the existing wider overhead line network. During a formally arranged outage, existing pylons and overhead line will be removed, new pylons constructed, and new overhead line cables installed.
- 3.7.2 The proposes changed at Tilbury are shown in Figure 3-5 below. Existing terminal pylon 4VG045A will be replaced with a new terminal pylon (with same reference), which will be erected adjacent to its existing location and to the north of the proposed Tilbury SEC. This will form the new commencement of the 400kV overhead line. Pylons 4VG044 and 4VG043 will be removed and the existing terminal pylon 4VG045B inside the Tilbury Substation will be refurbished. Approximately 600m of overhead line conductor will be removed.
- 3.7.3 Approximately 200m of new double span overhead line will be installed from the existing terminal pylon (4VG45B) within the Tilbury Substation, to the new pylon 4VG045A. This is illustrated on the figure below.

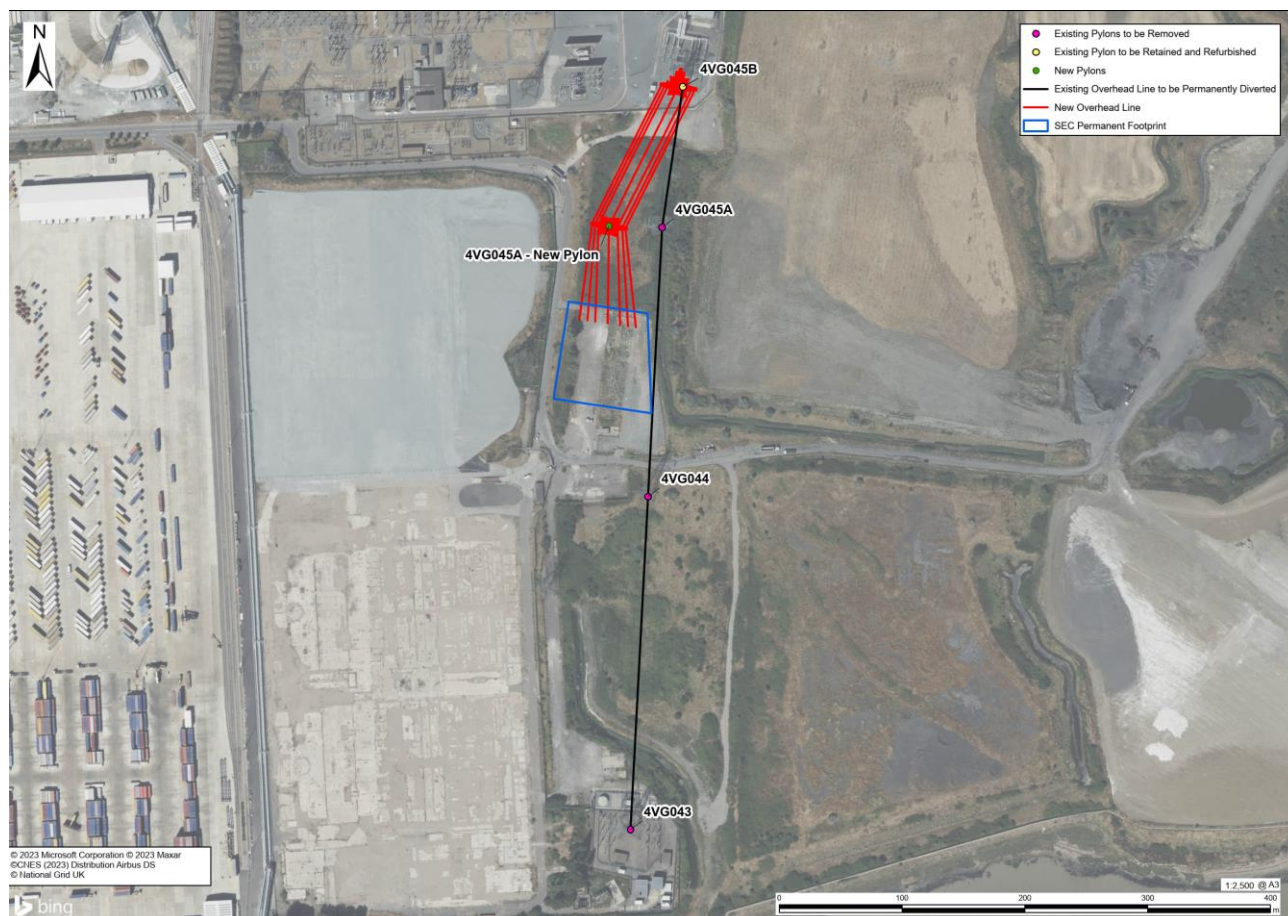
Outages or planned interruptions

National Grid maintain and improve the electricity network, which sometimes means supply needs to be interrupted for short periods. A pre-arranged outage means work can be completed safely and without damage or disruption.

Single and Double Span Overhead Line

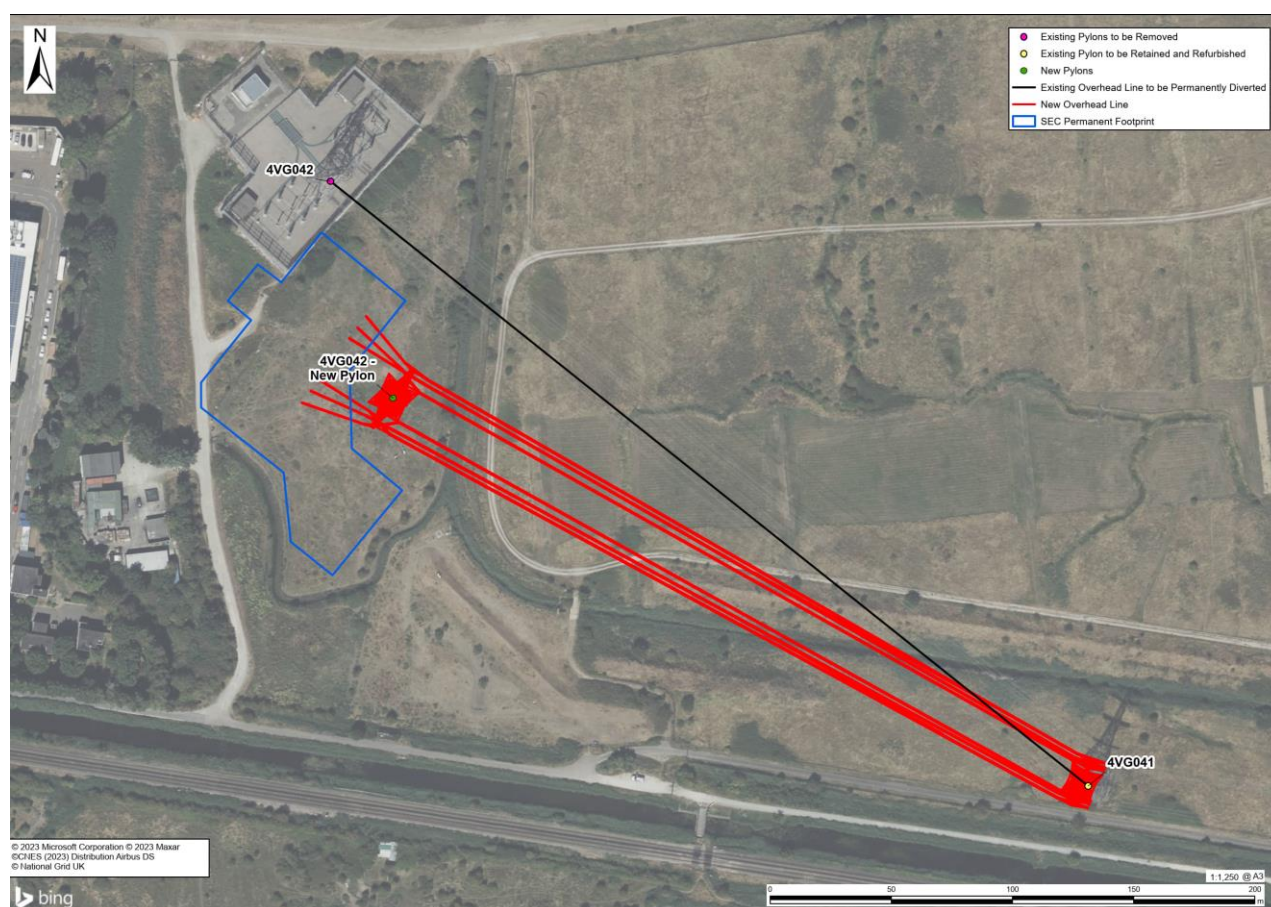
A single span carries conductors (cables) for only one circuit.
A double span carries conductors for two circuits.

Figure 3-5: Overhead Line Reconfiguration at Tilbury



- 3.7.4 At Gravesend, the new arrangement is shown on Figure 3-6. In summary, approximately 400m of single span overhead line will be permanently removed and approximately 330m new double span overhead line will be installed between pylons 4VG041 and new pylon 4VG042. The existing pylon 4VG042 will be removed. Pylon 4VG042 will be replaced by a new terminal pylon which will be erected near the new Sealing End Compound. The existing Pylon 4VG041 will be refurbished.

Figure 3-6: Overhead Line Reconfiguration at Gravesend



3.8 Construction Phase

Construction of the Tunnel

- 3.8.1 Using a tunnel boring machine, a tunnel will be constructed between the two shafts. The machine will be launched from the Tilbury side and be received at the shaft on the Gravesend side. Tunnelling works are expected to take place for approximately eight months.

Tunnel Boring Machines

A tunnel boring machine can excavate a tunnel and insert concrete lining using a rotating head with cutting parts, running on motors.

Figure 3-7: Example Tunnel Boring Machine



Tunnel and Shaft Spoil

- 3.8.2 National Grid have a target for zero waste to landfill by 2026, which will come into force during the construction phase of the Proposed Development. There are numerous promising local opportunities have been explored for the reuse of the spoil materials to meet National Grid's commitment to avoid landfill.
- 3.8.3 Currently, National Grid are exploring opportunities to transport the spoil to habitat enhancement projects in the local vicinity such as the RSPB site at Cliffe Pools which would provide benefits to aquatic invertebrates and wading birds.
- 3.8.4 Whichever site is chosen, the removal of the tunnel and shaft spoil at Tilbury will be via the River Thames, to reduce the number of HGV required on the local and strategic road network.

~~3.8.5~~ National Grid will seek to utilise ~~either~~ :

~~3.8.6~~ the existing and working jetty to the south-east of the proposed Tilbury SEC, delivering the tunnel and Tilbury shaft spoil to the jetty via HGV and transferring to barge. There is an existing road extending to the jetty, however some upgrading of the existing road will be required.

~~3.8.7~~ 3.8.5 Berth 5 at the Port of Tilbury, delivering the tunnel spoil to the berth via HGV and transferring to barge. No road upgrading will be required ~~for this option~~. This route is depicted in the Planning Application – Red Line Boundary on Figure 1.1 of this ES.

~~3.8.8~~ 3.8.6 The ~~jetty or~~ berth would not be used during weekend or night-time hours, as spoil from the 24-hour tunnelling process will be stored within the temporary construction compounds overnight and during the weekend. The spoil will only be transported to the jetty or berth during daytime working hours.

Temporary Construction Compounds

~~3.8.9~~ 3.8.7 To facilitate the construction of the Proposed Development, a temporary construction compound will be required at both Tilbury and at Gravesend. These are required to provide space

for construction of the Proposed Development, the storage of construction plant and equipment, and provide offices and welfare facilities for construction workers.

~~3.8.10~~**3.8.8** The construction compounds will be configured to suit the phase of the construction, starting with construction of the tunnel shafts, then the tunnelling phase, then the build of the headhouse and sealing end compound, and finally the alterations to the overhead lines.

Overhead Line Reconfiguration – temporary working areas

~~3.8.11~~**3.8.9** Temporary working areas and plant areas are required to allow for the refurbishment, removal or erection, as well as overhead line restringing (when the cables are installed between the pylons).

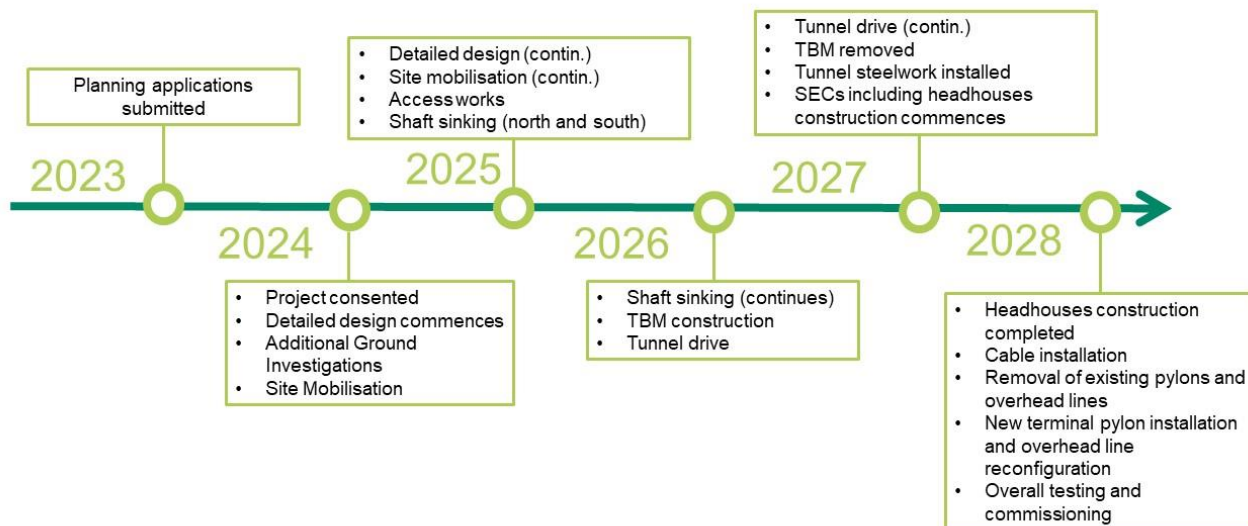
3.9 Construction Traffic

- 3.9.1 The tunnelling phase will involve the busiest period of construction activity and so will see the most traffic generation during the whole of the Proposed Development.
- 3.9.2 By utilising the River Thames to remove the shaft and tunnel spoil from Tilbury, approximately ~~11,440~~**11,426** HGV movements (in and out of the site), or ~~5,713~~**two-way HGV movements** would be removed from the local and strategic highway network. This equates to approximately ~~50~~**42**% of total HGV movements for the Proposed Development at Tilbury.
- 3.9.3 The construction works required at Gravesend is less intensive than at Tilbury. This is because the tunnelling will be driven from the Tilbury side. The busiest period of construction activity at Gravesend will be during the sinking of the tunnel shaft. During this period, there would be approximately ~~2,462~~**2,436** HGV movements spread over ~~24~~**26-33** weeks.
- 3.9.4 An Outline Construction Traffic Management Plan has been produced (See ES Volume VI Appendix 10.1) to accompany the planning application. This identifies a safe and efficient transport route for vehicles to access both the Gravesend and Tilbury sites during the construction period, whilst minimising impacts on the local highway network.

3.10 Construction Programme

- 3.10.1 Early construction activity will take place from late 2024. The main construction work will commence in 2025 and run until approximately 2028, when the Proposed Development is to be commissioned. The indicative construction programme is shown in **Figure 3-8**.

Figure 3-8: Indicative Construction Programme



3.11 Working Hours

- 3.11.1 The core working hours for the construction activities will be between 8:00 – 18:00 (Monday to Sunday). A period of up to one hour before and one hour after core working hours is envisaged for start-up and close down activities. These activities will not create significant disturbance to neighbouring residents/businesses but may include movement to place of work, maintenance and general preparation works.
- 3.11.2 No works are to be undertaken out of hours (subject to delivery of the Tunnel Boring Machine), or on Bank Holidays without prior agreement with Thurrock Council and/or Gravesham Borough Council.
- 3.11.3 An exception to these hours is the tunnelling phase. Once the Tunnel Boring Machine starts, it will need to continue running 24 hours a day until completed. It is expected to take eight months. The potential impacts of this have been assessed as part of the Environmental Impact Assessment.

3.12 Public Rights of Way

- 3.12.1 At Tilbury, there would be no temporary or permanent changes required to any Public Rights of Way.
- 3.12.2 At Gravesend, the Thames & Medway Canal Road hosts the National Cycle Network (NCN) Route 1, managed by Sustrans (custodian of the NCN in the UK) and a Public Right of Way (NS317). For health and safety reasons, both of these would need to be diverted during appropriate phases of construction. Pedestrians will be diverted onto nearby Public Right of Way NS318 and NG1 (Sanon Shore Way / England Coast Path). Whereas, cyclists would be diverted onto Chequers Street (at Lower Higham) – Chalk Road – Lower Road – Lower Higham Road – A226 (Rochester Road) – Raphael Road – subway – Prospect Grove – Norfolk Road.

3.13 Environmental Management during Construction

- 3.13.1 An important measure to avoid significant environmental effects is effective management during the design and construction of the Proposed Development, details of which are included in an Outline Construction Environmental Management Plan (CEMP), which can be found in ES Volume VI Appendix 3.1.

- 3.13.2 The Construction Environmental Management Plan aims to ensure that any adverse effects of construction on the environment and local communities are minimised by establishing a framework within which the appointed Contractor (including any sub-contractors or suppliers involved in the works) will plan, implement and deliver environmental management, mitigation and monitoring requirements during the construction phase of the Proposed Development. National Grid will ensure adherence to the requirements of the CEMP during the detailed design and construction phase. National Grid will undertake assurance audits and inspections throughout the construction phase to ensure that the Contractor is in compliance with the CEMP and other applicable requirements.

3.14 Electric and Magnetic Fields

- 3.14.1 All equipment that generates, distributes or uses electricity produces Electric and Magnetic Fields (EMFs). The exposure limits for EMFs in the UK are set by the Government on advice from Public Health England, and the electricity industry strictly follows these limits.
- 3.14.2 The Proposed Development will be designed to comply with the guidelines for exposure to EMFs.

3.15 Operational Phase

- 3.15.1 Once the construction phase is completed and the new tunnel is commissioned and in operation, it is expected that visits will mirror those of the existing sealing end compounds.
- 3.15.2 The Sealing End Compounds will be unmanned, and infrequent maintenance visits required as detailed below:
- Bi-monthly visits (Tilbury) / monthly visits (Gravesend) with a light van or car for e.g., safety checks on such equipment as fire alarms; inspection or minor maintenance of electrical and ventilation equipment; and
 - Maintenance work on electrical/ventilation equipment or buildings involving five to ten light good vehicles visits once every two to five years.

3.16 Decommissioning

Decommissioning of existing assets

- 3.16.1 Decommissioning of the existing tunnel and associated infrastructure does not form part of the Proposed Development. However, it is expected that the existing cables and cable joints within the existing tunnel will have the oil removed and be sent for recycling. Further tunnel inspection work will be needed.
- 3.16.2 Where possible, materials such as steel and cable terminations, within the existing SEC's will be recycled, or reconditioned for reuse, or repurposed.

Decommissioning of new assets

- 3.16.3 The overall design life of the new tunnel, sealing end compounds including the headhouses is approximately 120 years. During that time, the cables are likely to be replaced more than once.
- 3.16.4 If the Proposed Development is to be decommissioned in the future, its parts will be decommissioned in accordance with the relevant legislation at the time. They will be removed, disposed of or reused in an appropriate manner.

4 EIA Methodology

4.1 Environmental Impact Assessment

4.1.1 The full Environmental Impact Assessment is reported within the Environmental Statement (ES), of which this document constitutes the ES Non-Technical Summary (ES Volume I). The ES will be submitted alongside the planning application and has been undertaken in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. The ES provides the decision maker, in this case Gravesham Borough Council, Thurrock Council and the Department of Energy Security and Net Zero as much information as possible about:

- The baseline environment (the environment as it is today);
- The likely environmental effects resulting from the Proposed Development in all phases of development (construction, operation and decommissioning);
- Appropriate mitigation being delivered as part of the Proposed Development (to avoid, reduce or offset adverse effects); and
- Any residual effects that cannot be mitigated.

4.1.2 This allows the decision makers to make a fully informed choice when it comes to considering consent for the Proposed Development.

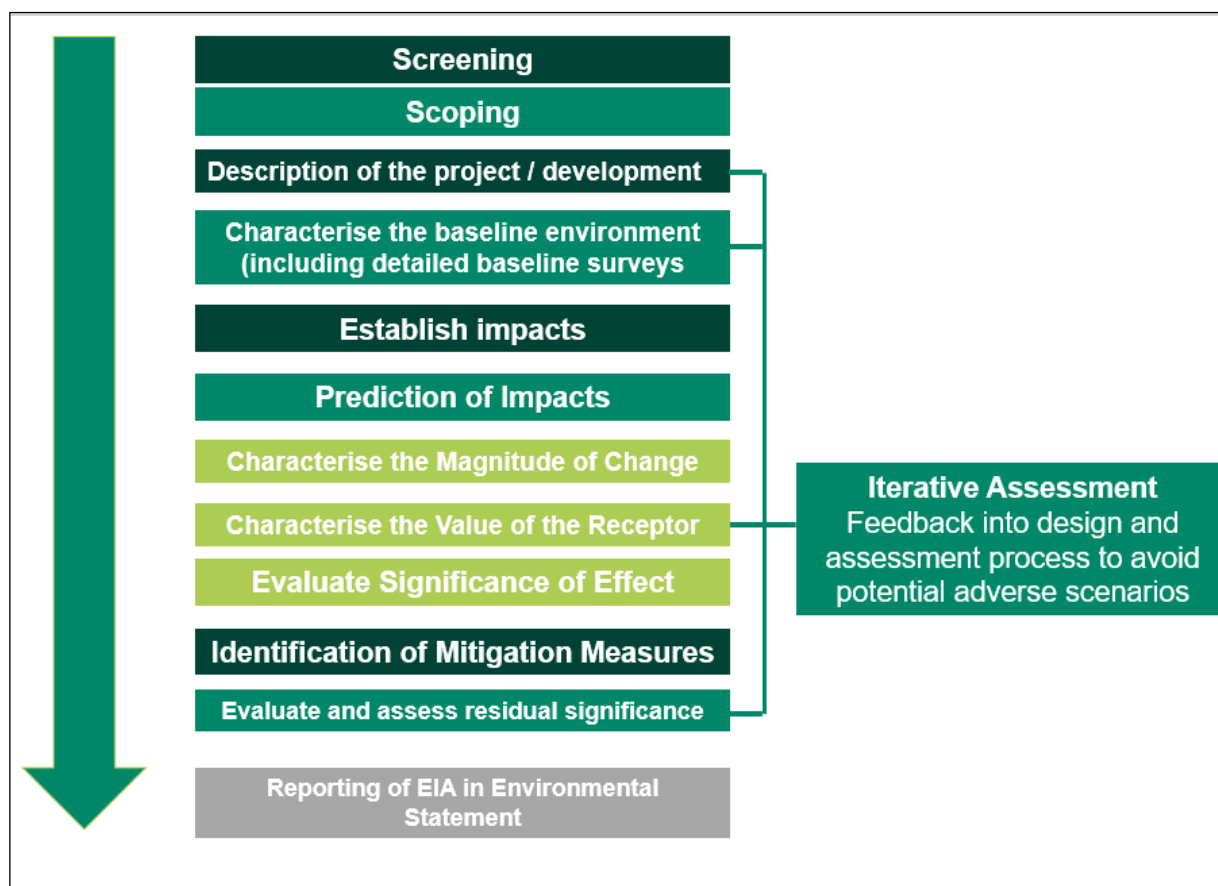
4.2 Methodology

4.2.1 The Applicant has gathered information about the existing environment in a study area around the Proposed Development. The size of the study area depends on the topic that is being assessed and is reported in each technical ES chapter along with a rationale for its selection.

4.2.2 The method for assessing the significance of effects is reported in full in ES Volume II Chapter 4: EIA Methodology. More specific methods for each technical topic, based on relevant standards or guidelines, are presented in ES Volume III Chapters 7-14 for Tilbury and ES Volume IV Chapters 15-22 for Gravesend. Any deviation from the methodology presented in Chapter 4 is explained in each respective chapter.

4.2.3 The assessment methodology for the ES follows a systematic approach in order to identify the significant environmental effects of the Proposed Development. The staged approach for the ES assessment methodology is shown in **Figure 4-1**.

Figure 4-1: Staged Approach for ES Assessment Methodology



Mitigation

4.2.4 A standard hierarchical approach to identifying mitigation requirements has been used:

- **Avoid or Prevent:** In the first instance, mitigation should seek to avoid or prevent the adverse effect at source, for example by locating the headhouse and CSES away from a sensitive receptor. Mitigation by design has played an important role in avoiding impacts as the design of the Proposed Development has evolved;
- **Reduce:** If the effect is unavoidable, mitigation measures should be implemented which seek to reduce the significance of the effect; and
- **Offset:** If the effect can neither be avoided nor reduced, mitigation should seek to offset the effect through the implementation of compensatory mitigation, for example offsite habitat creation to replace habitat losses.

4.2.5 The mitigation measures described in the ES fall into two categories, as follows:

- **Mitigation by design:** This is where the design of the Proposed Development is developed through an iterative process which involves seeking to avoid or reduce potential environmental effects through appropriate routeing, siting and design specifications. This is also often referred to as mitigation by design; and
- **Mitigation specific to the Proposed Development:** This refers to additional measures which have been identified as being necessary following an initial assessment, to help ensure any potential effects are minimised further wherever possible.

5 Consultation

- 5.1.1 As part of the environmental assessment process varying types of stakeholder engagement has been undertaken. This has included engagement with statutory bodies as well as consultation with the members of the public.
- 5.1.2 A website was launched in October 2023 and can be accessed via the link below. This website includes detailed information about the Proposed Development including an interactive map, online public information exhibitions and contact information. The website can be found at:
<https://www.nationalgrid.com/electricity-transmission/network-and-infrastructure/infrastructure-projects/grain-to-tilbury>
- 5.1.3 A separate Statement of Community Involvement Report is included as part of the planning applications, which further explains how the public were engaged during the development of the Proposed Development. Further information on the consultation undertaken is also present within ES Volume II Chapter 5: Consultation.

5.2 Early engagement on the Proposed Development

- 5.2.1 In 2022, National Grid assessed a selection of options for the upgrade of the circuits within the existing cable tunnel under the River Thames. The following three options were identified:
- the installation of new cables within the existing tunnel;
 - the installation of new cables within the new tunnel; and
 - the installation of a new overhead line across the River Thames.
- 5.2.2 On balance, it was considered that the installation of new cables within a new tunnel was the most viable preferable option overall. Feedback from the following stakeholders was sought to inform this decision:
- Thurrock Council;
 - Gravesham Borough Council;
 - Natural England;
 - Historic England;
 - Environment Agency;
 - Port of Tilbury;
 - Port of London Authority; and
 - Royal Society for the Protection of Birds (RSPB).

5.3 EIA Scoping

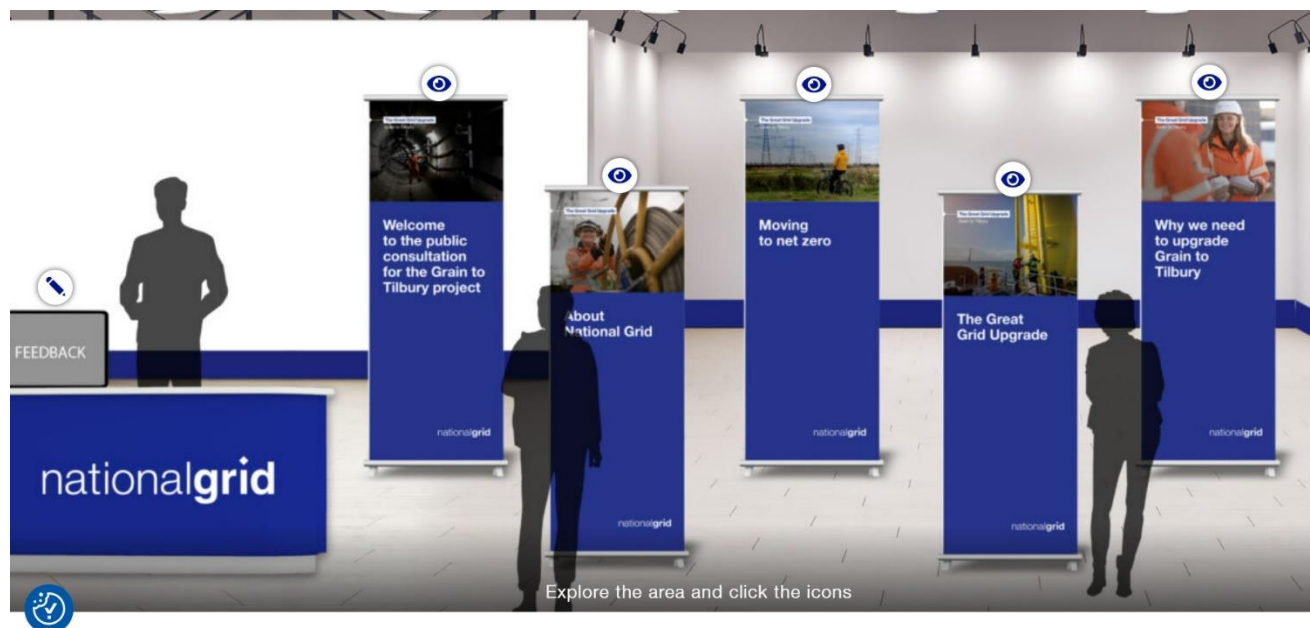
- 5.3.1 A formal EIA Scoping Report was not submitted to Thurrock Council or Gravesham Borough Council. However, consultation was held on specific elements of the scope of the ES with relevant consultees to ensure the Environmental Statement is robust and proportionate.
- 5.3.2 Technical specialists also consulted with relevant statutory consultees, regulatory bodies and specialist advisors throughout the production of the Environmental Statement as part of the baseline data gathering and assessment process.

5.4 Public consultation

- 5.4.1 Two in-person public exhibition events and two webinars were held to introduce the proposals to residents in Gravesend and Tilbury and provide the local communities and key stakeholders with the opportunity to speak to the Proposed Development design team. To ensure the wider community

was aware of the consultation, a detailed press release was issued to several local media publications.

Figure 5-1: Virtual Exhibition at nationalgrid.com



In person Events

- 5.4.2 A public consultation event for the Gravesend site was held on 11 October 2023, and a public event for the Tilbury site was held on 13 October 2023. These events provided an opportunity for the team to share the proposals for submission with residents and invite the public to meet the team and have their questions answered. These events were supported by a consultation website which could be viewed at any time online. The website was made publicly available from 27 September 2023, feedback was then accepted until 11:59pm on 29 October 2023.
- 5.4.3 These events were advertised extensively via a newsletter which was sent to over 11,000 households and businesses in the local areas surrounding the two proposed sites. The events were also advertised on the dedicated Proposed Development website, and through social media advertisements.
- 5.4.4 National Grid held a four-week public consultation which included in person and online events that ran from the 27th September 2023 to the 29th October 2023. The purpose of the consultation was to inform members of the public, the local community, and other interested stakeholders on the details of the Proposed Development and also allows an opportunity for people to provide feedback relating to the Proposed Development so that useful insights can be integrated into the evolving design in advance of planning submission.

Webinar Events

- 5.4.5 Two webinar events were also held to provide people with an opportunity to engage with the proposals and ask questions to the Proposed Development design team virtually. The first webinar was held on 18th October 2023 to present the Gravesend proposals. 12 people registered for this event. The second webinar was held on 19th October 2023 to present the Tilbury proposals. Nine people registered for this event.

Feedback Form and Feedback Received

- 5.4.6 A feedback form allowing residents to share their views on the proposals was available at the in-person events and published online via the consultation website. Those without access to the internet were also able to request a paper copy of the feedback form to be sent to their home address.

- 5.4.7 The form asked five questions covering different aspects of the proposals with a mixture of question formats, including multiple-choice and open-ended questions. The feedback obtained from the forms is shown in the next chapter.
- 5.4.8 The following review includes all comments received up to the closure of the public consultation on 29 October 2023, including online, public exhibition and postal responses. A total of 24 visitors attended the two in-person exhibition events.
- 5.4.9 During the consultation period, a total of 16 feedback forms were received. In addition to this, the Proposed Development design team also received six emails from residents and local businesses. These emails ranged from providing feedback, as well as asking questions to the wider Proposed Development design team.
- 5.4.10 Overall, the feedback received was broadly positive, with the majority of respondents stating that they were in favour of the proposals. 66% of respondents strongly supported or supported the proposal to upgrade the existing cable tunnel. 56.5% of respondents strongly supported or supported the construction process plan, including the proposal to move spoil via barge on the Thames.
- 5.4.11 For more information, refer to the Statement of Community Involvement.

6 Biodiversity

6.1 Introduction

- 6.1.1 The biodiversity assessment looks at the effects of the Proposed Development on animal and plant species in the area. Survey work and desk-based research has helped to inform this assessment by establishing the baseline (or existing) environment, in particular any protected or valuable habitats, including designated sites and protected species that fall within the Site Boundary and the surrounding area.
- 6.1.2 The full biodiversity impact assessment can be found in ES Volume III Chapter 7: Biodiversity – Tilbury and ES Volume IV Chapter 15: Biodiversity – Gravesend.



6.2 Baseline Environment

- 6.2.1 A 10 km Study Area around the Proposed Development Boundary has been used to identify European and international statutory designated sites, and a 2 km Study Area has been used for the identification of local non-statutory conservation sites and for gathering third party records of habitats and protected and notable species.

Tilbury

- 6.2.2 At Tilbury, there are eight Statutory Designated Sites within the study area:

- Thames Estuary & Marshes Special Protection Area (SPA);
- Thames Estuary & Marshes Ramsar site;
- Mucking Flats & Marshes Site of Special Scientific Interest (SSSI);
- South Thames Estuary and Marshes SSSI;
- Swanscombe Marine Conservation Zone (MCZ);
- Swanscombe Peninsula SSSI;
- North Downs Woodlands Special Areas of Conservation (SAC); and
- Medway Estuary and Marshes SPA.

Designated Sites

- **Special Protection Area** - protected areas for birds in the UK
- **Special Areas of Conservation** - protected areas for habitat types and species most considered in need of conservation
- **Ramsar site** - a wetland site designated to be of international importance under the Ramsar Convention
- **Site of Special Scientific Interest** – an area of particular interest to science due to rare species of flora or fauna
- **Marine Conservation Zone** – areas that protect a range of nationally important, rare or threatened habitats and species

- 6.2.3 In addition, there are six non-statutory sites, designated for their local nature conservation value, within the 2 km study area. This includes Tilbury Power station Local Wildlife Site.
- 6.2.4 A preliminary ecological appraisal, which included a Phase 1 habitat survey of the land within the Site Boundary, was produced for both Tilbury and Gravesend in January 2023 (survey undertaken in November 2022). In addition to this, further surveys were undertaken for a variety of species to help further inform the baseline information and the assessment presented within the ES.
- 6.2.5 All widespread reptile species are known to occur at Tilbury. Ornithology surveys have recorded gadwall; little egret; avocet; whimbrel; black tailed godwit; dunlin; and redshank. There are no badgers setts within the Tilbury, but they are known to be active in the local area. No bats, great crested newts or otter/water vole were recorded at the Tilbury.
- 6.2.6 Invertebrate surveys at Tilbury undertaken in 2023 identified a total of 334 species of which 35 are regarded as 'key species'. This is higher than average and suggests that the Tilbury survey area is a very diverse site for invertebrates. However, these vary in importance between areas, with some

of very high importance (in particular the tall fescue dominated areas) and others of much lower importance.

Gravesend

6.2.7 At Gravesend, there are 6 Statutory Designated Sites within the study area:

- Thames Estuary & Marshes Ramsar site;
- South Thames Estuary and Marshes SSSI;
- Thames Estuary & Marshes Special Protection Area (SPA);
- Mucking Flats & Marshes Site of Special Scientific Interest (SSSI);
- North Downs Woodlands Special Areas of Conservation (SAC); and
- Medway Estuary and Marshes SPA.

6.2.8 In addition, there are 5 non-statutory sites, designated for their local nature conservation value, within the 2 km study area, one of which is within the Proposed Development site.

6.2.9 A preliminary ecological appraisal, which included a Phase 1 habitat survey of the land within the Site Boundary, was produced for both Tilbury and Gravesend in January 2023 (survey undertaken in November 2022). In addition to this, further surveys were undertaken for a variety of species to help further inform the baseline information and the assessment presented within the ES.

6.2.10 Slow worm, common lizard and grass snake are known to occur at Gravesend. Ornithology surveys have recorded Cetti's Warbler, Skylark, Song Thrush, Dunnock and Linnet. No bats, great crested newts, otter/water vole were recorded at Gravesend. Badger is also assumed to be currently absent.

6.2.11 Invertebrate surveys at Gravesend undertaken in 2023 identified a total of 307 species of which 27 are regarded as 'key species'. This is a higher than average and suggests that the Gravesend survey area is a diverse site for invertebrates. A total of 4 Rare Key Species were found.



6.2.12 Japanese knotweed is present to the north of Wharf Road adjoining the Site. It is listed under Schedule 9 of the Wildlife and Countryside Act (1981 as amended) making it an offence to plant or cause its spread in the wild.

6.3 Overview of Assessment

6.3.1 Potential impacts during the construction phase include:

- Habitat loss and or gain;
- Habitat degradation;
- Species mortality / death;
- Species disturbance/displacement;
- Fragmentation/connectivity of populations or habitats; and
- Introduction/spread of invasive species.

6.3.2 Potential impacts during the operational phase include:

- Habitat degradation/disturbance.

6.4 Mitigation

Construction

Tilbury

- 6.4.1 The Proposed Development design has evolved to consider sensitive ecological receptors, for example the Tilbury site has been located to minimise impacts on both the existing Tilbury Power Station Local Wildlife Site (LWS) and the proposed extension to the Mucking Flats and Marshes SSSI, through targeting the construction of the permanent development, and construction laydown to areas of existing hard-standing.
- 6.4.2 The design of the Proposed Development has also considered sensitive habitats, including grassland habitats that fall within the Tilbury Power Station LWS and proposed SSSI. This acted to minimise the loss of more valuable semi-natural habitats and in turn potential losses of reptile, invertebrate, bird nesting and foraging habitats. In addition, it acted to increase the distance between key noise generating activities associated with the tunnelling works and sensitive intertidal habitats utilised by wintering and passage birds, and thus reduce potential for disturbance of these bird populations during construction.
- 6.4.3 An Outline Construction Environmental Management Plan (CEMP) (provided in ES Volume VI - Appendix 3.1) summarises the types of mitigation measures that will be considered to mitigate against the effects of the Proposed Development.
- 6.4.4 It was identified that additional mitigation would be required to mitigate and compensate for potential impacts on terrestrial invertebrate populations, in particular the tall fescue planthopper. Tall fescue tussocks will be translocated (moved) from the affected areas between mid-July and end of August 2024. Once construction is complete, these tussocks and associated soil will be transferred to the area of hardstanding surrounding the proposed Tilbury SEC and utilised to provide enhancement of the habitats to be created in these areas.

Gravesend

- 6.4.5 The Proposed Development design at Gravesend has evolved to consider sensitive ecological receptors, for example the design of the Proposed Development at Gravesend has sought to minimise impacts on the Thames Estuary and Marshes SPA and Ramsar Site through siting the proposed new Gravesend Sealing End Compound (SEC) in close proximity to the existing SEC, while ensuring main works will avoid direct impacts on the SPA and Ramsar and minimise risk of disturbance impacts.
- 6.4.6 An Outline Construction Environmental Management Plan (CEMP) (provided in ES Volume VI - Appendix 3.1) summarises the types of mitigation measures that will be considered to mitigate against the effects of the Proposed Development.

Operation

- 6.4.7 The proposed lighting during operation will be managed to ensure it is avoided wherever possible, and where required sensitive design ensures that spillage into adjacent habitats is minimised.

Additional Mitigation

Tilbury

- 6.4.8 A number of additional mitigation and enhancement measures have been identified to reduce potential impacts. These include:
- Translocation of tussocks of tall fescue (the key foodplant of the tall fescue planthopper) from the areas impacted on the western margin of the proposed Tilbury SEC in order to reduce the level of direct mortality and maintain the availability of suitable habitat throughout the construction phase for this invertebrate.

- Undergoing negotiations for the use of spoil generated by the tunnel excavation for large scale habitat creation.

Gravesend

6.4.9 Requirements for additional mitigation is not required for the Gravesend site.

6.5 Residual Effects and Conclusions

Tilbury

Construction

- 6.5.1 There are no significant effects anticipated during the construction phase at Tilbury. Minor to negligible effects are expected as follows:
- A temporary minor beneficial effect (not significant) to grassland, scrub and reed mosaic habitats 1-2 years following construction due to creation of habitat.
 - Temporary negligible beneficial effect (not significant) at Site level, 1-2 years following construction on reptile assemblage utilising tilbury site and adjacent habitats.
 - Temporary adverse effects (minor adverse, not-significant) effect to the conservation status of tall fescue planthopper due to habitat loss, loss of individuals during site clearance / translocation.

Operation

- 6.5.2 There are no significant effects during the operational phase.

Gravesend

- 6.5.3 At the Gravesend site, there are no significant effects during the construction or operational phases.

7 Landscape and Visual

7.1 Introduction

- 7.1.1 The landscape assessment considers how the Proposed Development could affect the landscape through physical change and what impact this has on the existing character and setting. The visual assessment considers how the views of the landscape would be altered by the Proposed Development and the impact this could have on people.
- 7.1.2 The full landscape and visual impact assessment can be found in ES Volume III Chapter 8: Landscape and Visual – Tilbury and ES Volume IV Chapter 16: Landscape and Visual – Gravesend.



7.2 Baseline Environment

- 7.2.1 A Study Area of 1.5 km from the radius of the Site has been used for the landscape and visual assessment. Beyond this distance it is anticipated that the Proposed Development would be unlikely to give rise to significant landscape or visual effects.
- 7.2.2 Site visits were undertaken by qualified and experienced landscape architects in summer 2023 to assess the existing character of the landscape and to photograph representative viewpoints. A thorough review of desk-based sources including mapping, aerial photography, planning and policy documents, landscape character assessments and other sources of information was also undertaken to identify the existing landscape character.

7.3 Landscape Baseline

Tilbury

- 7.3.1 The site is not subject to any locally, nationally or internationally important landscape designations.
- 7.3.2 The Study Area falls within:
- Two National Character Areas;
 - One Marine Character Area; and
 - Four Local Landscape Character Areas.
- 7.3.3 Neither the Tilbury site or its respective study area are covered by any statutory landscape designations. The nearest Area of Outstanding National Beauty (AONB) is the Kent Downs located approximately 5km south of the Tilbury site.
- 7.3.4 Whilst there are no landscape designations, there are a number of ecological and cultural heritage designations within the study area and these can inform landscape value and are of importance in terms of visitor destinations and visual amenity for the area.

Landscape Designations

- **National Character Areas** – divide England in to 159 distinct natural areas, each defined by a unique combination of landscape, biodiversity, geodiversity, history and cultural and economic activity.
- **Local Landscape Character Area** – divide counties or boroughs in to units of countryside character
- **Marine Character Area** - highlight the key natural, cultural and perceptual influences that make the character of each seascape distinct and unique

Gravesend

- 7.3.5 The site is not subject to any locally, nationally or internationally important landscape designations.
- 7.3.6 The Study Area falls within:
- Two National Character Areas;
 - One Marine Character Area;
 - Two County Landscape Character Areas;

- Two Local Landscape Character Areas; and
- Four Urban Landscape Character Areas.

7.3.7 Neither the Gravesend site or its respective study area are covered by any statutory landscape designations. The nearest Area of Outstanding National Beauty (AONB) is the Kent Downs located 3.2km south of the Gravesend site.

7.3.8 Whilst there are no landscape designations, there are a number of ecological and cultural heritage designations within the study area and these can inform landscape value and are of importance in terms of visitor destinations and visual amenity for the area.

7.4 Visual Baseline

7.4.1 In order to identify locations with the potential to have views of the Proposed Development and understand to what extent it is likely to be visible, a number of 'Zones of Theoretical Visibility' have been produced.

7.4.2 The types of visual receptor and receptor groups within the study area who have the potential to experience views of the Proposed Development at Tilbury and Gravesend are listed below and grouped into the following categories:

- Views from residential developments;
- Views from recreational routes and places of interest;
- Views from roads and rail;
- Views from places of work; and
- Views for those engaged in outdoor sport or recreation.

7.5 Overview of Assessment

7.5.1 During construction of the Proposed Development, several elements and activities have the potential to temporarily impact landscape character and visual amenity within the Study Area. The potential for temporary impacts on landscape and visual receptors may arise from a number of construction activities including:

- The site preparation and construction works, especially:
 - Vegetation clearance;
 - Removal of top soil;
 - Areas for plant maintenance, site offices and compound areas;
 - Storage areas for construction and for excavated materials;
 - The construction of new access routes – temporary and permanent
 - The movement of construction workers and plant within the site;
 - The movement of materials and plant within the vicinity of the site;
 - Acoustic disturbance from construction activities; and
 - Lighting during preparation and construction – particularly noting the 24 hour tunnel construction upon the completion of shaft construction.
- Land uses within the operational Proposed Development in particular:
 - New Sealing End Compound including headhouse;
 - New access roads and utilities;
 - Removal, replacement and additional OHLs;
 - New drainage; and

- Lighting.

7.6 Mitigation

- 7.6.1 The Proposed Development's landscape design has been developed to reduce the visual impact of the Proposed Development and integrate it into the existing landscape context, while improving biodiversity through planting new habitat such as trees and scrub.
- 7.6.2 Embedded mitigation has been taken into consideration when assessing the landscape and visual impacts of the Proposed Development, including but not limited to:
- Proposed Development extents have been minimised as far as possible to reduce land take and allow greater retention of existing vegetation including scrub and other landscape features;
 - Incorporate new and additional planting such scrub, and landform elements including ditches and creeks to help tie the Proposed Scheme into the existing landscape character and provide localised screening.
 - Optimising zones within construction compounds to minimise their temporary impact on the landscape and views, including at night;
 - Returning and reinstating land used temporarily to its former condition and profiles, where appropriate;
 - Confining lighting on new and improved sections of the compound / road within the Proposed Development site to locations where safety is a priority to minimise the potential for light spill in night-time views;
 - Designing permanent structures, such as the sealing end compound and security fencing, in a way that minimises their visual impact and achieves good visual appearance. This may include selection of a muted colour palette that appears recessive within views;
 - Construction programme to be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas will be cleared for construction as close as possible to works commencing and top-soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete; and
 - Due to the openness of the site and surrounding marshland landscape, careful consideration has been given to landscape planting such that these are considered in keeping with the existing character of the open landscape.
- 7.6.3 The Outline Construction Environmental Management Plan (CEMP) (ES Volume VI Appendix 3.1) sets out additional mitigation measures identified by the assessment such as fencing working areas and retaining vegetation where possible.

7.7 Residual Effects and Conclusions

- 7.7.1 The Proposed Development will be adjacent to existing National Grid infrastructure. It is also situated within the wider industrial landscape of this area of the River Thames and the associated industrial sites at both Tilbury and the Gravesend.
- 7.7.2 Construction would be short-term, reversible and occur in an industrialised context. No landscape elements of value would be lost as a result of the construction, with effects being temporary and of minor adverse to negligible, which is not significant.
- 7.7.3 Construction of above ground infrastructure would result in a negligible change in views for the majority of potential viewers, including the most sensitive groups of residents in Tilbury/Gravesend. Recreational users of the long distance routes which run to the south of the site at Tilbury, and north of the site at Gravesend, will experience minor adverse change in views at Gravesend only, which is not significant. Construction plant and activity will be apparent within the context of more prominent industrial elements, within their wide, panoramic views across the Thames estuary.
- 7.7.4 Once operational the Proposed Development will result in a barely perceptible change in the views would be perceived as part of, and an extension to, this existing industrial landscape.

- 7.7.5 Once established, the network of drainage channels, marshland habitat improvements and scrub planting would provide increased landscape connectivity and habitat improvement to the local landscape character and visual amenity.
- 7.7.6 In summary, there would be no likely significant landscape or visual effects during either the construction or operational phases of the Proposed Development.

8 Historic Environment

8.1 Introduction

- 8.1.1 The historic environment assessment considers the potential effects of the Proposed Development on cultural heritage – namely archaeological remains, historic buildings and the historic landscape character.
- 8.1.2 The full historic environment impact assessment can be found in ES Volume III Chapter 9: Historic Environment – Tilbury and ES Volume IV Chapter 16: Historic Environment – Gravesend.



8.2 Baseline Environment

- 8.2.1 The known heritage assets within the Study Area were identified through comprehensive desk-based research, fieldwork surveys and consultation with stakeholders.

Listed Buildings and Scheduled Monuments

- 8.2.2 A building is listed when it is of special architectural or historic interest considered to be of national importance and therefore worth protecting.

Tilbury

- 8.2.3 At the Tilbury site, there are no World Heritage Sites, registered parks and gardens, registered battlefields or Conservation Areas located within the 1km study area.
- 8.2.4 There is a single scheduled monument asset, Tilbury Fort, which is located within the study area. The associated grade II* listed Officers' Barracks also lie within the fort, approximately 840m west of the Proposed Development.
- 8.2.5 There is ~~as single~~two non-designated heritage assets (Medieval Sea Wall and Tilbury Power Station) within the limits of the Proposed Development. A further ~~24~~34 non-designated heritage assets have been recorded within 1km of the Proposed Development.
- 8.2.6 The Proposed Development is situated within an area identified as coastal wetland; historic defensive elements are still part of this landscape and include the Tilbury Fort scheduled monument, the Proposed Development is also within a landscape area of industrial buildings that date to the latter half of the 20th century.

Listed Buildings and Scheduled Monuments

- Grade I buildings are of exceptional interest, only 2.5% of listed buildings are Grade I
- Grade II* buildings are particularly important buildings of more than special interest; 5.8% of listed buildings are Grade II*
- Grade II buildings are of special interest; 91.7% of all listed buildings are in this class and it is the most likely grade of listing for a home owner
- A scheduled monument is a heritage asset of national importance protected under legislation.

Gravesend

- 8.2.7 There are no World Heritage Sites, scheduled monuments, registered parks and gardens or registered battlefields located within 1km of the Proposed Development
- 8.2.8 Seven grade II listed buildings are located within the 1km study area.
- 8.2.9 A single non-designated archaeological asset, Milton Rifle Range has been recorded within the limits of the Proposed Development. A further 53 non-designated archaeological assets have been recorded within 1km of the Proposed Development.
- 8.2.10 The Proposed Development is located within the Kent Historic Landscape Character Area (KHLC) Reclaimed Marsh - Small Regular Enclosures.

8.3 Overview of Assessment

8.3.1 During construction of the Proposed Development, temporary impacts to the setting of heritage assets are likely to include:

- The presence and movement of construction plant, equipment and traffic, including change arising from noise and dust; and
- The presence of construction compounds as a result of noise or light intrusion.

8.3.2 Permanent construction impacts that would last beyond the construction phase may include:

- Physical impacts on known and previously unknown buried archaeological assets arising from construction activities, including earthworks;
- Physical impacts on landscapes of historical, cultural or archaeological significance as a consequence of construction, such as the loss of important elements of the landscape as a result of site clearance; and
- The disturbance, compaction or removal of previously unrecorded subsurface archaeological remains through construction activities.

8.3.3 Operational impacts that could result in changes to the settings of heritage assets are considered in relation to limited noise and visual intrusion associated with the above ground installations.

8.4 Mitigation

8.4.1 The design of the Proposed Development involved careful consideration to avoid direct physical impacts on heritage assets. Other embedded mitigation measures include:

- Construction and implementation of a biodiverse headhouse roof which will be used to limit the visual intrusion of the headway house structure; and
- Implementation and use of landscaping to the east of the Proposed Development which will provide some limited screening of the headhouse.

8.4.2 Additional mitigation measures have been identified to help mitigate potential impacts to heritage assets, including measures which are considered to be standard requirements of statutory stakeholders. The Outline Construction Environmental Management Plan (ES Volume VI Appendix 3.1) sets out the additional mitigation measures identified, which include such commitment as continued discussion and engagement with the Historic Environment officers at Essex and Kent County Councils, and what to do if archaeological finds or artefacts are found during the construction works.

8.5 Residual Effects and Conclusions

Tilbury

8.5.1 Construction of the Proposed Development has the potential to result in a temporary effects on the setting of the Tilbury Fort Scheduled Monument (NHLE 1021092) and the Tilbury Fort Officers Barracks (NHLE 1375568), however, these effects are not considered to be significant. The Tilbury Clock Tower War Memorial (NHLE 1471691) will not experience any effects as a consequence of the Proposed Development.

8.5.2 There is potential for adverse effects (which are not significant) on the surviving non-designated extant pillbox (MEX31812), [Tilbury Power Station](#) and any non-designated archaeological remains associated with the Medieval Sea Wall (MEX6629) in addition to previously unknown buried archaeological and paleoenvironmental remains within the Proposed Development. An appropriate programme of archaeological investigation, sampling and recording developed in consultation with the Historic Environment Officers at Essex County Council will help mitigate these effects.

8.5.3 Therefore, the Proposed Development would not give rise to any residual significant effects on the historic environment at Tilbury.

Gravesend

- 8.5.4 Construction and operation of the Proposed Development will not affect the setting of the seven grade II listed buildings.
- 8.5.5 There is potential for adverse effects on any surviving non-designated archaeological remains associated with the Milton Rifle Range (TQ 67 SE 1185) in addition to previously unknown buried archaeological and palaeoenvironmental remains within the Proposed Development, these are considered not to be significant. A programme of borehole surveys, followed by archaeological investigation and recording will take place prior to the construction.
- 8.5.6 It is therefore not anticipated that the Proposed Development would give rise to any residual significant effects on the historic environment.

9 Traffic and Transport

9.1 Introduction

- 9.1.1 The traffic and transport assessment considers how the Proposed Development could cause changes in traffic numbers and vehicle types on the local and the strategic road network. It also assesses how the construction of the Proposed Development could impact road users including pedestrians.
- 9.1.2 During the operational phase, traffic will be limited to periodic inspections and maintenance, similar to the frequency of visits the current infrastructure receive. On this basis, operational traffic was not considered in the assessment.
- 9.1.3 The full traffic and transport impact assessment can be found in ES Volume III Chapter 10: Traffic and Transport – Tilbury and ES Volume IV Chapter 18: Traffic and Transport – Gravesend.



9.2 Baseline Environment

- 9.2.1 The Study Area for the traffic and transport assessment includes the anticipated routes that would be used by construction vehicles associated with the Proposed Development.
- 9.2.2 Data sources used to establish the current traffic and transport baseline included automatic traffic count survey data, personal injury accident analysis data from the relevant highway authority as well as traffic flow data from the department for transport. The automatic traffic count surveys were undertaken to understand the existing levels of traffic using the local road network. Public Rights of Way were identified through online mapping data.

9.3 Overview of Assessment

- 9.3.1 The forecast increase in traffic levels (including heavy goods vehicles) on the surrounding highway network during the busiest construction phase (2026) has been assessed to determine whether it would have a significant impact on other road users, cyclists and pedestrians.

9.4 Mitigation

- 9.4.1 The Proposed Development will minimise construction impacts through the implementation of a Construction Traffic Management Plan (CTMP) and Construction Environmental Management Plan.
- 9.4.2 These documents detail mitigation measures that will reduce construction-related effects on traffic and transport. Outline versions are presented in ES Volume VI Appendix 10.1 and Appendix 3.1, and both documents will be updated and finalised in discussions with Thurrock Council and Gravesham Borough Council, and other relevant consultees, before the construction phase of the Proposed Development begins.

9.5 Residual effects and conclusions

- 9.5.1 The assessment of residual effects related to traffic and transport for both Tilbury and Gravesend is summarised below:
- Severance and pedestrian delay: minor – negligible (**not significant**);
 - Non-motorised user amenity: minor – negligible (**not significant**);
 - Fear and Intimidation: minor – negligible (**not significant**);
 - Driver Delay: minor – negligible (**not significant**); and
 - Road Safety: Hazardous / Large Loads: minor – negligible (**not-significant**).

Cumulative effects

- 9.5.2 The traffic and transport assessment has also assessed the potential for significant effects based on the Proposed Development and other proposed developments in the vicinity, that may be using the same construction traffic routes. These are known as 'cumulative effects'.
- 9.5.3 The other developments considered include such large infrastructure projects as Lower Thames Crossing (National Highways) and Thurrock Flexible Generation Plant (Thurrock Power).

Tilbury

- 9.5.4 Cumulative traffic increases have been identified for the A1089 (South) and the A1089/Station Approach junction. It is considered however, that the potential impacts and environmental risks relating to traffic and transport associated with the works can be effectively managed between the different developers through effective consultation and the application of accepted good practice and compliance.

Gravesend

- 9.5.5 Cumulative increases in traffic have been identified for the A226. It is considered however, that the potential impacts and environmental risks relating to traffic and transport associated with the works can be managed between the different developers through effective consultation and the application of accepted good practice and compliance.

10 Noise and Vibration

10.1 Introduction



- 10.1.1 The noise and vibration assessment considers how the construction and operational phases of the Proposed Development may change the influence the current levels of noise and vibration, and the impact of this on sensitive noise receptors, such as residents, hospitals, schools and care homes.
- 10.1.2 The full water environment impact assessment can be found in ES Volume III Chapter 11: Noise and Vibration – Tilbury and ES Volume IV Chapter 19: Noise and Vibration – Gravesend.

10.2 Baseline Environment

- 10.2.1 The Study Area includes sensitive noise receptors within 1km of the newly proposed headhouses and within 300m of the construction site boundaries. These distances have been selected based on previous experience that operational noise sources are likely to be negligible at distances greater than 1km and that construction noise predictions are generally reliable up 300m.
- 10.2.2 There are no identified Noise Important Areas and Noise Action Plan Priority Areas within the Study Area described above.
- 10.2.3 Baseline noise monitoring was undertaken at the Gravesend site from 18th April to 19th June 2023 and at the Tilbury site from 18th April to 14th June 2023. This monitoring established the levels of existing noise in the area, providing a baseline against which the construction and operational noise associated with the Proposed Development could be measured.
- 10.2.4 A selection of sensitive noise receptors were identified. The sensitive noise receptors considered are the nearest receptors to the Proposed Development (i.e. the receptors that will experience the highest levels of noise and vibration).
- 10.2.5 The nearest sensitive receptors to the Tilbury Site are non-residential office buildings (Tilbury Substation Offices and Tarmac Tilbury offices) on the wider industrial area. The nearest residential receptors to the Tilbury Site are those on Sandhurst Road, approximately 800m to the northwest of the Tilbury site.
- 10.2.6 The nearest sensitive receptors to the Gravesend Site are the National Maritime Training Centre (NMTC) and the Metropolitan Police Specialist Training Centre (MPSTC) (non-residential receptors) located directly to the west of the Gravesend Site at a minimum distance of approximately 50m. The nearest residential receptors are located near to Dalefield Way, to the south of the Gravesend Site at a distance of approximately 700m south-east.

10.3 Overview of Assessment

- 10.3.1 The noise and vibration assessment considers the following:
- Noise and vibration associated with construction works;
 - Road traffic associated with construction works; and
 - Noise associated with operational activities associated with the tunnel headhouses (ventilation fans at Tilbury only).

10.4 Mitigation

- 10.4.1 Embedded mitigation has been included as part of the Proposed Development design that will ensure that all reasonable steps are taken to minimise noise and vibration emissions from construction activities, these measures are provided in the Outline CEMP provided in ES Volume Vi Appendix 3.1. These include such measures as a set of generic best practice working methods referred to as Best Practicable Means, as well as closed board fencing to be installed around construction compounds, which can reduce noise by 10 decibels.

- 10.4.2 No additional mitigation measures are considered to be necessary following the conclusions of the assessment.

10.5 Residual Effects and Conclusions

Tilbury

- 10.5.1 Due to the distance between the Tilbury Site and sensitive receptors, no significant noise or vibration effects are expected during the construction or operational phases.

Gravesend

- 10.5.2 Due to the distance between the Gravesend Site and sensitive receptors, and baseline background noise levels in comparison to operational noise levels, no significant noise or vibration effects are expected during the construction or operational phases.

Air Quality

11.1 Introduction

- 11.1.1 The air quality assessment assesses how the construction of the Proposed Development may cause changes to the local air quality. This includes airborne pollutants such as dust, nitrogen dioxide and particulate matter.
- 11.1.2 The full air quality environment impact assessment can be found in ES Volume III Chapter 12: Air Quality – Tilbury and ES Volume IV Chapter 20: Air Quality – Gravesend.
- 11.1.3



11.2 Baseline Environment

- 11.2.1 A desk study was carried out to review the existing publicly available air quality information to inform baseline information on air quality. Data sources used include Local Authority monitoring reports, background concentrations and Air Quality Management Area (AQMA) boundaries provided by DEFRA's UK Air Information Resource as well as designated ecological sites provided by DEFRA's MAGIC maps.
- 11.2.2 The following Study Areas have been used where an assessment of dust emissions produced by construction activities is required:
- 11.2.3 A human receptor (sensitive for harm to human health and amenity) within:
- 250 m of the limits of construction activity within the site considered; or
 - 50 m from the construction route on the public highway, up to 500 m from the site entrance(s).
- 11.2.4 An ecological receptor within:
- 50 m of the limits of construction activity within the Site Boundary; or
 - 50 m of the construction route on the public highway, up to 500 m from the site entrance(s).

PM

Particulate Matter or PM are very small particles (10 micrometres (0.01 mm) or smaller) found in dust and smoke and are a common air pollutant.

Air Quality Management Area

Areas that are likely to exceed the national air quality objective for a specific pollutant. They are determined by Local Authorities.

Tilbury

- 11.2.5 There is currently one AQMA in Tilbury, AQMA 24, declared by Tilbury Council due to exceedances of the annual mean nitrogen dioxide (NO₂) air quality objective. The AQMA is located in an area which encompasses Calcutta Road, Dock Road and St Chads Road, in Tilbury.

Gravesend

- 11.2.6 In 2022, there were three AQMA's located in Gravesend, near the southern construction site. These AQMA's have been declared due to exceedances of the annual mean NO₂ or particulate matter (PM₁₀) air quality objective:
- Northfleet Industrial Area AQMA (Declared 2005 due to elevated PM₁₀)
 - Gravesham A226 One Way System AQMA (Declared 2005 due to elevated NO₂)
 - A227/B621 Wrotham Road/Old Road West Junction AQMA (Declared 2005 due to elevated NO₂).

11.3 Overview of Assessment

- 11.3.1 During the construction phase, air quality impacts to human health and ecological receptors may result from:
- Construction dust emissions;
 - Construction plant emissions;
 - Construction traffic emissions; and
 - Emissions from diesel-fired generators that may be required to meet the energy demand of the tunnel boring equipment.
- 11.3.2 Operational phase emissions are limited to intermittent maintenance activity and would have no significant effects on air quality.

11.4 Mitigation

- 11.4.1 Mitigation measures have been identified and adopted as part of the evolution of the Proposed Development design. For example:
- During the construction phase, the preferred option for powering the tunnel boring equipment will be connection to the existing electrical grid, if feasible. If this is not feasible, onsite diesel generators will be required to provide power to the tunnel boring equipment. Should this be the case, a stack with a suitable emission release height will be required so that it does not cause a significant effect for ecological receptors;
- An Outline Construction Traffic Management Plan (ES Volume VI Appendix 10.1) has been produced with the intention of mitigating traffic impacts on the local road network. Good traffic management will have a positive impact on vehicle emissions, by avoiding congested routes and congested periods of the day.
 - The spoil generated by the tunnelling works will be removed from the Tilbury construction site by barge, thus mitigating the impact of construction traffic movements on the local road network.
 - During the operational phase, no mitigation will be required due to the limited sources of emissions to the air.
- 11.4.2 Additional mitigation measures have been identified to reduce the effects associated with construction activity impacts. These include a range of best practice measures to reduce and minimise air quality emissions, such as the production of a Dust Management Plan which will include specific measures to control dust and other emissions and undertaking daily on-site and off-site inspections.

11.5 Residual Effects and Conclusions

- 11.5.1 The Proposed Development has the potential to impact on local air quality through construction phase dust emissions, construction phase traffic emissions and construction phase generator plant emissions. These impacts have the potential to impact on amenity, human health and nature conservation receptors close to the site, and human health sensitive receptors adjacent to the road network on the construction traffic route. In the absence of the mitigation, there is potential for increased emissions from construction to result in likely significant effects on local air quality. However, it is considered that the proposed mitigation measures to be incorporated into design and construction will reduce effects such that they are unlikely to be significant.

12 Water Environment

12.1 Introduction

- 12.1.1 The water environment assessment considers the effects of the Proposed Development on surface water quality, hydromorphology, groundwater and flood risk.
- 12.1.2 The full water environment impact assessment can be found in ES Volume III Chapter 13: Water Environment – Tilbury and ES Volume IV Chapter 21: Water Environment – Gravesend.



12.2 Baseline Environment

- 12.2.1 The general Study Area for the Water Environment assessment is 1km from the Proposed Development, the study area is used to identify all water features that may be affected by the Proposed Development and is extended to 2km for any surface water, groundwater bodies or water dependent ecological sites that are considered to be hydraulically linked.
- 12.2.2 Data sources used to establish the baseline environment included Ordnance Survey Maps, Land Use Mapping, British Geological Survey and Soils mapping, Environment Agency mapping and abstraction data, and Local Authority flood risk assessments. Site walkovers of the Study Area were also carried out which focused on surface water features in the study area.

Tilbury

- 12.2.3 The South Essex Thurrock Chalk Water Body underlies the Tilbury Site.
- 12.2.4 The Thames Estuary is located approximately 350m south of the Proposed Development. It is considered a Main River and the only Water Framework Directive (WFD) designated surface water body within the site boundary and study area. The Proposed Development is surrounded by a number of ditches.
- 12.2.5 The Tilbury Site is located within Flood Zone 3. The Environment Agency Flood Risk from Surface Water map indicates a medium to high risk from surface water flooding.

Gravesend

- 12.2.6 The Thames Estuary is situated approximately 170m north of the Proposed Development. There are a number of water features within the study area, including drains, ditches and ponds but are not designated as WFD water bodies in their own right. This includes the Thames and Medway Canal which is a disused canal situated south of Wharf Road and approximately 80m south of the Proposed Headhouse Location.
- 12.2.7 There are a series of ditches that are part of Eastcourt Marshes which are recognised as Main River which bound the east and south of the Gravesend Site.

Hydromorphology

The physical characteristics of the shape, boundaries and content of a water body.

Main Rivers

Statutory watercourse, typically larger streams or rivers but can also include smaller watercourses of strategic drainage importance.

Ordinary Watercourse

Every river, stream, ditch, drain, cut, dyke, sluice, sewer (other than a public sewer) and passage through which water flows and which does not form part of a Main River.

Water Framework Directive

The overarching aim of the Water Framework Directive is to protect and enhance watercourses.

Flood Zones

Zones based on annual probability of river and sea flooding:

Flood Zone 1 – low probability of flooding (annual <0.1% chance of flooding from rivers or sea).

Flood Zone 2 - medium probability of flooding (annual 1%-0.1% chance of flooding from rivers and 0.5%-0.1% chance of flooding from the sea).

Flood Zone 3 - high probability of flooding (annual ≥1% chance of flooding from rivers or ≥0.5% chance of flooding from the sea).

- 12.2.8 The Environment Agency Flood Map shows that the Gravesend Site is located within Flood Zone 3. The majority of the Gravesend Site is in an area where there is a reduction in risk of flooding from rivers and the sea due to flood defences present along the banks of the Thames estuary and therefore the fluvial and tidal flooding from the Thames Estuary is said to have a very low risk to low risk of flooding.

12.3 Overview of Assessment

- 12.3.1 The construction and operation of the Proposed Development may cause the following impacts to the water environment:
- Mobilisation of fine sediment affecting water quality through runoff or scour;
 - Impacts to hydromorphology of watercourses;
 - Release of oils and / or other chemicals affecting water quality including ground water; and
 - Increase in flood risk.

12.4 Mitigation

- 12.4.1 The Proposed Development has been designed, as far as possible, to avoid and minimise impacts and effects on the water environment through the process of design development, and by embedding measures into the design of the Proposed Development.
- 12.4.2 The Outline CEMP (ES Volume VI Appendix 3.1) sets out the mitigation measures identified in the assessment. Guidance of Pollution Prevention has been used to inform the measures set out in the Outline CEMP. The measures will ensure management of construction site runoff and sediment, management of spillage risk, management of flood risk during construction and management of groundwater activities.

12.5 Residual Effects and Conclusions

- 12.5.1 With the incorporation of mitigation including the development of management plans and adherence to best practice, effects on the water environment due to the construction and operation of the Proposed Development are expected to be not significant.
- 12.5.2 The full water environment assessment can be found in ES Volume III Chapter 13 (Tilbury) and ES Volume IV Chapter 21 (Gravesend).

Water Framework Directive Assessment

- 12.5.3 A Water Framework Directive (WFD) Assessment was carried out to support the planning application for the Proposed Development. The WFD Assessment assesses whether the Proposed Development meets the requirements of the WFD, ensuring that new developments do not cause the deterioration or prevent the improvement of WFD waterbodies.
- 12.5.4 For this assessment, three water bodies were considered:
- South Essex Thurrock Chalk water body;
 - North Kent Medway Chalk water body; and
 - Thames Middle waterbody.
- 12.5.5 Construction activities such as spoil handling and storage and tunnel and shaft construction were identified during the screening process as potentially impacting the WFD water bodies. This would be through contamination from soils, sediments, oils, fuels, or other construction chemicals, or through mobilisation of contamination following disturbance of contaminated ground or groundwater. However, the mitigation measures within the CEMP, once implemented would ensure these potential impacts are effectively managed.

- 12.5.6 The Proposed Development is considered to be compliant with all WFD Objectives for these water bodies. The full WFD assessment can be found in ES Volume VI Appendix 13.1.

Flood Risk Assessment

- 12.5.7 A Flood Risk Assessment (Document Reference 30003364-BHK-XX-XX-RA-C-02002) was prepared for the Proposed Development. This assesses flood risk to and from the Proposed Development from groundwater, river (fluvial), surface water (pluvial), estuary/coastal (tidal), or from sewer sources.
- 12.5.8 The Flood Risk Assessment has concluded that it will be possible to effectively manage flood risk to and from the Proposed Development.

13 Materials and Waste

13.1 Introduction

- 13.1.1 This assessment presents the assessment of the likely significant effects of the Proposed Development on materials and waste. The assessment includes consideration of impacts to landfill capacity, national and regional availability of key construction materials and safeguarded waste sites.
- 13.1.2 The full materials and waste impact assessment can be found in ES Volume III Chapter 14: Materials and Waste – Tilbury and ES Volume IV Chapter 22: Materials and Waste – Gravesend.



13.2 Baseline Environment

- 13.2.1 The Study Area for construction waste generation, use of construction materials, impacts on safeguarded mineral and waste sites, presence of mineral safeguarding areas (MSA's) for context, and presence of historic landfills is considered to be the Site Boundary.
- 13.2.2 The expansive Study Area for non-hazardous waste management comprises the East of England and South East of England. For hazardous waste management, the Study Area is England. For the availability of key construction materials this is assessed on a national scale (United Kingdom or Great Britain, depending on where information is available).
- 13.2.3 The baseline from a material assets and waste perspective covers the availability of key construction materials, potential recycled content, landfill capacity and sites, and the presence of safeguarding areas and sites within the Study Area.

Tilbury Site

- 13.2.4 The Proposed Development lies within the boundary of ~~two~~^{one} historic landfill sites and two authorised landfills. There is one Permitted Waste Site on its boundary where the access road for transfer of excavated tunnel spoil (via HGV) will be put on a barge for transport offsite. There are no other permitted or application waste sites within the Proposed Development boundary~~other permitted waste sites or waste site applications in the vicinity (within 500m) of the Proposed Development.~~
- 13.2.5 There are no mineral safeguarding areas (MSAs) or safeguarded mineral or waste sites in the vicinity of the Proposed Development.

Gravesend Site

- 13.2.6 There are no historic or authorised landfill, permitted waste sites or waste site applications in the vicinity of the Proposed Development.
- 13.2.7 There are no safeguarded mineral or waste sites in the vicinity of the Proposed Development.
- 13.2.8 The Site Boundary passes through a Mineral Safeguarding Area (MSA) for sand and gravel. Additionally, there are two safeguarded waste sites and 12 local permitted and surrendered waste sites in close proximity to the DCO Site Boundary as well as nine local waste site permit applications.

13.3 Overview of Assessment

- 13.3.1 The materials and waste assessment considers:
- The types and quantities of materials which would be required to construct and operate the Proposed Development and the availability of these materials and their potential recycled content;
 - The types and quantities of waste produced to construct and operate the Proposed Development, and the planned recovery of this waste; and

- The cut and fill balance of the earthworks associated with constructing the Proposed Development.

13.3.2 The final details of the materials and waste associated with the Proposed Development is not yet fully established. Therefore, the assessment is based upon worst case early estimations, likely types of materials that will be used and wastes that are likely to be generated during the construction of the Proposed Development in order to adequately predict the likelihood of significant environmental effects.

13.3.3 During the construction phase, the potential impacts on materials and waste as a result of the Proposed Development are expected to be:

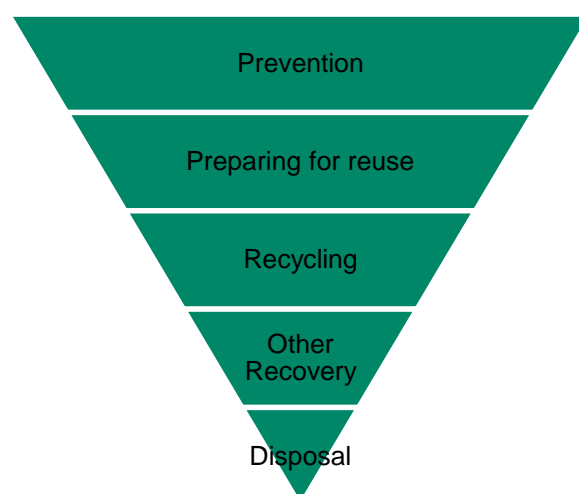
- Changes in landfill capacity; and
- Changes in demand for materials.

13.3.4 During operation, maintenance activities will be required. Waste arising from these maintenance activities during Proposed Development operation are expected to be negligible and less than construction. Materials and waste types will generally be the same to those generated by other National Grid sites; and wastes would be managed using established procedures and facilities. Therefore, significant effects are unlikely.

13.4 Mitigation

13.4.1 Embedded mitigation in relation to material assets and waste follows a hierarchy (see adjacent image) which prioritises waste prevention, followed by preparing for re-use, recycling and recovery, and lastly disposal to landfill. Other measures include design for materials optimisation, design for off-site construction to encourage a process of assembly and designing for the future to allow for materials to be more easily adapted over an asset's lifetime.

13.4.2 The additional mitigation measures which would be implemented in the construction phase include the production of a Site Waste Management Plan which would incorporate measures to ensure that waste produced or held on the Proposed Development's construction site is disposed of safely, efficiently and lawfully. Waste would be sorted and segregated into different waste streams (where feasible).



13.5 Residual Effects and Conclusions

13.5.1 The impacts on materials and waste receptors during the construction and operational phases of the Proposed Development have been assessed and their effects are deemed to be Not Significant.

14 Cumulative Effects

14.1 Introduction

14.1.1 The cumulative effects assessment considers both cumulative and combined effects as a result of the Proposed Development. These are described below:

- **Combined Effects** – these are where an individual environmental receptor or resource will likely be affected by more than one type of impact as a result of the construction / operation of the Proposed Development. For example, a residential receptor may experience air quality effects as well as noise and vibration effects and visual effects.
- **Cumulative Effects** – these are effects caused by the Proposed Development in-combination with other developments which are within close proximity and whose development phases may overlap.



14.2 Combined Effects

- 14.2.1 This assessment involves the identification of those receptors that have the potential to be affected by more than one of the identified residual effects as identified in the individual technical chapters within Environmental Statement. These receptors include residential properties and public rights of way.
- 14.2.2 Examples of the types of impacts that could be jointly experienced by the residential receptors and the users of public rights of way are activities relating to noise, air quality, visual and transport effects, during both construction and operation.
- 14.2.3 Following the incorporation of the embedded and additional mitigation, no significant combined effects are expected to occur.

14.3 Cumulative Effects

- 14.3.1 The assessment of cumulative effects follows a four-stage approach in accordance with the guidance detailed within Planning Inspectorate's Advice Note Seventeen: cumulative effects assessment. The stages to the Cumulative Effects Assessment are as follows:
- **Stage 1:** Establish and identify long list of 'other existing development and/or approved development' in the surrounding area;
 - **Stage 2:** Identify the shortlist of 'other existing development and/or approved development' for inclusion within the cumulative effects assessment;
 - **Stage 3:** Information gathering; and
 - **Stage 4:** Assessment of shortlisted 'other existing development and/or approved development'.
- 14.3.2 The potential for cumulative effects to arise, from one or several of the shortlisted developments in combination with the Proposed Development has been assessed. Each environmental topic reviewed other relevant schemes in the locality to establish the potential for any cumulative effects to occur. Where necessary, a narrative was provided to support the findings of each cumulative assessment undertaken for each technical topic and the details are provided within ES Volume V Chapter 23: Cumulative Effects.
- 14.3.3 Through consideration of the available information for each of the identified shortlisted developments, and of the effects associated with the Proposed Development, it has been concluded there is the potential for the following significant cumulative effects to occur:
- Temporary moderate adverse (i.e. significant) cumulative effects for Filborough Farmhouse and Granary at Little Filborough Farm from visual intrusion during construction of Lower Thames Crossing and the Proposed Development.

- Temporary adverse (significant) effect (for approximately 4 years) on the structure and function of the Canal and Grazing Marsh Higham Local Wildlife site at the District level, temporary adverse (significant) effect (for approximately 4 years) on conservation status of remnant grazing marsh habitats and a temporary adverse (significant) effect (for approximately 4 years) on conservation status of breeding and wintering bird populations utilising habitats at and adjacent to the Gravesend Site.
- Moderate adverse (i.e. significant) cumulative effect on Tilbury Fort during operation as a result of Thurrock Flexible Generation Plant and the Proposed Development due to an alteration of the setting of the asset.

14.3.4 Although the cumulative effects reported above are 'significant', it should be noted that this is driven by the moderate adverse (i.e. significant) effects assessed by the Lower Thames Crossing and Thurrock Flexible Generation Plant projects. The Proposed Development is an insignificant contributor.

14.3.5 It is considered that the cumulative effect identified in this cumulative effects assessment would be no worse than the effect presented in isolation in the other planning application assessments. The assessment for the Proposed Development presents minor adverse effects (i.e. not significant) for Filborough Farmhouse, Granary at Little Filborough Farm and they have been mitigated as far as appropriate and therefore there are no additional mitigation measures proposed beyond those recommended in the technical chapter.

14.3.6 The full cumulative effects assessment can be found in ES Volume V Chapter 23.

15 Summary

- 15.1.1 This section provides an overview of the conclusions of the EIA, including any Significant Residual Effects. These are effects which have been classed as being of an either Major or Moderate significance which remain after the consideration and adaptation of both embedded and additional mitigation measures.
- 15.1.2 The summary has been split between the three key phases of the Proposed Development, namely the construction phase, operational phase, and decommissioning. Where no significant effects have been identified, this is also stated.



Tilbury

Construction Phase

- **Biodiversity** – No significant adverse effects have been identified;
- **Landscape and Visual** - No significant adverse effects have been identified;
- **Historic Environment** - No significant adverse effects have been identified;
- **Traffic and Transport** - No significant adverse effects have been identified;
- **Noise and Vibration** - No significant adverse effects have been identified;
- **Air Quality** - No significant adverse effects have been identified;
- **Water Environment** - No significant adverse effects have been identified; and
- **Materials and Waste** - No significant adverse effects have been identified.

Operational Phase

- **Biodiversity** – No significant adverse effects have been identified
- **Landscape and Visual** - No significant adverse effects have been identified;
- **Historic Environment** - No significant adverse effects have been identified;
- **Traffic and Transport** - No significant adverse effects have been identified;
- **Noise and Vibration** - No significant adverse effects have been identified;
- **Air Quality** - No significant adverse effects have been identified;
- **Water Environment** - No significant adverse effects have been identified; and
- **Materials and Waste** - No significant adverse effects have been identified.

Gravesend

Construction Phase

- **Biodiversity** – No significant adverse effects have been identified;
- **Landscape and Visual** - No significant adverse effects have been identified;
- **Historic Environment** - No significant adverse effects have been identified;
- **Traffic and Transport** - No significant adverse effects have been identified;
- **Noise and Vibration** - No significant adverse effects have been identified;
- **Air Quality** - No significant adverse effects have been identified;

- **Water Environment** - No significant adverse effects have been identified; and
- **Materials and Waste** - No significant adverse effects have been identified.

Operational Phase

- **Biodiversity** – No significant adverse effects have been identified;
- **Landscape and Visual** - No significant adverse effects have been identified;
- **Historic Environment** - No significant adverse effects have been identified;
- **Traffic and Transport** - No significant adverse effects have been identified;
- **Noise and Vibration** - No significant adverse effects have been identified;
- **Air Quality** - No significant adverse effects have been identified;
- **Water Environment** - No significant adverse effects have been identified; and
- **Materials and Waste** - No significant adverse effects have been identified.

Cumulative Effects

- **Construction** - The cumulative effects assessment has identified that Filborough Farmhouse and Granary at Little Filborough Farm are likely to experience temporary moderate adverse (i.e. significant) cumulative effects from visual intrusion during the construction of the Lower Thames Crossing Project, and the Proposed Development. It should be noted that these cumulative effects are both driven by the moderate adverse (i.e. significant) effects reported in the Lower Thames Crossing environmental assessment. It is considered that the contribution from the Proposed Development in isolation would be no worse than the effect from the other planning application assessments combined - the Proposed Development is an insignificant contributor.
- **Construction** - There is also the likelihood of temporary adverse (significant) effect (for approximately 4 years) on the structure and function of the Canal and Grazing Marsh Higham Local Wildlife Site, temporary adverse (significant) effect (for approximately 4 years) on conservation status of remnant grazing marsh habitats and a temporary adverse (significant) effect (for approximately 4 years) on conservation status of breeding and wintering bird populations utilising habitats at and adjacent to the Gravesend Site as a result of overlapping construction phases of the Proposed Development and Lower Thames Crossing. It should be noted that all of these effects will be reversible following completion of construction and reinstatement.
- **Operation** - The assessment of cumulative effects determines that during operation there is likely to be a moderate adverse (significant) cumulative effect to Tilbury Fort (NHLE 1021092) as a result of Thurrock Flexible Generation Plant (ID N.2 - EN010092) and the Proposed Development due to an alteration of the setting of the asset. As per the significant effect identified above, it should be noted that the residual significant cumulative effect in this case is also driven by the moderate adverse effect detailed in the Thurrock flexible generation plant assessment and it is considered that the cumulative effect would be no worse than the effect presented in isolation in the Thurrock Flexible Generation Plant assessment. No significant adverse effects have been identified.

16 Next Steps



- 16.1.1 The results of this environmental assessment will be considered as part of the decision-making process to determine whether to grant permission for the Proposed Development and associated overhead line and pylon alterations that are included in the applications made to local councils and the Department of Energy Security and Net Zero.
- 16.1.2 In considering the planning applications, Thurrock Council and Gravesham Borough Council will consult with a range of organisations such as Natural England, the Environment Agency and Historic England, as well as inviting comments from the local community.
- 16.1.3 The responses to the planning application from all parties, including comments made in relation to results of this Environmental Statement, will be considered in determining the planning applications.
- 16.1.4 Should permission be granted, a Contractor(s) will be appointed and the detailed design of elements of the Proposed Development will be progressed. Where appropriate, the detailed design will be agreed with Thurrock Council and Gravesham Borough Council prior to construction works commencing.

National Grid Cable Tunnel Replacement Project

Environmental Statement Volume II Chapter 2 Alternatives

December 2023

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2 Alternatives

2.1 Introduction

- 2.1.1 In accordance with Regulation 18(3)(d) and Schedule 4 part 2 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (2017 Regulations) (Ref 2-1), this chapter will provide a description of the reasonable alternatives considered by National Grid which are relevant to the Proposed Development and its specific characteristics, and the main reasons for the option chosen, taking into account the effects of the Proposed Development on the environment.
- 2.1.2 This chapter sets out the need for the Proposed Development and describes how the project has been identified; firstly, in response to the need case and secondly, how the Proposed Development has evolved and the alternatives that have been considered taking account of National Grid statutory duties under the Electricity Act 1989.

2.2 Background

- 2.2.1 The Future Energy Scenarios (FES) (Ref 2-2) and Electricity Ten Year Statement (ETYS) 2020 (Ref 2-3) forecast a large amount of renewable and low carbon generation, including offshore wind and nuclear, together with three interconnectors from the continent connecting into the transmission system in the east coast of England. Through these forecasts, National Grid Electricity System Operator (ESO) has identified that the Tilbury to Grain and Tilbury to Kingsnorth 400 kilovolt (kV) circuits will be significantly overloaded in their current capacity.
- 2.2.2 The Network Options Assessment (NOA) is undertaken by the ESO each year. This comprises economic analysis to understand the balance between managing power flows across network boundaries by making constraint payments and the cost of asset-based reinforcement options proposed by the Transmission Owners (TOs). In the most recent NOA (2022) (Ref 2-4), the ESO has recommended investment in upgrading these 400 kV circuits giving the project a 'proceed' signal with an Earliest in Service Date (EISD) of 2028. This is reconfirmed in the NOA refresh published July 2022, incorporating the Holistic Network Design (HND) as a key input.
- 2.2.3 The 400 kV circuits are currently predominantly overhead line, with a cable section installed within a deep tunnel crossing the River Thames. As the Transmission Licence Holder with responsibility for the circuits, National Grid commenced assessing alternative approaches to refurbish or upgrade the existing tunnel section of the 400 kV circuits in 2021.

2.3 Need for the Proposed Development

- 2.3.1 National Grid owns and operates the national high-voltage electricity transmission system throughout England and Wales. The key role of the transmission system is to connect the electricity generators' power stations with the local distribution networks of the regional electricity companies. National Grid holds the Transmission Licence for England and Wales and is thus obligated to develop and maintain an efficient, co-ordinated and economical system of electricity transmission and to facilitate competition in the generation and supply of electricity, as set out in the Electricity Act 1989.
- 2.3.2 The Proposed Development is part of the Ofgem's new accelerated strategic transmission investment (ASTI) framework (Ref 2-5) (published December 2022). National Grid is responsible for delivering the extensive onshore transmission system enhancements that are required to achieve the government's 2030 power sector decarbonisation target.
- 2.3.3 National Grid's operations are dictated by the latest Future Energy Scenarios (FES) and Electricity Ten Year Statement (ETYS) reports. In recent years, these reports have begun forecasting a large amount of renewable and low carbon energy generation, connecting into the transmission network

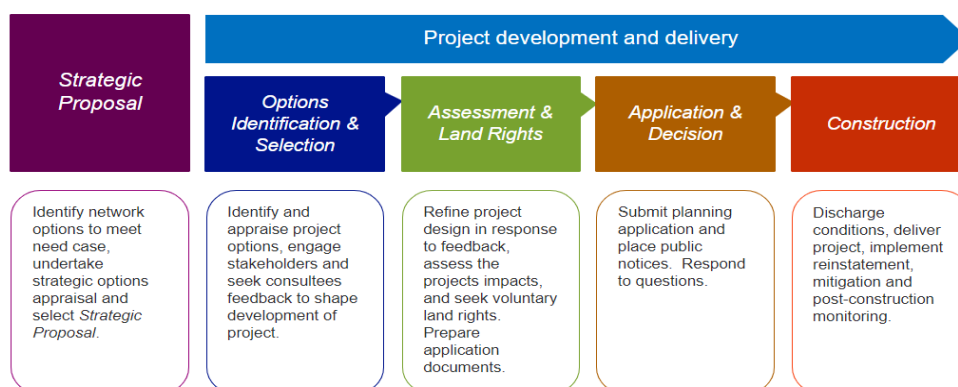
in the east coast of England, together with three interconnectors from the continent. Through these forecasts, National Grid Electricity System Operator (ESO) has identified that the Tilbury to Grain and Tilbury to Kingsnorth (TKRE) 400 kilovolt (kV) circuits will be significantly overloaded in their current capacity and require uprating. National Grid has named this wider project: 'Grain to Tilbury'.

- 2.3.4 Each year, the ESO undertakes an assessment of the options National Grid has available for meeting forecasted energy demands (the Network Options Assessment, NOA). This assessment comprises economic analysis to understand the balance between managing power flows across network boundaries. In the most recent NOA (2021/22), the ESO has recommended investment in upgrading the 400 kV circuits giving the project a 'proceed' signal with an Earliest in Service Date (EISD) of 2028. This was reconfirmed in the NOA refresh published July 2022.
- 2.3.5 The 400 kV circuits are currently predominantly overhead line, with a section installed within a deep tunnel beneath the River Thames. As the Transmission Licence Holder with responsibility for the circuits, National Grid are required to upgrade them.

2.4 Approach to developing the Proposed Development

- 2.4.1 As a transmission licence holder under the Electricity Act 1989 (1989 Act) (Ref 2-6), National Grid has a number of statutory duties which it must comply with when developing and maintaining its network. In accordance with Section 9(2) of the 1989 Act, the holder of a licence authorising the transmission of electricity must develop and maintain an efficient, coordinated and economical electricity transmission system and to facilitate competition in the supply and generation of electricity.
- 2.4.2 In terms of Schedule 9 of the 1989 Act, National Grid is required in formulating any 'relevant proposals' such as the Proposed Development, to (a) have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and (b) do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects.
- 2.4.3 Taking account of this, National Grid has considered the natural environment, cultural heritage, landscape and visual quality, and also includes the impact of its works on communities, such as the effects on traffic and transport from construction in developing the Proposed Development.
- 2.4.4 The statutory responsibilities outlined above underpin National Grid's approach to developing new infrastructure projects such as the Proposed Development. This is illustrated below in Plate 2-1. The first three stages (Strategic Proposal, Options Identification and Selection and Assessment and Land Rights) have informed the identification of the Proposed Development. At each of these stages, National Grid has considered a range of engineering, economic, environmental and social factors consistent with its statutory duties. In addition, consultation has been undertaken with stakeholders and members of the public at key stages providing the opportunity to feedback on alternatives and inform the identification of the Proposed Development.

Plate 2-1: National Grid's Approach to Project Development & Delivery



2.5 Strategic Proposal

Strategic Options Appraisal

- 2.5.1 In 2022, National Grid undertook a Strategic Options Appraisal to inform the selection of a preferred option for the upgrade of the 400kV circuits. The Strategic Options Appraisal Report documented the environmentally led process which identified and balanced technical, socio-economic, environmental and cost considerations to inform the selection of a preferred option for the upgrade of the 400kV circuits that cross the River Thames. The three options initially identified are described below.

Option 1: The installation of new cables within the existing tunnel

This option comprised the removal of the existing fluid filled cables (FFCs) within the existing tunnel and retrofitting of new cross-linked polyethylene (XLPE) cables. This option would also require civil repair work to the existing tunnel, although the full extent of this work was unknown. The existing mechanical ventilation system would require replacement. A new mechanical ventilation system would be required in a building of approximately 20m x 10m as shown on **Plate 2-2**. Mechanical and electrical services (M&E) at Tilbury would also be required with this option.



Source: Mott MacDonald, 2021

Plate 2-2: Option 1, new mechanical ventilation system in a building of approximately 20m x 10m

- 2.5.2 There were health and safety risks associated with Option 1 which would not meet with health and safety regulations or National Grid technical requirements. For example, the works would be within a confined space where the working area would be extremely limited. Additionally, the work would need to be undertaken adjacent to live equipment, as at least one 400kV circuit would need to remain live to maintain electricity supply.
- 2.5.3 During cable replacement, each circuit would need to be switched out for a full outage season with an Emergency Return to Service (ERTS) on commissioning. The maximum outage duration that could be facilitated for the refurbishment of the tunnel and shafts would be two, six-month outages, in 2026 and 2028 (noting system access would not be available in 2027). An uninterrupted 18-month outage per circuit would not be possible for the Kingsnorth-Tilbury and Grain-Tilbury circuits with consecutive outages required per year between 2029 and 2033 for the cable replacement. Given the minimum construction programme to replace a single circuit is 13 months, it was not considered

feasible to remove each existing circuit, supporting concrete and install new cables within the outages provided.

Summary of the Appraisal

- 2.5.4 Following the option appraisal, Option 1 was determined to have the least environmental impact and would be delivered through the consenting phase faster than the other two options. However, Option 1 posed significant health and safety risks which could not be eliminated by design or mitigation. It is thought that specialist control measures would be required to mitigate risk during construction and installation activities. Additionally, the construction programme associated with this option was deemed not to be viable due to the limited maximum outage durations.

Option 2: The installation of new cables within the new tunnel

- 2.5.5 This option comprised the boring of a new tunnel approximately 1.4km long (from shoreline to shoreline), parallel to the existing tunnel, and installations of new XLPE cables. Two cables per phase would be required. This option also included associated infrastructure including new shaft headhouses and mechanical and electrical services, cable sealing end compounds and modifications to the existing overhead lines. This option is what was taken forward as the preferred option and which forms the basis of the Proposed Development as described in Chapter 3: Project Description and assessed in the technical environmental assessments in Chapters 7 – 15 of this Environmental Statement (ES) and is shown on Plate 2-3 below.



Plate 2-3: Option 2, existing Tunnel (black dashed line) and two indicative corridors for new tunnel (red hatched areas).

Summary of the Appraisal

- 2.5.6 Option 2 posed a higher risk of potentially significant adverse environmental effects on the Historic Environment than Option 1. It was also determined that the construction work could be undertaken using Permitted Development rights if the headhouses were to be situated on National Grid's operational land, subject to EIA Screening. Should EIA be screened in, permitted development rights would be lost and an EIA required to support a planning application to the relevant Local Authority, which would result in a longer consenting programme.
- 2.5.7 The estimated number of two-way traffic movements required for this option during construction were greater than that estimated for Option 3 which as identified as having the potential to cause greater temporary environmental effects on air quality, noise and vibration and traffic and transport than Option 3 in the local area albeit noting that these would be temporary in nature, lasting the duration of the construction phase. It was also assessed that National Grid would explore alternative options to the transport network, specifically the use of river transport and the existing jetties which should reduce direct and indirect effects, along with sensitive routing of road traffic in liaison with stakeholders.
- 2.5.8 Option 2 was assessed to comply with health and safety, and with all National Grid technical requirements and standards. It would also not impact on the existing circuits for most of the construction phase, with only outages required during the permanent overhead line diversions. The cost and required construction programme of this Option would be greater than that for Option 1.

Option 3: The installation of a new overhead line across the River Thames.

- 2.5.9 As shown on Plate 2-4, this option comprised the construction of an approximately 2 km span length overhead line across the River Thames, to replace the cables within the existing tunnel. There is limited space for the anchor pylons and diversions to be able to achieve a straight line for tension / loading. The siting of the pylons is also constrained on the south bank of the river due to the Thames and Medway Canal running parallel. The pylons, their foundations and the conductor system would require a bespoke design as well as a complex and extended construction period. The required space to accommodate the anchor pylons in line with the crossing pylons is considerably larger than the other two options.
- 2.5.10 The crossing overhead line pylons would need to be approximately 245 m in height. This requirement is due to the approximately 130m sag at maximum operating temperature which needs to allow clearance of the frequent numbers of large shipping vessels which use this section of the River Thames. contextualises the height requirement of the pylons in comparison to the existing River Thames crossing pylons, suspension pylon standard height and the Eiffel Tower in Paris, France. Further design engineering work would have been required to confirm whether two crossing pylons either side of the River Thames would be necessary in order to carry the weight of conductors required.

Plate 2-4: Option 3, indicative locations of the crossings, anchor and stringing sites (Source: Mott MacDonald sketch 2022)

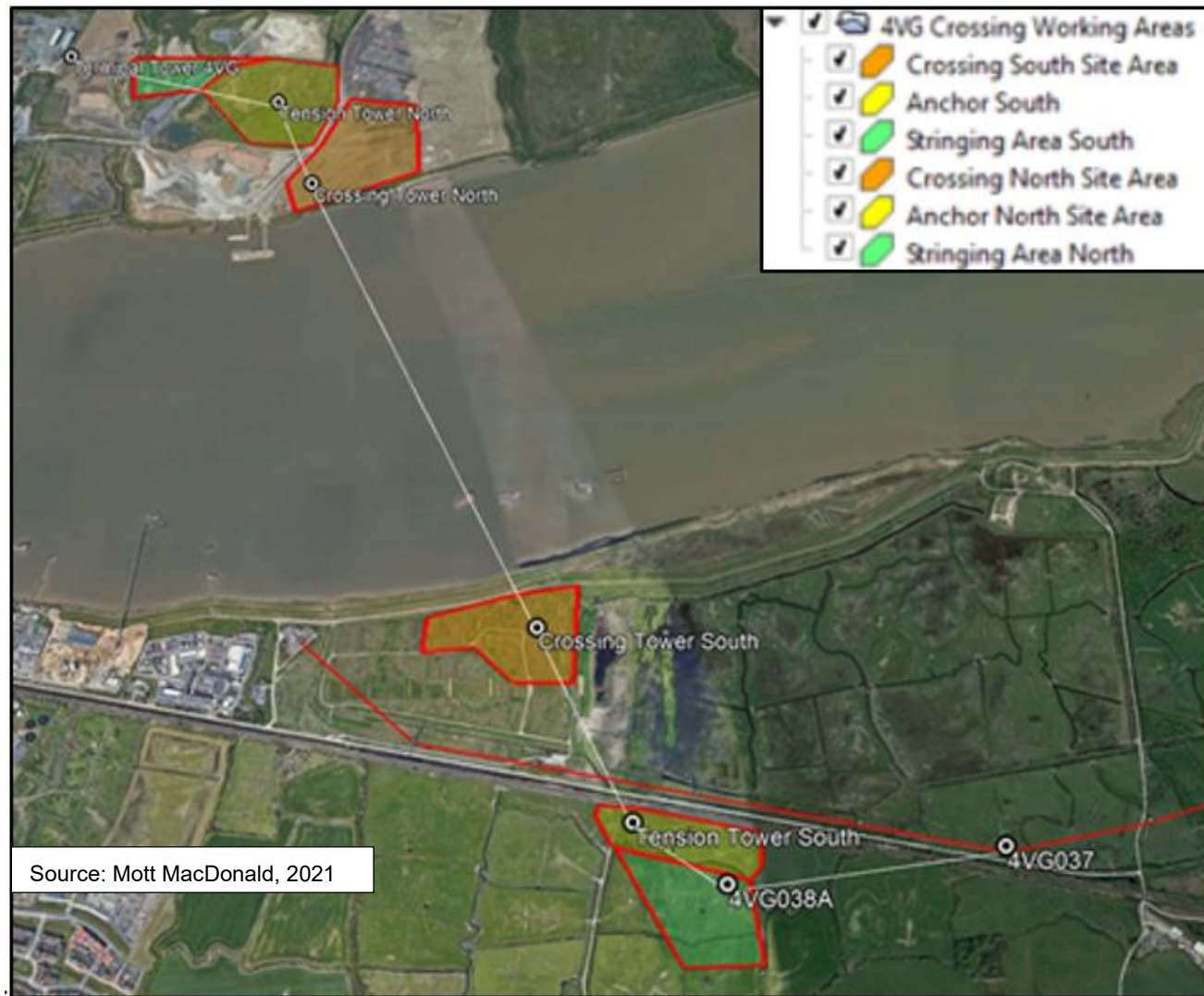
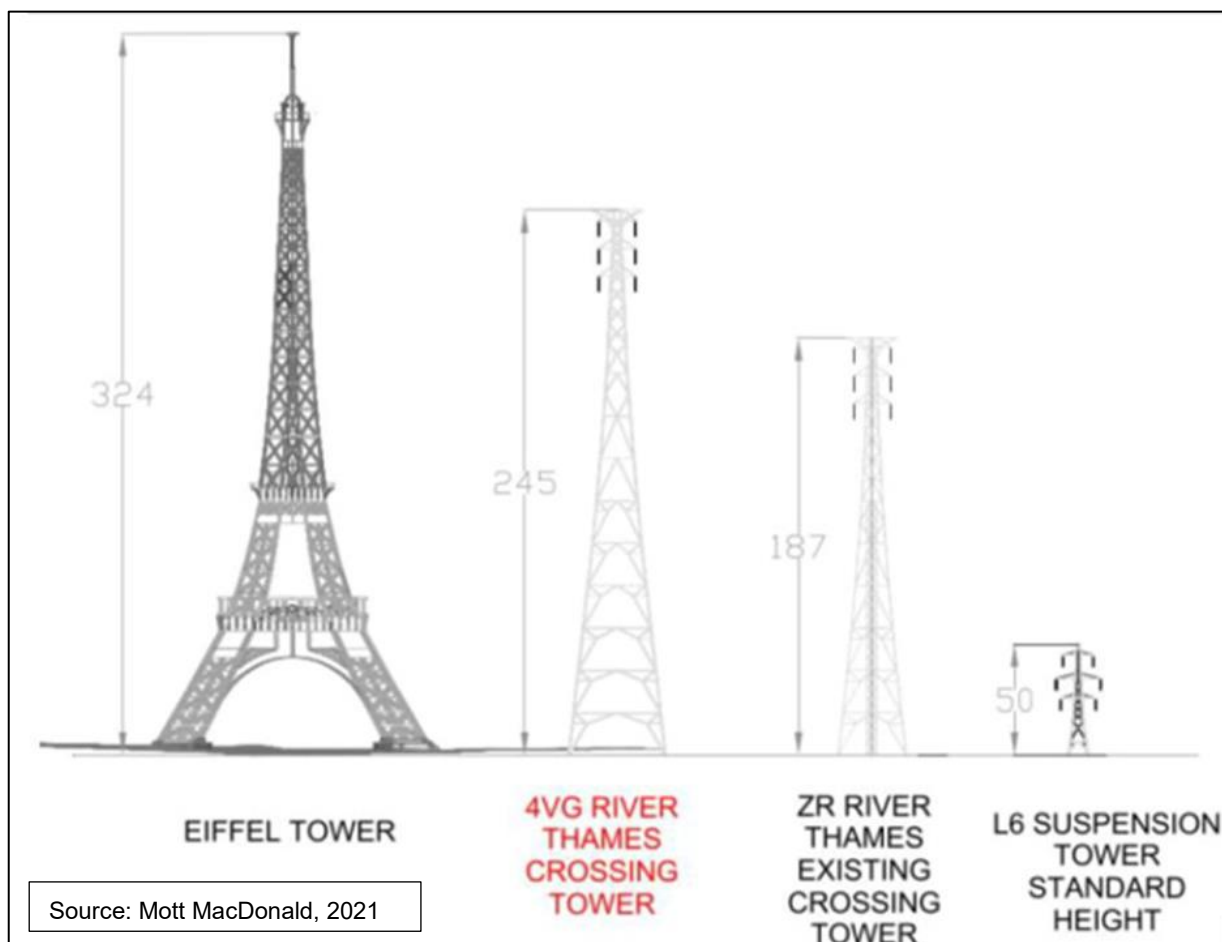


Plate 2-5: Option 3, likely required height of 4VG pylon



Summary of the Appraisal

- 2.5.11 Option 3 would have complied with health and safety, and with all National Grid technical requirements and standards. It would also have been cheaper and quicker than Option 2 to construct. The estimated number of two-way traffic movements required for this option during construction are fewer than that estimated for Option 2.
- 2.5.12 However, Option 3 would fall into the criteria of a Nationally Significant Infrastructure Project (NSIP) under section 16(3)(aa) of the Planning Act 2008 (Ref 2-7) and require a Development Consent Order (DCO) application. Therefore, the consenting programme would be considerably more extensive than Option 1 and 2.
- 2.5.13 It would also have been likely to receive substantial stakeholder challenge, particularly in regard to the size of 4VG pylons required (see 2.5.11) and there would have likely been long-term significant landscape and visual effects as a result of the required pylon height.
- 2.5.14 In addition to the above, the indicative proposed alignment of this option passes through sites of international and national importance for ornithological features. Ornithological species susceptible to collision risk are present within this project area and wider zone of influence, including qualifying species of the Thames Estuary and Marshes Special Protection Area / Ramsar. Given the highly migratory nature of many of the species present, significant numbers of species flying at risk heights could not be ruled out. The risk is said to be variable according to the species, but in the worst case could be significant, including for species listed as qualifying features for designated sites. There may also have been habitat loss of functionally linked land used by bird species listed as qualifying species of European designated sites.

Strategic Options Appraisal Recommendation

- 2.5.15 As Option 1 is not feasible due to the health and safety risks, the choice was limited to Option 2 or Option 3.
- 2.5.16 It was considered that the environmental impacts of Option 2 would be generally short term (during the construction phase only) with long term impacts being highly localised to the headhouse SEC locations. A differentiating factor between Option 2 and 3 is the estimated construction traffic two-way movements, which for Option 2 are greater than that of Option 3 due to the required tunnel spoil removal. It was recognised at the options stage that it may result in significant environmental effects on local air quality and noise albeit these would be temporary. National Grid were also keen to look at alternatives to removal spoil via the road network to mitigate these potential significant effects.
- 2.5.17 Given the location and scale of Option 3, it was considered that it would have greater significant and permanent environmental effects. Additionally, the indicative alignment of option 3 passed through sites of international and national importance for ornithological features, and species susceptible to collision risk with overhead lines would be present within the vicinity of Option 3, including qualifying species of the Thames Estuary and Marshes SPA / Ramsar site. There is also the potential for displacement of birds from the wider area surrounding this option.
- 2.5.18 On balance it was considered that Option 2, the installation of new cables within the new tunnel, would be considered preferable overall. While the costs for this option are greater in comparison to the Option 3, the risk of potential significant effects were fewer and temporary in nature.

Environmental Stakeholder Consultation

- 2.5.19 The Strategic Options Appraisal was shared with key environmental stakeholders, firstly to inform them of the proposals and seek their feedback on the options presented and emerging preference. The engagement and feedback received is summarised below.

Meeting with Environment Agency: 13th October 2022

- 2.5.20 The purpose of this meeting was to discuss the Proposed Development and the three options outlined above with the Environment Agency. The Strategic Options Appraisal report was shared in advance of the meeting. The conclusions outlined in the report as well as constraints associated with the relevant options were discussed. The following key constraints were noted by the Environment Agency:
- Flood zones 2 and 3 present on both sides of the river;
 - Flood defences present on both sides of the river, and National Grid should consider the 16m working distances during construction, where feasible, and residual risk in the preparation of any Flood Risk Assessment;
 - Existing and historic landfill sites on the north bank in east and consequent risks to water quality from mobilisation of sediment and contaminants; and
 - Wildlife habitat including nearby European designated sites.
- 2.5.21 The Environment Agency advised their Thames Estuary 2100 Plan¹ (currently undergoing revision) should be considered, especially with regards to depths of shafts and where the defences would be.
- 2.5.22 The Environment Agency did not have a clear preference on which option should be taken forward but agreed Option 3 would be the more difficult of the three to consent and implement.

Pre-application advice letter from Historic England: 8th November 2022

- 2.5.23 Historic England provided National Grid with a pre-application advice letter detailing their opinion on the three options outlined above.

¹ <https://www.gov.uk/government/collections/thames-estuary-2100-te2100>

- 2.5.24 They stated serious concerns with regards to the Option 3 (the installation of a new overhead line across the River Thames) and the likely impact of this option on a range of heritage receptors which would be significant.
- 2.5.25 Historic England confirmed that their preferred option at this early stage would be Option 2 (the preferred option).

Meeting with Royal Society for the Protection of Birds (RSPB): 25th November 2022

- 2.5.26 The RSPB stated that ground nesting birds will be a key consideration during construction phase along with other Schedule 1 birds such as marsh harriers and water voles. The RSPB also recommended Cliffe Pools as being suitable locations for exported spoil, stating that the RSPB are interested in using tunnel spoil from the Proposed Development to provide wildlife benefits at this location, should it be suitable.
- 2.5.27 During the meeting, details of relevant RSPB contacts were provided to allow continued and meaningful engagement.

Meeting with Royal Society for the Protection of Birds (RSPB): 1st December 2022

- 2.5.28 This meeting was held following the initial meeting on the 25 November 2022, attendees from the RSPB included the RSPB Area Manager for Kent and Sussex, and the RSPB Rural Surveyor. The meetings' purpose was to request formal opinions on the three options presented in the Strategic Options Report.
- 2.5.29 National Grid confirmed in the meeting that the tunnel works (driving from the north) will not be in the adjacent national/European designated sites and that the adjacent existing overhead line will require some alterations.
- 2.5.30 The RSPB explained the importance of the Shorne coast as a designated site for breeding Redshank, and that the area would benefit from improvements to the freshwater supplies. Likewise, the RSPB explained undergrounding of OHL would be a beneficial project for local biodiversity and encouraged National Grid to submit details on potential easements (as appropriate) as early as possible.
- 2.5.31 National Grid also clarified that any advice or recommendations on survey work from the RSPB would be welcomed.

Meeting with Natural England: 28th November 2022

- 2.5.32 This meeting was held with the lead advisor in the West Anglia Team (covering Essex), the senior advisor for Thames Estuary and project manager for the Site of Special Scientific Interest (SSSI) Notification Project from Natural England to discuss the Proposed Development and run through the options presented in the Strategic Options Appraisal.
- 2.5.33 Uncertainties surrounding the extent and location of land required for spoil storage were discussed alongside uncertainties of how the Proposed Development might interact with the Port of Tilbury Freeport proposals, it was however noted that an initial meeting had been held with Port of Tilbury to discuss this interaction.
- 2.5.34 Natural England enquired about the noise generated from the Tunnel Boring Machine which would be required for Option 2, and also stated that the scope of impacts must consider all functionally linked land to European sites. Natural England explained that the Tilbury area is in the second stage of Natural England's 'Thames Estuary Invertebrates Essex & Kent' SSSI notification project.
- 2.5.35 Natural England raised the presence of Goshem's Farm, an Ingrebourne Valley site which consists of ash deposits, has undergone 10 years of ecological monitoring and is particularly important for

invertebrates with species of national interest. There are also notable plant, and breeding bird species and ditches of importance to aquatic wildlife.

Letter received from Natural England: 25th April 2023

- 2.5.36 Natural England provided National Grid with a letter detailing their opinion on the three options outlined above.
- 2.5.37 Natural England agreed with the view that Option 1 would have least environmental impact, giving rise to no direct effects on nationally and internationally designated sites. However, Health and Safety considerations and the requirement for prolonged outages appear to render this option unfeasible.
- 2.5.38 In regard to Option 2, Natural England clarified that it will be necessary to undertake a Habitats Regulations Assessment screening and (if required) appropriate assessment. They also advised National Grid that the Tilbury area provides a node for nationally important wildlife interest and is within an 'area of interest' for possible notification as Site of Special Scientific Interest (SSSI) and consequently, great care should be taken to avoid areas of high sensitivity as a matter of best practise, consistent with these considerations, and noting National Grid's status as a public body with legal duties towards the conservation and enhancement of SSSIs.
- 2.5.39 In relation to Option 3, Natural England assessed that this option would involve a direct loss of habitat used by qualifying features within the Ramsar and SSSI and would also create the potential for displacement of birds from a wider area, both within the designated sites and on functionally linked land. They stated that these potential impacts, together with the bird collision risk presented by the overhead line/structures, represent a more significant ecological risk, with much less scope for mitigation, than that which is associated with Option 2.

Strategic Options Phase – Conclusion

- 2.5.40 The Environment Agency did not have a clear preference on which option should be taken forward but agreed Option 3 would be the more difficult of the three to consent and implement.
- 2.5.41 Historic England confirmed that their preferred option at this early stage would be Option 2.
- 2.5.42 Natural England agreed that Option 1 would have least environmental impact but acknowledged that this option is not feasible due to Health and Safety considerations. They stated that Option 3 represents a more significant ecological risk, with much less scope for mitigation, than that which is associated with Option 2 but that should Option 2 be taken forward, that great care should be taken to avoid areas of high sensitivity as a matter of best practise.
- 2.5.43 Following the feedback received from consultees, there is an acknowledgement that Option 1, although more favourable from an environmental perspective is not feasible due to health and safety considerations and therefore the justification for ruling this option out is understood. When considering Option 2 and 3 there is consensus that option 2 is preferential over Option 3.

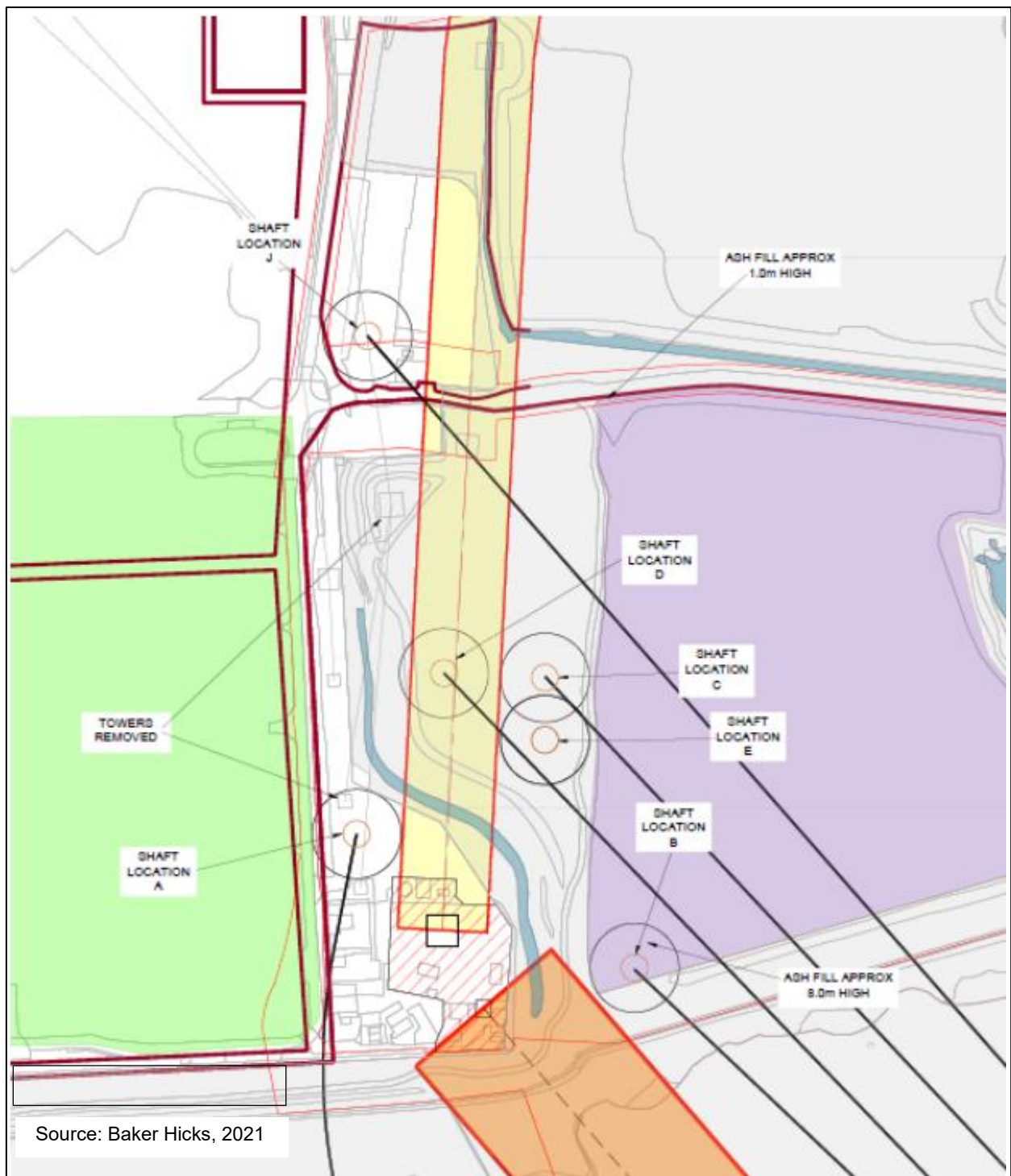
2.6 Siting Options - Identification and Selection

- 2.6.1 Following the decision to adopt Strategic Option 2 (a new tunnel), further options work was carried out to identify areas that are suitable for the temporary and permanent works required for the new bored tunnel (hereafter the Proposed Development) and associated infrastructure.
- 2.6.2 It was noted early that it would be preferable, from National Grid's perspective, to site the required infrastructure as close to the existing as possible, so to reduce the amount of construction work required to divert the overhead line i.e. new pylons.
- 2.6.3 Land adjacent to both existing sealing end compounds at Tilbury and Gravesend was deemed suitable for both the temporary and permanent works, however, it was recognised that environmental and engineering constraints were present on the surrounding land.
- 2.6.4 These constraints, such as current and former land use, access to major roads, existing landowner preferences, environmental status and topography have been used to inform the identification of suitable land. The former Tilbury Power Station foundations, in particular, would pose a significant risk to tunnelling and the integrity of the existing cable tunnel in service.
- 2.6.5 It was also recognised that the proposed Tilbury SEC and overhead line connection options would need to avoid and minimise the impact on Natural England's Thames Estuary Invertebrates Essex & Kent' SSSI notification project. , as highlighted by Natural England in consultation (see paragraph 2.5.34).

Tilbury Site Area

- 2.6.6 Initially, five preferred tunnel shaft locations were identified at Tilbury as shown in Plate 2-6 and described below.

Plate 2-6: Extract from Tilbury Constraints and Tunnel Route Plan



- **Shaft Location A** was positioned on hardstanding left over from the demolition of the Tilbury Power Station and immediately behind the existing SEC. Whilst a shaft and head house could be constructed in this location it is not possible to have the gantries positioned immediately adjacent to it. It was identified that tunnelling to this point would be constrained by the presence of deep foundations from both the former power station and the jetty/dolphin piles for the Port of Tilbury and was therefore dismissed as a viable option.
- **Shaft Location B** was positioned as close as possible to the River Thames in the Pulverised Fuel Ash (PFA). There is significant land changes in level in that area, which would require considerable removal of PFA to produce the required construction level and would require

reinstatement to the original levels at the end of construction. This location lies within the proposed SSSI.

- **Shaft Locations C & E** was positioned within a zone between the exclusion zone for the overhead cables and the PFA area. Some ash material would need to be removed to give sufficient working area. This location would require additional length of tunnelling over option B. This location lies within the proposed SSSI.
- **Shaft Location D** was positioned in the north west corner of the area but underneath the existing overhead lines. This option would require a line diversion to enable suitable plant and equipment to construct the shaft and subsequent headhouse and sealing end compound. This location lies within the proposed SSSI.
- **Shaft Location J** was the most northerly of the shaft locations and is midway between the existing sealing end compound and the main substation. The location does not lie within the proposed SSSI. This location would result in the longest tunnelling drive. The location is constrained by the existing overhead lines to the east, roads to the south and west and any movement north is constrained by the need for the sealing end compound and gantries to tie into the existing network.

2.6.7 As the Tilbury side was particularly constrained by its ecological potential and so a wider area of land was appraised. The areas of land available for the Proposed Development were divided in eight areas (T1 – T8) as shown in Plate 2-7. An exercise was undertaken to rank T1-T8 where the tunnel shaft and headhouse, and SEC could be most collectively located with least impact from an ecological perspective.

Plate 2-7: Sub-area locations for the Proposed Development at Tilbury



2.6.8 Table 2-1 below provides a summary of the high-level appraisal of sub areas T1-T8 for the location of the Tilbury site from an ecological perspective and ranks them in order of preference (with 1 being most preferable from an ecological perspective).

Table 2-1: Tilbury Site Sub-Area Ecological Ranking

Sub Area Ref.	Positive Ecological Factors	Negative Ecological Factors	Overall Rank 1-8 (1 being the most ecologically favourable)
T1	<ul style="list-style-type: none"> Habitats present are scrub / grassland / ruderal common of unmanaged ground, therefore can be recreated. Sufficient room to avoid impacts to ditches. While foreshore adjoining the site is potentially suitable for SPA/Ramsar species the site is well shielded by existing sea wall which will act to limit visual disturbance. 	<ul style="list-style-type: none"> Within non-statutory wildlife site. Within area Natural England are considering for SSSI designation. Range of likely potential species constraints including known populations of all 4 species of common reptile, water vole and habitat suitable for range of birds. In close proximity to areas of sensitive PFA and some potential for disturbance of these areas. Potentially extensive species translocation works (in particular reptiles) required prior to works. These activities are seasonally dependant and may impact project programme. 	6
T2	None.	<ul style="list-style-type: none"> Highly sensitive area of low nutrient habitat supporting diverse invertebrate assemblage. This area is within the proposed SSSI designation and will almost certainly be highest priority for inclusion. Any works in this area would lead to strong objection from Natural England and other local nature conservation stakeholders. Habitat is slow to develop and difficult to recreate therefore mitigation/compensation would be costly and complex. 	7
T3	<ul style="list-style-type: none"> No established habitat so negligible value for protected/notable species. Outside of the proposed SSSI designation. Good potential for ecological enhancement and achieving Biodiversity Net Gain (as low starting point). 	<ul style="list-style-type: none"> Area in closer proximity to SPA/Ramsar therefore increased risk of bird disturbance and need to repeat/update Habitats Regulations Assessment. 	3

Sub Area Ref.	Positive Ecological Factors	Negative Ecological Factors	Overall Rank 1-8 (1 being the most ecologically favourable)
	<ul style="list-style-type: none"> Likely less requirement for further surveys and mitigation thus reducing costs and reducing impacts to programme. 		
T4	<ul style="list-style-type: none"> Majority of site is hardstanding and of negligible ecological value. Likely less requirement for further surveys and mitigation thus reducing costs and reducing impacts to programme. 	<ul style="list-style-type: none"> Opportunities for achieving biodiversity net gain may be more limited due to space constraints. 	2
T5	<ul style="list-style-type: none"> Habitats present are scrub/grassland/ruderal common of unmanaged ground, therefore can be recreated. Further from the SPA/Ramsar therefore bird disturbance less of an issue. 	<ul style="list-style-type: none"> Within non-statutory wildlife site. Within area Natural England are considering for SSSI designation. Range of likely potential species constraints including known populations of all 4 species of common reptile, water vole and habitat suitable for range of birds. Potentially extensive species translocation works (in particular reptiles) required prior to works. These activities are seasonally dependent and may impact project programme. 	5
T6	<ul style="list-style-type: none"> Habitat yet to establish or in very early stages of establishment so limited value for protected/notable species. Outside of the proposed SSSI designation. Good potential for ecological enhancement and achieving Biodiversity Net Gain (as low starting point). Likely less requirement for further surveys and mitigation thus reducing costs and reducing impacts to programme. 	<ul style="list-style-type: none"> Access to the area may be difficult and may impact habitats to the south in order to allow construction access. 	4
T7	<ul style="list-style-type: none"> With exception of small areas of disturbed ground in the north consists of hard standing slab of negligible value for biodiversity. 	None	1
T8	<ul style="list-style-type: none"> Hardstanding but areas deemed too small to be viable for required works. 	None	N/A – Too small to be viable for works.

2.6.9 At the Tilbury site, the same consideration of sub-area options T1 to T8 was carried out from an engineering perspective, as shown in Table 2-2 below.

Table 2-2: Tilbury Site Sub-area Engineering Ranking

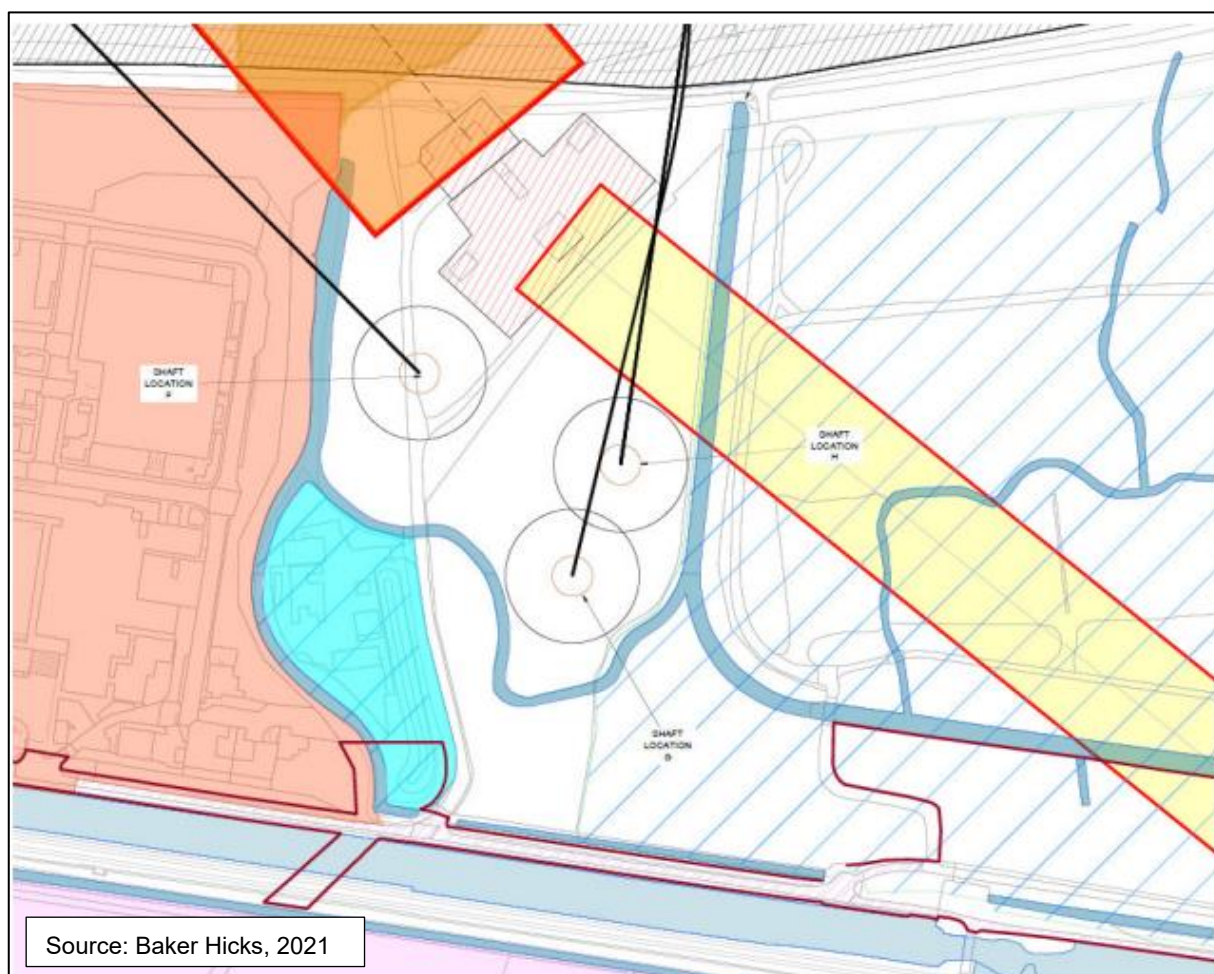
Sub Area Ref.	Positive Tunnel, Shaft, Headhouse and SEC Engineering Factors	Negative Tunnel, Shaft, Headhouse and SEC Engineering Factors	Overall Rank 1-8 (1 being the most favourable from an engineering perspective)
T1	<ul style="list-style-type: none"> Close to existing infrastructure, allows effective connection to the existing Overhead Line (OHL). Most new assets could be constructed outside of outages. Good compromise between tunnel length, alignment and vicinity to existing OHL asset for connection. Area clear of underground services / obstructions. Good existing access ways to the new construction site and temporary working areas. 	<ul style="list-style-type: none"> Some shaft locations within area would require additional outages and/or additional temporary pylons. PFA fill to an unknown depth 	1
T2	<ul style="list-style-type: none"> Short tunnelling route. 	<ul style="list-style-type: none"> Significant depth of PFA and would potentially require stabilisation prior to construction, plus significant cut and fill works over a large area. Shaft depths greater due to higher elevation 4 No Layout option of ground profile. Far from existing OHL asset, would likely require additional OHL pylons or extended length of cables for connection. 	4
T3	<ul style="list-style-type: none"> Shortest tunnelling route. 	<ul style="list-style-type: none"> Great distance from the existing infrastructure, would require additional OHL pylons and/or extensive length of underground cables for connection. Poor ground conditions (described as very soft deposits). Poor existing access to temporary working areas. 	6
T4	<ul style="list-style-type: none"> Potentially thinner band of PFA. Close to existing infrastructure, depending on final connection option no additional pylons would be required; allows viable connection to the existing OHL asset. 	<ul style="list-style-type: none"> Small site area for permanent assets like compound, headhouse and shaft. Increased tunnel drive / length compared to T1, T2 and T3. Small site area for temporary works / laydown areas. Requires diversion of existing road through the PoT site to facilitate construction access. Existing underground services on west part of site will require diversion to facilitate new assets. 	3
T5	<ul style="list-style-type: none"> Likely no additional pylons would be required; allows viable connection to the existing assets. 	<ul style="list-style-type: none"> Increased tunnel drive / length. PFA fill to an unknown depth. 	2

Sub Area Ref.	Positive Tunnel, Shaft, Headhouse and SEC Engineering Factors	Negative Tunnel, Shaft, Headhouse and SEC Engineering Factors	Overall Rank 1-8 (1 being the most favourable from an engineering perspective)
		<ul style="list-style-type: none"> Site relatively small and orientation difficult, but workable. 	
T6	<ul style="list-style-type: none"> Large size area so headhouse and sealing end compound could be placed comfortably. 	<ul style="list-style-type: none"> Longest tunnel drive / length. Would require temporary diversion of overhead lines. Recently placed materials are subject to long term consolidation leading to settlement of the ground surface. 	5
T7	<ul style="list-style-type: none"> Large flat working area for temporary construction works. Good existing access ways to the new construction site and temporary working areas. 	<ul style="list-style-type: none"> Deep foundations will cause construction difficulties for the shaft and SEC, particularly foundations for gantries and High Voltage (HV) equipment. Deep foundations will cause construction difficulties for tunnelling; likely extensive asbestos deposits in ground. Deep foundations likely to cause issues with long term durability of tunnel. Existing underground services throughout site will require identification / diversion to facilitate new buried assets. Tunnel route would pass to the west of the existing tunnel (likely crossing would be required) and under the jetty for Port of Tilbury with dolphin foundations - construction risk. 	7
T8	Hardstanding, close to existing SEC and good existing access routes towards area.	Area too small to be viable for required headhouse and SEC. Tunnel drive alignment would be within the protection / exclusion zone of the existing tunnel; no viable bend radius can be accommodated to avoid.	8

Gravesend Site Area

2.6.10 Plate 2-8 below shows the three identified shaft location options at Gravesend.

Plate 2-8: Extract from Gravesend Constraints and Tunnel Route Plan



- 2.6.11 The land immediately south of the existing SEC was identified as having the least constraints for the permanent location of the head house and sealing end compound. The land is within the ownership of National Grid and has no past land use that could technically constrain its development.
- 2.6.12 The major constraint in this location ,however, is the existing overhead lines passing into the existing sealing end compound.
- 2.6.13 The land to the east is an RSPB nature reserve and the Metropolitan Police Firing Range. The use of this land was not considered as environmentally favourable as the land to the south of the existing sealing end compound.
- 2.6.14 **Shaft Location F** to the west would be restricted to a tunnel passing to the west of the existing tunnel under the existing sealing end compound. It would also require access to the flood defences along the River Thames.
- 2.6.15 **Shaft Location G and H** are along a line on the boundary of the existing site positioned to allow sufficient working room with the constraint of the height restriction of the existing overhead lines. Tunnels from both these shafts would run to the east of the existing tunnel.

Tunnel Constraints

- 2.6.16 Due to the positioning of the land available it is considered that the proposed tunnel alignment will be to the east of the existing tunnel, ensuring it does not cross the boundary laid out by National Highway's Lower Thames Crossing project, whilst also considering the deep foundations of the former Tilbury Power Station that exist to the west of the existing tunnel on the Tilbury side.

Main Compound and Drive Site

- 2.6.17 An initial appraisal of the sites based on access, current land use and environmental constraints suggested that the main construction compound site and the tunnel boring drive shaft would be better suited at the Tilbury Site. It was recognised that the land at Gravesend is within a Local Wildlife Site and that vehicle access to the site is limited along the Thames and Medway Canal Road.
- 2.6.18 The access to Gravesend site is through Gravesend town centre and a narrow single carriageway road would present problems for the extended construction period of tunnelling. Whilst materials could be delivered and removed via a jetty on the River Thames, the personnel requirements arriving on a shift for a drive site would still present a significant number of vehicle movements. The widening of the carriageway is not possible due to the presence of the canal.
- 2.6.19 The area available at Tilbury is sufficient for the permanent and temporary works requirements. The desk study identification of the deposition of ash from the power station would lead to positioning the permanent works in an area where the land was not infilled, but this is constrained by the overhead line to the existing compound which can't be disrupted during construction.
- 2.6.20 It was determined that there would be sufficient land adjacent to the existing sealing end compound for it to be considered for either the drive or reception shaft for the tunnel boring.

Sealing End Compound and Overhead Line Connection Options

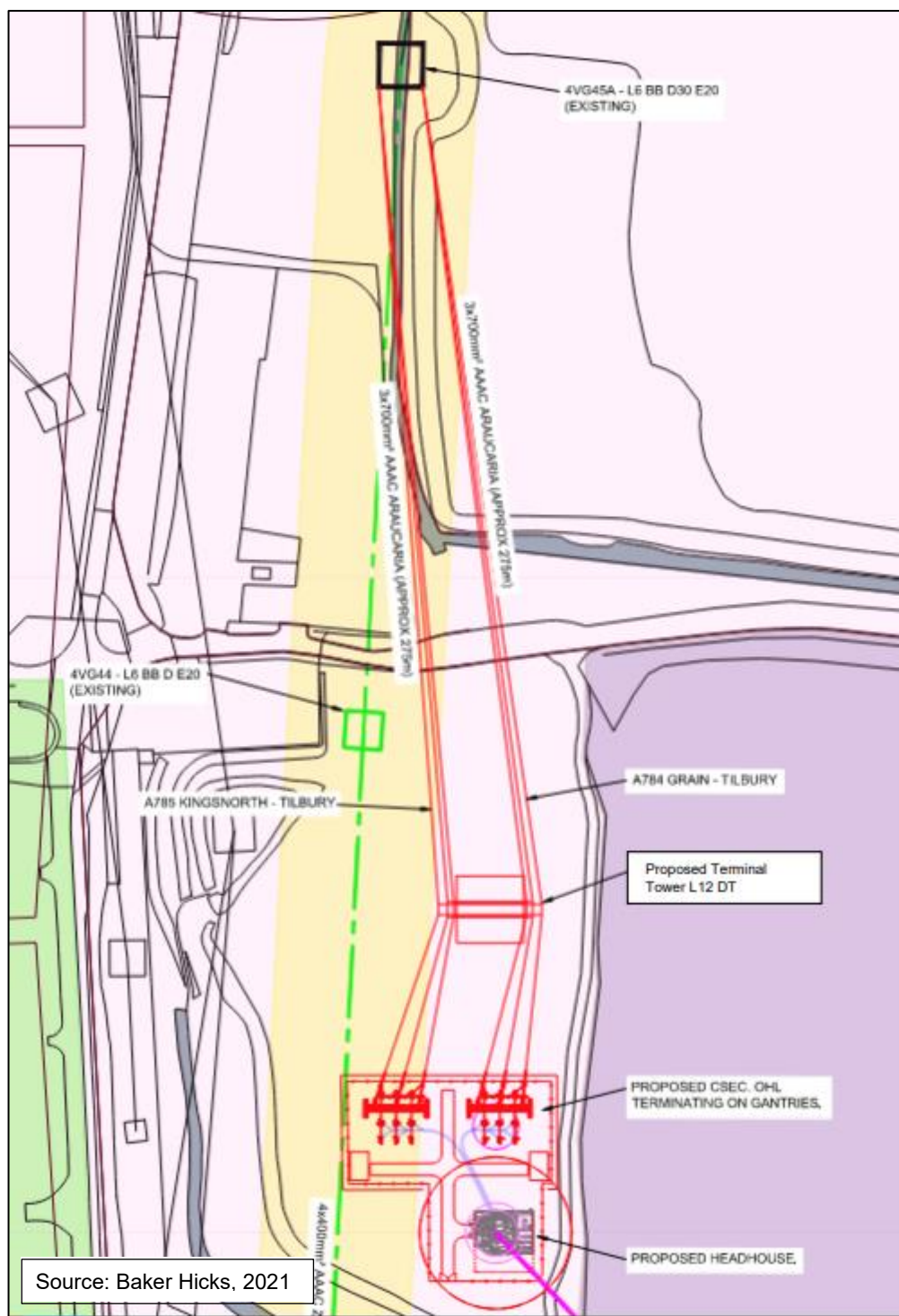
Tilbury

- 2.6.21 Following the appraisal of the sub-areas and the shaft locations, seven Sealing End Compound (SEC) and Overhead Line (OHL) connection options were assessed at Tilbury. Each option has briefly been described below and a comparison (see Table 2-3 below) has been made between the options.

Tilbury Option 1

- 2.6.22 This option is based on the Shaft Location E. A new terminal pylon would need to be constructed offline to terminate the circuits onto new proposed SEC.

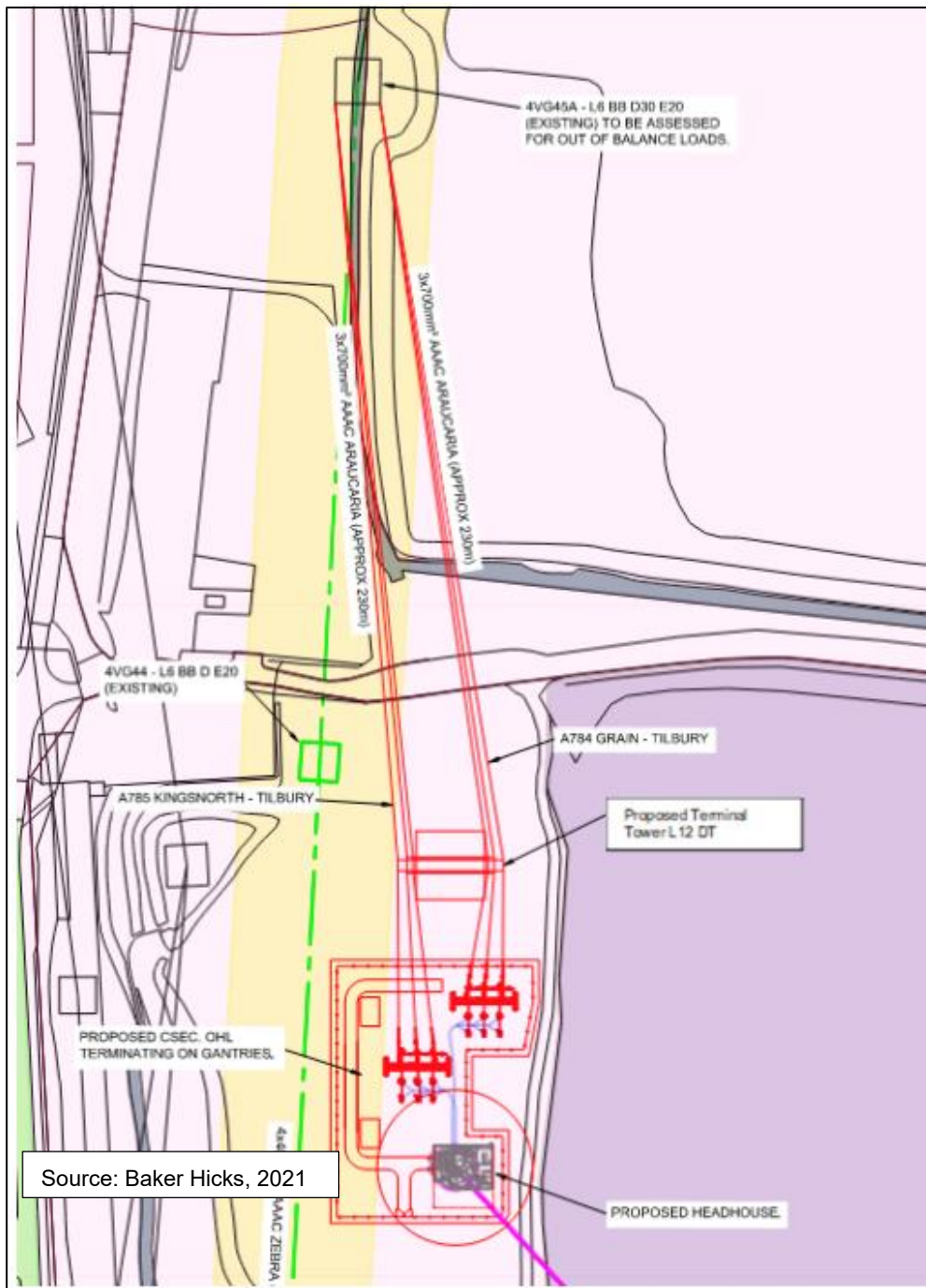
Plate 2-9: Tilbury Option 1



Tilbury Option 2

- 2.6.23 This option is based on the Shaft Location C. A new terminal pylon would need to be constructed offline to terminate the circuits onto the new proposed SEC. The SEC footprint is larger than option 1 due to staggered arrangement of circuit bays.

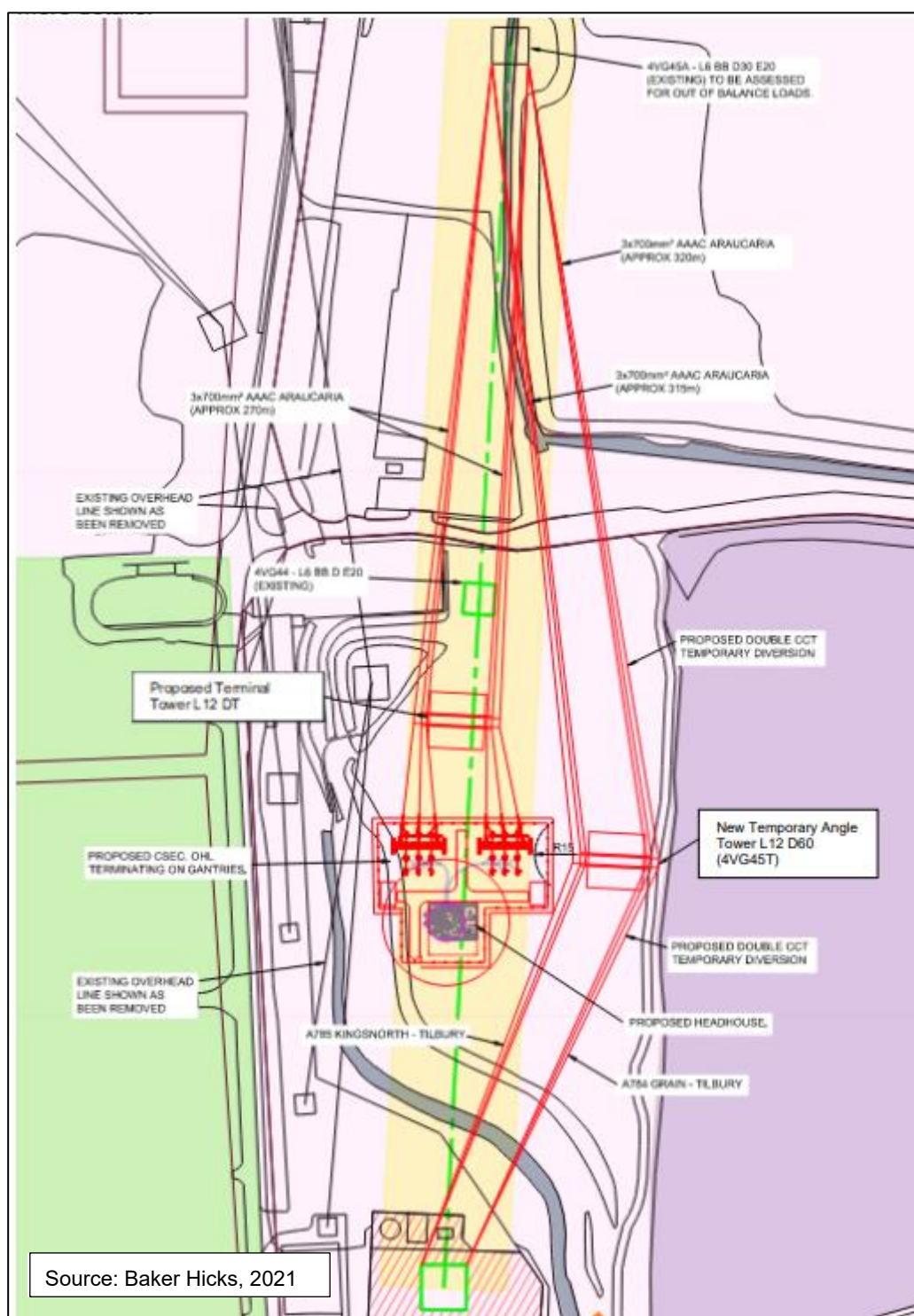
Plate 2-10: Tilbury Option 2



Tilbury Option 3

- 2.6.24 This option is based on the Shaft Location D. A new terminal pylon would need to be constructed inline to replace exiting pylon at 4VG44 and terminate the circuits onto new proposed SEC. To facilitate the construction of the new terminal pylon, SEC, head house and tunnelling work, a temporary diversion of both circuits will be required. Temporary diversion will be constructed between 4VG43 - 4VG45A via temporary pylon at 4VG45T.

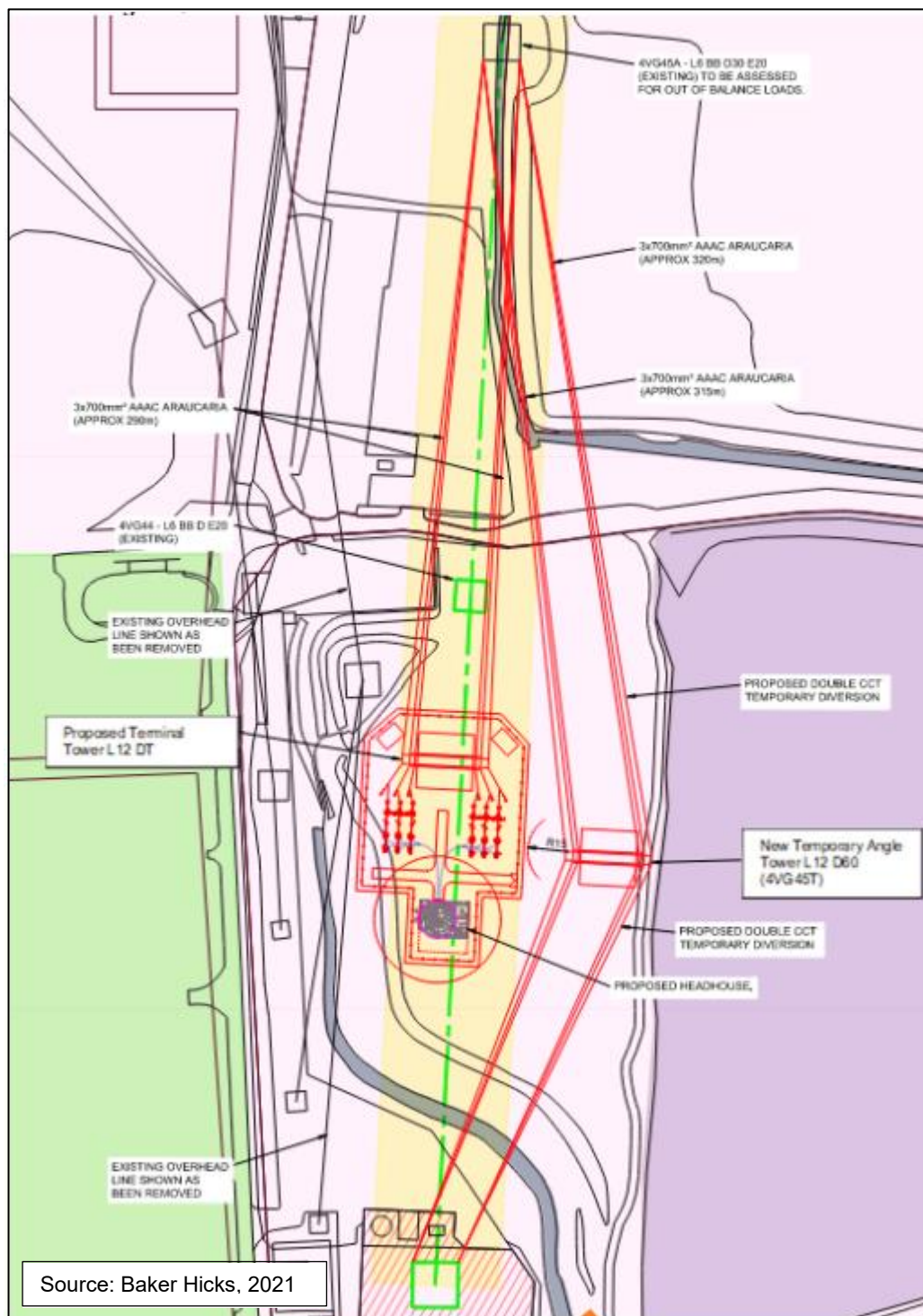
Plate 2-11: Tilbury Option 3



Tilbury Option 4

2.6.25 This option is based on the Shaft Location D. A new terminal pylon would need to be constructed inline to replace the existing pylon at 4VG44 and terminate the circuits onto new proposed SEC. To facilitate the construction of the new terminal pylon, SEC, head house and tunnelling work, a temporary diversion of both circuits will be required. Temporary diversion will be constructed between 4VG43 - 4VG45A via a temporary pylon at 4VG45T. Both circuits will be terminated on anchor blocks. As such, footprint of the SEC would be greater to accommodate the new terminal pylon and the anchor blocks.

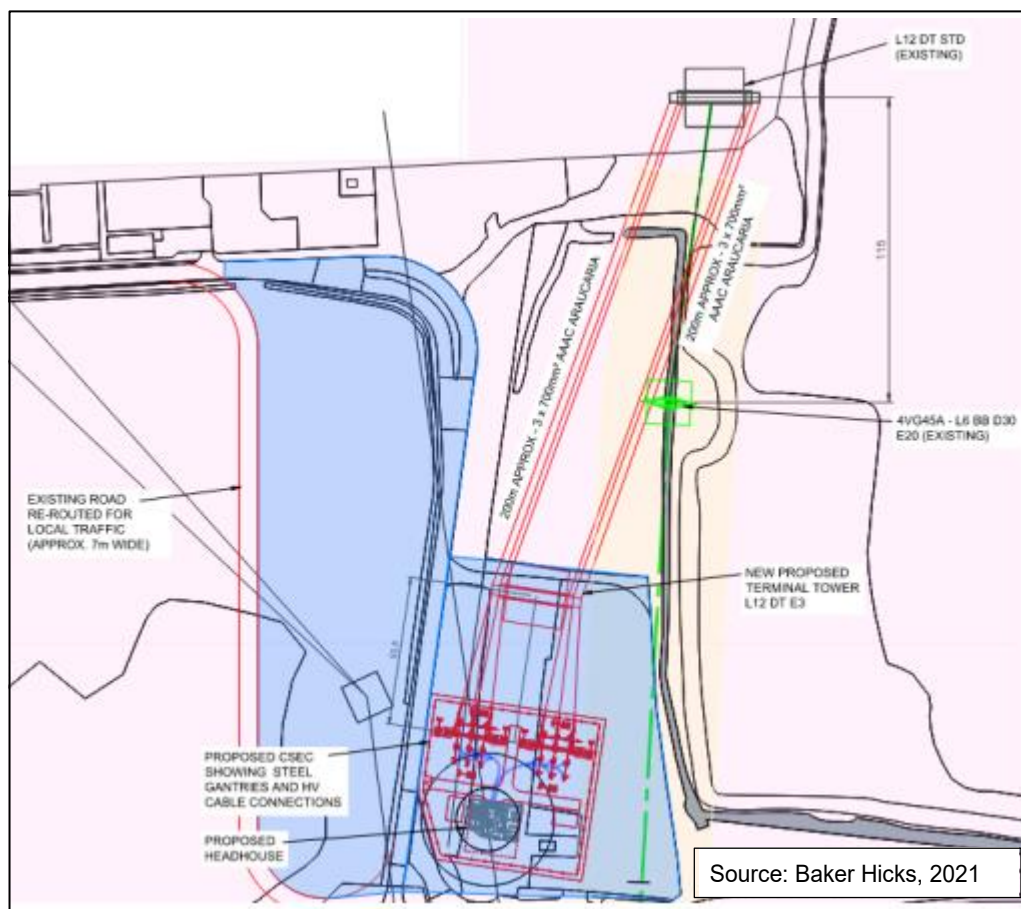
Plate 2-12: Tilbury Option 4



Tilbury Option 5

2.6.26 This option is based on the Shaft Location J. A new terminal pylon would be constructed offline to replace existing pylon at 4VG45A. Both circuit bays can be built offline.

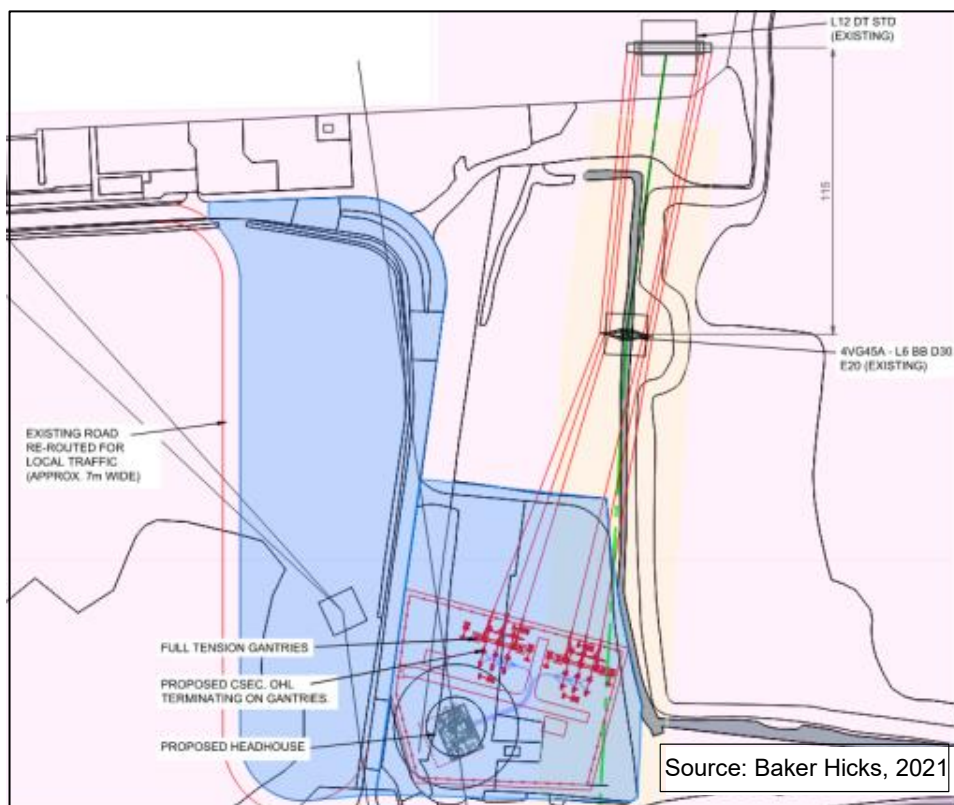
Plate 2-13: Tilbury Option 5



Tilbury Option 6

- 2.6.27 This option is based on the Shaft Location J. The existing pylon at 4VG45A would be used to terminate both circuits onto full tension gantries at new proposed SEC. Construction of Kingsnorth - Tilbury circuit bay was noted can be achieved offline.

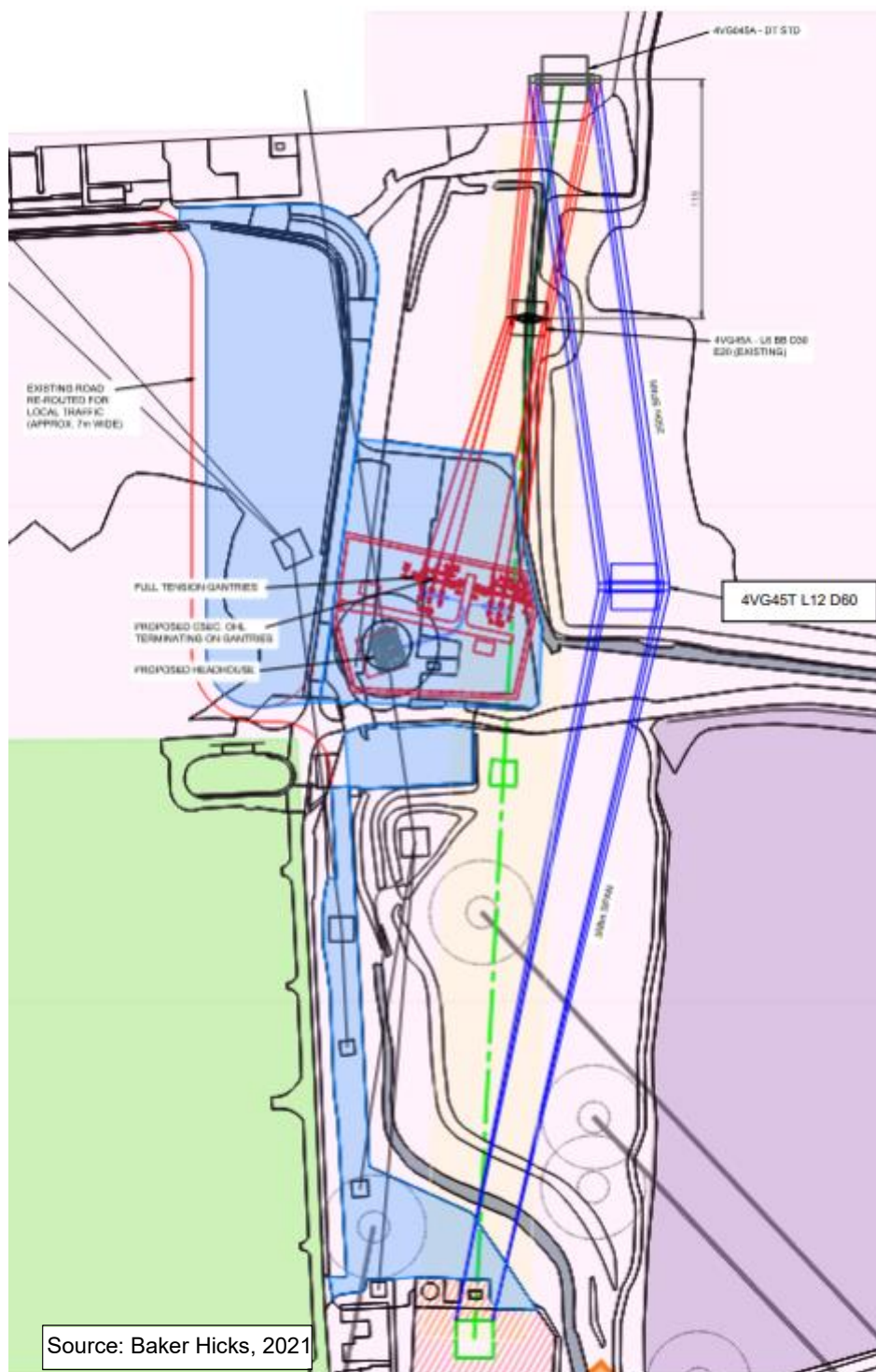
Plate 2-14: Tilbury Option 6



Tilbury Option 7

- 2.6.28 This option is based on the Shaft Location J. Existing pylon at 4VG45A would be used to terminate both circuits onto full tension gantries at new proposed SEC. To facilitate the construction of both circuit bays offline, a temporary diversion of both circuits will be required.

Plate 2-15: Tilbury Option 7



Tilbury Site OHL termination and SEC Location Option Comparison and Preferred option

2.6.29 Following the identification of the seven options for the Tilbury Overhead Line and SEC locations, a comparison was undertaken to determine the most suitable of the option that should be taken forward for further design consideration, the outcome is outlined in Table 2-3 below.

Table 2-3: Tilbury Siting Options Appraisal

Option	Positive outcomes	Negative outcomes	Selected for further design development
Option 1	<ul style="list-style-type: none"> Shorter tunnel length. New terminal pylon. Grain – Tilbury circuit bay at SEC can be constructed offline. Single circuit outage will be required to build the Kingsnorth. Tilbury circuit bay. 	<ul style="list-style-type: none"> Possibility of contaminated land (Ground Investigations (GI) to confirm). Proposed site area is within the potential SSSI site. 	No – proposed site area is within the potential SSSI site
Option 2	<ul style="list-style-type: none"> Shorter tunnel length. Offline construction of new terminal pylon and both circuit bays onto SEC. Non-standard layout of SEC. 	<ul style="list-style-type: none"> Possibility of contaminated land (GI to confirm). Proposed site area is within the potential SSSI site. 	No – proposed site area is within the potential SSSI site
Option 3	<ul style="list-style-type: none"> Offline construction of tunnelling work, SEC, terminal pylon. 	<ul style="list-style-type: none"> Longer tunnel length. Temporary diversion of both circuits. 	No – proposed site area is within the potential SSSI site
Option 4	<ul style="list-style-type: none"> Offline construction of tunnelling work, SEC, terminal pylon. 	<ul style="list-style-type: none"> Longer tunnel length Temporary diversion of both circuits. 	No – proposed site area is within the potential SSSI site.
Option 5	<ul style="list-style-type: none"> New terminal pylon, SEC and head house are outside potential SSSI area. Removing the existing pylon from potential SSSI area. All the construction work can be done offline. 	<ul style="list-style-type: none"> Diversion of existing road will be required to accommodate the laydown area. SEC is very close to existing road. SEC gate will be constructed inside to allow appropriate curvature of entrance road. 	Yes – Selected for further development.
Option 6	<ul style="list-style-type: none"> Re-utilisation of existing pylon at 4VG45A. Overall footprint of the new installation is much less comparing with other options. Kingsnorth bay can be installed offline. Single circuit outage may be required for Grain-Tilbury Bay construction. SEC is away from existing road. SEC gate can be installed in usual place. 	<ul style="list-style-type: none"> Existing pylon 4VG45A is within potential SSSI area. Diversion of existing road will be required to accommodate the laydown area 	No – proposed site area is within the potential SSSI site.
Option 7	<ul style="list-style-type: none"> Re-utilisation of existing pylon at 4VG45A Both circuit bays can be constructed offline. SEC is away from existing road. SEC gate can be installed in usual place 	<ul style="list-style-type: none"> Existing pylon 4VG45A is within potential SSSI area. Diversion of existing road will be required to accommodate the laydown area. Need double circuit diversion. 	No – proposed site area is within the potential SSSI site.

Option	Positive outcomes	Negative outcomes	Selected for further design development
		<ul style="list-style-type: none"> Need more outage for temporary diversion. Larger construction footprint. 	

2.6.30 Option 5 was determined to be the most appropriate option and was taken forward for further design development as the option outside of the proposed SSSI and would remove existing pylons within the proposed SSSI as well.

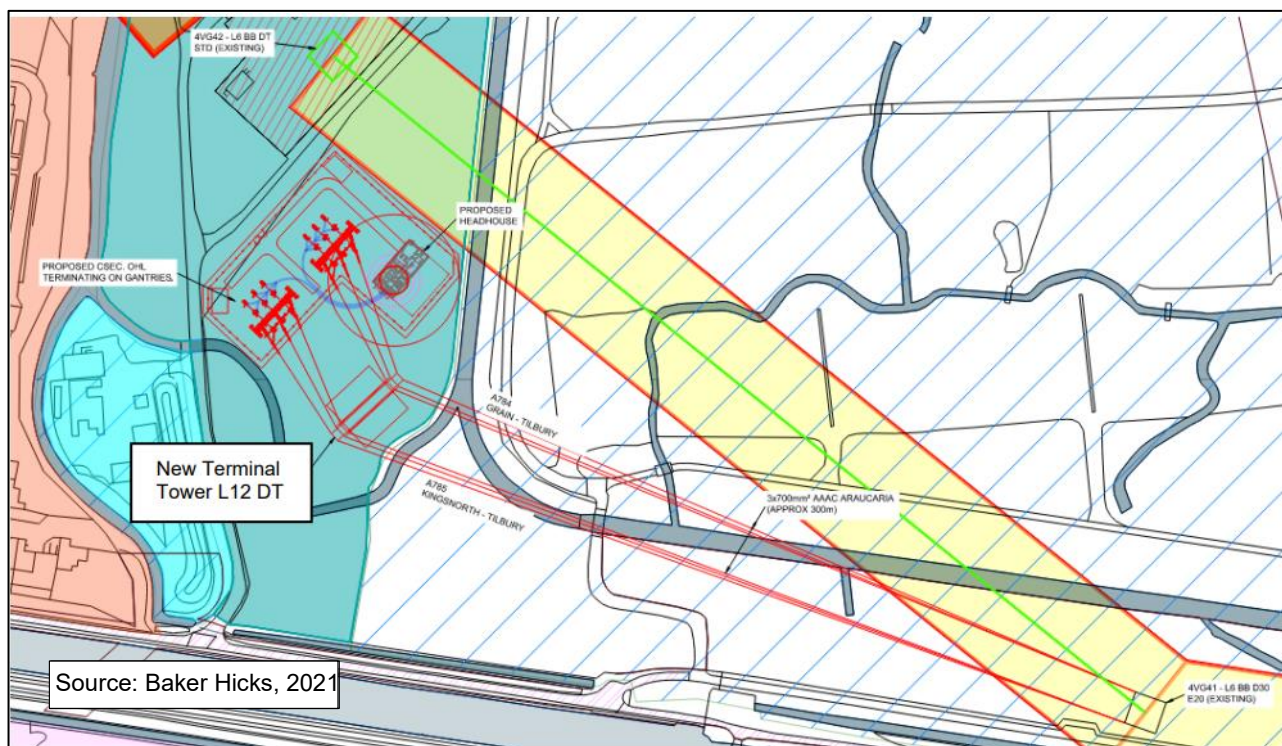
Gravesend

2.6.31 Following the appraisal of the shaft locations, six SEC and OHL connection options were assessed. Each option has briefly been described below and a comparison (see Table 2-4 below) has been made between the options.

Gravesend Option 1

2.6.32 This option is based on the shaft location H. A new terminal pylon would be constructed offline at 4VG42 to terminate the circuits onto new proposed SEC. Both circuit bay can be built offline.

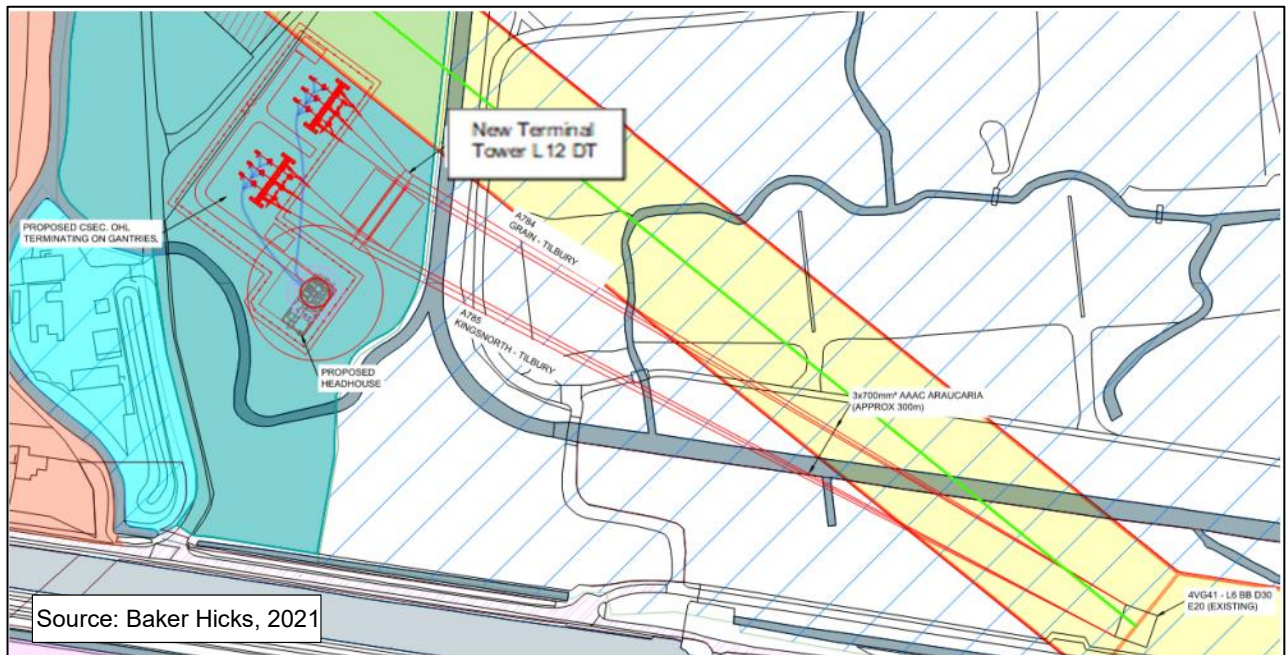
Plate 2-16: Gravesend Option 1



Gravesend Option 2

2.6.33 This option is based on the Shaft Location G. A new terminal pylon would be constructed offline at 4VG42 to terminate the circuits onto new proposed SEC. Both circuit bay can be built offline.

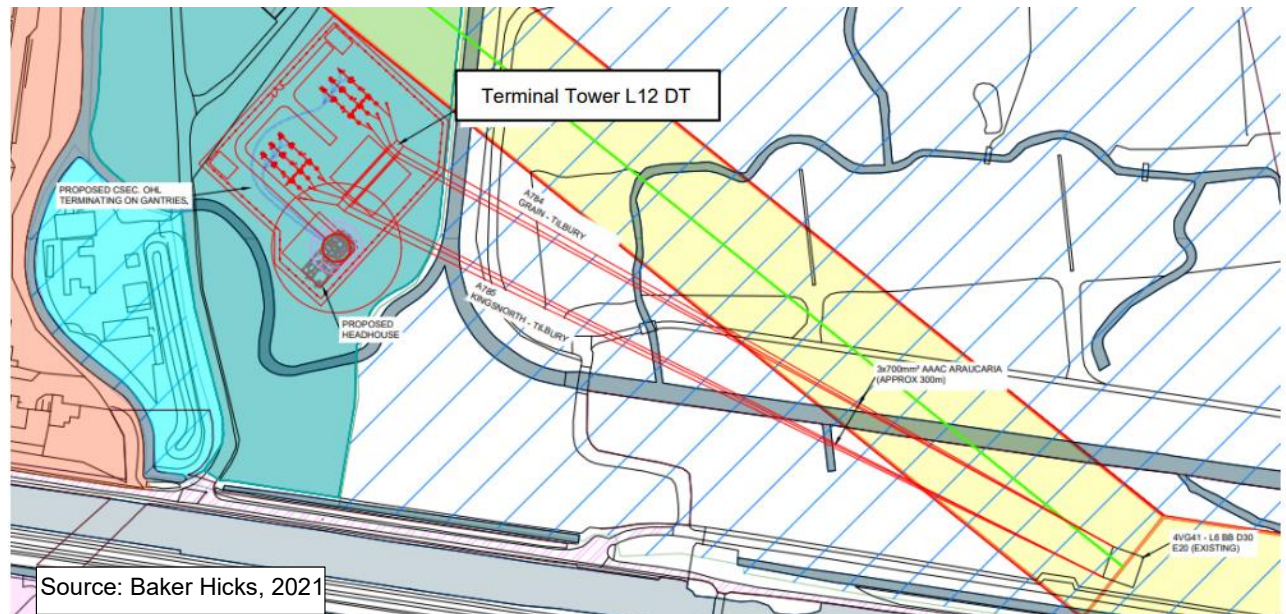
Plate 2-17: Gravesend Option 2



Gravesend Option 3

- 2.6.34 This option is based on the shaft location G. A new terminal tower would be constructed offline at 4VG42 to terminate the circuits to anchor blocks at new proposed SEC. Both circuit bay can be built offline. SEC footprint is larger than other options to accommodate the terminal tower and anchor blocks within the compound.

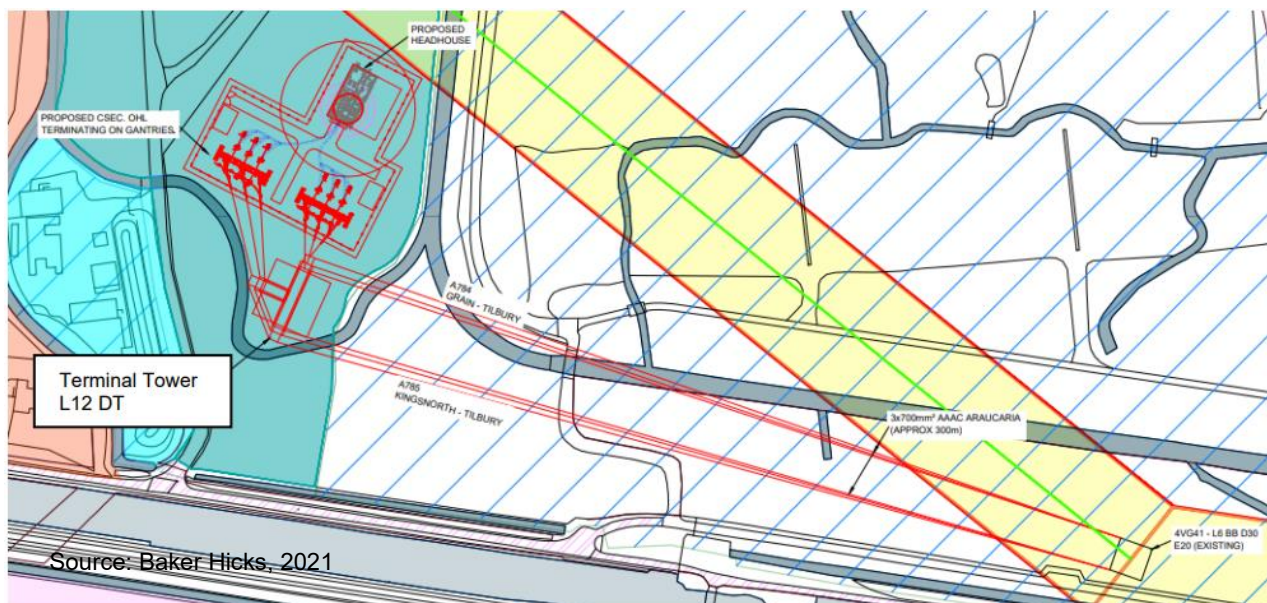
Plate 2-18: Gravesend Option 3



Gravesend Option 4

- 2.6.35 This option is based on the shaft location H. A new terminal tower with auxiliary crossarm would be constructed offline near 4VG42 to terminate the circuits onto new proposed SEC. Both circuit bay can be built offline.

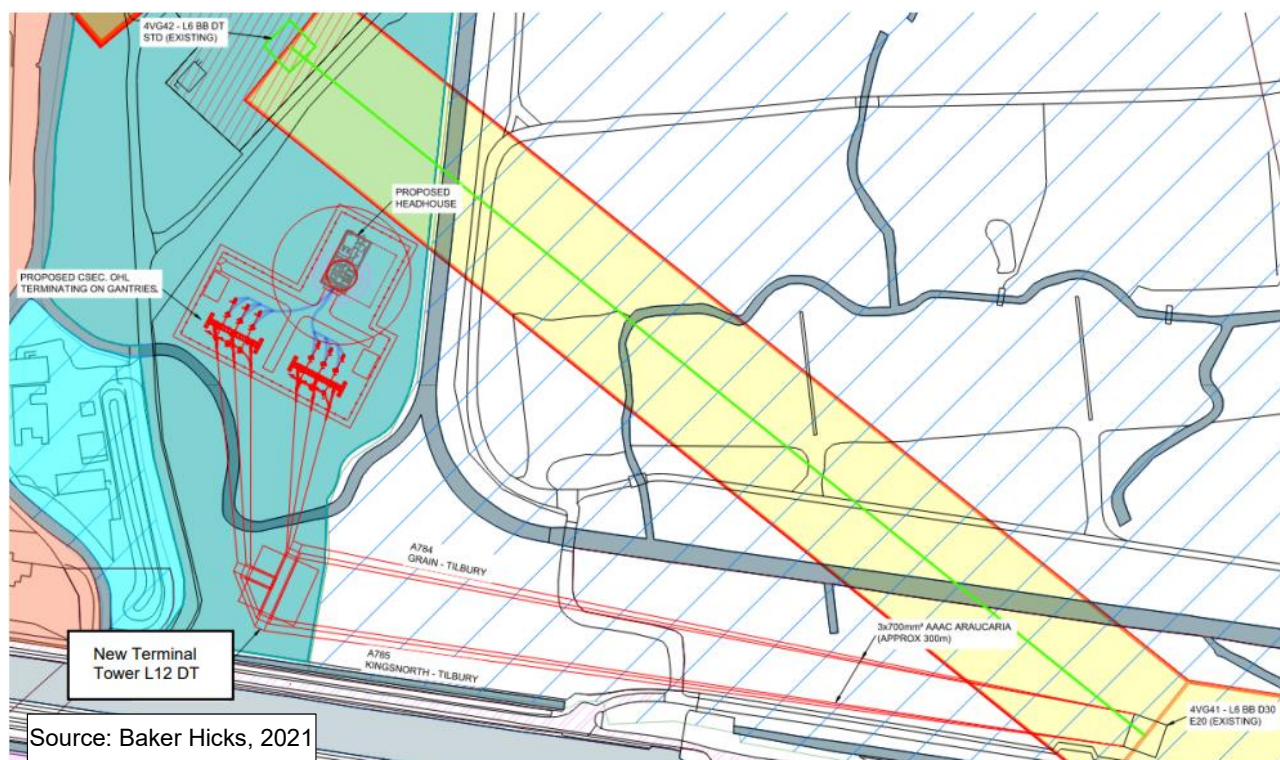
Plate 2-19: Gravesend Option 4



Gravesend Option 5

- 2.6.36 This option is based on the shaft location H. A new terminal tower with auxiliary crossarm would be constructed offline at 4VG42 to terminate the circuits onto new proposed SEC. Both circuit bay can be built offline. Proposed location of the new terminal tower is further away from the existing line.

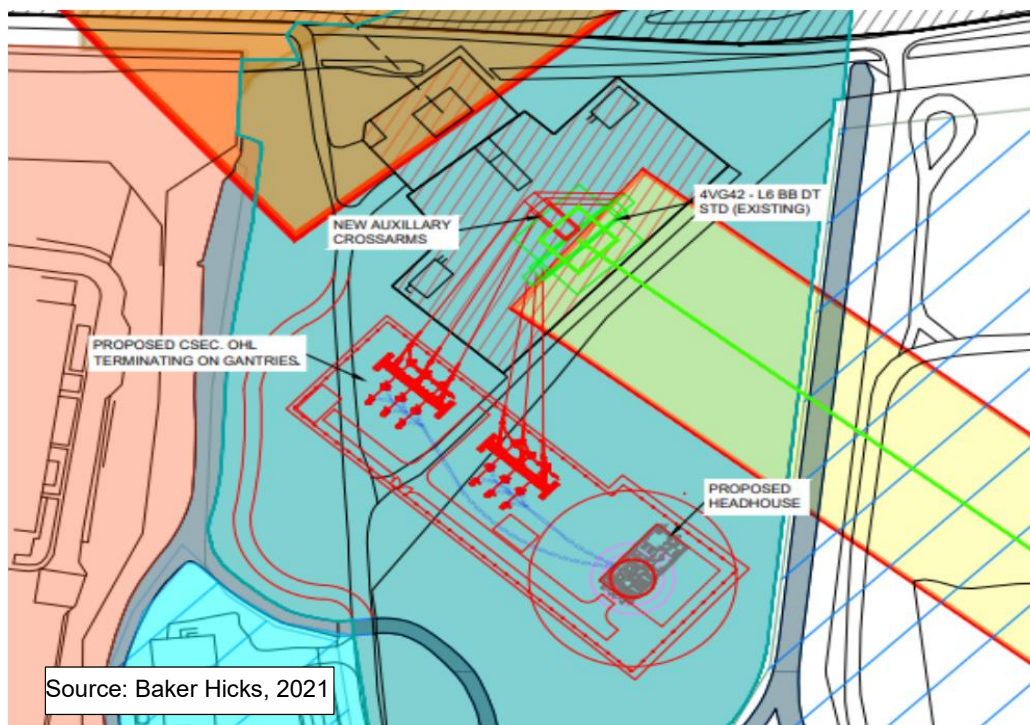
Plate 2-20: Gravesend Option 5



Gravesend Option 6

- 2.6.37 This option is based on the shaft location H. Existing terminal tower 4VG42 would be used. Auxiliary crossarm would be installed to existing terminal tower to terminate the circuits onto new proposed SEC. Both circuit bay can be built offline.

Plate 2-21: Gravesend Option 6



Gravesend Site OHL termination and SEC Location Option Comparison and Preferred option

- 2.6.38 Following the identification of the six options for the Gravesend OHL and SEC locations a comparison was undertaken to determine the most suitable of the options that should be taken forward for further design consideration, the outcome is outlined in Table 2-4 below.

Table 2-4: Gravesend Option

Option	Positive outcomes	Negative outcomes	Selected for further design development
Option 1	<ul style="list-style-type: none"> Shorter tunnel length -new terminal tower, SEC, head house can be built offline. Existing road can be utilised for the access to SEC. 	<ul style="list-style-type: none"> Sharp bends are required for HV cable. Head house is in close proximity of new Grain. Tilbury downleads. 	No
Option 2	<ul style="list-style-type: none"> New terminal tower, SEC, head house can be built offline. -Existing road can be utilised for the access to SEC. Change in angle of deviation for existing tower 4VG41 is minimum. 	<ul style="list-style-type: none"> Longer tunnel length in compare with option 1. Sharp bends are required for HV cable. 	Yes – Selected for further development.

Option	Positive outcomes	Negative outcomes	Selected for further design development
Option 3	<ul style="list-style-type: none"> New terminal tower, SEC, head house can be built offline. Existing road can be utilised for the access to SEC. Change in angle of deviation for existing tower 4VG41 is minimum. 	<ul style="list-style-type: none"> Longer tunnel length in compare with option 1. Sharp bends are required for HV cable. SEC footprints is larger to accommodate the new terminal tower and anchor block. 	No
Option 4	<ul style="list-style-type: none"> Shorter tunnel length -new terminal tower, SEC, head house can be built offline. Existing road can be utilised for the access to SEC. HV cable termination to SEC is easier than other options. 	<ul style="list-style-type: none"> Auxiliary crossarm will be required on Terminal tower Terminal tower positioned very close to ditch- Grain - Tilbury gantry is very close to terminal tower. Required phase to phase and phase to earth clearance will be difficult to achieve. Change in angle of deviation for existing tower 4VG41 is large. Steelwork and foundation upgrade may be required at tower 4VG41. Temporary bridge may be required to facilitate the installation of new terminal tower. 	No
Option 5	<ul style="list-style-type: none"> Shorter tunnel length -New terminal tower, SEC, head house can be built offline. Existing road can be utilised for the access to SEC. HV cable termination to SEC is easier than other options. 	<ul style="list-style-type: none"> Terminal tower required auxiliary crossarm Terminal tower positioned very close to ditch -Grain - Tilbury gantry is very close to terminal tower. Required phase to phase and phase to earth clearance will be difficult to achieve. Change in angle of deviation for existing tower 4VG41 is large. Steelwork and foundation upgrade may be required at tower 4VG41. 	No
Option 6	<ul style="list-style-type: none"> Re-utilising the existing terminal tower 4VG42. HV cable termination to SEC is easier. 	<ul style="list-style-type: none"> Installation of new auxiliary crossarm may be required double circuit outage. Larger footprint of SEC More challenging construction. De-commission and dismantling of existing Kingsnorth-Tilbury Bay will require prior to energise the Grain - Tilbury circuit. Existing road need to be diverted to facilitate access to river bank. 	<ul style="list-style-type: none"> No

2.6.39 Option 2 was determined to be the most appropriate option and was taken forward for further design development because it has the best balance of positives to negatives.

Horizontal Directional Drilling Feasibility

- 2.6.40 The use of Horizontal Directional Drilling (HDD) as a construction method for the tunnel was initially reviewed. The ground profile contains a gravel layer which would present a significant challenge with horizontal penetration for any appreciable distance. The number and length of bores required would be significant resulting in larger launch and reception pits which would result in shafts within the RSPB nature reserve at Gravesend and the PFA area at Tilbury.
- 2.6.41 HDD was therefore considered high risk, high cost and without significant benefits when compared to tunnel boring, and therefore this tunnelling option would not be taken further forward in the design of the Proposed Development.

2.7 The Preferred Option

- 2.7.1 The preferred option consists of a new tunnel to the east of the existing tunnel, described in the Strategic Options Appraisal as Option 2.
- 2.7.2 For the Tilbury side, Option 5 with Shaft Location J (within sub-area T4) was selected. This option consists of a new terminal pylon that would be constructed offline in order to replace an existing pylon (4VG45A). The new terminal pylons and headhouses are located outside of the potential SSSI (the old pylon that is to be removed is located within the potential SSSI area). Shaft Location J is the most northerly of the shaft locations and is located midway between the existing sealing end compound and the main substation. The location is constrained by the existing overhead lines to the east, roads to the south and west and any movement north is constrained by the need for the sealing end compound and gantries to tie into the existing network.
- 2.7.3 For the Gravesend side, Option 2 with Shaft Location G was selected. This option consists of a new terminal pylon, sealing end compound and headhouse which would be constructed offline. Shaft location G is along the boundary line of the existing site and has been positioned to allow sufficient working room with the constraint of the height restriction of the existing overhead lines.
- 2.7.4 Refer to Chapter 3: Project Description for more details on the Proposed Development.

2.8 Summary and Conclusions

- 2.8.1 The Strategic Options Appraisal identified and assessed that installation of new cables within a new tunnel beneath the River Thames was preferable compared with installing new cables within the existing tunnel or opting for an overhead line crossing the River Thames due to health and safety concerns associated with the existing tunnel, and the environmental impact was considered to be lower and temporary in nature compared to that of a new overhead line. The strategic options were discussed with relevant consultees in order to receive their feedback on the 3 options, the appraisal, and the emerging preference of a new tunnel. No objections to a new tunnel were received from relevant consultees.
- 2.8.2 Once the decision to adopt the new tunnel as outlined in the Strategic Options Appraisal was taken, further siting work was carried out to identify areas that were suitable for the temporary and permanent infrastructure required for the Proposed Development in Tilbury and Gravesend. A range of considerations including, former land use, access to a major road, environmental constraints, topography, engineering design and cost were factored into the decision to determine the approach and location for the cable sealing end compounds, headhouses, overhead line connection and tunnel location.
- 2.8.3 The preferred option taken forward for planning and Environmental Impact Assessment (EIA) is Option 5 for Tilbury with Shaft Location J (within sub-area T4 – see Plate 2-13) and is the most northerly of the shaft locations. For Gravesend, Option 2 with Shaft Location G along the boundary of the existing site was selected.

2.9 References

Ref 2-1 Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (2017 Regulations), Available at: <https://www.legislation.gov.uk/ukxi/2017/571/contents/made> (Accessed: 29/08/2023).

Ref 2-2 National Grid ESO, Future Energy Scenarios, Available at: <https://www.nationalgrideso.com/future-energy/future-energy-scenarios> (Accessed: 29/08/2023).

Ref 2-3 National Grid ESO, Electricity Ten Year Statement (2023) Available at: <https://www.nationalgrideso.com/research-and-publications/electricity-ten-year-statement-etys> (Accessed: 29/08/2023).

Ref 2-4 National Grid ESO, Network Options Assessment 2021/22 Refresh (July 2022), Available at: <https://www.nationalgrideso.com/research-and-publications/network-options-assessment-noa> (Accessed: 29/08/2023).

Ref 2-5 Ofgem, Decision on accelerating onshore electricity transmission investment (15 December 2022). Available at: <https://www.ofgem.gov.uk/publications/decision-accelerating-onshore-electricity-transmission-investment> (Accessed: 29/08/2023).

Ref 2-6 Electricity Act (1989), Available at: <https://www.legislation.gov.uk/ukpga/1989/29/contents> (Accessed: 29/08/2023).

Ref 2-7 Planning Act (2008), Available at: <https://www.legislation.gov.uk/ukpga/2008/29/contents> (Accessed: 29/08/2023).

2.10 Abbreviations

Abbreviation	Definition
ASTI	Accelerated Strategic Transmission Investment
DCO	Development Consent Order
EIA	Environmental Impact Assessment
EISD	Earliest in Service Date
ERTS	Emergency Return to Service
ES	Environmental Statement
ESO	Electricity System Operator
ETYS	Electricity Ten Year Statement
FES	Future Energy Scenarios
FFC	fluid filled cables
GI	Ground investigation
HDD	Horizontal Directional Drilling
HND	Holistic Network Design
HV	High Voltage
kV	Kilovolt
M&E	Mechanical and electrical
NOA	Network Options Assessment
NSIPs	Nationally Significant Infrastructure Projects
OHL	Overhead Line
PFA	Pulverised Fuel Ash
RSPB	Royal Society for the Protection of Birds
SEC	Sealing End Compound
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TKRE	Tilbury to Grain and Tilbury to Kingsnorth
TO	Transmission Owners
XLPE	Cross Linked Polyethylene

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National Grid Cable Tunnel Replacement Project

Environmental Statement Volume II Chapter 2 Alternatives

December 2023

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2 Alternatives

2.1 Introduction

- 2.1.1 In accordance with Regulation 18(3)(d) and Schedule 4 part 2 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (2017 Regulations) (Ref 2-1), this chapter will provide a description of the reasonable alternatives considered by National Grid which are relevant to the Proposed Development and its specific characteristics, and the main reasons for the option chosen, taking into account the effects of the Proposed Development on the environment.
- 2.1.2 This chapter sets out the need for the Proposed Development and describes how the project has been identified; firstly, in response to the need case and secondly, how the Proposed Development has evolved and the alternatives that have been considered taking account of National Grid statutory duties under the Electricity Act 1989.

2.2 Background

- 2.2.1 The Future Energy Scenarios (FES) (Ref 2-2) and Electricity Ten Year Statement (ETYS) 2020 (Ref 2-3) forecast a large amount of renewable and low carbon generation, including offshore wind and nuclear, together with three interconnectors from the continent connecting into the transmission system in the east coast of England. Through these forecasts, National Grid Electricity System Operator (ESO) has identified that the Tilbury to Grain and Tilbury to Kingsnorth 400 kilovolt (kV) circuits will be significantly overloaded in their current capacity.
- 2.2.2 The Network Options Assessment (NOA) is undertaken by the ESO each year. This comprises economic analysis to understand the balance between managing power flows across network boundaries by making constraint payments and the cost of asset-based reinforcement options proposed by the Transmission Owners (TOs). In the most recent NOA (2022) (Ref 2-4), the ESO has recommended investment in upgrading these 400 kV circuits giving the project a 'proceed' signal with an Earliest in Service Date (EISD) of 2028. This is reconfirmed in the NOA refresh published July 2022, incorporating the Holistic Network Design (HND) as a key input.
- 2.2.3 The 400 kV circuits are currently predominantly overhead line, with a cable section installed within a deep tunnel crossing the River Thames. As the Transmission Licence Holder with responsibility for the circuits, National Grid commenced assessing alternative approaches to refurbish or upgrade the existing tunnel section of the 400 kV circuits in 2021.

2.3 Need for the Proposed Development

- 2.3.1 National Grid owns and operates the national high-voltage electricity transmission system throughout England and Wales. The key role of the transmission system is to connect the electricity generators' power stations with the local distribution networks of the regional electricity companies. National Grid holds the Transmission Licence for England and Wales and is thus obligated to develop and maintain an efficient, co-ordinated and economical system of electricity transmission and to facilitate competition in the generation and supply of electricity, as set out in the Electricity Act 1989.
- 2.3.2 The Proposed Development is part of the Ofgem's new accelerated strategic transmission investment (ASTI) framework (Ref 2-5) (published December 2022). National Grid is responsible for delivering the extensive onshore transmission system enhancements that are required to achieve the government's 2030 power sector decarbonisation target.
- 2.3.3 National Grid's operations are dictated by the latest Future Energy Scenarios (FES) and Electricity Ten Year Statement (ETYS) reports. In recent years, these reports have begun forecasting a large amount of renewable and low carbon energy generation, connecting into the transmission network

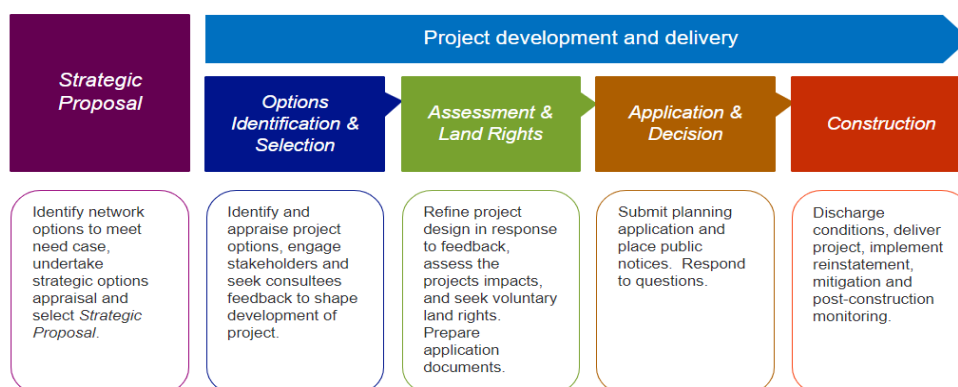
in the east coast of England, together with three interconnectors from the continent. Through these forecasts, National Grid Electricity System Operator (ESO) has identified that the Tilbury to Grain and Tilbury to Kingsnorth (TKRE) 400 kilovolt (kV) circuits will be significantly overloaded in their current capacity and require uprating. National Grid has named this wider project: 'Grain to Tilbury'.

- 2.3.4 Each year, the ESO undertakes an assessment of the options National Grid has available for meeting forecasted energy demands (the Network Options Assessment, NOA). This assessment comprises economic analysis to understand the balance between managing power flows across network boundaries. In the most recent NOA (2021/22), the ESO has recommended investment in upgrading the 400 kV circuits giving the project a 'proceed' signal with an Earliest in Service Date (EISD) of 2028. This was reconfirmed in the NOA refresh published July 2022.
- 2.3.5 The 400 kV circuits are currently predominantly overhead line, with a section installed within a deep tunnel beneath the River Thames. As the Transmission Licence Holder with responsibility for the circuits, National Grid are required to upgrade them.

2.4 Approach to developing the Proposed Development

- 2.4.1 As a transmission licence holder under the Electricity Act 1989 (1989 Act) (Ref 2-6), National Grid has a number of statutory duties which it must comply with when developing and maintaining its network. In accordance with Section 9(2) of the 1989 Act, the holder of a licence authorising the transmission of electricity must develop and maintain an efficient, coordinated and economical electricity transmission system and to facilitate competition in the supply and generation of electricity.
- 2.4.2 In terms of Schedule 9 of the 1989 Act, National Grid is required in formulating any 'relevant proposals' such as the Proposed Development, to (a) have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and (b) do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects.
- 2.4.3 Taking account of this, National Grid has considered the natural environment, cultural heritage, landscape and visual quality, and also includes the impact of its works on communities, such as the effects on traffic and transport from construction in developing the Proposed Development.
- 2.4.4 The statutory responsibilities outlined above underpin National Grid's approach to developing new infrastructure projects such as the Proposed Development. This is illustrated below in Plate 2-1. The first three stages (Strategic Proposal, Options Identification and Selection and Assessment and Land Rights) have informed the identification of the Proposed Development. At each of these stages, National Grid has considered a range of engineering, economic, environmental and social factors consistent with its statutory duties. In addition, consultation has been undertaken with stakeholders and members of the public at key stages providing the opportunity to feedback on alternatives and inform the identification of the Proposed Development.

Plate 2-1: National Grid's Approach to Project Development & Delivery



2.5 Strategic Proposal

Strategic Options Appraisal

- 2.5.1 In 2022, National Grid undertook a Strategic Options Appraisal to inform the selection of a preferred option for the upgrade of the 400kV circuits. The Strategic Options Appraisal Report documented the environmentally led process which identified and balanced technical, socio-economic, environmental and cost considerations to inform the selection of a preferred option for the upgrade of the 400kV circuits that cross the River Thames. The three options initially identified are described below.

Option 1: The installation of new cables within the existing tunnel

This option comprised the removal of the existing fluid filled cables (FFCs) within the existing tunnel and retrofitting of new cross-linked polyethylene (XLPE) cables. This option would also require civil repair work to the existing tunnel, although the full extent of this work was unknown. The existing mechanical ventilation system would require replacement. A new mechanical ventilation system would be required in a building of approximately 20m x 10m as shown on **Plate 2-2**. Mechanical and electrical services (M&E) at Tilbury would also be required with this option.



Source: Mott MacDonald, 2021

Plate 2-2: Option 1, new mechanical ventilation system in a building of approximately 20m x 10m

- 2.5.2 There were health and safety risks associated with Option 1 which would not meet with health and safety regulations or National Grid technical requirements. For example, the works would be within a confined space where the working area would be extremely limited. Additionally, the work would need to be undertaken adjacent to live equipment, as at least one 400kV circuit would need to remain live to maintain electricity supply.
- 2.5.3 During cable replacement, each circuit would need to be switched out for a full outage season with an Emergency Return to Service (ERTS) on commissioning. The maximum outage duration that could be facilitated for the refurbishment of the tunnel and shafts would be two, six-month outages, in 2026 and 2028 (noting system access would not be available in 2027). An uninterrupted 18-month outage per circuit would not be possible for the Kingsnorth-Tilbury and Grain-Tilbury circuits with consecutive outages required per year between 2029 and 2033 for the cable replacement. Given the minimum construction programme to replace a single circuit is 13 months, it was not considered

feasible to remove each existing circuit, supporting concrete and install new cables within the outages provided.

Summary of the Appraisal

- 2.5.4 Following the option appraisal, Option 1 was determined to have the least environmental impact and would be delivered through the consenting phase faster than the other two options. However, Option 1 posed significant health and safety risks which could not be eliminated by design or mitigation. It is thought that specialist control measures would be required to mitigate risk during construction and installation activities. Additionally, the construction programme associated with this option was deemed not to be viable due to the limited maximum outage durations.

Option 2: The installation of new cables within the new tunnel

- 2.5.5 This option comprised the boring of a new tunnel approximately 1.4km long (from shoreline to shoreline), parallel to the existing tunnel, and installations of new XLPE cables. Two cables per phase would be required. This option also included associated infrastructure including new shaft headhouses and mechanical and electrical services, cable sealing end compounds and modifications to the existing overhead lines. This option is what was taken forward as the preferred option and which forms the basis of the Proposed Development as described in Chapter 3: Project Description and assessed in the technical environmental assessments in Chapters 7 – 15 of this Environmental Statement (ES) and is shown on Plate 2-3 below.

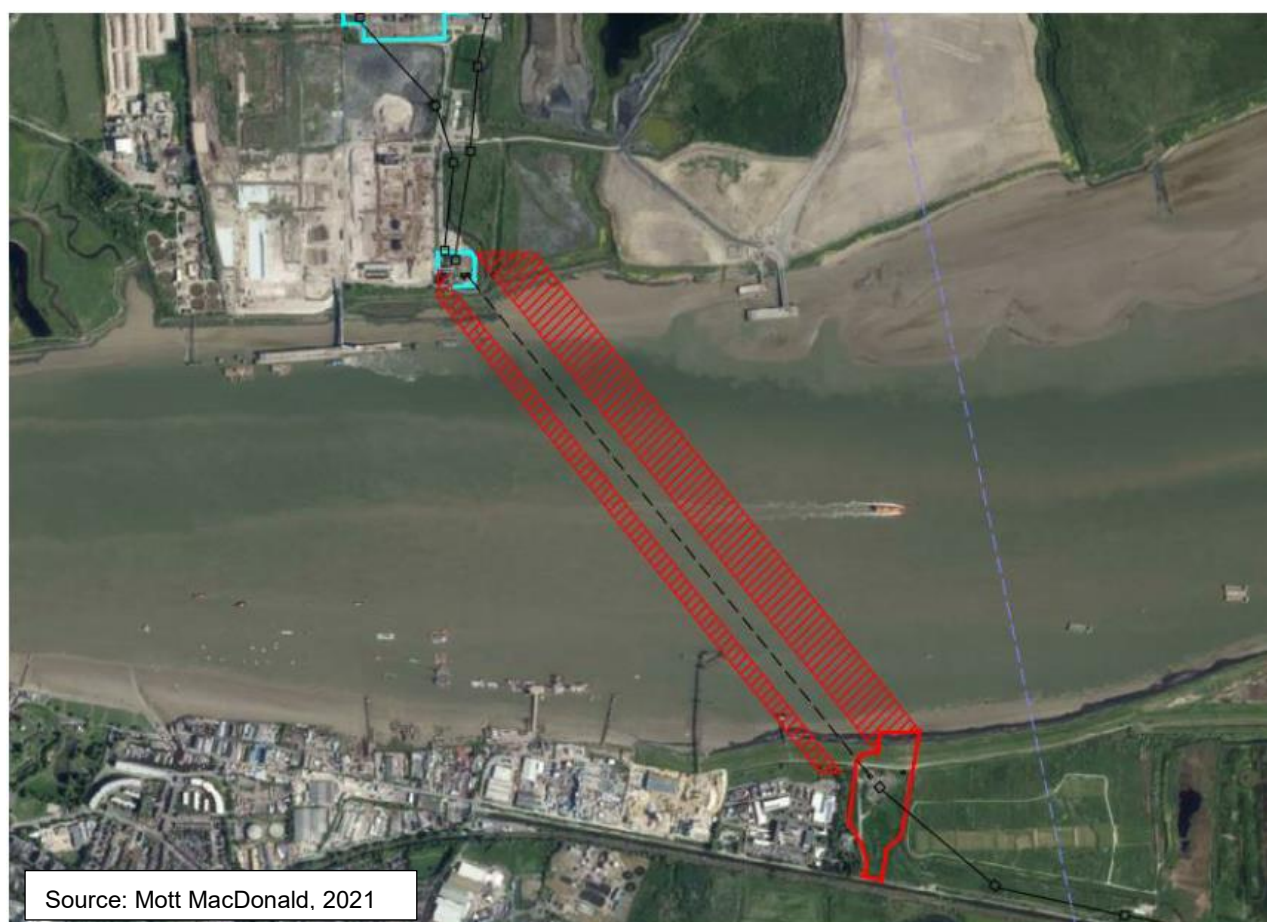


Plate 2-3: Option 2, existing Tunnel (black dashed line) and two indicative corridors for new tunnel (red hatched areas).

Summary of the Appraisal

- 2.5.6 Option 2 posed a higher risk of potentially significant adverse environmental effects on the Historic Environment than Option 1. It was also determined that the construction work could be undertaken using Permitted Development rights if the headhouses were to be situated on National Grid's operational land, subject to EIA Screening. Should EIA be screened in, permitted development rights would be lost and an EIA required to support a planning application to the relevant Local Authority, which would result in a longer consenting programme.
- 2.5.7 The estimated number of two-way traffic movements required for this option during construction were greater than that estimated for Option 3 which as identified as having the potential to cause greater temporary environmental effects on air quality, noise and vibration and traffic and transport than Option 3 in the local area albeit noting that these would be temporary in nature, lasting the duration of the construction phase. It was also assessed that National Grid would explore alternative options to the transport network, specifically the use of river transport and the existing jetties which should reduce direct and indirect effects, along with sensitive routing of road traffic in liaison with stakeholders.
- 2.5.8 Option 2 was assessed to comply with health and safety, and with all National Grid technical requirements and standards. It would also not impact on the existing circuits for most of the construction phase, with only outages required during the permanent overhead line diversions. The cost and required construction programme of this Option would be greater than that for Option 1.

Option 3: The installation of a new overhead line across the River Thames.

- 2.5.9 As shown on Plate 2-4, this option comprised the construction of an approximately 2 km span length overhead line across the River Thames, to replace the cables within the existing tunnel. There is limited space for the anchor pylons and diversions to be able to achieve a straight line for tension / loading. The siting of the pylons is also constrained on the south bank of the river due to the Thames and Medway Canal running parallel. The pylons, their foundations and the conductor system would require a bespoke design as well as a complex and extended construction period. The required space to accommodate the anchor pylons in line with the crossing pylons is considerably larger than the other two options.
- 2.5.10 The crossing overhead line pylons would need to be approximately 245 m in height. This requirement is due to the approximately 130m sag at maximum operating temperature which needs to allow clearance of the frequent numbers of large shipping vessels which use this section of the River Thames. contextualises the height requirement of the pylons in comparison to the existing River Thames crossing pylons, suspension pylon standard height and the Eiffel Tower in Paris, France. Further design engineering work would have been required to confirm whether two crossing pylons either side of the River Thames would be necessary in order to carry the weight of conductors required.

Plate 2-4: Option 3, indicative locations of the crossings, anchor and stringing sites (Source: Mott MacDonald sketch 2022)

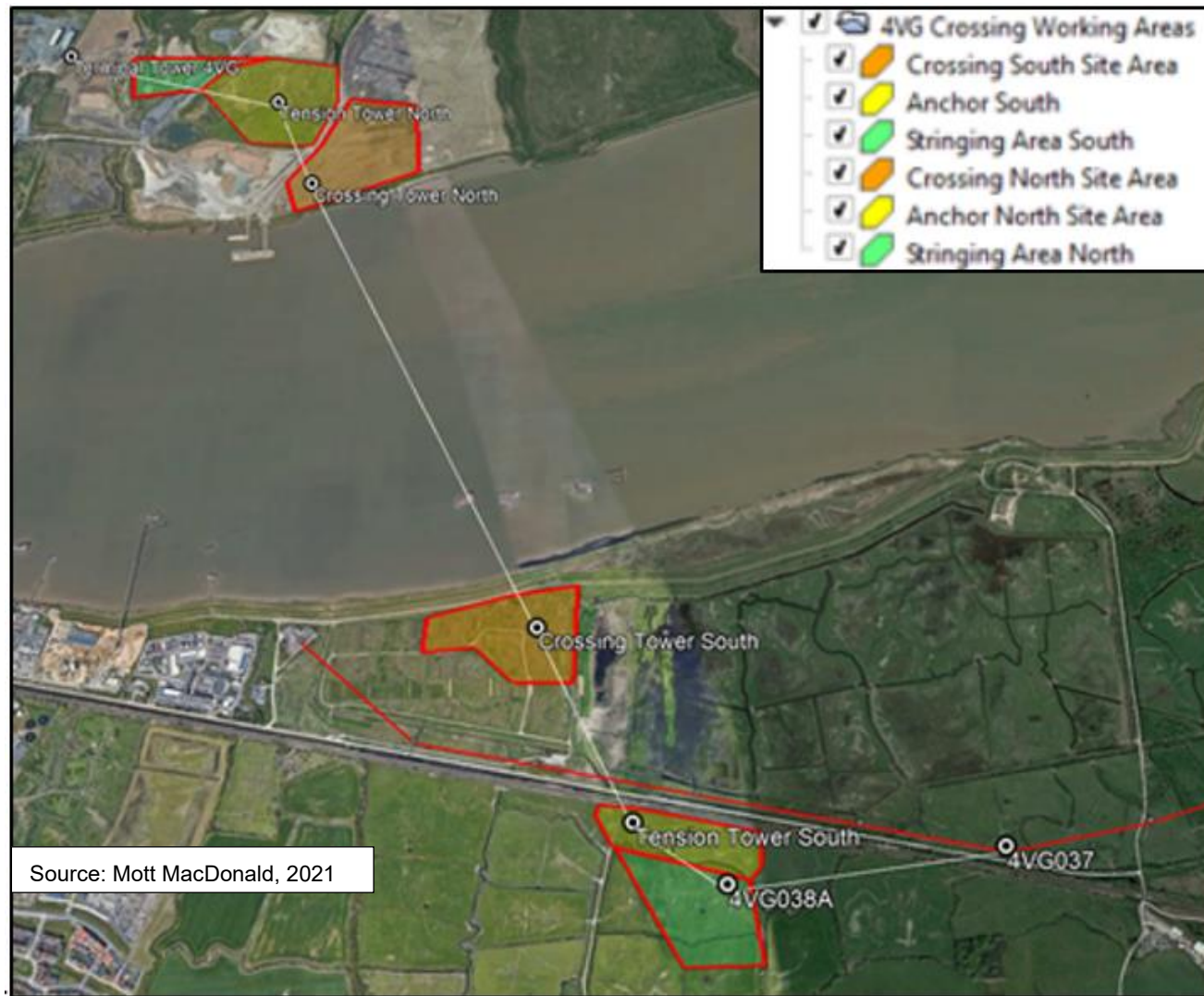
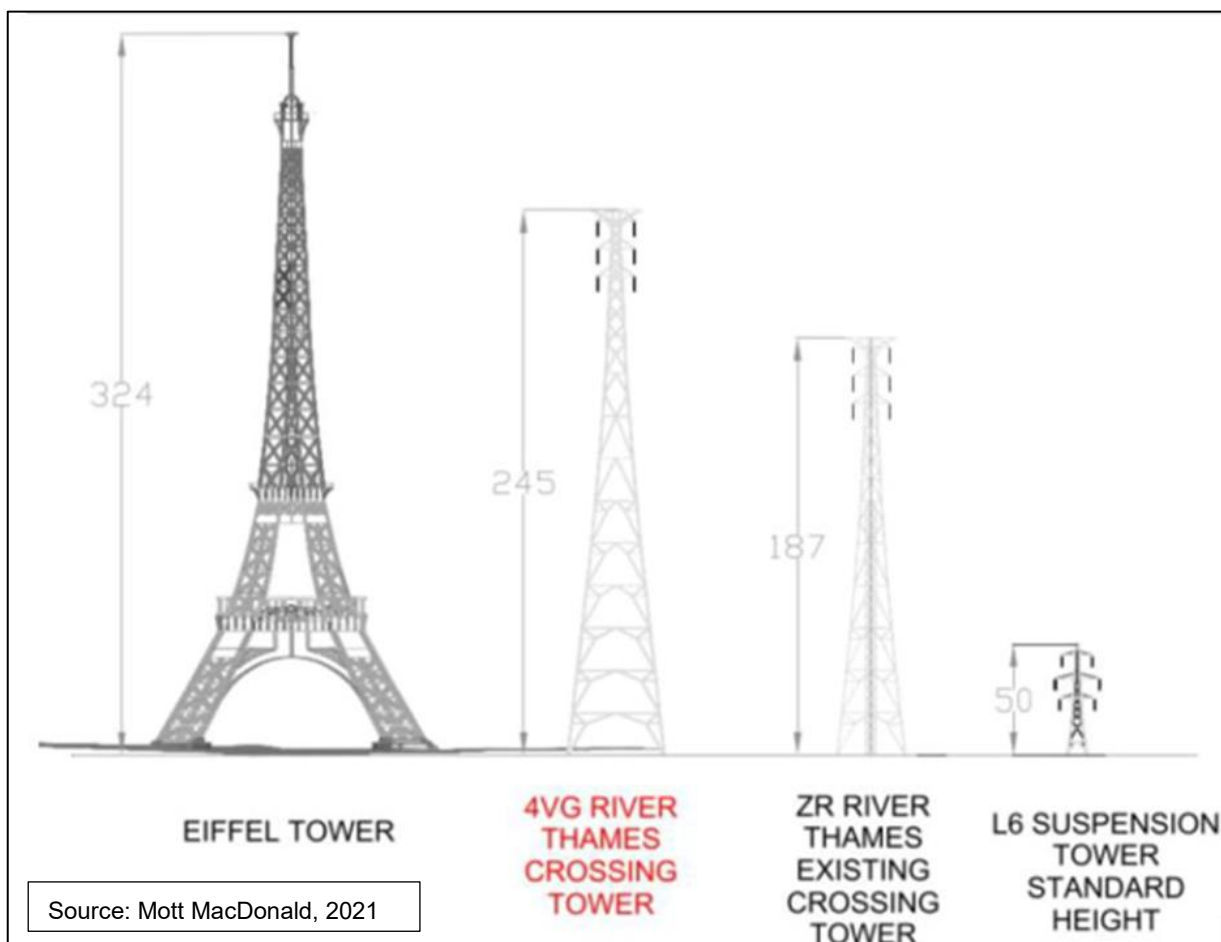


Plate 2-5: Option 3, likely required height of 4VG pylon



Summary of the Appraisal

- 2.5.11 Option 3 would have complied with health and safety, and with all National Grid technical requirements and standards. It would also have been cheaper and quicker than Option 2 to construct. The estimated number of two-way traffic movements required for this option during construction are fewer than that estimated for Option 2.
- 2.5.12 However, Option 3 would fall into the criteria of a Nationally Significant Infrastructure Project (NSIP) under section 16(3)(aa) of the Planning Act 2008 (Ref 2-7) and require a Development Consent Order (DCO) application. Therefore, the consenting programme would be considerably more extensive than Option 1 and 2.
- 2.5.13 It would also have been likely to receive substantial stakeholder challenge, particularly in regard to the size of 4VG pylons required (see 2.5.11) and there would have likely been long-term significant landscape and visual effects as a result of the required pylon height.
- 2.5.14 In addition to the above, the indicative proposed alignment of this option passes through sites of international and national importance for ornithological features. Ornithological species susceptible to collision risk are present within this project area and wider zone of influence, including qualifying species of the Thames Estuary and Marshes Special Protection Area / Ramsar. Given the highly migratory nature of many of the species present, significant numbers of species flying at risk heights could not be ruled out. The risk is said to be variable according to the species, but in the worst case could be significant, including for species listed as qualifying features for designated sites. There may also have been habitat loss of functionally linked land used by bird species listed as qualifying species of European designated sites.

Strategic Options Appraisal Recommendation

- 2.5.15 As Option 1 is not feasible due to the health and safety risks, the choice was limited to Option 2 or Option 3.
- 2.5.16 It was considered that the environmental impacts of Option 2 would be generally short term (during the construction phase only) with long term impacts being highly localised to the headhouse SEC locations. A differentiating factor between Option 2 and 3 is the estimated construction traffic two-way movements, which for Option 2 are greater than that of Option 3 due to the required tunnel spoil removal. It was recognised at the options stage that it may result in significant environmental effects on local air quality and noise albeit these would be temporary. National Grid were also keen to look at alternatives to removal spoil via the road network to mitigate these potential significant effects.
- 2.5.17 Given the location and scale of Option 3, it was considered that it would have greater significant and permanent environmental effects. Additionally, the indicative alignment of option 3 passed through sites of international and national importance for ornithological features, and species susceptible to collision risk with overhead lines would be present within the vicinity of Option 3, including qualifying species of the Thames Estuary and Marshes SPA / Ramsar site. There is also the potential for displacement of birds from the wider area surrounding this option.
- 2.5.18 On balance it was considered that Option 2, the installation of new cables within the new tunnel, would be considered preferable overall. While the costs for this option are greater in comparison to the Option 3, the risk of potential significant effects were fewer and temporary in nature.

Environmental Stakeholder Consultation

- 2.5.19 The Strategic Options Appraisal was shared with key environmental stakeholders, firstly to inform them of the proposals and seek their feedback on the options presented and emerging preference. The engagement and feedback received is summarised below.

Meeting with Environment Agency: 13th October 2022

- 2.5.20 The purpose of this meeting was to discuss the Proposed Development and the three options outlined above with the Environment Agency. The Strategic Options Appraisal report was shared in advance of the meeting. The conclusions outlined in the report as well as constraints associated with the relevant options were discussed. The following key constraints were noted by the Environment Agency:
- Flood zones 2 and 3 present on both sides of the river;
 - Flood defences present on both sides of the river, and National Grid should consider the 16m working distances during construction, where feasible, and residual risk in the preparation of any Flood Risk Assessment;
 - Existing and historic landfill sites on the north bank in east and consequent risks to water quality from mobilisation of sediment and contaminants; and
 - Wildlife habitat including nearby European designated sites.
- 2.5.21 The Environment Agency advised their Thames Estuary 2100 Plan¹ (currently undergoing revision) should be considered, especially with regards to depths of shafts and where the defences would be.
- 2.5.22 The Environment Agency did not have a clear preference on which option should be taken forward but agreed Option 3 would be the more difficult of the three to consent and implement.

Pre-application advice letter from Historic England: 8th November 2022

- 2.5.23 Historic England provided National Grid with a pre-application advice letter detailing their opinion on the three options outlined above.

¹ <https://www.gov.uk/government/collections/thames-estuary-2100-te2100>

- 2.5.24 They stated serious concerns with regards to the Option 3 (the installation of a new overhead line across the River Thames) and the likely impact of this option on a range of heritage receptors which would be significant.
- 2.5.25 Historic England confirmed that their preferred option at this early stage would be Option 2 (the preferred option).

Meeting with Royal Society for the Protection of Birds (RSPB): 25th November 2022

- 2.5.26 The RSPB stated that ground nesting birds will be a key consideration during construction phase along with other Schedule 1 birds such as marsh harriers and water voles. The RSPB also recommended Cliffe Pools as being suitable locations for exported spoil, stating that the RSPB are interested in using tunnel spoil from the Proposed Development to provide wildlife benefits at this location, should it be suitable.
- 2.5.27 During the meeting, details of relevant RSPB contacts were provided to allow continued and meaningful engagement.

Meeting with Royal Society for the Protection of Birds (RSPB): 1st December 2022

- 2.5.28 This meeting was held following the initial meeting on the 25 November 2022, attendees from the RSPB included the RSPB Area Manager for Kent and Sussex, and the RSPB Rural Surveyor. The meetings' purpose was to request formal opinions on the three options presented in the Strategic Options Report.
- 2.5.29 National Grid confirmed in the meeting that the tunnel works (driving from the north) will not be in the adjacent national/European designated sites and that the adjacent existing overhead line will require some alterations.
- 2.5.30 The RSPB explained the importance of the Shorne coast as a designated site for breeding Redshank, and that the area would benefit from improvements to the freshwater supplies. Likewise, the RSPB explained undergrounding of OHL would be a beneficial project for local biodiversity and encouraged National Grid to submit details on potential easements (as appropriate) as early as possible.
- 2.5.31 National Grid also clarified that any advice or recommendations on survey work from the RSPB would be welcomed.

Meeting with Natural England: 28th November 2022

- 2.5.32 This meeting was held with the lead advisor in the West Anglia Team (covering Essex), the senior advisor for Thames Estuary and project manager for the Site of Special Scientific Interest (SSSI) Notification Project from Natural England to discuss the Proposed Development and run through the options presented in the Strategic Options Appraisal.
- 2.5.33 Uncertainties surrounding the extent and location of land required for spoil storage were discussed alongside uncertainties of how the Proposed Development might interact with the Port of Tilbury Freeport proposals, it was however noted that an initial meeting had been held with Port of Tilbury to discuss this interaction.
- 2.5.34 Natural England enquired about the noise generated from the Tunnel Boring Machine which would be required for Option 2, and also stated that the scope of impacts must consider all functionally linked land to European sites. Natural England explained that the Tilbury area is in the second stage of Natural England's 'Thames Estuary Invertebrates Essex & Kent' SSSI notification project.
- 2.5.35 Natural England raised the presence of Goshem's Farm, an Ingrebourne Valley site which consists of ash deposits, has undergone 10 years of ecological monitoring and is particularly important for

invertebrates with species of national interest. There are also notable plant, and breeding bird species and ditches of importance to aquatic wildlife.

Letter received from Natural England: 25th April 2023

- 2.5.36 Natural England provided National Grid with a letter detailing their opinion on the three options outlined above.
- 2.5.37 Natural England agreed with the view that Option 1 would have least environmental impact, giving rise to no direct effects on nationally and internationally designated sites. However, Health and Safety considerations and the requirement for prolonged outages appear to render this option unfeasible.
- 2.5.38 In regard to Option 2, Natural England clarified that it will be necessary to undertake a Habitats Regulations Assessment screening and (if required) appropriate assessment. They also advised National Grid that the Tilbury area provides a node for nationally important wildlife interest and is within an 'area of interest' for possible notification as Site of Special Scientific Interest (SSSI) and consequently, great care should be taken to avoid areas of high sensitivity as a matter of best practise, consistent with these considerations, and noting National Grid's status as a public body with legal duties towards the conservation and enhancement of SSSIs.
- 2.5.39 In relation to Option 3, Natural England assessed that this option would involve a direct loss of habitat used by qualifying features within the Ramsar and SSSI and would also create the potential for displacement of birds from a wider area, both within the designated sites and on functionally linked land. They stated that these potential impacts, together with the bird collision risk presented by the overhead line/structures, represent a more significant ecological risk, with much less scope for mitigation, than that which is associated with Option 2.

Strategic Options Phase – Conclusion

- 2.5.40 The Environment Agency did not have a clear preference on which option should be taken forward but agreed Option 3 would be the more difficult of the three to consent and implement.
- 2.5.41 Historic England confirmed that their preferred option at this early stage would be Option 2.
- 2.5.42 Natural England agreed that Option 1 would have least environmental impact but acknowledged that this option is not feasible due to Health and Safety considerations. They stated that Option 3 represents a more significant ecological risk, with much less scope for mitigation, than that which is associated with Option 2 but that should Option 2 be taken forward, that great care should be taken to avoid areas of high sensitivity as a matter of best practise.
- 2.5.43 Following the feedback received from consultees, there is an acknowledgement that Option 1, although more favourable from an environmental perspective is not feasible due to health and safety considerations and therefore the justification for ruling this option out is understood. When considering Option 2 and 3 there is consensus that option 2 is preferential over Option 3.

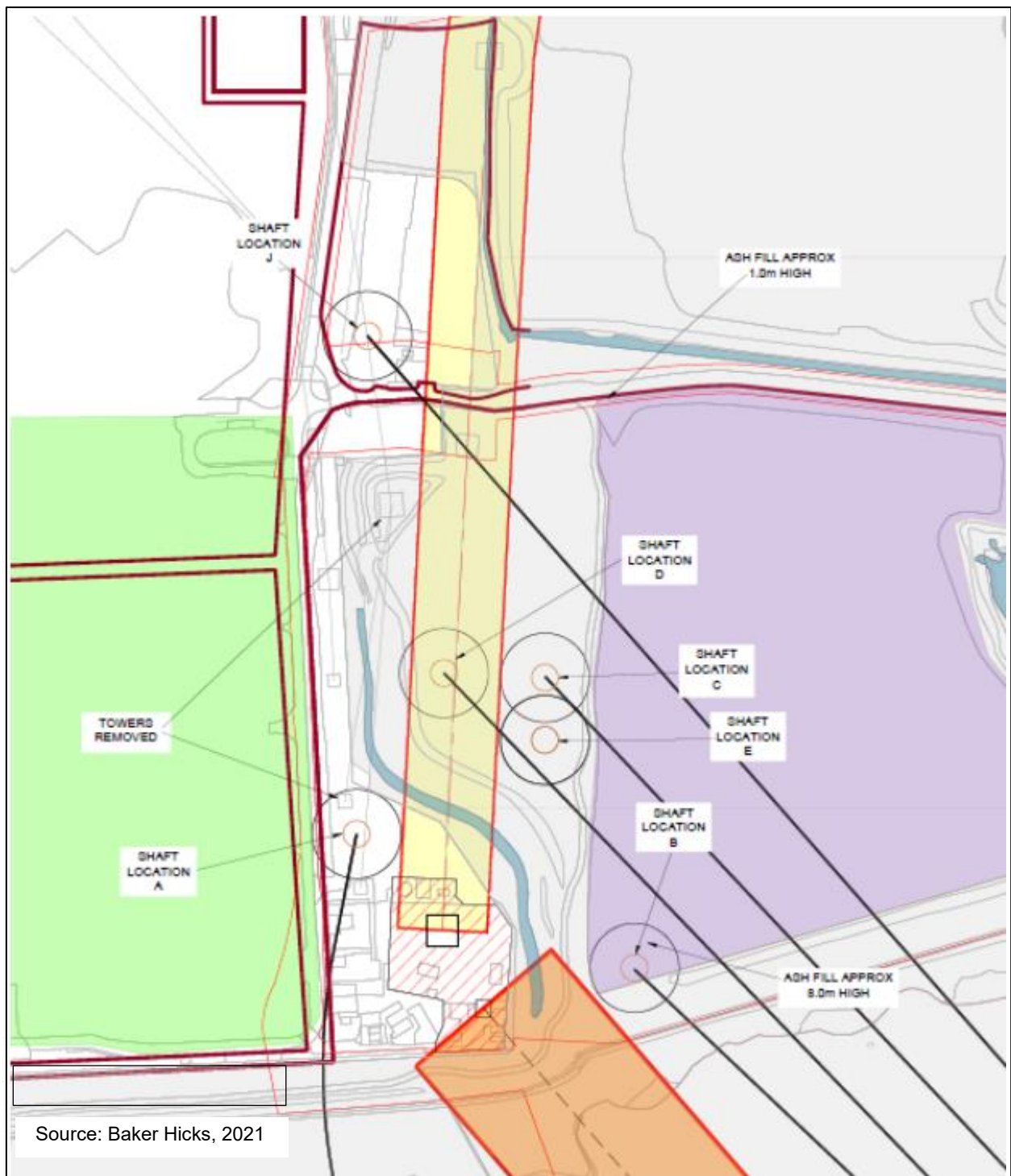
2.6 Siting Options - Identification and Selection

- 2.6.1 Following the decision to adopt Strategic Option 2 (a new tunnel), further options work was carried out to identify areas that are suitable for the temporary and permanent works required for the new bored tunnel (hereafter the Proposed Development) and associated infrastructure.
- 2.6.2 It was noted early that it would be preferable, from National Grid's perspective, to site the required infrastructure as close to the existing as possible, so to reduce the amount of construction work required to divert the overhead line i.e. new pylons.
- 2.6.3 Land adjacent to both existing sealing end compounds at Tilbury and Gravesend was deemed suitable for both the temporary and permanent works, however, it was recognised that environmental and engineering constraints were present on the surrounding land.
- 2.6.4 These constraints, such as current and former land use, access to major roads, existing landowner preferences, environmental status and topography have been used to inform the identification of suitable land. The former Tilbury Power Station foundations, in particular, would pose a significant risk to tunnelling and the integrity of the existing cable tunnel in service.
- 2.6.5 It was also recognised that the proposed Tilbury SEC and overhead line connection options would need to avoid and minimise the impact on Natural England's Thames Estuary Invertebrates Essex & Kent' SSSI notification project. , as highlighted by Natural England in consultation (see paragraph 2.5.34).

Tilbury Site Area

- 2.6.6 Initially, five preferred tunnel shaft locations were identified at Tilbury as shown in Plate 2-6 and described below.

Plate 2-6: Extract from Tilbury Constraints and Tunnel Route Plan



- **Shaft Location A** was positioned on hardstanding left over from the demolition of the Tilbury Power Station and immediately behind the existing SEC. Whilst a shaft and head house could be constructed in this location it is not possible to have the gantries positioned immediately adjacent to it. It was identified that tunnelling to this point would be constrained by the presence of deep foundations from both the former power station and the jetty/dolphin piles for the Port of Tilbury and was therefore dismissed as a viable option.
- **Shaft Location B** was positioned as close as possible to the River Thames in the Pulverised Fuel Ash (PFA). There is significant land changes in level in that area, which would require considerable removal of PFA to produce the required construction level and would require

reinstatement to the original levels at the end of construction. This location lies within the proposed SSSI.

- **Shaft Locations C & E** was positioned within a zone between the exclusion zone for the overhead cables and the PFA area. Some ash material would need to be removed to give sufficient working area. This location would require additional length of tunnelling over option B. This location lies within the proposed SSSI.
- **Shaft Location D** was positioned in the north west corner of the area but underneath the existing overhead lines. This option would require a line diversion to enable suitable plant and equipment to construct the shaft and subsequent headhouse and sealing end compound. This location lies within the proposed SSSI.
- **Shaft Location J** was the most northerly of the shaft locations and is midway between the existing sealing end compound and the main substation. The location does not lie within the proposed SSSI. This location would result in the longest tunnelling drive. The location is constrained by the existing overhead lines to the east, roads to the south and west and any movement north is constrained by the need for the sealing end compound and gantries to tie into the existing network.

2.6.7 As the Tilbury side was particularly constrained by its ecological potential and so a wider area of land was appraised. The areas of land available for the Proposed Development were divided in eight areas (T1 – T8) as shown in Plate 2-7. An exercise was undertaken to rank T1-T8 where the tunnel shaft and headhouse, and SEC could be most collectively located with least impact from an ecological perspective.

Plate 2-7: Sub-area locations for the Proposed Development at Tilbury



2.6.8 Table 2-1 below provides a summary of the high-level appraisal of sub areas T1-T8 for the location of the Tilbury site from an ecological perspective and ranks them in order of preference (with 1 being most preferable from an ecological perspective).

Table 2-1: Tilbury Site Sub-Area Ecological Ranking

Sub Area Ref.	Positive Ecological Factors	Negative Ecological Factors	Overall Rank 1-8 (1 being the most ecologically favourable)
T1	<ul style="list-style-type: none"> Habitats present are scrub / grassland / ruderal common of unmanaged ground, therefore can be recreated. Sufficient room to avoid impacts to ditches. While foreshore adjoining the site is potentially suitable for SPA/Ramsar species the site is well shielded by existing sea wall which will act to limit visual disturbance. 	<ul style="list-style-type: none"> Within non-statutory wildlife site. Within area Natural England are considering for SSSI designation. Range of likely potential species constraints including known populations of all 4 species of common reptile, water vole and habitat suitable for range of birds. In close proximity to areas of sensitive PFA and some potential for disturbance of these areas. Potentially extensive species translocation works (in particular reptiles) required prior to works. These activities are seasonally dependant and may impact project programme. 	6
T2	None.	<ul style="list-style-type: none"> Highly sensitive area of low nutrient habitat supporting diverse invertebrate assemblage. This area is within the proposed SSSI designation and will almost certainly be highest priority for inclusion. Any works in this area would lead to strong objection from Natural England and other local nature conservation stakeholders. Habitat is slow to develop and difficult to recreate therefore mitigation/compensation would be costly and complex. 	7
T3	<ul style="list-style-type: none"> No established habitat so negligible value for protected/notable species. Outside of the proposed SSSI designation. Good potential for ecological enhancement and achieving Biodiversity Net Gain (as low starting point). 	<ul style="list-style-type: none"> Area in closer proximity to SPA/Ramsar therefore increased risk of bird disturbance and need to repeat/update Habitats Regulations Assessment. 	3

Sub Area Ref.	Positive Ecological Factors	Negative Ecological Factors	Overall Rank 1-8 (1 being the most ecologically favourable)
	<ul style="list-style-type: none"> Likely less requirement for further surveys and mitigation thus reducing costs and reducing impacts to programme. 		
T4	<ul style="list-style-type: none"> Majority of site is hardstanding and of negligible ecological value. Likely less requirement for further surveys and mitigation thus reducing costs and reducing impacts to programme. 	<ul style="list-style-type: none"> Opportunities for achieving biodiversity net gain may be more limited due to space constraints. 	2
T5	<ul style="list-style-type: none"> Habitats present are scrub/grassland/ruderal common of unmanaged ground, therefore can be recreated. Further from the SPA/Ramsar therefore bird disturbance less of an issue. 	<ul style="list-style-type: none"> Within non-statutory wildlife site. Within area Natural England are considering for SSSI designation. Range of likely potential species constraints including known populations of all 4 species of common reptile, water vole and habitat suitable for range of birds. Potentially extensive species translocation works (in particular reptiles) required prior to works. These activities are seasonally dependent and may impact project programme. 	5
T6	<ul style="list-style-type: none"> Habitat yet to establish or in very early stages of establishment so limited value for protected/notable species. Outside of the proposed SSSI designation. Good potential for ecological enhancement and achieving Biodiversity Net Gain (as low starting point). Likely less requirement for further surveys and mitigation thus reducing costs and reducing impacts to programme. 	<ul style="list-style-type: none"> Access to the area may be difficult and may impact habitats to the south in order to allow construction access. 	4
T7	<ul style="list-style-type: none"> With exception of small areas of disturbed ground in the north consists of hard standing slab of negligible value for biodiversity. 	None	1
T8	<ul style="list-style-type: none"> Hardstanding but areas deemed too small to be viable for required works. 	None	N/A – Too small to be viable for works.

2.6.9 At the Tilbury site, the same consideration of sub-area options T1 to T8 was carried out from an engineering perspective, as shown in Table 2-2 below.

Table 2-2: Tilbury Site Sub-area Engineering Ranking

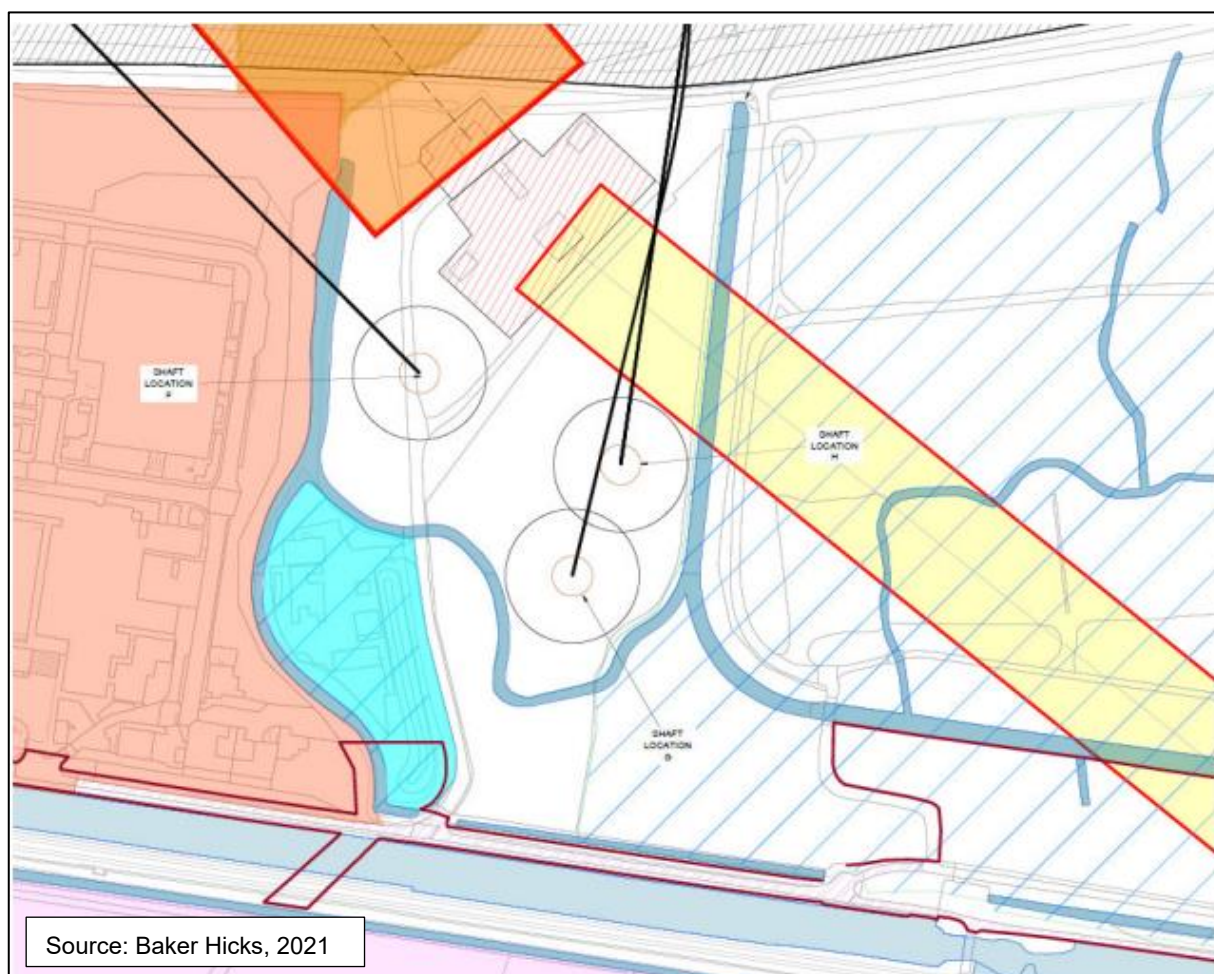
Sub Area Ref.	Positive Tunnel, Shaft, Headhouse and SEC Engineering Factors	Negative Tunnel, Shaft, Headhouse and SEC Engineering Factors	Overall Rank 1-8 (1 being the most favourable from an engineering perspective)
T1	<ul style="list-style-type: none"> Close to existing infrastructure, allows effective connection to the existing Overhead Line (OHL). Most new assets could be constructed outside of outages. Good compromise between tunnel length, alignment and vicinity to existing OHL asset for connection. Area clear of underground services / obstructions. Good existing access ways to the new construction site and temporary working areas. 	<ul style="list-style-type: none"> Some shaft locations within area would require additional outages and/or additional temporary pylons. PFA fill to an unknown depth 	1
T2	<ul style="list-style-type: none"> Short tunnelling route. 	<ul style="list-style-type: none"> Significant depth of PFA and would potentially require stabilisation prior to construction, plus significant cut and fill works over a large area. Shaft depths greater due to higher elevation 4 No Layout option of ground profile. Far from existing OHL asset, would likely require additional OHL pylons or extended length of cables for connection. 	4
T3	<ul style="list-style-type: none"> Shortest tunnelling route. 	<ul style="list-style-type: none"> Great distance from the existing infrastructure, would require additional OHL pylons and/or extensive length of underground cables for connection. Poor ground conditions (described as very soft deposits). Poor existing access to temporary working areas. 	6
T4	<ul style="list-style-type: none"> Potentially thinner band of PFA. Close to existing infrastructure, depending on final connection option no additional pylons would be required; allows viable connection to the existing OHL asset. 	<ul style="list-style-type: none"> Small site area for permanent assets like compound, headhouse and shaft. Increased tunnel drive / length compared to T1, T2 and T3. Small site area for temporary works / laydown areas. Requires diversion of existing road through the PoT site to facilitate construction access. Existing underground services on west part of site will require diversion to facilitate new assets. 	3
T5	<ul style="list-style-type: none"> Likely no additional pylons would be required; allows viable connection to the existing assets. 	<ul style="list-style-type: none"> Increased tunnel drive / length. PFA fill to an unknown depth. 	2

Sub Area Ref.	Positive Tunnel, Shaft, Headhouse and SEC Engineering Factors	Negative Tunnel, Shaft, Headhouse and SEC Engineering Factors	Overall Rank 1-8 (1 being the most favourable from an engineering perspective)
		<ul style="list-style-type: none"> Site relatively small and orientation difficult, but workable. 	
T6	<ul style="list-style-type: none"> Large size area so headhouse and sealing end compound could be placed comfortably. 	<ul style="list-style-type: none"> Longest tunnel drive / length. Would require temporary diversion of overhead lines. Recently placed materials are subject to long term consolidation leading to settlement of the ground surface. 	5
T7	<ul style="list-style-type: none"> Large flat working area for temporary construction works. Good existing access ways to the new construction site and temporary working areas. 	<ul style="list-style-type: none"> Deep foundations will cause construction difficulties for the shaft and SEC, particularly foundations for gantries and High Voltage (HV) equipment. Deep foundations will cause construction difficulties for tunnelling; likely extensive asbestos deposits in ground. Deep foundations likely to cause issues with long term durability of tunnel. Existing underground services throughout site will require identification / diversion to facilitate new buried assets. Tunnel route would pass to the west of the existing tunnel (likely crossing would be required) and under the jetty for Port of Tilbury with dolphin foundations - construction risk. 	7
T8	Hardstanding, close to existing SEC and good existing access routes towards area.	Area too small to be viable for required headhouse and SEC. Tunnel drive alignment would be within the protection / exclusion zone of the existing tunnel; no viable bend radius can be accommodated to avoid.	8

Gravesend Site Area

2.6.10 Plate 2-8 below shows the three identified shaft location options at Gravesend.

Plate 2-8: Extract from Gravesend Constraints and Tunnel Route Plan



- 2.6.11 The land immediately south of the existing SEC was identified as having the least constraints for the permanent location of the head house and sealing end compound. The land is within the ownership of National Grid and has no past land use that could technically constrain its development.
- 2.6.12 The major constraint in this location ,however, is the existing overhead lines passing into the existing sealing end compound.
- 2.6.13 The land to the east is an RSPB nature reserve and the Metropolitan Police Firing Range. The use of this land was not considered as environmentally favourable as the land to the south of the existing sealing end compound.
- 2.6.14 **Shaft Location F** to the west would be restricted to a tunnel passing to the west of the existing tunnel under the existing sealing end compound. It would also require access to the flood defences along the River Thames.
- 2.6.15 **Shaft Location G and H** are along a line on the boundary of the existing site positioned to allow sufficient working room with the constraint of the height restriction of the existing overhead lines. Tunnels from both these shafts would run to the east of the existing tunnel.

Tunnel Constraints

- 2.6.16 Due to the positioning of the land available it is considered that the proposed tunnel alignment will be to the east of the existing tunnel, ensuring it does not cross the boundary laid out by National Highway's Lower Thames Crossing project, whilst also considering the deep foundations of the former Tilbury Power Station that exist to the west of the existing tunnel on the Tilbury side.

Main Compound and Drive Site

- 2.6.17 An initial appraisal of the sites based on access, current land use and environmental constraints suggested that the main construction compound site and the tunnel boring drive shaft would be better suited at the Tilbury Site. It was recognised that the land at Gravesend is within a Local Wildlife Site and that vehicle access to the site is limited along the Thames and Medway Canal Road.
- 2.6.18 The access to Gravesend site is through Gravesend town centre and a narrow single carriageway road would present problems for the extended construction period of tunnelling. Whilst materials could be delivered and removed via a jetty on the River Thames, the personnel requirements arriving on a shift for a drive site would still present a significant number of vehicle movements. The widening of the carriageway is not possible due to the presence of the canal.
- 2.6.19 The area available at Tilbury is sufficient for the permanent and temporary works requirements. The desk study identification of the deposition of ash from the power station would lead to positioning the permanent works in an area where the land was not infilled, but this is constrained by the overhead line to the existing compound which can't be disrupted during construction.
- 2.6.20 It was determined that there would be sufficient land adjacent to the existing sealing end compound for it to be considered for either the drive or reception shaft for the tunnel boring.

Sealing End Compound and Overhead Line Connection Options

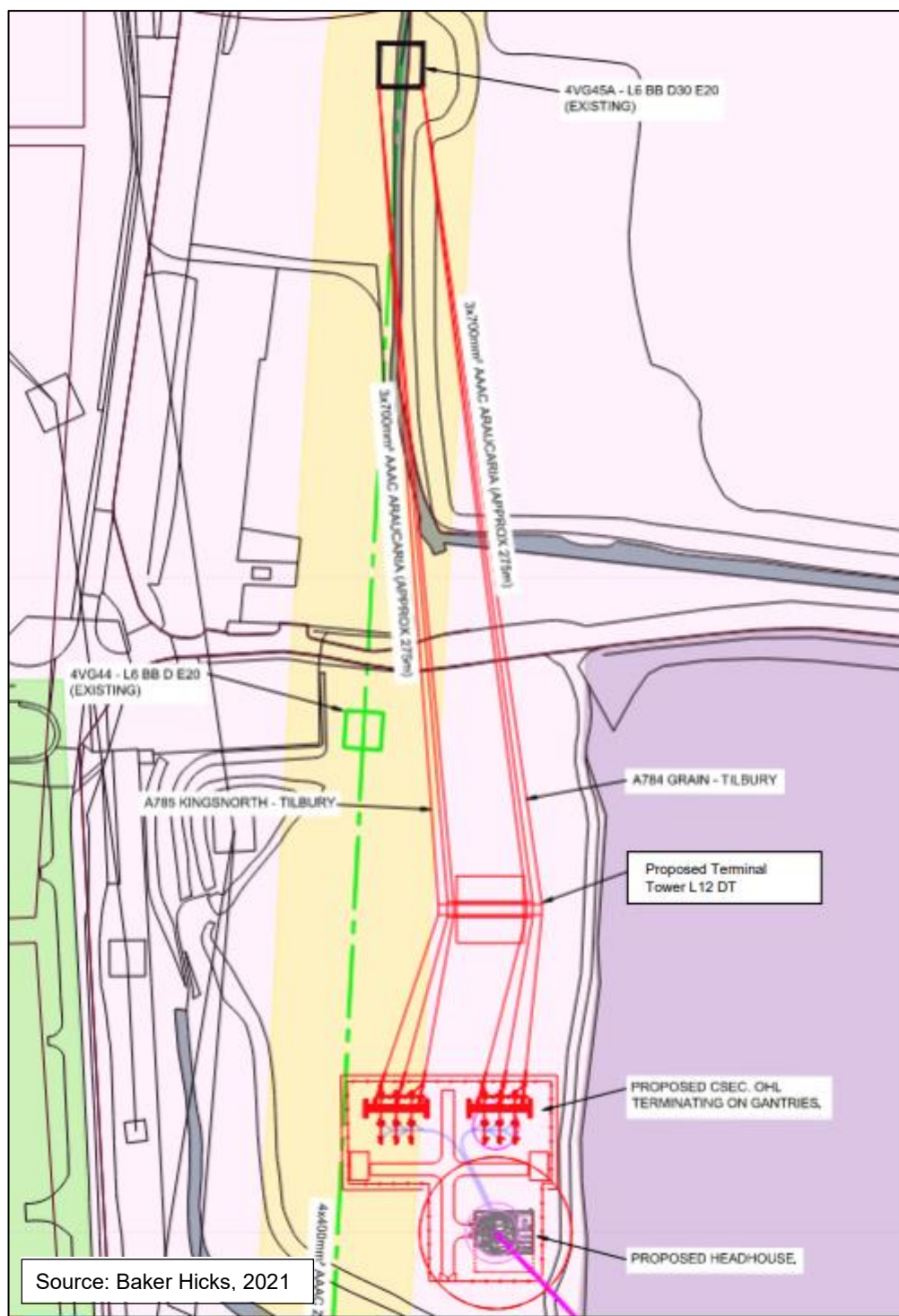
Tilbury

- 2.6.21 Following the appraisal of the sub-areas and the shaft locations, seven Sealing End Compound (SEC) and Overhead Line (OHL) connection options were assessed at Tilbury. Each option has briefly been described below and a comparison (see Table 2-3 below) has been made between the options.

Tilbury Option 1

- 2.6.22 This option is based on the Shaft Location E. A new terminal pylon would need to be constructed offline to terminate the circuits onto new proposed SEC.

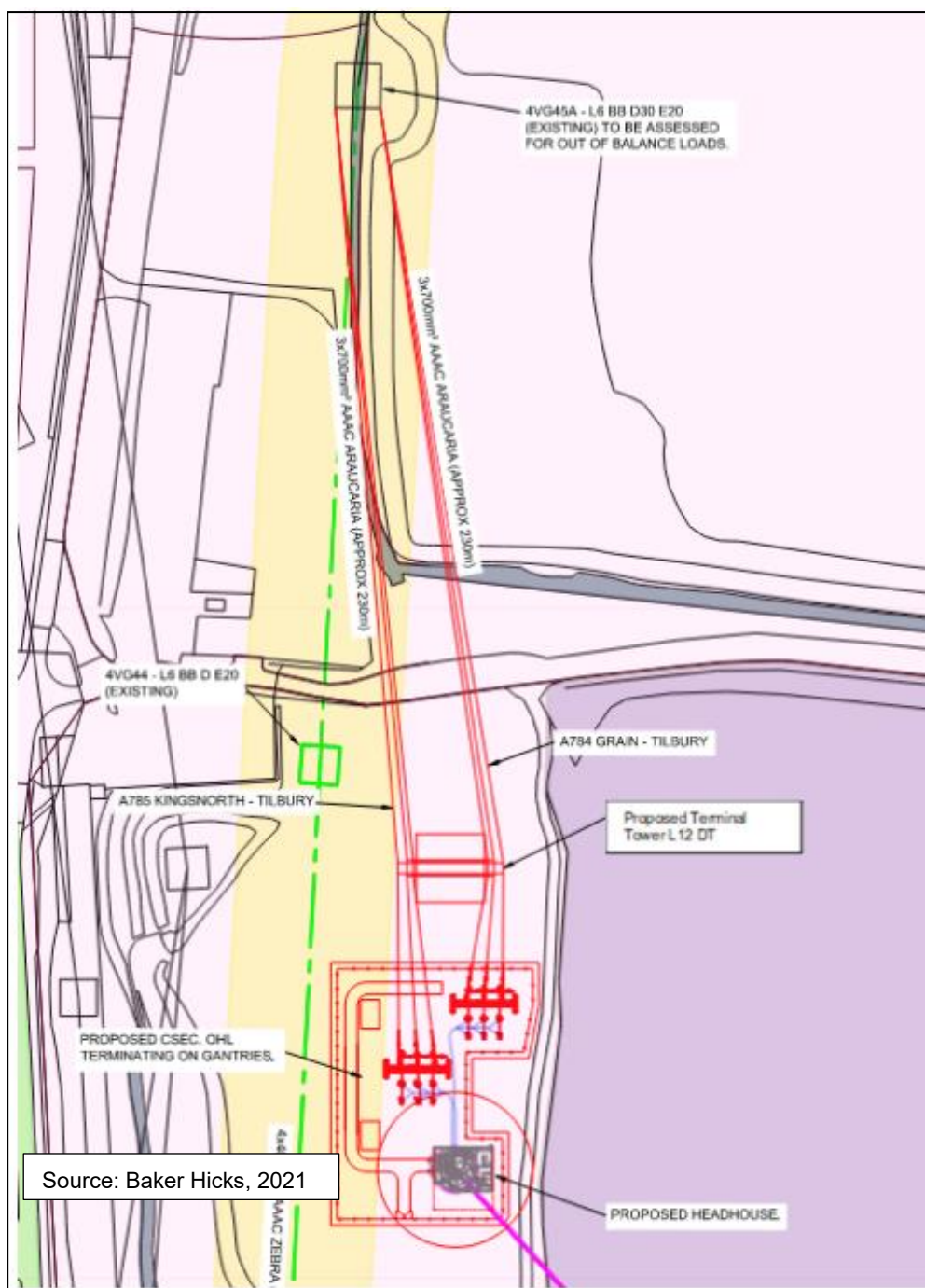
Plate 2-9: Tilbury Option 1



Tilbury Option 2

- 2.6.23 This option is based on the Shaft Location C. A new terminal pylon would need to be constructed offline to terminate the circuits onto the new proposed SEC. The SEC footprint is larger than option 1 due to staggered arrangement of circuit bays.

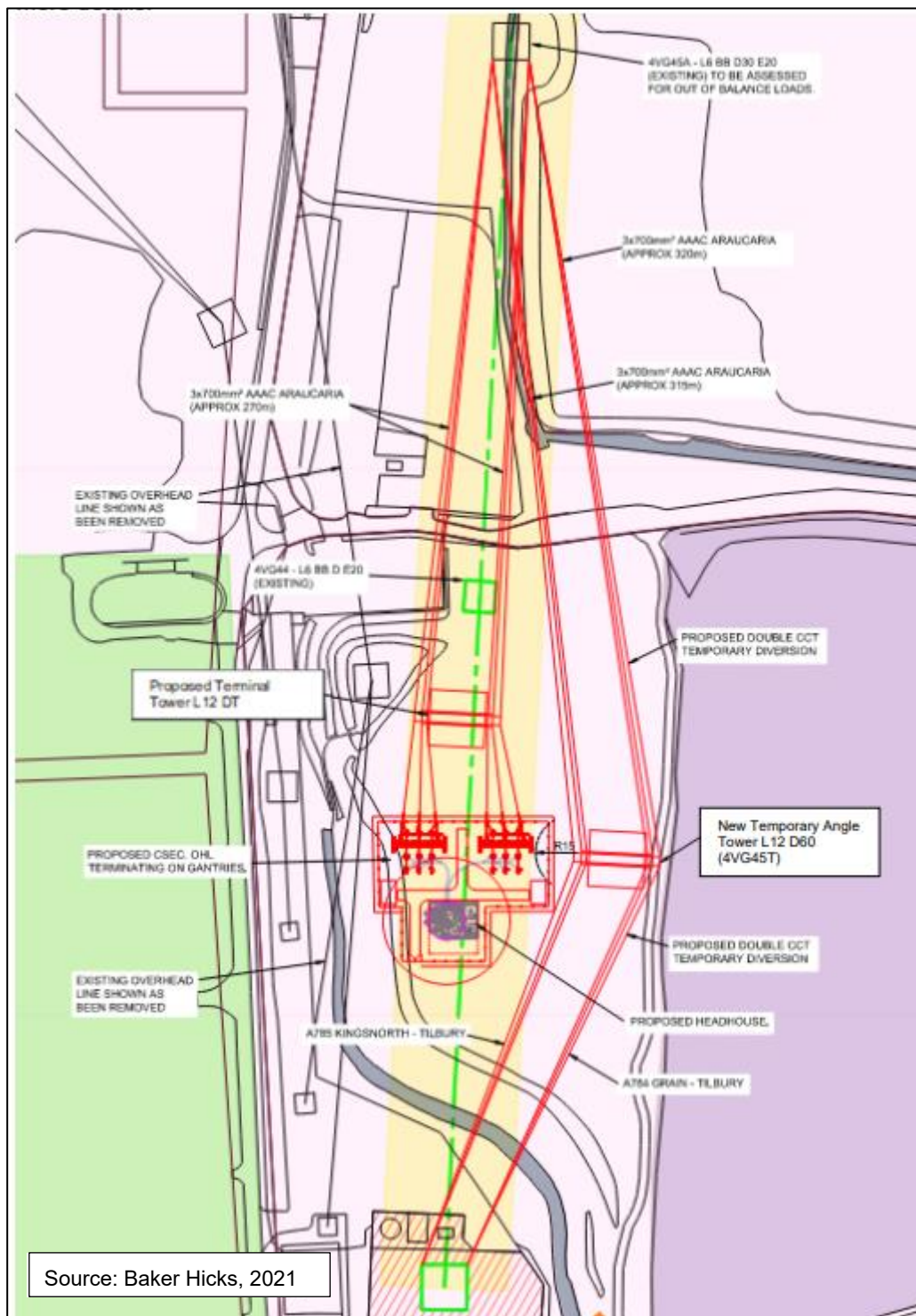
Plate 2-10: Tilbury Option 2



Tilbury Option 3

- 2.6.24 This option is based on the Shaft Location D. A new terminal pylon would need to be constructed inline to replace exiting pylon at 4VG44 and terminate the circuits onto new proposed SEC. To facilitate the construction of the new terminal pylon, SEC, head house and tunnelling work, a temporary diversion of both circuits will be required. Temporary diversion will be constructed between 4VG43 - 4VG45A via temporary pylon at 4VG45T.

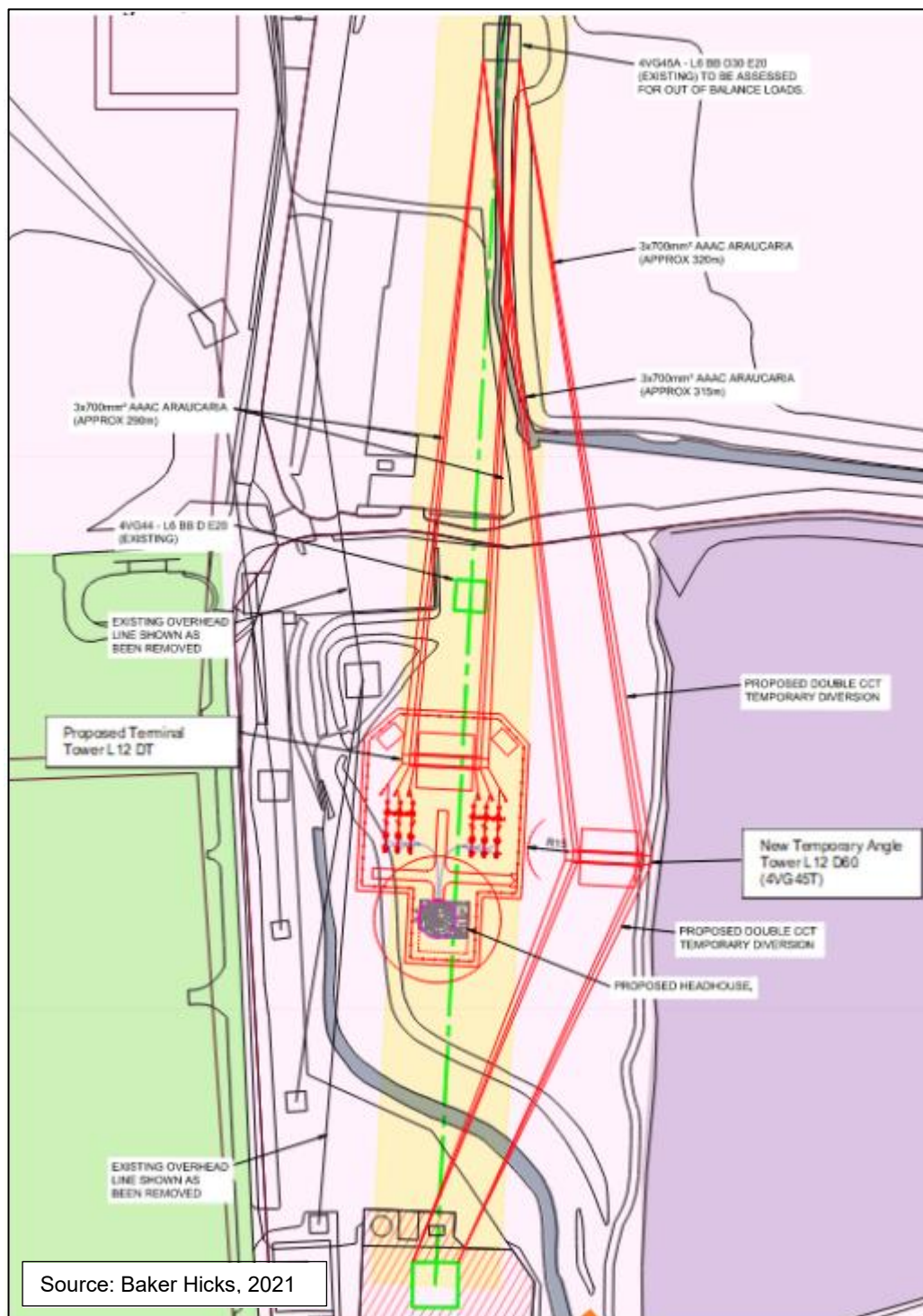
Plate 2-11: Tilbury Option 3



Tilbury Option 4

- 2.6.25 This option is based on the Shaft Location D. A new terminal pylon would need to be constructed inline to replace the existing pylon at 4VG44 and terminate the circuits onto new proposed SEC. To facilitate the construction of the new terminal pylon, SEC, head house and tunnelling work, a temporary diversion of both circuits will be required. Temporary diversion will be constructed between 4VG43 - 4VG45A via a temporary pylon at 4VG45T. Both circuits will be terminated on anchor blocks. As such, footprint of the SEC would be greater to accommodate the new terminal pylon and the anchor blocks.

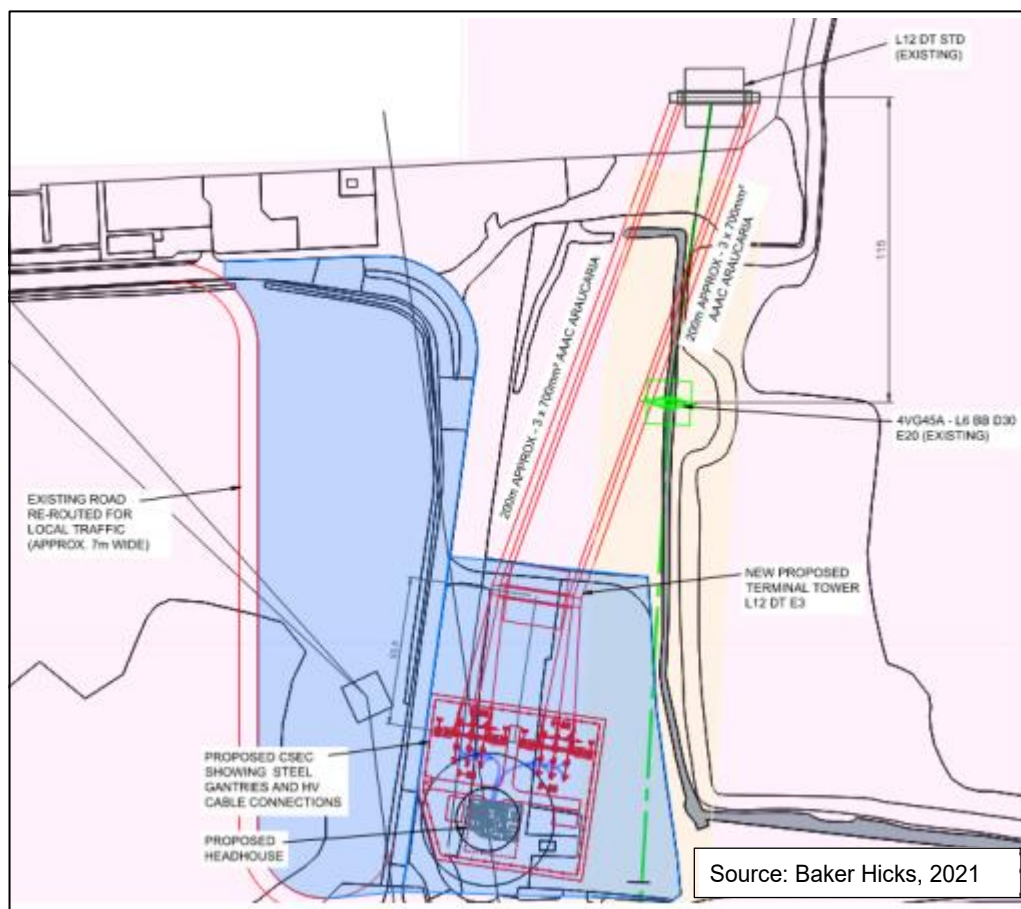
Plate 2-12: Tilbury Option 4



Tilbury Option 5

2.6.26 This option is based on the Shaft Location J. A new terminal pylon would be constructed offline to replace existing pylon at 4VG45A. Both circuit bays can be built offline.

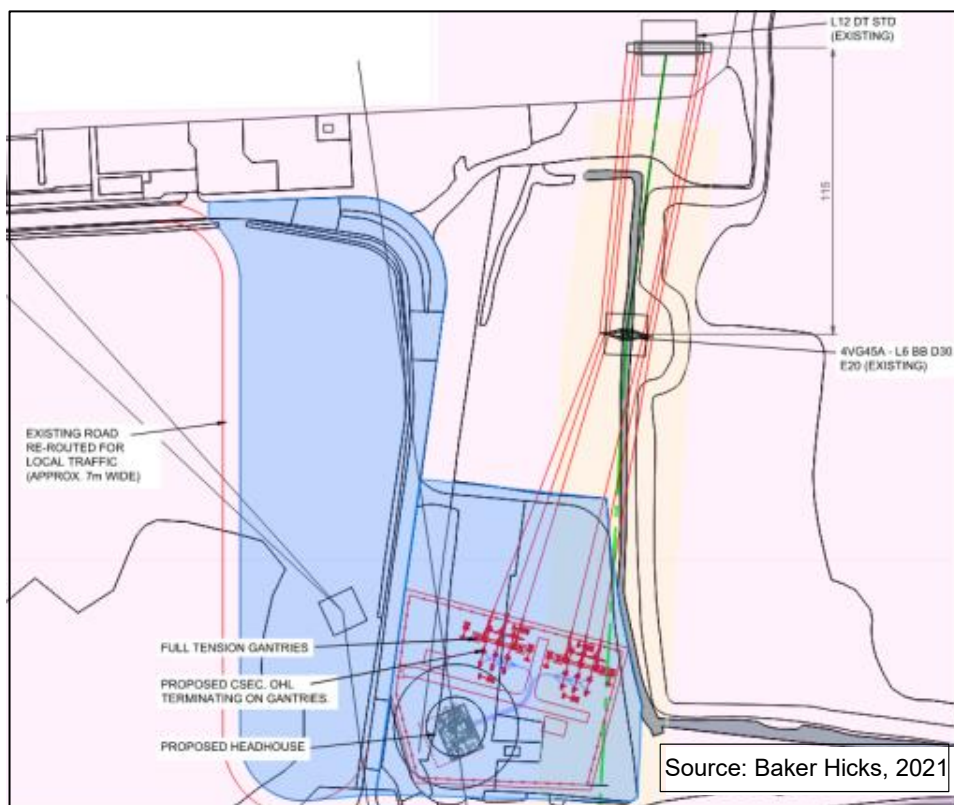
Plate 2-13: Tilbury Option 5



Tilbury Option 6

- 2.6.27 This option is based on the Shaft Location J. The existing pylon at 4VG45A would be used to terminate both circuits onto full tension gantries at new proposed SEC. Construction of Kingsnorth - Tilbury circuit bay was noted can be achieved offline.

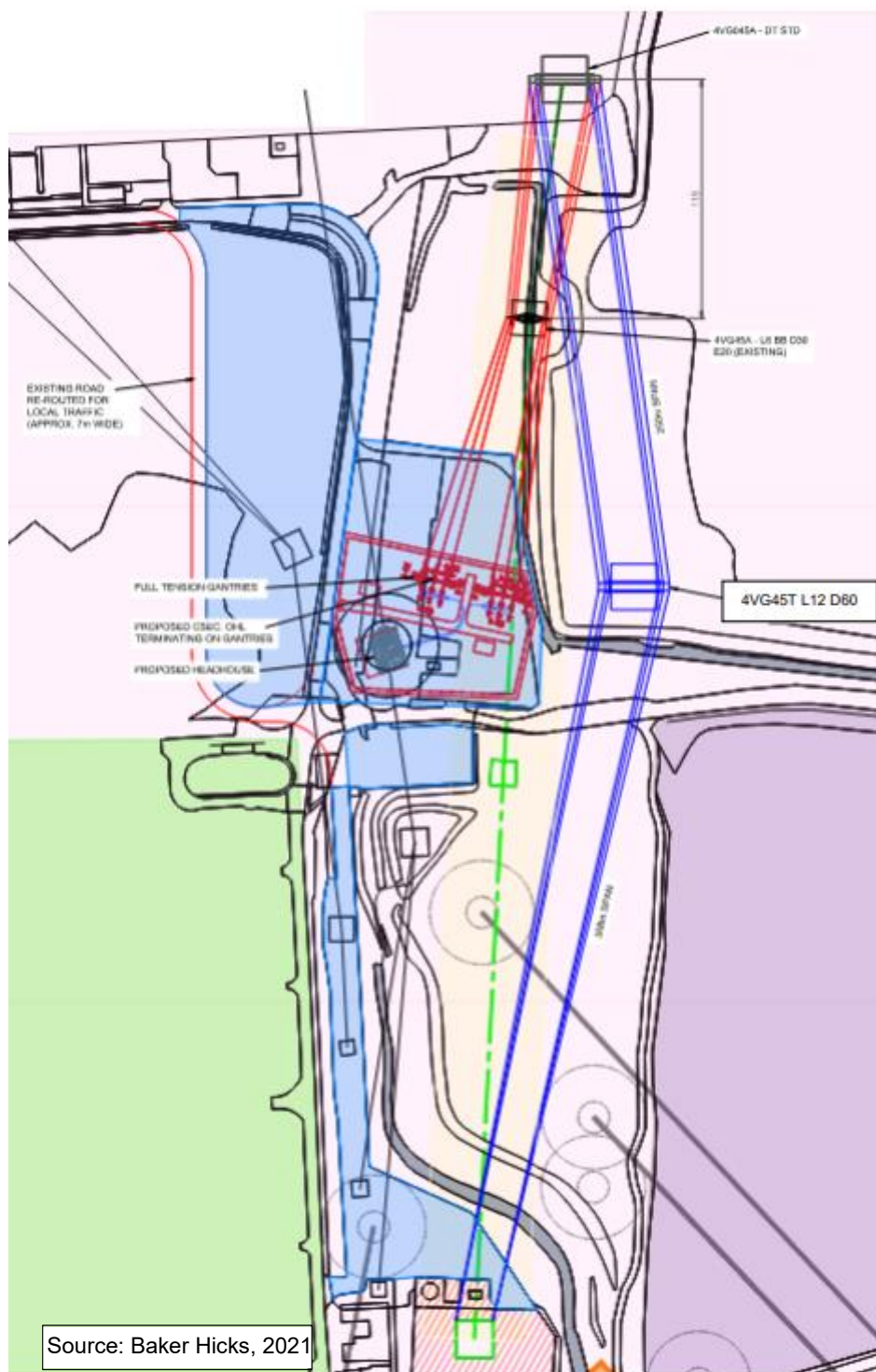
Plate 2-14: Tilbury Option 6



Tilbury Option 7

- 2.6.28 This option is based on the Shaft Location J. Existing pylon at 4VG45A would be used to terminate both circuits onto full tension gantries at new proposed SEC. To facilitate the construction of both circuit bays offline, a temporary diversion of both circuits will be required.

Plate 2-15: Tilbury Option 7



Tilbury Site OHL termination and SEC Location Option Comparison and Preferred option

2.6.29 Following the identification of the seven options for the Tilbury Overhead Line and SEC locations, a comparison was undertaken to determine the most suitable of the option that should be taken forward for further design consideration, the outcome is outlined in Table 2-3 below.

Table 2-3: Tilbury Siting Options Appraisal

Option	Positive outcomes	Negative outcomes	Selected for further design development
Option 1	<ul style="list-style-type: none"> Shorter tunnel length. New terminal pylon. Grain – Tilbury circuit bay at SEC can be constructed offline. Single circuit outage will be required to build the Kingsnorth. Tilbury circuit bay. 	<ul style="list-style-type: none"> Possibility of contaminated land (Ground Investigations (GI) to confirm). Proposed site area is within the potential SSSI site. 	No – proposed site area is within the potential SSSI site
Option 2	<ul style="list-style-type: none"> Shorter tunnel length. Offline construction of new terminal pylon and both circuit bays onto SEC. Non-standard layout of SEC. 	<ul style="list-style-type: none"> Possibility of contaminated land (GI to confirm). Proposed site area is within the potential SSSI site. 	No – proposed site area is within the potential SSSI site
Option 3	<ul style="list-style-type: none"> Offline construction of tunnelling work, SEC, terminal pylon. 	<ul style="list-style-type: none"> Longer tunnel length. Temporary diversion of both circuits. 	No – proposed site area is within the potential SSSI site
Option 4	<ul style="list-style-type: none"> Offline construction of tunnelling work, SEC, terminal pylon. 	<ul style="list-style-type: none"> Longer tunnel length Temporary diversion of both circuits. 	No – proposed site area is within the potential SSSI site.
Option 5	<ul style="list-style-type: none"> New terminal pylon, SEC and head house are outside potential SSSI area. Removing the existing pylon from potential SSSI area. All the construction work can be done offline. 	<ul style="list-style-type: none"> Diversion of existing road will be required to accommodate the laydown area. SEC is very close to existing road. SEC gate will be constructed inside to allow appropriate curvature of entrance road. 	Yes – Selected for further development.
Option 6	<ul style="list-style-type: none"> Re-utilisation of existing pylon at 4VG45A. Overall footprint of the new installation is much less comparing with other options. Kingsnorth bay can be installed offline. Single circuit outage may be required for Grain-Tilbury Bay construction. SEC is away from existing road. SEC gate can be installed in usual place. 	<ul style="list-style-type: none"> Existing pylon 4VG45A is within potential SSSI area. Diversion of existing road will be required to accommodate the laydown area 	No – proposed site area is within the potential SSSI site.
Option 7	<ul style="list-style-type: none"> Re-utilisation of existing pylon at 4VG45A Both circuit bays can be constructed offline. SEC is away from existing road. SEC gate can be installed in usual place 	<ul style="list-style-type: none"> Existing pylon 4VG45A is within potential SSSI area. Diversion of existing road will be required to accommodate the laydown area. Need double circuit diversion. 	No – proposed site area is within the potential SSSI site.

Option	Positive outcomes	Negative outcomes	Selected for further design development
		<ul style="list-style-type: none"> Need more outage for temporary diversion. Larger construction footprint. 	

2.6.30 Option 5 was determined to be the most appropriate option and was taken forward for further design development as the option outside of the proposed SSSI and would remove existing pylons within the proposed SSSI as well.

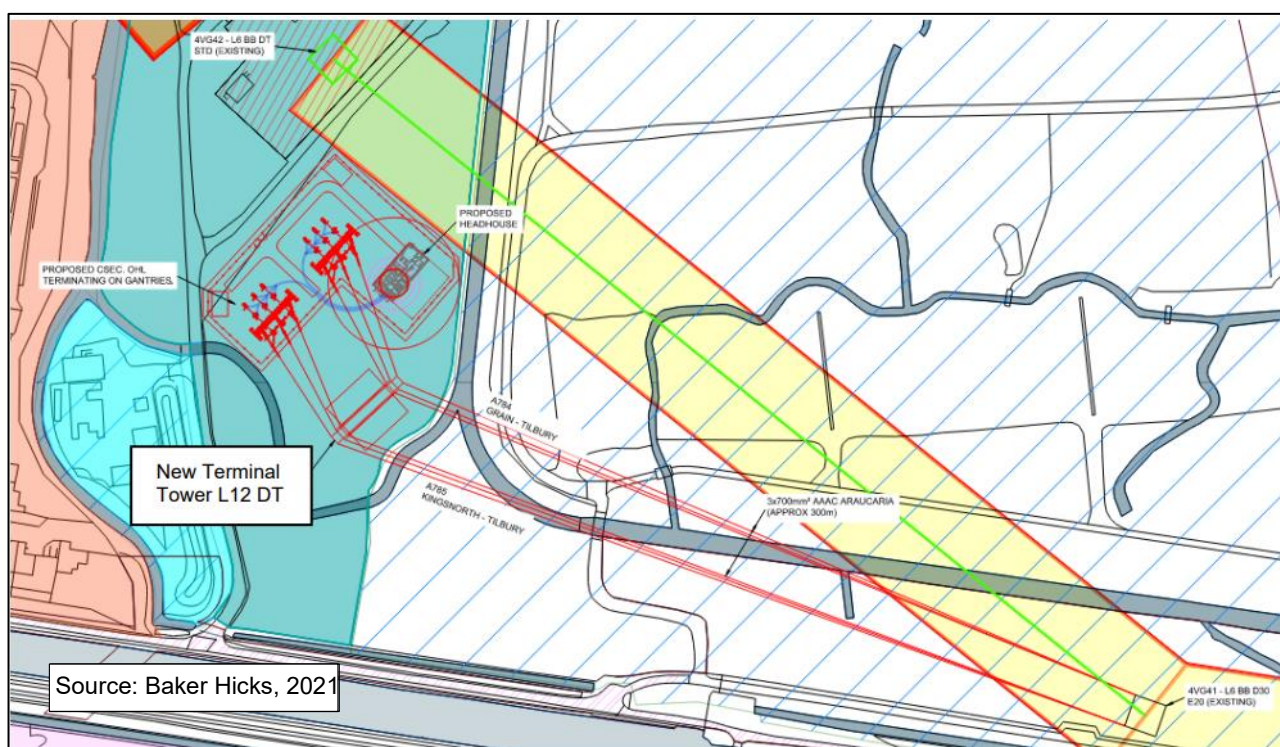
Gravesend

2.6.31 Following the appraisal of the shaft locations, six SEC and OHL connection options were assessed. Each option has briefly been described below and a comparison (see Table 2-4 below) has been made between the options.

Gravesend Option 1

2.6.32 This option is based on the shaft location H. A new terminal pylon would be constructed offline at 4VG42 to terminate the circuits onto new proposed SEC. Both circuit bay can be built offline.

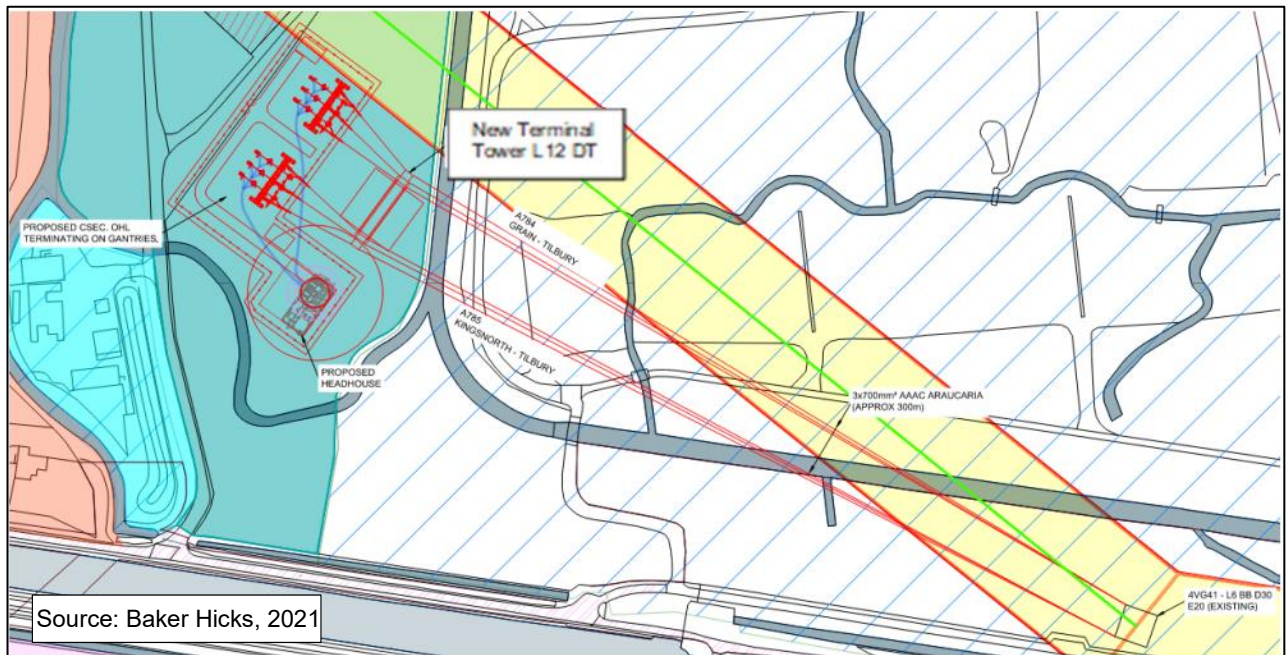
Plate 2-16: Gravesend Option 1



Gravesend Option 2

2.6.33 This option is based on the Shaft Location G. A new terminal pylon would be constructed offline at 4VG42 to terminate the circuits onto new proposed SEC. Both circuit bay can be built offline.

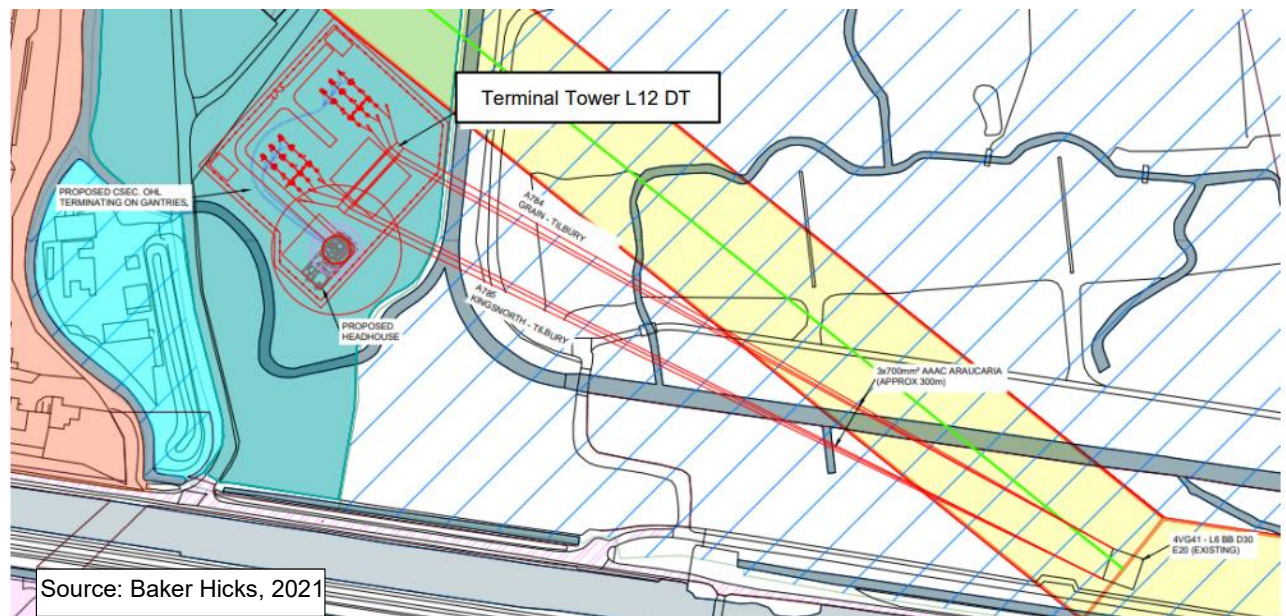
Plate 2-17: Gravesend Option 2



Gravesend Option 3

- 2.6.34 This option is based on the shaft location G. A new terminal tower would be constructed offline at 4VG42 to terminate the circuits to anchor blocks at new proposed SEC. Both circuit bay can be built offline. SEC footprint is larger than other options to accommodate the terminal tower and anchor blocks within the compound.

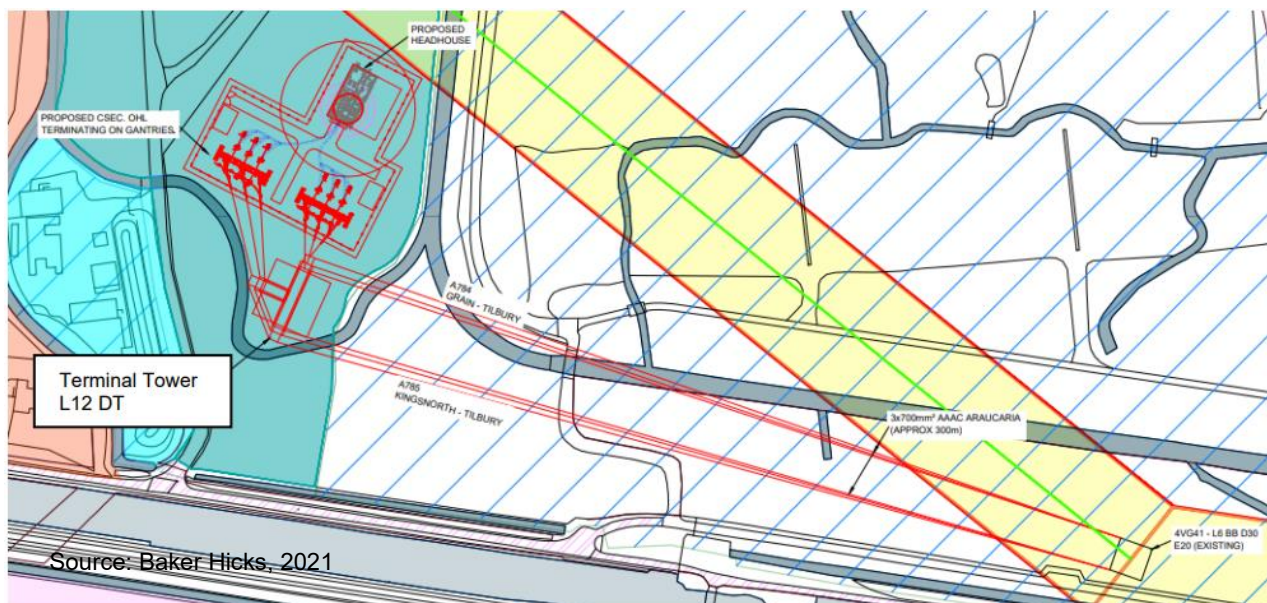
Plate 2-18: Gravesend Option 3



Gravesend Option 4

- 2.6.35 This option is based on the shaft location H. A new terminal tower with auxiliary crossarm would be constructed offline near 4VG42 to terminate the circuits onto new proposed SEC. Both circuit bay can be built offline.

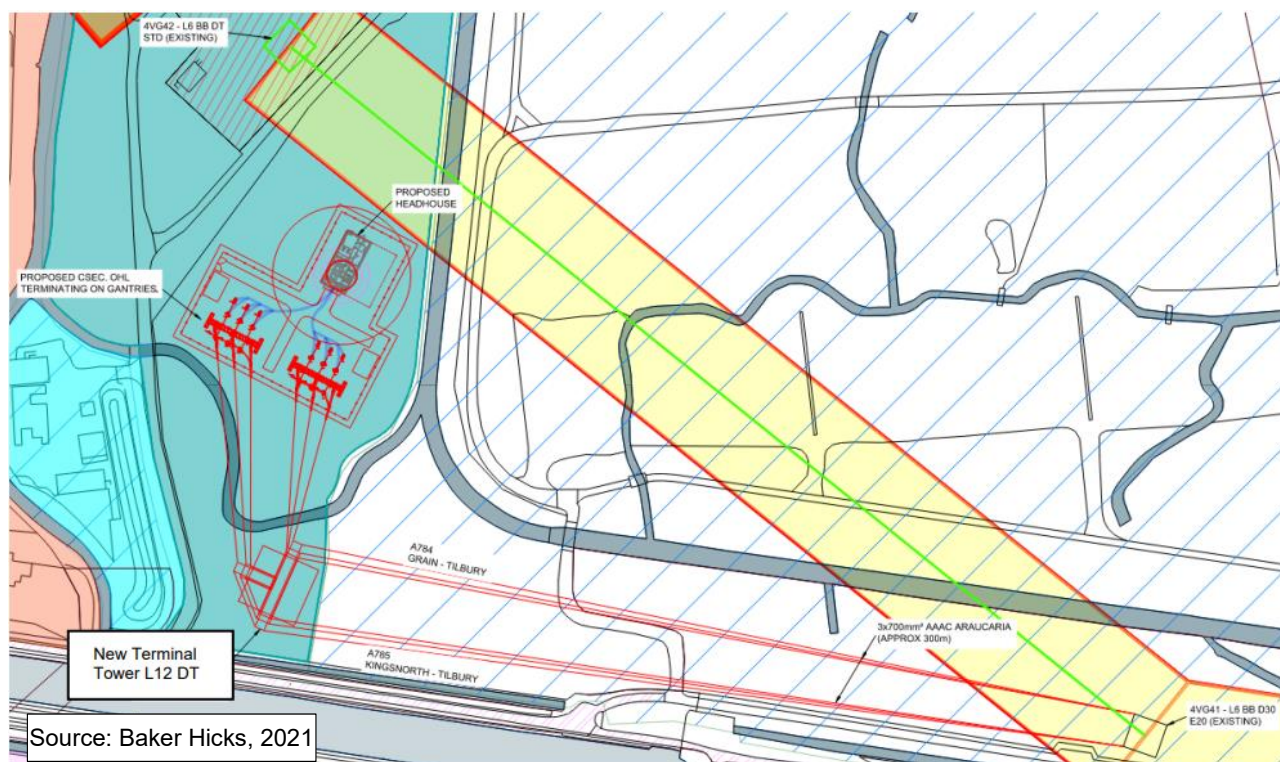
Plate 2-19: Gravesend Option 4



Gravesend Option 5

- 2.6.36 This option is based on the shaft location H. A new terminal tower with auxiliary crossarm would be constructed offline at 4VG42 to terminate the circuits onto new proposed SEC. Both circuit bay can be built offline. Proposed location of the new terminal tower is further away from the existing line.

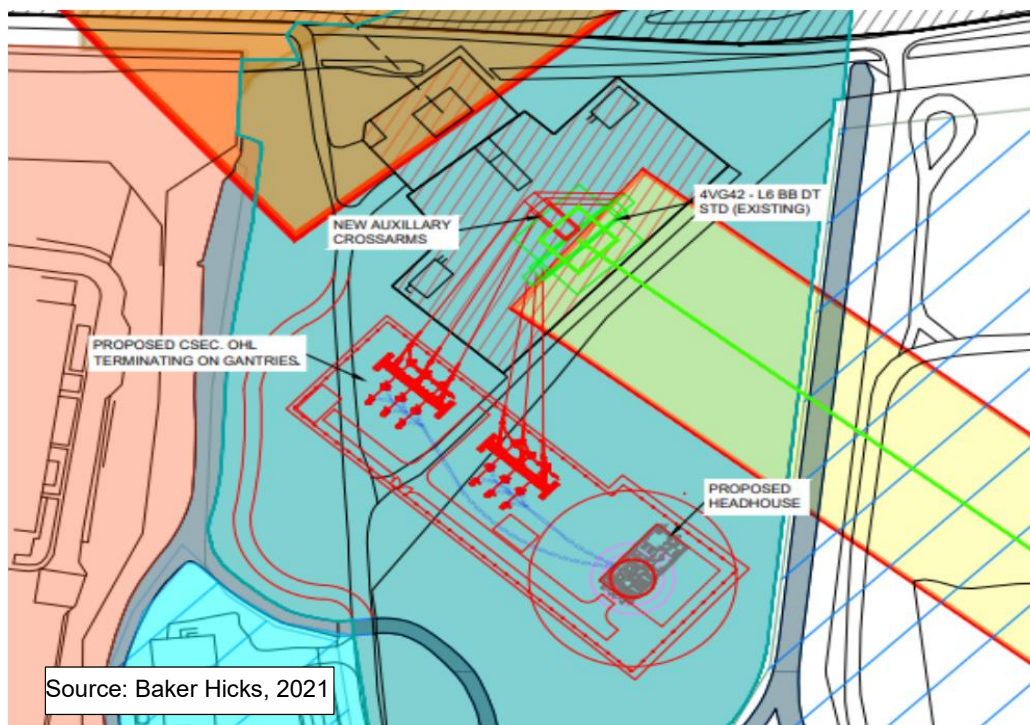
Plate 2-20: Gravesend Option 5



Gravesend Option 6

- 2.6.37 This option is based on the shaft location H. Existing terminal tower 4VG42 would be used. Auxiliary crossarm would be installed to existing terminal tower to terminate the circuits onto new proposed SEC. Both circuit bay can be built offline.

Plate 2-21: Gravesend Option 6



Gravesend Site OHL termination and SEC Location Option Comparison and Preferred option

- 2.6.38 Following the identification of the six options for the Gravesend OHL and SEC locations a comparison was undertaken to determine the most suitable of the options that should be taken forward for further design consideration, the outcome is outlined in Table 2-4 below.

Table 2-4: Gravesend Option

Option	Positive outcomes	Negative outcomes	Selected for further design development
Option 1	<ul style="list-style-type: none"> Shorter tunnel length -new terminal tower, SEC, head house can be built offline. Existing road can be utilised for the access to SEC. 	<ul style="list-style-type: none"> Sharp bends are required for HV cable. Head house is in close proximity of new Grain. Tilbury downleads. 	No
Option 2	<ul style="list-style-type: none"> New terminal tower, SEC, head house can be built offline. -Existing road can be utilised for the access to SEC. Change in angle of deviation for existing tower 4VG41 is minimum. 	<ul style="list-style-type: none"> Longer tunnel length in compare with option 1. Sharp bends are required for HV cable. 	Yes – Selected for further development.

Option	Positive outcomes	Negative outcomes	Selected for further design development
Option 3	<ul style="list-style-type: none"> New terminal tower, SEC, head house can be built offline. Existing road can be utilised for the access to SEC. Change in angle of deviation for existing tower 4VG41 is minimum. 	<ul style="list-style-type: none"> Longer tunnel length in compare with option 1. Sharp bends are required for HV cable. SEC footprints is larger to accommodate the new terminal tower and anchor block. 	No
Option 4	<ul style="list-style-type: none"> Shorter tunnel length -new terminal tower, SEC, head house can be built offline. Existing road can be utilised for the access to SEC. HV cable termination to SEC is easier than other options. 	<ul style="list-style-type: none"> Auxiliary crossarm will be required on Terminal tower Terminal tower positioned very close to ditch- Grain - Tilbury gantry is very close to terminal tower. Required phase to phase and phase to earth clearance will be difficult to achieve. Change in angle of deviation for existing tower 4VG41 is large. Steelwork and foundation upgrade may be required at tower 4VG41. Temporary bridge may be required to facilitate the installation of new terminal tower. 	No
Option 5	<ul style="list-style-type: none"> Shorter tunnel length -New terminal tower, SEC, head house can be built offline. Existing road can be utilised for the access to SEC. HV cable termination to SEC is easier than other options. 	<ul style="list-style-type: none"> Terminal tower required auxiliary crossarm Terminal tower positioned very close to ditch -Grain - Tilbury gantry is very close to terminal tower. Required phase to phase and phase to earth clearance will be difficult to achieve. Change in angle of deviation for existing tower 4VG41 is large. Steelwork and foundation upgrade may be required at tower 4VG41. 	No
Option 6	<ul style="list-style-type: none"> Re-utilising the existing terminal tower 4VG42. HV cable termination to SEC is easier. 	<ul style="list-style-type: none"> Installation of new auxiliary crossarm may be required double circuit outage. Larger footprint of SEC More challenging construction. De-commission and dismantling of existing Kingsnorth-Tilbury Bay will require prior to energise the Grain - Tilbury circuit. Existing road need to be diverted to facilitate access to river bank. 	<ul style="list-style-type: none"> No

2.6.39 Option 2 was determined to be the most appropriate option and was taken forward for further design development because it has the best balance of positives to negatives.

Horizontal Directional Drilling Feasibility

- 2.6.40 The use of Horizontal Directional Drilling (HDD) as a construction method for the tunnel was initially reviewed. The ground profile contains a gravel layer which would present a significant challenge with horizontal penetration for any appreciable distance. The number and length of bores required would be significant resulting in larger launch and reception pits which would result in shafts within the RSPB nature reserve at Gravesend and the PFA area at Tilbury.
- 2.6.41 HDD was therefore considered high risk, high cost and without significant benefits when compared to tunnel boring, and therefore this tunnelling option would not be taken further forward in the design of the Proposed Development.

2.7 The Preferred Option

- 2.7.1 The preferred option consists of a new tunnel to the east of the existing tunnel, described in the Strategic Options Appraisal as Option 2.
- 2.7.2 For the Tilbury side, Option 5 with Shaft Location J (within sub-area T4) was selected. This option consists of a new terminal pylon that would be constructed offline in order to replace an existing pylon (4VG45A). The new terminal pylons and headhouses are located outside of the potential SSSI (the old pylon that is to be removed is located within the potential SSSI area). Shaft Location J is the most northerly of the shaft locations and is located midway between the existing sealing end compound and the main substation. The location is constrained by the existing overhead lines to the east, roads to the south and west and any movement north is constrained by the need for the sealing end compound and gantries to tie into the existing network.
- 2.7.3 For the Gravesend side, Option 2 with Shaft Location G was selected. This option consists of a new terminal pylon, sealing end compound and headhouse which would be constructed offline. Shaft location G is along the boundary line of the existing site and has been positioned to allow sufficient working room with the constraint of the height restriction of the existing overhead lines.
- 2.7.4 Refer to Chapter 3: Project Description for more details on the Proposed Development.

2.8 Summary and Conclusions

- 2.8.1 The Strategic Options Appraisal identified and assessed that installation of new cables within a new tunnel beneath the River Thames was preferable compared with installing new cables within the existing tunnel or opting for an overhead line crossing the River Thames due to health and safety concerns associated with the existing tunnel, and the environmental impact was considered to be lower and temporary in nature compared to that of a new overhead line. The strategic options were discussed with relevant consultees in order to receive their feedback on the 3 options, the appraisal, and the emerging preference of a new tunnel. No objections to a new tunnel were received from relevant consultees.
- 2.8.2 Once the decision to adopt the new tunnel as outlined in the Strategic Options Appraisal was taken, further siting work was carried out to identify areas that were suitable for the temporary and permanent infrastructure required for the Proposed Development in Tilbury and Gravesend. A range of considerations including, former land use, access to a major road, environmental constraints, topography, engineering design and cost were factored into the decision to determine the approach and location for the cable sealing end compounds, headhouses, overhead line connection and tunnel location.
- 2.8.3 The preferred option taken forward for planning and Environmental Impact Assessment (EIA) is Option 5 for Tilbury with Shaft Location J (within sub-area T4 – see Plate 2-13) and is the most northerly of the shaft locations. For Gravesend, Option 2 with Shaft Location G along the boundary of the existing site was selected.

2.9 References

Ref 2-1 Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (2017 Regulations), Available at: <https://www.legislation.gov.uk/ukxi/2017/571/contents/made> (Accessed: 29/08/2023).

Ref 2-2 National Grid ESO, Future Energy Scenarios, Available at: <https://www.nationalgrideso.com/future-energy/future-energy-scenarios> (Accessed: 29/08/2023).

Ref 2-3 National Grid ESO, Electricity Ten Year Statement (2023) Available at: <https://www.nationalgrideso.com/research-and-publications/electricity-ten-year-statement-etys> (Accessed: 29/08/2023).

Ref 2-4 National Grid ESO, Network Options Assessment 2021/22 Refresh (July 2022), Available at: <https://www.nationalgrideso.com/research-and-publications/network-options-assessment-noa> (Accessed: 29/08/2023).

Ref 2-5 Ofgem, Decision on accelerating onshore electricity transmission investment (15 December 2022). Available at: <https://www.ofgem.gov.uk/publications/decision-accelerating-onshore-electricity-transmission-investment> (Accessed: 29/08/2023).

Ref 2-6 Electricity Act (1989), Available at: <https://www.legislation.gov.uk/ukpga/1989/29/contents> (Accessed: 29/08/2023).

Ref 2-7 Planning Act (2008), Available at: <https://www.legislation.gov.uk/ukpga/2008/29/contents> (Accessed: 29/08/2023).

2.10 Abbreviations

Abbreviation	Definition
ASTI	Accelerated Strategic Transmission Investment
DCO	Development Consent Order
EIA	Environmental Impact Assessment
EISD	Earliest in Service Date
ERTS	Emergency Return to Service
ES	Environmental Statement
ESO	Electricity System Operator
ETYS	Electricity Ten Year Statement
FES	Future Energy Scenarios
FFC	fluid filled cables
GI	Ground investigation
HDD	Horizontal Directional Drilling
HND	Holistic Network Design
HV	High Voltage
kV	Kilovolt
M&E	Mechanical and electrical
NOA	Network Options Assessment
NSIPs	Nationally Significant Infrastructure Projects
OHL	Overhead Line
PFA	Pulverised Fuel Ash
RSPB	Royal Society for the Protection of Birds
SEC	Sealing End Compound
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TKRE	Tilbury to Grain and Tilbury to Kingsnorth
TO	Transmission Owners
XLPE	Cross Linked Polyethylene

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National Grid Cable Tunnel Replacement Project

Environmental Statement Volume II Chapter 5 Consultation

December 2023

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5 Consultation

5.1 Introduction

5.1.1 This chapter of the Environmental Statement (ES) outlines the stakeholder engagement activities undertaken on the Proposed Development to date which have been carried out as part of the optioneering phase and the environmental assessment process. Consultation and stakeholder input has been integral to the design and development of the Proposed Development in the identification of existing environmental sensitivities and identification and assessment of potential environmental impacts as a result of the Proposed Development.

5.1.2 A Statement of Community Involvement Report has been submitted with the planning applications to Thurrock Council and Gravesham Borough Council, which contains further details of how the public were engaged on the proposals for the Proposed Development.

5.1.3 A Project website was launched in September 2023 and can be accessed via the link below. This website includes detailed information about the Proposed Development including an interactive map, online public information exhibitions and contact information. The website can be found at:

<https://www.nationalgrid.com/electricity-transmission/network-and-infrastructure/infrastructure-projects/grain-to-tilbury>

5.2 National Grid's commitment to engagement

5.2.1 Under Section 38 and Schedule 9 of the Electricity Act 1989¹, National Grid has a duty to have regard to the desirability of the preservation of amenity: the natural environment, cultural heritage, landscape and visual quality, as well as the effect of National Grid's works on communities.

5.2.2 In addition, National Grid's Stakeholder, Community and Amenity Policy² sets out a commitment to meet this duty. It makes the following commitments to consultation when undertaking electricity works:

"We will promote genuine and meaningful stakeholder and community engagement. We will meet and, where appropriate, exceed the statutory requirements for consultation or engagement. We will adopt the following principles to help us meet this commitment:

- we will seek to identify and understand the views and opinions of all the stakeholders and communities who may be affected by our works;*
- we will provide opportunities for engagement from the early stages of the process, where options and alternatives are being considered and there is the greatest scope to influence the design of the works;*
- we will endeavour to enable constructive debate to take place, creating open and two-way communication processes;*
- we will ensure that benefits, constraints and adverse impacts of proposed works are communicated openly for meaningful stakeholder and community comment and discussion;*
- we will be clear about any aspects of the works that cannot be altered;*
- we will utilise appropriate methods and effort in engaging stakeholders and communities, proportionate to the scale and impact of the works; and, we will provide feedback on how views expressed have been considered and the outcomes of any engagement process or activity".*

¹ <https://www.legislation.gov.uk/ukpga/1989/29/contents>

² https://www.nationalgrid.com/sites/default/files/documents/National%20Grid_s%20commitments%20when%20undertaking%20works%20in%20the%20UK.pdf
December 2023

5.3 Early engagement on the Proposed Development

Strategic Options Appraisal

- 5.3.1 In 2022, National Grid undertook a Strategic Options Appraisal to inform the selection of a preferred option for the upgrade of the TKRE circuits. Three options were initially identified:
- the installation of new cables within the existing tunnel;
 - the installation of new cables within the new tunnel; and
 - the installation of a new overhead line across the River Thames.
- 5.3.2 The installation of new cables within the existing tunnel was determined not to be feasible due to the health and safety risks. The installation of a new overhead line across the River Thames, given its location and scale, would have had greater permanent environmental impacts. On balance, it was considered that the installation of new cables within a new tunnel was the most viable preferable option overall.
- 5.3.3 An 'Options Appraisal Report' was produced and used to approach the following relevant stakeholders for early pre-application advice:
- Thurrock Council;
 - Gravesham Borough Council;
 - Natural England;
 - Historic England;
 - Environment Agency;
 - Marine Management Organisation (MMO);
 - Port of Tilbury;
 - Port of London Authority; and
 - Royal Society for the Protection of Birds (RSPB).
- 5.3.4 Pre-application responses and advice were received from Thurrock Council, Natural England, Historic England, Environment Agency. Refer to Volume II Chapter 2: Alternatives for a summary of these responses as well as further information on the options appraisal process.

Engagement with Environmental Statutory Consultees on Strategic Options Report

- 5.3.5 A series of further meetings were held to brief these key stakeholders as the initial siting and preliminary design of the Proposed Development progressed. These are detailed in **Table 5-1** below:

Table 5-1: Engagement with Environmental Statutory Consultees on Strategic Options Report

Date	Stakeholder	Summary of Meeting
13th October 2022	Environment Agency	<p>The purpose of this meeting was to discuss the Proposed Development and the three options outlined above with the Environment Agency. The Strategic Options Appraisal report was shared in advance of the meeting. The conclusions outlined in the report as well as constraints associated with the relevant options were discussed. The following key constraints were noted by the Environment Agency:</p> <ul style="list-style-type: none"> • Flood zones 2 and 3 present on both sides of the river; • Flood defences present on both sides of the river, and National Grid should consider the 16m working distances during

Date	Stakeholder	Summary of Meeting
		<p>construction, where feasible, and residual risk in the preparation of any Flood Risk Assessment;</p> <ul style="list-style-type: none"> Existing and historic landfill sites on the north bank in east and consequent risks to water quality from mobilisation of sediment and contaminants; and Wildlife habitat including nearby European designated sites. <p>The Environment Agency advised their Thames Estuary 2100 Plan (currently undergoing revision) should be considered, especially with regards to depths of shafts and where the defences would be.</p> <p>The Environment Agency did not have a clear preference on which option should be taken forward but agreed Option 3 would be the more difficult of the three to consent and implement.</p>
25th November 2022	Royal Society for the Protection of Birds (RSPB)	<p>The RSPB stated that ground nesting birds will be a key consideration during construction phase along with other Schedule 1 birds such as marsh harriers and water voles. The RSPB also recommended Cliffe Pools as being suitable locations for exported spoil, stating that the RSPB are interested in using tunnel spoil from the Proposed Development to provide wildlife benefits at this location, should it be suitable.</p> <p>During the meeting, details of relevant RSPB contacts were provided to allow continued and meaningful engagement.</p>
28 November 2022	Natural England	<p>This meeting was held with the lead advisor in the West Anglia Team (covering Essex), the senior advisor for Thames Estuary and project manager for the SSSI Notification Project from Natural England to discuss the Proposed Development and run through the options presented in the Strategic Options Appraisal.</p> <p>Uncertainties surrounding the extent and location of land required for spoil storage were discussed alongside uncertainties of how the Proposed Development might interact with the Port of Tilbury Freeport proposals, it was however noted that an initial meeting had been held with Port of Tilbury to discuss this interaction.</p> <p>Natural England enquired about the noise generated from the Tunnel Boring Machine which would be required for Option 2, and also stated that the scope of impacts must consider all functionally linked land to European sites. Natural England explained that the Tilbury area is in the second stage of Natural England's 'Thames Estuary Invertebrates Essex & Kent' SSSI notification project.</p> <p>Natural England raised the presence of Goshem's Farm, an Ingrebourne Valley site which consists of ash deposits, has undergone 10 years of ecological monitoring and is particularly important for invertebrates with species of national interest. There are also notable plant, and breeding bird species and ditches of importance to aquatic wildlife.</p>
01st December 2022 (follow up meeting)	RSPB	<p>This meeting was held following the initial meeting on the 25 November 2022, attendees from the RSPB included the RSPB Area Manager for Kent & Sussex and the RSPB Rural Surveyor. The meetings' purpose was to request formal opinions on the three options presented in the Strategic Options Report.</p> <p>National Grid confirmed in the meeting that the tunnel works (driving from the north) will not be in the adjacent national/European designated sites and that the adjacent existing overhead line will require some alterations.</p> <p>The RSPB explained the importance of the Shorne coast as a designated site for breeding Redshank, and that the area would benefit from improvements to the freshwater supplies. Likewise, the RSPB explained undergrounding of OHL would be a beneficial project for local ecology and encouraged the applicant to submit</p>

Date	Stakeholder	Summary of Meeting
		<p>details on potential easements (as appropriate) as early as possible.</p> <p>The applicant also clarifies that any advice or recommendations on survey work from the RSPB would be welcomed.</p>
19 December 2022	Port of London Authority (PLA)	<p>The purpose of this meeting was to discuss the Proposed Development and the three options outlined above with the Port of Tilbury. The Strategic Options Appraisal report was shared in advance of the meeting. The following points were discussed:</p> <ul style="list-style-type: none"> • The approach to planning for the Proposed Development, including that the tunnel would fall under permitted development rights. • Requesting written feedback from the PLA on which option they would prefer. • Land ownership. • PLA explained that the process under S66 of the Port London Act and PLA licences cover both the land ownership and consenting aspects of the works. • Temporary works licences were discussed in relation to off shore ground investigation. • Tunnel depth and importance of sufficient depth so not to interfere with dredging with the PLA to send on the necessary details and other important parameters to abide by. • Methods for water discharge during operation of the tunnel and tunnel design. • PLA explained that they would strongly prefer spoil to be moved via river. • PLA queried what would happen with the existing tunnel. National Grid explained decommissioning would not form part of this project and that no decisions had been made yet. Existing oil-filled cables would definitely need to be removed though.

5.4 EIA Screening Consultation

- 5.4.1 As detailed in ES Volume II Chapter 4: Environmental Impact Assessment Methodology, a screening report was produced in June 2023 and submitted to Thurrock Council, Gravesham Borough Council and the MMO.
- 5.4.2 Thurrock Council's screening opinion (23/00681/SCR, received 7 July 2023) confirmed that the Proposed Development is not considered to be 'EIA Development'. Gravesham Borough Council's screening opinion (20230668, received 3 August 2023) confirmed their opinion that the Proposed Development is 'EIA Development'. Consequently, an EIA has been prepared to support both planning applications to Thurrock Council and Gravesham Borough Council.
- 5.4.3 The MMO determined the Proposed Development does not constitute a project under either Schedule A1 or A2 of the Marine Works (Environmental Impact Assessment) Regulations 2007, and so requested the screening be revoked.
- 5.4.4 A copy of the screening opinions received are provided in Volume VI Appendix 4.2.
- 5.4.5 It should also be noted that prior to the submission of the EIA Screening Report, National Grid engaged with the Environment Agency, Thurrock Council, Gravesham Borough Council and Historic England, in April and May 2023, to provide details of the design of the Proposed Development at that time and explain the approach to EIA Screening and the intention to submit a planning application.

5.5 EIA Scoping Consultation

- 5.5.1 As detailed in ES Volume II Chapter 4: Environmental Impact Assessment Methodology, a formal Scoping Report was not submitted to Thurrock Council or Gravesham Borough Council. However, consultation was held on specific elements of the scope of the ES with relevant consultees to ensure the ES submitted with the planning applications was robust and proportionate.
- 5.5.2 The details of these consultations are summarised in Table 5-2 and more detailed information is presented in the relevant technical chapter in ES Volumes III and IV.

Table 5-2: EIA Scoping Consultation Summaries

Date	Consultees	Summary of Consultation
11 th July 2023	Thurrock Council / Gravesham Borough Council	<p>An email was sent to Thurrock Council and Gravesham Borough Council on the 11 July 2023, setting out proposed visual receptors, viewpoints locations and photographic methodology that would form the basis of the Landscape and Visual Impact Assessment. A response was requested from Thurrock Council and Gravesham Borough Council to provide comment and or agreement.</p> <p>Thurrock Council responded on the 17/07/2023 and confirmed their agreement to the proposed viewpoint locations, however they requested a viewpoint be included from the Village of West Tilbury to the north east.</p> <p>Gravesham Borough Council did not have any comment to make.</p>
10 th August 2023	Internal Drainage Board (IDB)	<p>The IDB were contacted as the Proposed Development is located within the North Kent Marshes IDB authority area and asked for any comments or feedback.</p> <p>The IDB responded on 21 August 2023 confirming the watercourses in the vicinity which are IDB adopted watercourses and provided information on the potential for various consents, subject to the proposed works.</p>
11 th August 2023	Environment Agency	<p>A meeting was held with the Environment Agency to discuss the Proposed Development's interaction with the flood defences in the vicinity. The Environment Agency confirmed that the Proposed</p>

Date	Consultees	Summary of Consultation
		<p>Development design looks acceptable in this regard but that the following actions would be required:</p> <ul style="list-style-type: none"> • Monitoring of impact on flood defences before, during and after the tunnelling; • Access to flood defences and main rivers would be required for routine maintenance and at times of flooding (e.g. for removal of obstructions contributing to the flooding); • A 2m minimum space would be required to allow the access of vehicles to undertake maintenance; and • The Proposed Development will require a Flood Risk Activity permit. <p>The drainage management strategy was also discussed at this meeting.</p>
29 th August 2023	<p>Heritage consultees including:</p> <ul style="list-style-type: none"> • Historic England; • Kent County Council's Senior Archaeological Officer providing supporting Gravesham Borough Council; and • Essex County Council's Principal Historic Environment Consultant supporting Thurrock Council. 	<p>A meeting was held with the heritage consultees to discuss the scope of the Historic Environment assessment, specifically the scope of the geoarchaeological deposit modelling and subsequent fieldwork.</p> <p>Prior to the meeting, a Written Scheme of Investigation (WSI) for Geoarchaeological Deposit Modelling and Borehole Survey was submitted to the consultees for comment.</p> <p>In the meeting it was explained, as set out in the WSI, the work will be staged with the results of the Stage 1 deposit model informing the number and location of Stage 2 boreholes.</p> <p>During the meeting, discussion was held on the deposit model, and how robust the underlying data would be. Additionally, it was raised that further understanding of the construction methodology and hydrological model for the tunnel shaft would be important.</p> <p>It was agreed that a second meeting would be held once Stage 1 of the WSI had been executed, to review its robustness. Construction engineers would also be invited to the second meeting so to explain the construction methodology and hydrological model for the tunnel shaft.</p>
6 th September 2023	<p>Highways Authorities including:</p> <ul style="list-style-type: none"> • Thurrock Council; and • National Highways 	<p>A meeting was held with highways representatives from Thurrock Council and National Highways to present the Proposed Development, update on progress and discuss the scope of the transport assessment within the ES's to be submitted as part of the planning applications.</p> <p>An overview of the Proposed Development was provided, summarising the project location, the need for the Proposed Development, consideration of alternatives, sensitivities in the area, project timescales/ programme and the recent decision to submit a planning application with EIA.</p> <p>The meeting was also used to discuss the Screening Opinion provided by Thurrock Council and respond to the points made to date.</p> <p>The scope of this meeting was to focus on traffic and transport relevant project information therefore relevant parameters were discussed. E.g., the Proposed Developments construction programme, construction worker numbers, construction traffic flows, use of HGV's/ abnormal loads, peak construction phase, travel patterns and proposed construction vehicle routes/ study area for example.</p> <p>It was also clarified at the meeting that during normal operation of the Proposed Development, the only traffic generated would be</p>

Date	Consultees	Summary of Consultation
		<p>associated with infrequent repair and routine maintenance works. Therefore, additional traffic movements during the operational phase are not anticipated to have a significant effect on the transport network or receptors.</p> <p>The transport deliverables were also discussed outlining the approach taken for each, this included:</p> <ul style="list-style-type: none"> • Environmental Statement Traffic and Transport chapter; • Outline CTMP; • Abnormal Load Assessment Report; and • The decision was made not to produce a standalone Transport Statement as the relevant detail would be captured in the other transport deliverables detailed. <p>During the call questions were raised and the following aspects were agreed:</p> <ul style="list-style-type: none"> • The study area for the traffic and transport chapter of the ES was agreed. • Agreement that the cumulative developments listed seemed reasonable and that a cumulative impacts section of the ES chapter would be included and then combined with the traffic assessment. • Agreement that a transport statement would not be required if the required information was picked up in other application documents, but it was agreed that a transport statement note signposting to the relevant information is provided with the application. • Confirmation that decommissioning would not be part of the project or planning application (so scoped of the ES or the traffic model). • Clarification that visitors are included in consideration of operational movements, although in the case of the Proposed Development the numbers at operation are unlikely to be significant. • It was agreed that another meeting prior to planning submission is not required unless a specific issue needs discussing.
15 th September 2023	<p>Highways Authorities including:</p> <ul style="list-style-type: none"> • Kent County Council (supporting Gravesham Borough Council) 	<p>In the same way that a meeting was set up with Thurrock Council, a meeting was held with highways representatives from Kent County Council to present the project.</p> <p>An overview of the Proposed Development was provided, summarising the project location, the need for the Proposed Development, consideration of alternatives, sensitivities in the area, project timescales/ programme and the recent decision to submit a planning application with EIA.</p> <p>The meeting was also used to discuss the Screening Opinion provided by Gravesham Borough Council and Kent County Council and respond to the points made to date.</p> <p>The scope of this meeting was to focus on traffic and transport relevant project information therefore relevant parameters were discussed. E.g. the Proposed Developments construction programme, construction worker numbers, construction traffic flows, use of HGV's/ abnormal loads, peak construction phase, travel patterns and proposed construction vehicle routes/ study area for example.</p>

Date	Consultees	Summary of Consultation
		<p>It was also clarified at the meeting that during normal operation of the Proposed Development, the only traffic generated would be associated with infrequent repair and routine maintenance works. Therefore, additional traffic movements during the operational phase are not anticipated to have a significant effect on the transport network or receptors.</p> <p>The transport deliverables were also discussed outlining the approach taken for each, this included:</p> <ul style="list-style-type: none"> • Environmental Statement Traffic and Transport chapter; • Outline CTMP; • Abnormal Load Assessment Report; and • The decision not to produce a standalone Transport Statement as the relevant detail would be captured in the other transport deliverables detailed. <p>During the call questions were raised and the following aspects were agreed:</p> <ul style="list-style-type: none"> • The study area for the traffic and transport chapter of the ES was agreed. • Agreement that a transport statement would not be required if the required information was picked up in other application documents, but it was agreed that a transport statement note signposting to the relevant information is provided with the application.
22 nd September 2023	Environmental Health Officer at Gravesham Borough Council	An email was sent to Gravesham Borough Council on 22/09/2023 outlining the proposed scope of the air quality and noise and vibration assessments. A response was received on 13 November 2023 with their agreement.
22 nd September 2023	Environmental Health Officer at Thurrock Council	A scoping email was sent to Thurrock Council outlining the proposed scope of the air quality and noise and vibration assessments. No response was received.
22 nd September 2023	Natural England	<p>A meeting was held with Natural England to discuss the scope and progress of the ecological assessment, the Report to inform the Habitat Regulations Assessment (HRA) and the approach to Biodiversity Net Gain (BNG).</p> <p>HRA</p> <p>The working noise modelling results were discussed. It was confirmed that an increase of 3dB from the baseline is Natural England's internally agreed approach, but that there is a difference between perceptible noise change and what would influence bird behaviours/cause disturbance. It was also raised that the HRA should consider other functionally linked land than just the foreshore and to consider ringed plover in the area, further inland of the foreshore.</p> <p>It was agreed that a draft of the Report to Inform the HRA would be provided to Natural England prior to the submission of the planning applications. <i>Note: This was provided to Natural England for comment on 24 October 2023, and comment was received 8 November 2023. These comments were taken into account and the Report to Inform the HRA updated prior to planning submission.</i></p> <p>Ecology Surveys</p> <p>The ecology surveys undertaken for the Proposed Development were discussed, in particular the invertebrate, bird, reptile, badger and watervole surveys and the likely mitigation where required.</p>

Date	Consultees	Summary of Consultation
		<p>Biodiversity Net Gain:</p> <p>A “first draft” of the BNG metric 4.0 was presented with an explanation of which elements of the work were being recorded as a loss/retained/delayed. This was to be developed to include a post-construction plan (landscape plan) and a BNG strategy to be included with the planning submission.</p>
27 th September 2023	<p>Lead Local Flood Authority:</p> <ul style="list-style-type: none"> Thurrock Council (Strategic Transport Officer covering flooding matters) Kent County Council (Flood Risk Officer) 	<p>A meeting was held with the LLFAs to discuss the Proposed Development and associated Drainage Management Strategy.</p> <p>Gravesend:</p> <p>The drainage management strategy was discussed consisting of channel drains to pick up surface water, rain water pipes on headhouse, capturing and discharging via an outfall in to the existing drainage ditch. Using SuDS guidance, the site has been determined to be of low/medium risk of surface water pollution. The majority of the site will have free drainage stone chipping with a type 3 sub-base so water will soak away naturally. Impermeable surfacing makes up approximately 25% of the site. The site will have filtration trenches and downstream defenders. It is anticipated the site can hold water for a whole day. A biodiverse green roof is proposed on the headhouse. SuDS are unable to be incorporated due to National Grid operational requirements which are further explained in the drainage strategy submitted within this planning application.</p> <p>Tilbury:</p> <p>The drainage management strategy at Tilbury was explained, which has a similar design to Gravesend. There is the same operational issue of being unable to incorporate SuDS.</p>
9 th October 2023	<p>Heritage consultees including:</p> <ul style="list-style-type: none"> Historic England Kent County Council's Senior Archaeological Officer providing supporting Gravesham Borough Council Essex County Council's Principal Historic Environment Consultant supporting Thurrock Council. 	<p>A second meeting was held to present the results of the deposit modelling to the consultees and the tunnel construction in more depth. It was agreed that the updated Written Scheme of Investigation (WSI) would be included in the ES for proposed borehole investigations. It was proposed this be undertaken post planning application submission in accordance with seasonal restrictions for percussive boreholes in relation to the nearby European Designations.</p>
17 th October 2023	Kent County Council Public Right of Way (PRoW) team	<p>A meeting was held with Kent's PRoW team to discuss in particular the Gravesend PRoW NG2 and National Cycle Network (NCN) Route 1.</p> <p>It was confirmed that the Gravesend PRoW NG1 (coastal path) will be unaffected during construction of the Proposed Development project. NG2 along Thames and Medway Canal Road, which formally finishes approx. 100m prior to entrance to National Grid's land will be affected. The section of the road, after NG2 finishes, is very narrow and it was noted that the road is also used by motorcyclists and horses graze in the fields.</p>

Date	Consultees	Summary of Consultation
		<p>Peak vehicle movements and construction programme were discussed and the following diversion options for NG2 considered:</p> <ul style="list-style-type: none"> The construction of new passing places was considered but there is not felt to be enough space. The only possible diversion would be 7km long which generally is undesirable for cyclists (through Highham to the train station, not Shorne). The diversion would take cyclists onto dangerous narrow roads such as Lower Chalk Road which would bring them into conflict with road traffic. However, these are risks that cyclists constantly evaluate and this may be a safer options than bringing them into close proximity with construction traffic. A further option considered was temporary traffic lights and marshalls to manage flow of pedestrians and cyclist on the footpath. <p>It was advised that Sustrans will shortly be commissioning resurfacing project on NG2 from the barrier on Thames and Medway Canal road, east of National Grid's entrance. This part of the road is not needed for the Proposed Development; however it was agreed that Sustrans would be consulted and made aware of the Proposed Development and to gain advice on diversions. Their works will take 2-3 weeks.</p> <p>It was also recommended that the Kent County Council's cycling team be consulted for advice on diversions.</p>
17 th October 2023	Buglife	<p>This meeting was held to introduce Buglife to the project. An overview of the findings of the invertebrate surveys undertaken was provided and the use of biodiverse roofs discussed, with Buglife highlighting their best practice guidance for the creation of these types of roofs.</p>
18 th October 2023	Kent County Council – Senior Archaeological Officer.	<p>This meeting was held to discuss the approaches to evaluation and mitigation for the headhouse and SEC compound at Gravesend from an archaeology perspective.</p> <p>The key points discussed at this meeting were as follows:</p> <ul style="list-style-type: none"> Clarify the proposed approach to borehole investigation - two boreholes within the tunnel shaft and one borehole in the location of the proposed new pylon. Confirmation that the results of the boreholes would inform the requirements for further investigation/mitigation followed by update of the WSI. Confirmed that there is a clearer understanding of the elements that may survive within the Milton rifle range as earthworks or buried remains. In terms of surviving earthworks, these would be recorded prior to construction, and we discussed the potential for LiDAR either existing Environment Agency data or drone-based field survey to achieve this. Discussed the potential for separating evaluation/recording of shallower remains associated with the Milton range from that of any deeply buried deposits/remains associated with the Mesolithic/Neolithic peat horizons. Discussed that targeted shallower trenches could be used to evaluate those remains of the rifle range that may be impacted. Clarified that evaluation of the archaeological potential of the deeper deposits needs to be considered in light of the current engineering/construction methods and dewatering solutions e.g. coffer dams or working within the shaft structure itself.

Date	Consultees	Summary of Consultation
		<ul style="list-style-type: none"> Discussed that it is also worth considering any existing solutions where this might have previously been achieved e.g. Holland or France. Discussed the timing of the archaeological investigations and the proposed planning submission at the end of November. Agreed that as long as the ES/planning application clearly set out the proposed approach and outline programme for the fieldwork, it would be reasonable to progress this post-submission/by condition. <p>The updated WSI for Geoarchaeological Deposit Modelling and Borehole Survey incorporating comments from KCC was re-circulated to Kent County Council following the call.</p>
31 st October 2023	Sustrans / Kent County Council's Sustainable Transport Officer	This meeting was held to discuss the Proposed Development's interaction with National Cycle Network (NCN) Route 1 during the construction phase at Gravesend. Various options for the management of / temporary diversion of NCN Route 1 were discussed. After the meeting, the options discussed were formally recorded and shared back with the meeting attendees for comment.

5.5.3 It should be noted that Kent Wildlife Trust, Essex Wildlife Trust and the county ecologists at Kent and Essex were contacted, but no response was received. National Highway's Lower Thames Crossing projects team and Statera's Thurrock Power Flexible generation project team have also been consulted on the Proposed Development.

5.5.4 Technical specialists have continued to consult with the relevant statutory consultees, regulatory bodies and specialist advisors throughout the production of the ES as part of the baseline data gathering and assessment process. This engagement process has supported in the progression of the ES, ensuring that available baseline data has been used and the assessment method, evaluation and mitigation is robust. Again, these consultations are summarised in the corresponding technical chapters contained within this ES.

5.6 Public Consultation

5.6.1 National Grid held a four-week public consultation which included in person and online events that ran from the 27 September 2023 to the 29 October 2023. The purpose of the consultation is to inform members of the public, the local community, and other interested stakeholders on the details of the Proposed Development and also allows an opportunity for people to provide feedback relating to the Proposed Development so that useful insights can be integrated into the evolving design in advance of planning submission.

5.6.2 Residents within the immediate vicinity of the Proposed Development received a newsletter with more information on the public consultation.

Information Events

5.6.3 Public information events took place at Tilbury (Tilbury Community Association) on 13 October 2023 at 3pm -7pm and in Gravesend (Clarendon Royal Community) on 11 October 2023 3pm-7pm. These events served primarily to provide information on the Proposed Development to members of the public in the local community. The feedback provided during the public information event has been documented and considered by the project team and is detailed in the Statement of Community Involvement.

Webinars

- 5.6.4 The public consultation was also hosted on a project website where residents and members of the public could register to attend to get more information. This allowed those that could not attend the events in person to receive information relevant to the Proposed Development.
- 5.6.5 Two webinars were held, one which focussed on the Proposed Development in Tilbury north of the River Thames and one focussed on Gravesend south of the River Thames.
- 5.6.6 The Gravesend webinar was held on Wednesday 18 October 2023 7pm-8pm and the Tilbury webinar was held on Thursday 19 October 2023 7pm-8pm.

Feedback

- 5.6.7 In addition to the in-person events held and the online webinars, members of the public could provide feedback through a variety of means. An online feedback form was available to complete via the National Grid project webpage, an email address and telephone number were also made available on the project webpage and for those who preferred to respond to the consultation via post there was the opportunity to receive a printed copy of the feedback form and a freepost envelope by calling the project telephone information line.
- 5.6.8 A summary of all feedback received and further relevant engagement with the wider public including Counsellors is summarised in the Statement of Community Involvement accompanying this planning application.

5.7 Further Engagement on the Proposed Development for the EIA

- 5.7.1 Topic specific consultation is summarised in each technical chapter of the ES where relevant.

5.8 Abbreviations

Abbreviation	Meaning
BNG	Biodiversity Net Gain
CTMP	Construction Traffic Management Plan
EIA	Environmental Impact Assessment
ES	Environmental Statement
HGV	Heavy Goods Vehicle
HRA	Habitats Regulations Assessment
IDB	Internal Drainage Board
KCC	Kent County Council
LLFA	Lead Local Flood Authority
MMO	Marine Management Organisation
NCN	National Cycle Network
OHL	Overhead Line
PLA	Port of London Authority
PRoW	Public Right of Way
RSPB	Royal Society for the Protection of Birds
SEC	Sealing End Compound
SSSI	Site of Special Scientific Interest
SuDS	Sustainable urban Drainage Systems
TKRE	Tilbury to Grain and Tilbury to Kingsnorth
WSI	Written Scheme of Investigation

aecom.com

National Grid Cable Tunnel Replacement Project

Environmental Statement Volume II Chapter 5 Consultation

December 2023

Quality information

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5 Consultation

5.1 Introduction

5.1.1 This chapter of the Environmental Statement (ES) outlines the stakeholder engagement activities undertaken on the Proposed Development to date which have been carried out as part of the optioneering phase and the environmental assessment process. Consultation and stakeholder input has been integral to the design and development of the Proposed Development in the identification of existing environmental sensitivities and identification and assessment of potential environmental impacts as a result of the Proposed Development.

5.1.2 A Statement of Community Involvement Report has been submitted with the planning applications to Thurrock Council and Gravesham Borough Council, which contains further details of how the public were engaged on the proposals for the Proposed Development.

5.1.3 A Project website was launched in September 2023 and can be accessed via the link below. This website includes detailed information about the Proposed Development including an interactive map, online public information exhibitions and contact information. The website can be found at:

<https://www.nationalgrid.com/electricity-transmission/network-and-infrastructure/infrastructure-projects/grain-to-tilbury>

5.2 National Grid's commitment to engagement

5.2.1 Under Section 38 and Schedule 9 of the Electricity Act 1989¹, National Grid has a duty to have regard to the desirability of the preservation of amenity: the natural environment, cultural heritage, landscape and visual quality, as well as the effect of National Grid's works on communities.

5.2.2 In addition, National Grid's Stakeholder, Community and Amenity Policy² sets out a commitment to meet this duty. It makes the following commitments to consultation when undertaking electricity works:

"We will promote genuine and meaningful stakeholder and community engagement. We will meet and, where appropriate, exceed the statutory requirements for consultation or engagement. We will adopt the following principles to help us meet this commitment:

- we will seek to identify and understand the views and opinions of all the stakeholders and communities who may be affected by our works;*
- we will provide opportunities for engagement from the early stages of the process, where options and alternatives are being considered and there is the greatest scope to influence the design of the works;*
- we will endeavour to enable constructive debate to take place, creating open and two-way communication processes;*
- we will ensure that benefits, constraints and adverse impacts of proposed works are communicated openly for meaningful stakeholder and community comment and discussion;*
- we will be clear about any aspects of the works that cannot be altered;*
- we will utilise appropriate methods and effort in engaging stakeholders and communities, proportionate to the scale and impact of the works; and, we will provide feedback on how views expressed have been considered and the outcomes of any engagement process or activity".*

¹ <https://www.legislation.gov.uk/ukpga/1989/29/contents>

² https://www.nationalgrid.com/sites/default/files/documents/National%20Grid_s%20commitments%20when%20undertaking%20works%20in%20the%20UK.pdf

December 2023

5.3 Early engagement on the Proposed Development

Strategic Options Appraisal

- 5.3.1 In 2022, National Grid undertook a Strategic Options Appraisal to inform the selection of a preferred option for the upgrade of the TKRE circuits. Three options were initially identified:
- the installation of new cables within the existing tunnel;
 - the installation of new cables within the new tunnel; and
 - the installation of a new overhead line across the River Thames.
- 5.3.2 The installation of new cables within the existing tunnel was determined not to be feasible due to the health and safety risks. The installation of a new overhead line across the River Thames, given its location and scale, would have had greater permanent environmental impacts. On balance, it was considered that the installation of new cables within a new tunnel was the most viable preferable option overall.
- 5.3.3 An 'Options Appraisal Report' was produced and used to approach the following relevant stakeholders for early pre-application advice:
- Thurrock Council;
 - Gravesham Borough Council;
 - Natural England;
 - Historic England;
 - Environment Agency;
 - Marine Management Organisation (MMO);
 - Port of Tilbury;
 - Port of London Authority; and
 - Royal Society for the Protection of Birds (RSPB).
- 5.3.4 Pre-application responses and advice were received from Thurrock Council, Natural England, Historic England, Environment Agency. Refer to Volume II Chapter 2: Alternatives for a summary of these responses as well as further information on the options appraisal process.

Engagement with Environmental Statutory Consultees on Strategic Options Report

- 5.3.5 A series of further meetings were held to brief these key stakeholders as the initial siting and preliminary design of the Proposed Development progressed. These are detailed in **Table 5-1** below:

Table 5-1: Engagement with Environmental Statutory Consultees on Strategic Options Report

Date	Stakeholder	Summary of Meeting
13th October 2022	Environment Agency	<p>The purpose of this meeting was to discuss the Proposed Development and the three options outlined above with the Environment Agency. The Strategic Options Appraisal report was shared in advance of the meeting. The conclusions outlined in the report as well as constraints associated with the relevant options were discussed. The following key constraints were noted by the Environment Agency:</p> <ul style="list-style-type: none"> • Flood zones 2 and 3 present on both sides of the river; • Flood defences present on both sides of the river, and National Grid should consider the 16m working distances during

Date	Stakeholder	Summary of Meeting
		<p>construction, where feasible, and residual risk in the preparation of any Flood Risk Assessment;</p> <ul style="list-style-type: none"> Existing and historic landfill sites on the north bank in east and consequent risks to water quality from mobilisation of sediment and contaminants; and Wildlife habitat including nearby European designated sites. <p>The Environment Agency advised their Thames Estuary 2100 Plan (currently undergoing revision) should be considered, especially with regards to depths of shafts and where the defences would be.</p> <p>The Environment Agency did not have a clear preference on which option should be taken forward but agreed Option 3 would be the more difficult of the three to consent and implement.</p>
25th November 2022	Royal Society for the Protection of Birds (RSPB)	<p>The RSPB stated that ground nesting birds will be a key consideration during construction phase along with other Schedule 1 birds such as marsh harriers and water voles. The RSPB also recommended Cliffe Pools as being suitable locations for exported spoil, stating that the RSPB are interested in using tunnel spoil from the Proposed Development to provide wildlife benefits at this location, should it be suitable.</p> <p>During the meeting, details of relevant RSPB contacts were provided to allow continued and meaningful engagement.</p>
28 November 2022	Natural England	<p>This meeting was held with the lead advisor in the West Anglia Team (covering Essex), the senior advisor for Thames Estuary and project manager for the SSSI Notification Project from Natural England to discuss the Proposed Development and run through the options presented in the Strategic Options Appraisal.</p> <p>Uncertainties surrounding the extent and location of land required for spoil storage were discussed alongside uncertainties of how the Proposed Development might interact with the Port of Tilbury Freeport proposals, it was however noted that an initial meeting had been held with Port of Tilbury to discuss this interaction.</p> <p>Natural England enquired about the noise generated from the Tunnel Boring Machine which would be required for Option 2, and also stated that the scope of impacts must consider all functionally linked land to European sites. Natural England explained that the Tilbury area is in the second stage of Natural England's 'Thames Estuary Invertebrates Essex & Kent' SSSI notification project.</p> <p>Natural England raised the presence of Goshem's Farm, an Ingrebourne Valley site which consists of ash deposits, has undergone 10 years of ecological monitoring and is particularly important for invertebrates with species of national interest. There are also notable plant, and breeding bird species and ditches of importance to aquatic wildlife.</p>
01st December 2022 (follow up meeting)	RSPB	<p>This meeting was held following the initial meeting on the 25 November 2022, attendees from the RSPB included the RSPB Area Manager for Kent & Sussex and the RSPB Rural Surveyor. The meetings' purpose was to request formal opinions on the three options presented in the Strategic Options Report.</p> <p>National Grid confirmed in the meeting that the tunnel works (driving from the north) will not be in the adjacent national/European designated sites and that the adjacent existing overhead line will require some alterations.</p> <p>The RSPB explained the importance of the Shorne coast as a designated site for breeding Redshank, and that the area would benefit from improvements to the freshwater supplies. Likewise, the RSPB explained undergrounding of OHL would be a beneficial project for local ecology and encouraged the applicant to submit</p>

Date	Stakeholder	Summary of Meeting
		<p>details on potential easements (as appropriate) as early as possible.</p> <p>The applicant also clarifies that any advice or recommendations on survey work from the RSPB would be welcomed.</p>
19 December 2022	Port of London Authority (PLA)	<p>The purpose of this meeting was to discuss the Proposed Development and the three options outlined above with the Port of Tilbury. The Strategic Options Appraisal report was shared in advance of the meeting. The following points were discussed:</p> <ul style="list-style-type: none"> • The approach to planning for the Proposed Development, including that the tunnel would fall under permitted development rights. • Requesting written feedback from the PLA on which option they would prefer. • Land ownership. • PLA explained that the process under S66 of the Port London Act and PLA licences cover both the land ownership and consenting aspects of the works. • Temporary works licences were discussed in relation to off shore ground investigation. • Tunnel depth and importance of sufficient depth so not to interfere with dredging with the PLA to send on the necessary details and other important parameters to abide by. • Methods for water discharge during operation of the tunnel and tunnel design. • PLA explained that they would strongly prefer spoil to be moved via river. • PLA queried what would happen with the existing tunnel. National Grid explained decommissioning would not form part of this project and that no decisions had been made yet. Existing oil-filled cables would definitely need to be removed though.

5.4 EIA Screening Consultation

- 5.4.1 As detailed in ES Volume II Chapter 4: Environmental Impact Assessment Methodology, a screening report was produced in June 2023 and submitted to Thurrock Council, Gravesham Borough Council and the MMO.
- 5.4.2 Thurrock Council's screening opinion (23/00681/SCR, received 7 July 2023) confirmed that the Proposed Development is not considered to be 'EIA Development'. Gravesham Borough Council's screening opinion (20230668, received 3 August 2023) confirmed their opinion that the Proposed Development is 'EIA Development'. Consequently, an EIA has been prepared to support both planning applications to Thurrock Council and Gravesham Borough Council.
- 5.4.3 The MMO determined the Proposed Development does not constitute a project under either Schedule A1 or A2 of the Marine Works (Environmental Impact Assessment) Regulations 2007, and so requested the screening be revoked.
- 5.4.4 A copy of the screening opinions received are provided in Volume VI Appendix 4.2.
- 5.4.5 It should also be noted that prior to the submission of the EIA Screening Report, National Grid engaged with the Environment Agency, Thurrock Council, Gravesham Borough Council and Historic England, in April and May 2023, to provide details of the design of the Proposed Development at that time and explain the approach to EIA Screening and the intention to submit a planning application.

5.5 EIA Scoping Consultation

- 5.5.1 As detailed in ES Volume II Chapter 4: Environmental Impact Assessment Methodology, a formal Scoping Report was not submitted to Thurrock Council or Gravesham Borough Council. However, consultation was held on specific elements of the scope of the ES with relevant consultees to ensure the ES submitted with the planning applications was robust and proportionate.
- 5.5.2 The details of these consultations are summarised in Table 5-2 and more detailed information is presented in the relevant technical chapter in ES Volumes III and IV.

Table 5-2: EIA Scoping Consultation Summaries

Date	Consultees	Summary of Consultation
11 th July 2023	Thurrock Council / Gravesham Borough Council	<p>An email was sent to Thurrock Council and Gravesham Borough Council on the 11 July 2023, setting out proposed visual receptors, viewpoints locations and photographic methodology that would form the basis of the Landscape and Visual Impact Assessment. A response was requested from Thurrock Council and Gravesham Borough Council to provide comment and or agreement.</p> <p>Thurrock Council responded on the 17/07/2023 and confirmed their agreement to the proposed viewpoint locations, however they requested a viewpoint be included from the Village of West Tilbury to the north east.</p> <p>Gravesham Borough Council did not have any comment to make.</p>
10 th August 2023	Internal Drainage Board (IDB)	<p>The IDB were contacted as the Proposed Development is located within the North Kent Marshes IDB authority area and asked for any comments or feedback.</p> <p>The IDB responded on 21 August 2023 confirming the watercourses in the vicinity which are IDB adopted watercourses and provided information on the potential for various consents, subject to the proposed works.</p>
11 th August 2023	Environment Agency	<p>A meeting was held with the Environment Agency to discuss the Proposed Development's interaction with the flood defences in the vicinity. The Environment Agency confirmed that the Proposed</p>

Date	Consultees	Summary of Consultation
		<p>Development design looks acceptable in this regard but that the following actions would be required:</p> <ul style="list-style-type: none"> • Monitoring of impact on flood defences before, during and after the tunnelling; • Access to flood defences and main rivers would be required for routine maintenance and at times of flooding (e.g. for removal of obstructions contributing to the flooding); • A 2m minimum space would be required to allow the access of vehicles to undertake maintenance; and • The Proposed Development will require a Flood Risk Activity permit. <p>The drainage management strategy was also discussed at this meeting.</p>
29 th August 2023	<p>Heritage consultees including:</p> <ul style="list-style-type: none"> • Historic England; • Kent County Council's Senior Archaeological Officer providing supporting Gravesham Borough Council; and • Essex County Council's Principal Historic Environment Consultant supporting Thurrock Council. 	<p>A meeting was held with the heritage consultees to discuss the scope of the Historic Environment assessment, specifically the scope of the geoarchaeological deposit modelling and subsequent fieldwork.</p> <p>Prior to the meeting, a Written Scheme of Investigation (WSI) for Geoarchaeological Deposit Modelling and Borehole Survey was submitted to the consultees for comment.</p> <p>In the meeting it was explained, as set out in the WSI, the work will be staged with the results of the Stage 1 deposit model informing the number and location of Stage 2 boreholes.</p> <p>During the meeting, discussion was held on the deposit model, and how robust the underlying data would be. Additionally, it was raised that further understanding of the construction methodology and hydrological model for the tunnel shaft would be important.</p> <p>It was agreed that a second meeting would be held once Stage 1 of the WSI had been executed, to review its robustness. Construction engineers would also be invited to the second meeting so to explain the construction methodology and hydrological model for the tunnel shaft.</p>
6 th September 2023	<p>Highways Authorities including:</p> <ul style="list-style-type: none"> • Thurrock Council; and • National Highways 	<p>A meeting was held with highways representatives from Thurrock Council and National Highways to present the Proposed Development, update on progress and discuss the scope of the transport assessment within the ES's to be submitted as part of the planning applications.</p> <p>An overview of the Proposed Development was provided, summarising the project location, the need for the Proposed Development, consideration of alternatives, sensitivities in the area, project timescales/ programme and the recent decision to submit a planning application with EIA.</p> <p>The meeting was also used to discuss the Screening Opinion provided by Thurrock Council and respond to the points made to date.</p> <p>The scope of this meeting was to focus on traffic and transport relevant project information therefore relevant parameters were discussed. E.g., the Proposed Developments construction programme, construction worker numbers, construction traffic flows, use of HGV's/ abnormal loads, peak construction phase, travel patterns and proposed construction vehicle routes/ study area for example.</p> <p>It was also clarified at the meeting that during normal operation of the Proposed Development, the only traffic generated would be</p>

Date	Consultees	Summary of Consultation
		<p>associated with infrequent repair and routine maintenance works. Therefore, additional traffic movements during the operational phase are not anticipated to have a significant effect on the transport network or receptors.</p> <p>The transport deliverables were also discussed outlining the approach taken for each, this included:</p> <ul style="list-style-type: none"> • Environmental Statement Traffic and Transport chapter; • Outline CTMP; • Abnormal Load Assessment Report; and • The decision was made not to produce a standalone Transport Statement as the relevant detail would be captured in the other transport deliverables detailed. <p>During the call questions were raised and the following aspects were agreed:</p> <ul style="list-style-type: none"> • The study area for the traffic and transport chapter of the ES was agreed. • Agreement that the cumulative developments listed seemed reasonable and that a cumulative impacts section of the ES chapter would be included and then combined with the traffic assessment. • Agreement that a transport statement would not be required if the required information was picked up in other application documents, but it was agreed that a transport statement note signposting to the relevant information is provided with the application. • Confirmation that decommissioning would not be part of the project or planning application (so scoped of the ES or the traffic model). • Clarification that visitors are included in consideration of operational movements, although in the case of the Proposed Development the numbers at operation are unlikely to be significant. • It was agreed that another meeting prior to planning submission is not required unless a specific issue needs discussing.
15 th September 2023	<p>Highways Authorities including:</p> <ul style="list-style-type: none"> • Kent County Council (supporting Gravesham Borough Council) 	<p>In the same way that a meeting was set up with Thurrock Council, a meeting was held with highways representatives from Kent County Council to present the project.</p> <p>An overview of the Proposed Development was provided, summarising the project location, the need for the Proposed Development, consideration of alternatives, sensitivities in the area, project timescales/ programme and the recent decision to submit a planning application with EIA.</p> <p>The meeting was also used to discuss the Screening Opinion provided by Gravesham Borough Council and Kent County Council and respond to the points made to date.</p> <p>The scope of this meeting was to focus on traffic and transport relevant project information therefore relevant parameters were discussed. E.g. the Proposed Developments construction programme, construction worker numbers, construction traffic flows, use of HGV's/ abnormal loads, peak construction phase, travel patterns and proposed construction vehicle routes/ study area for example.</p>

Date	Consultees	Summary of Consultation
		<p>It was also clarified at the meeting that during normal operation of the Proposed Development, the only traffic generated would be associated with infrequent repair and routine maintenance works. Therefore, additional traffic movements during the operational phase are not anticipated to have a significant effect on the transport network or receptors.</p> <p>The transport deliverables were also discussed outlining the approach taken for each, this included:</p> <ul style="list-style-type: none"> • Environmental Statement Traffic and Transport chapter; • Outline CTMP; • Abnormal Load Assessment Report; and • The decision not to produce a standalone Transport Statement as the relevant detail would be captured in the other transport deliverables detailed. <p>During the call questions were raised and the following aspects were agreed:</p> <ul style="list-style-type: none"> • The study area for the traffic and transport chapter of the ES was agreed. • Agreement that a transport statement would not be required if the required information was picked up in other application documents, but it was agreed that a transport statement note signposting to the relevant information is provided with the application.
22 nd September 2023	Environmental Health Officer at Gravesham Borough Council	An email was sent to Gravesham Borough Council on 22/09/2023 outlining the proposed scope of the air quality and noise and vibration assessments. A response was received on 13 November 2023 with their agreement.
22 nd September 2023	Environmental Health Officer at Thurrock Council	A scoping email was sent to Thurrock Council outlining the proposed scope of the air quality and noise and vibration assessments. No response was received.
22 nd September 2023	Natural England	<p>A meeting was held with Natural England to discuss the scope and progress of the ecological assessment, the Report to inform the Habitat Regulations Assessment (HRA) and the approach to Biodiversity Net Gain (BNG).</p> <p>HRA</p> <p>The working noise modelling results were discussed. It was confirmed that an increase of 3dB from the baseline is Natural England's internally agreed approach, but that there is a difference between perceptible noise change and what would influence bird behaviours/cause disturbance. It was also raised that the HRA should consider other functionally linked land than just the foreshore and to consider ringed plover in the area, further inland of the foreshore.</p> <p>It was agreed that a draft of the Report to Inform the HRA would be provided to Natural England prior to the submission of the planning applications. <i>Note: This was provided to Natural England for comment on 24 October 2023, and comment was received 8 November 2023. These comments were taken into account and the Report to Inform the HRA updated prior to planning submission.</i></p> <p>Ecology Surveys</p> <p>The ecology surveys undertaken for the Proposed Development were discussed, in particular the invertebrate, bird, reptile, badger and watervole surveys and the likely mitigation where required.</p>

Date	Consultees	Summary of Consultation
		<p>Biodiversity Net Gain:</p> <p>A “first draft” of the BNG metric 4.0 was presented with an explanation of which elements of the work were being recorded as a loss/retained/delayed. This was to be developed to include a post-construction plan (landscape plan) and a BNG strategy to be included with the planning submission.</p>
27 th September 2023	<p>Lead Local Flood Authority:</p> <ul style="list-style-type: none"> Thurrock Council (Strategic Transport Officer covering flooding matters) Kent County Council (Flood Risk Officer) 	<p>A meeting was held with the LLFAs to discuss the Proposed Development and associated Drainage Management Strategy.</p> <p>Gravesend:</p> <p>The drainage management strategy was discussed consisting of channel drains to pick up surface water, rain water pipes on headhouse, capturing and discharging via an outfall in to the existing drainage ditch. Using SuDS guidance, the site has been determined to be of low/medium risk of surface water pollution. The majority of the site will have free drainage stone chipping with a type 3 sub-base so water will soak away naturally. Impermeable surfacing makes up approximately 25% of the site. The site will have filtration trenches and downstream defenders. It is anticipated the site can hold water for a whole day. A biodiverse green roof is proposed on the headhouse. SuDS are unable to be incorporated due to National Grid operational requirements which are further explained in the drainage strategy submitted within this planning application.</p> <p>Tilbury:</p> <p>The drainage management strategy at Tilbury was explained, which has a similar design to Gravesend. There is the same operational issue of being unable to incorporate SuDS.</p>
9 th October 2023	<p>Heritage consultees including:</p> <ul style="list-style-type: none"> Historic England Kent County Council's Senior Archaeological Officer providing supporting Gravesham Borough Council Essex County Council's Principal Historic Environment Consultant supporting Thurrock Council. 	<p>A second meeting was held to present the results of the deposit modelling to the consultees and the tunnel construction in more depth. It was agreed that the updated Written Scheme of Investigation (WSI) would be included in the ES for proposed borehole investigations. It was proposed this be undertaken post planning application submission in accordance with seasonal restrictions for percussive boreholes in relation to the nearby European Designations.</p>
17 th October 2023	Kent County Council Public Right of Way (PRoW) team	<p>A meeting was held with Kent's PRoW team to discuss in particular the Gravesend PRoW NG2 and National Cycle Network (NCN) Route 1.</p> <p>It was confirmed that the Gravesend PRoW NG1 (coastal path) will be unaffected during construction of the Proposed Development project. NG2 along Thames and Medway Canal Road, which formally finishes approx. 100m prior to entrance to National Grid's land will be affected. The section of the road, after NG2 finishes, is very narrow and it was noted that the road is also used by motorcyclists and horses graze in the fields.</p>

Date	Consultees	Summary of Consultation
		<p>Peak vehicle movements and construction programme were discussed and the following diversion options for NG2 considered:</p> <ul style="list-style-type: none"> The construction of new passing places was considered but there is not felt to be enough space. The only possible diversion would be 7km long which generally is undesirable for cyclists (through Highham to the train station, not Shorne). The diversion would take cyclists onto dangerous narrow roads such as Lower Chalk Road which would bring them into conflict with road traffic. However, these are risks that cyclists constantly evaluate and this may be a safer options than bringing them into close proximity with construction traffic. A further option considered was temporary traffic lights and marshalls to manage flow of pedestrians and cyclist on the footpath. <p>It was advised that Sustrans will shortly be commissioning resurfacing project on NG2 from the barrier on Thames and Medway Canal road, east of National Grid's entrance. This part of the road is not needed for the Proposed Development; however it was agreed that Sustrans would be consulted and made aware of the Proposed Development and to gain advice on diversions. Their works will take 2-3 weeks.</p> <p>It was also recommended that the Kent County Council's cycling team be consulted for advice on diversions.</p>
17 th October 2023	Buglife	<p>This meeting was held to introduce Buglife to the project. An overview of the findings of the invertebrate surveys undertaken was provided and the use of biodiverse roofs discussed, with Buglife highlighting their best practice guidance for the creation of these types of roofs.</p>
18 th October 2023	Kent County Council – Senior Archaeological Officer.	<p>This meeting was held to discuss the approaches to evaluation and mitigation for the headhouse and SEC compound at Gravesend from an archaeology perspective.</p> <p>The key points discussed at this meeting were as follows:</p> <ul style="list-style-type: none"> Clarify the proposed approach to borehole investigation - two boreholes within the tunnel shaft and one borehole in the location of the proposed new pylon. Confirmation that the results of the boreholes would inform the requirements for further investigation/mitigation followed by update of the WSI. Confirmed that there is a clearer understanding of the elements that may survive within the Milton rifle range as earthworks or buried remains. In terms of surviving earthworks, these would be recorded prior to construction, and we discussed the potential for LiDAR either existing Environment Agency data or drone-based field survey to achieve this. Discussed the potential for separating evaluation/recording of shallower remains associated with the Milton range from that of any deeply buried deposits/remains associated with the Mesolithic/Neolithic peat horizons. Discussed that targeted shallower trenches could be used to evaluate those remains of the rifle range that may be impacted. Clarified that evaluation of the archaeological potential of the deeper deposits needs to be considered in light of the current engineering/construction methods and dewatering solutions e.g. coffer dams or working within the shaft structure itself.

Date	Consultees	Summary of Consultation
		<ul style="list-style-type: none"> Discussed that it is also worth considering any existing solutions where this might have previously been achieved e.g. Holland or France. Discussed the timing of the archaeological investigations and the proposed planning submission at the end of November. Agreed that as long as the ES/planning application clearly set out the proposed approach and outline programme for the fieldwork, it would be reasonable to progress this post-submission/by condition. <p>The updated WSI for Geoarchaeological Deposit Modelling and Borehole Survey incorporating comments from KCC was re-circulated to Kent County Council following the call.</p>
31 st October 2023	Sustrans / Kent County Council's Sustainable Transport Officer	This meeting was held to discuss the Proposed Development's interaction with National Cycle Network (NCN) Route 1 during the construction phase at Gravesend. Various options for the management of / temporary diversion of NCN Route 1 were discussed. After the meeting, the options discussed were formally recorded and shared back with the meeting attendees for comment.

5.5.3 It should be noted that Kent Wildlife Trust, Essex Wildlife Trust and the county ecologists at Kent and Essex were contacted, but no response was received. National Highway's Lower Thames Crossing projects team and Statera's Thurrock Power Flexible generation project team have also been consulted on the Proposed Development.

5.5.4 Technical specialists have continued to consult with the relevant statutory consultees, regulatory bodies and specialist advisors throughout the production of the ES as part of the baseline data gathering and assessment process. This engagement process has supported in the progression of the ES, ensuring that available baseline data has been used and the assessment method, evaluation and mitigation is robust. Again, these consultations are summarised in the corresponding technical chapters contained within this ES.

5.6 Public Consultation

5.6.1 National Grid held a four-week public consultation which included in person and online events that ran from the 27 September 2023 to the 29 October 2023. The purpose of the consultation is to inform members of the public, the local community, and other interested stakeholders on the details of the Proposed Development and also allows an opportunity for people to provide feedback relating to the Proposed Development so that useful insights can be integrated into the evolving design in advance of planning submission.

5.6.2 Residents within the immediate vicinity of the Proposed Development received a newsletter with more information on the public consultation.

Information Events

5.6.3 Public information events took place at Tilbury (Tilbury Community Association) on 13 October 2023 at 3pm -7pm and in Gravesend (Clarendon Royal Community) on 11 October 2023 3pm-7pm. These events served primarily to provide information on the Proposed Development to members of the public in the local community. The feedback provided during the public information event has been documented and considered by the project team and is detailed in the Statement of Community Involvement.

Webinars

- 5.6.4 The public consultation was also hosted on a project website where residents and members of the public could register to attend to get more information. This allowed those that could not attend the events in person to receive information relevant to the Proposed Development.
- 5.6.5 Two webinars were held, one which focussed on the Proposed Development in Tilbury north of the River Thames and one focussed on Gravesend south of the River Thames.
- 5.6.6 The Gravesend webinar was held on Wednesday 18 October 2023 7pm-8pm and the Tilbury webinar was held on Thursday 19 October 2023 7pm-8pm.

Feedback

- 5.6.7 In addition to the in-person events held and the online webinars, members of the public could provide feedback through a variety of means. An online feedback form was available to complete via the National Grid project webpage, an email address and telephone number were also made available on the project webpage and for those who preferred to respond to the consultation via post there was the opportunity to receive a printed copy of the feedback form and a freepost envelope by calling the project telephone information line.
- 5.6.8 A summary of all feedback received and further relevant engagement with the wider public including Counsellors is summarised in the Statement of Community Involvement accompanying this planning application.

5.7 Further Engagement on the Proposed Development for the EIA

- 5.7.1 Topic specific consultation is summarised in each technical chapter of the ES where relevant.

5.8 Abbreviations

Abbreviation	Meaning
BNG	Biodiversity Net Gain
CTMP	Construction Traffic Management Plan
EIA	Environmental Impact Assessment
ES	Environmental Statement
HGV	Heavy Goods Vehicle
HRA	Habitats Regulations Assessment
IDB	Internal Drainage Board
KCC	Kent County Council
LLFA	Lead Local Flood Authority
MMO	Marine Management Organisation
NCN	National Cycle Network
OHL	Overhead Line
PLA	Port of London Authority
PRoW	Public Right of Way
RSPB	Royal Society for the Protection of Birds
SEC	Sealing End Compound
SSSI	Site of Special Scientific Interest
SuDS	Sustainable urban Drainage Systems
TKRE	Tilbury to Grain and Tilbury to Kingsnorth
WSI	Written Scheme of Investigation

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National Grid

Cable Tunnel Replacement
Project

Environmental Statement
Volume V

Chapter 24 Summary

December 2023

Quality information

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24 Summary

24.1 Overview

- 24.1.1 This chapter of the Environmental Statement (ES) summarises the results of the Environmental Impact Assessment of the construction and operation of the Tilbury to Grain and Tilbury to Kingsnorth (TKRE) Cable Tunnel Replacement Project (hereafter the Proposed Development).
- 24.1.2 The assessment of the potential residual effects has been predicted after due consideration of those embedded and additional mitigation (where appropriate) that have been developed and committed to at this stage, as identified in each technical chapter.
- 24.1.3 Table 24-1 summarises the significant residual environmental effects for Tilbury and Table 24-2 for Gravesend, split by each technical topic.

Table 24-1: Summary of Environmental Impact Assessment - Tilbury

ES Chapter reference	Summary of Environmental Impact Assessment	Summary of Likely Significant Effects
Chapter 7: Biodiversity - Tilbury	<p>The Proposed Development is situated approximately 1.3km south-east (southern bank of Thames) and 1.9km east (northern bank of Thames) of the Thames Estuary & Marshes Special Protection Area (SPA) and Ramsar site, and the Mucking Flats & Marshes Site of Special Scientific Interest (SSSI). The Tilbury Power Station Local Wildlife Site is partly within the Tilbury site. All widespread reptile species are known to occur at Tilbury. Ornithology surveys have recorded gadwall; little egret; avocet; whimbrel; black tailed godwit; dunlin; and redshank. There are no badgers setts at Tilbury, but they are known to be active in the local area. No bats, great crested newts, otter/water vole were recorded at Tilbury.</p> <p>Invertebrate surveys at Tilbury undertaken in 2023 identified a total of 334 species of which 35 are regarded as 'key species'. This is a high total species list for a three visit survey, substantially higher than average, and suggests that the Tilbury survey area is a very diverse site for invertebrates. However, there is considerable variation in importance between areas, with some of very high importance (in particular the tall fescue dominated areas) and others of much lower importance. Russian olive (<i>Elaeagnus angustifolia</i>), an invasive non-native plant species (not subject to legal constraints but invasive species in nature) is present.</p> <p>The design of the Proposed Development has sought to minimise impacts on both the existing Tilbury Power Station LWS and the proposed extension to the Mucking Flats and Marshes SSSI, through targeting the construction and storage activities to areas of existing hard-standing. Spoil created by the tunnelling process will be disposed of by barge utilising either an existing berth at the Port of Tilbury or the existing Inglebourne Valley jetty to the south-east of the proposed Tilbury SEC. This will minimise the potential for adverse impacts on both marine receptors and bird populations utilising the River Thames estuary through use of existing shipping routes and no requirement to construct a new project specific jetty.</p> <p>The potential impacts from the construction phase of the Proposed Development considered in the assessment included habitat loss/gain/degradation, species mortality, species disturbance/displacement, fragmentation/ connectivity of population or habitats and the introduction of will include habitat loss from non-statutory designated sites. The potential impacts from the operational phase of the Proposed Development considered habitat degradation/disturbance from operational lighting only.</p> <p>It was identified that additional mitigation would be required to mitigate and compensate for potential impacts on terrestrial invertebrate populations, in particular the tall fescue planthopper. Tall fescue tussocks will be translocated from the affected areas between mid-July and end of August. Once construction is complete these tussocks and associated soil will be transferred to the area of hardstanding surrounding the proposed Tilbury SEC and utilised to provide enhancement of the habitats to be created in these areas.</p> <p>In summary, there would be no likely significant residual effects on ecological receptors during either the construction or operational phases of the Proposed Development.</p>	No likely significant effects
Chapter 8: Landscape and Visual - Tilbury	<p>The Proposed Development is situated in the immediate context of the existing TKRE 400 kV cable and infrastructure. It is also situated within the industrial landscape of this area of the River Thames and the associated heavy industrial sites at</p>	No likely significant effects

ES Chapter reference	Summary of Environmental Impact Assessment	Summary of Likely Significant Effects
	<p>Tilbury. The Proposed Development site at Tilbury is adjacent to industrial areas and is therefore likely to be perceived as part of, and an extension to, this existing industrial landscape.</p> <p>Construction would be short-term, reversible and occur in a wholly industrialised context. No landscape elements of value would be lost as a result of the construction, with effects being temporary and of negligible effects.</p> <p>Construction of above ground infrastructure/overhead cables would result in a minor to negligible effect in the view for the majority of potential viewers, including the most sensitive groups of residents in Tilbury/Gravesend, and recreational receptors. Viewers in proximity to the site at Tilbury would be limited in number and experience the additional infrastructure in the context of more prominent industrial elements, limiting the magnitude of change and resulting effect.</p> <p>Receptor groups using this section of the River Thames are likely to view the site within the wider industrial context of the area. Similarly, in operation the effects on landscape character would be negligible. Any change in character would be small scale and with a localised geographical extent of influence. It would involve no loss of landscape elements of value and occur within the existing context. The net loss of two OHLs and reinstatement of priority habitat type would be negligible beneficial.</p> <p>Once operational the Proposed Development would result in a barely perceptible change in the view for the majority of potential viewers and would be perceived as part of, and an extension to, this existing industrial landscape. Residual effects on visual amenity would be negligible adverse or neutral. Once established the network of drainage channels, marshland habitat improvements and scrub planting would provide increased landscape connectivity and habitat improvement to the local landscape character and visual amenity.</p> <p>In summary, there would be no likely significant landscape or visual effects during either the construction or operational phases of the Proposed Development.</p>	
Chapter 9: Historic Environment - Tilbury	<p>The historic environment desk-based assessment prepared to inform this report has identified two designated heritage assets and two non-designated heritage assets within the combined study area of the Proposed Development. The desk-based assessment also identified potential for the survival of previously unknown palaeoenvironmental and prehistoric remains dating to the Mesolithic to Iron Age within the Proposed Development.</p> <p>Construction of the Proposed Development has the potential to result in a temporary effects on the setting of the Tilbury Fort Scheduled Monument (NHLE 1021092) and the Tilbury Fort Officers Barracks (NHLE 1375568), however, these effects are not considered to be significant. The Tilbury Clock Tower War Memorial (NHLE 1471691) will not experience any effects as a consequence of the Proposed Development.</p> <p>There is potential for adverse effects on the surviving non-designated extant pillbox (MEX31812) or any non-designated archaeological remains associated with the Medieval Sea Wall (MEX6629) in addition to previously unknown buried archaeological and palaeoenvironmental remains within the Proposed Development. It is concluded that the potential adverse effects arising from the loss or disturbance of these remains arising from construction of the Proposed Development could be mitigated by an appropriate programme of archaeological investigation, sampling and recording developed in consultation with the Historic Environment Officers at Essex County Council.</p> <p>It is therefore not anticipated that the Proposed Development would give rise to any residual significant effects on the historic environment.</p>	No likely significant effects

ES Chapter reference	Summary of Environmental Impact Assessment	Summary of Likely Significant Effects
Chapter 10: Traffic and Transport - Tilbury	<p>It is considered that each of the potential impacts and environmental risks relating to traffic and transport associated with the works can be managed through the application of accepted good practice and compliance with mitigation measures. Cumulative traffic increases have been identified for the A1089 (South) and the A1089/Station Approach junction following the inclusion of the cumulative schemes (with an associated increase in magnitude of change). However, this remains the case without the Proposed Development, which is in itself expected to have a low or negligible impact with no environmental effects on these parts of the local highway network as a result of construction-related traffic. The high proportional traffic flow increases identified on Station Approach arise due to very low baseline flows and it is not considered that the cumulative increase in traffic would have the potential to result in any significant impacts with respect to traffic and transport.</p> <p>As a result, the Proposed Development is not in itself expected to result in any significant environmental effects in terms of traffic and transport.</p>	No likely significant effects
Chapter 11: Noise and Vibration - Tilbury	<p>There are no identified Noise Important Areas and Noise Action Plan Priority Areas within the Noise and Vibration Study Area. Baseline noise monitoring was undertaken at the Tilbury site from 18th April to 14th June 2023. The nearest sensitive noise receptors to the Tilbury Site are non-residential office buildings (Tilbury Substation Offices and Tarmac Tilbury offices) on the wider industrial area. The nearest residential receptors to the Tilbury Site are those on Sandhurst Road, approximately 800m to the northwest of the Tilbury site.</p> <p>The noise and vibration assessment considers the following:</p> <ul style="list-style-type: none"> • Noise and vibration associated with construction works; • Road traffic associated with construction works; and • Noise associated with operational activities associated with the tunnel headhouses (ventilation fans). <p>Mitigation measures have been embedded into the design of the Proposed Development, these measures are provided in the Outline CEMP (ES Volume VI Appendix 3.1) and include a set of generic best practice working methods referred to as Best Practicable Means, as well as closed board fencing to be installed around construction compounds.</p> <p>The assessment concludes with no significant residual effects expected during the during the construction or operational phases.</p>	No likely significant effects

ES Chapter reference	Summary of Environmental Impact Assessment	Summary of Likely Significant Effects
Chapter 12: Air Quality - Tilbury	<p>There is currently one Air Quality Management Area in Tilbury, AQMA 24, declared by TC due to exceedances of the annual mean nitrogen dioxide (NO₂) air quality objective. The AQMA is located in an area which encompasses Calcutta Road, Dock Road and St Chads Road, in Tilbury.</p> <p>Monitoring of NO₂, PM₁₀ and PM_{2.5} has been undertaken within the red line boundary at both Gravesend and Tilbury sites. This was undertaken for a period of 3 months, between the 18th of April and 24th of July 2023, using Turnkey Osiris monitors (for PM₁₀ and PM_{2.5}) and diffusion tubes (for NO₂).</p> <p>The Proposed Development has the potential to impact on local air quality through construction dust and PM₁₀ emissions generated by vegetation clearance and removal of top soil, NO_x, PM₁₀ and PM_{2.5} emissions from construction phase traffic; and emissions associated with the on-site generators used to supply the energy required for high energy demand construction activities such as shaft sinking and tunnelling. These impacts have the potential to impact on amenity, human health and nature conservation receptors close to the site, and human health sensitive receptors adjacent to the road network on the construction traffic route.</p> <p>The dispersion modelling completed for various scenarios associated with the use of on-site generators has identified that impacts at the nearby potential SSSI and LWS are well above either the Critical Level for annual mean NO_x and/or the relevant Critical Load for nitrogen deposition, even with a notable stack height. Subject to the selection of the generator specification, additional mitigation is likely to be required. Such mitigation would likely involve a suitable emissions release height and the use of Selective Catalytic Reduction (SCR) technology to bring NO_x emissions in line with the EU Stage 5 (US EPA Tier IV) emission standard for NO_x.</p> <p>Other mitigation has been embedded into the design of the project which was taken into account when assessing the impacts of the Proposed Development on air quality. This includes the removal of tunnel and shaft spoil at Tilbury via barge, as well as the good traffic management outlined within the CTMP (ES Volume VI Appendix 10.1). Mitigation measures are also secured within the Outline CEMP (ES Volume VI Appendix 3.1) that will be required to mitigate against the effects on local air quality.</p> <p>The assessment concludes with no residual significant effects on air quality.</p>	No likely significant effects

ES Chapter reference	Summary of Environmental Impact Assessment	Summary of Likely Significant Effects
Chapter 13: Water Environment - Tilbury	<p>The South Essex Thurrock Chalk Water Body underlies the Tilbury Site. The Thames Estuary is located approximately 350m south of the Proposed Development. It is considered a Main River and the only Water Framework Directive (WFD) designated surface water body within the site boundary and study area. The Proposed Development is surrounded by a number of ditches. The Tilbury Site is located within Flood Zone 3. The Environment Agency Flood Risk from Surface Water map indicates a medium to high risk from surface water flooding.</p> <p>A number of activities during construction and operation and maintenance that are likely to generate impacts, which have the potential to affect the water environment, including vegetation clearance, removal of topsoil, areas for plant maintenance, site offices and compound areas, storage areas for construction and for excavated materials; and dust generation.</p> <p>A number of standard and embedded measures have been identified, which would be implemented during construction to manage the impacts and reduce the effects that the construction of the Proposed Development would have on the water environment. For example, suitable spoil material would be sent via River Thames to a suitable receiver. Additional mitigation is required which is detailed in the Outline CEMP (Appendix 3.1) which when implemented, will manage the construction site runoff and sediment effectively, as well as spillage risk and flood risk.</p> <p>The assessment concludes with no likely significant effects on the water environment during construction and operational phases.</p>	No likely significant effects
Chapter 14: Materials and Waste - Tilbury	<p>The Proposed Development lies within the boundary of one historic landfill (Tilbury B Power Station Fort Road authorised for inert waste with first input in 1978) and two authorised landfills (R W E n Power plc Tilbury B Power Station Fort Road and Ingrebourne Valley Ltd Tilbury Ash Disposal Tip). There are no other permitted waste sites or waste site applications in the vicinity (within 500m) of the Proposed Development. The Thurrock Council Core Strategy and Policies for Management of Development safeguards MSAs, mineral and waste sites however, the associated Policies Map does not show any MSAs or safeguarded mineral or waste sites (policy “CSTP32 Safeguarding Mineral Resources”, “CSTP29 Waste Strategy” and “Strategic Spatial Objective SSO15”).</p> <p>The assessment of effects has been carried out on a project wide basis, covering both the development at Tilbury and Gravesend. The Proposed Development will aim to prioritise waste prevention, followed by preparing for reuse, recycling and recovery and lastly disposal to landfill as per the internationally recognised waste hierarchy. Additional mitigation is required which is detailed in the Outline CEMP (ES Volume VI Appendix 3.1) and includes such commitments as producing a Materials Management Plan and Site Waste Management Plan.</p> <p>The assessment concludes with no likely significant effects on materials and waste during the construction phase.</p>	No likely significant effects

Table 24-2: Summary of Environmental Impact Assessment - Gravesham

Topic	Summary of Environmental Impact Assessment	Conclusion
Chapter 15: Biodiversity - Gravesend	<p>The Proposed Development is situated approximately 30m south of the Thames Estuary & Marshes Ramsar site and South Thames Estuary and Marshes SSSI, and approximately 520m northeast Thames Estuary & Marshes SPA. The site is within the Canal and Grazing Marsh, Higham LWS.</p> <p>Reptiles slow worm, common lizard and grass snake are known to occur at Gravesend. Ornithology surveys have recorded Cetti's Warbler, Skylark, Song Thrush, Dunnock and Linnet. No bats, great crested newts, otter/water vole were recorded at Gravesend. Badger is also assumed to be currently absent from Gravesend.</p> <p>Invertebrate surveys at Gravesend undertaken in 2023 identified a total of 307 species of which 27 are regarded as 'key species'. This is a higher than average total species list for a three visit survey, and suggests that the Gravesend survey area is a diverse site for invertebrates. A total of 4 accurately rated Rare Key Species were found. Japanese knotweed (<i>Reynoutria japonica</i>) is present to the north of Wharf Road adjoining the Site. It is listed under Schedule 9 of the Wildlife and Countryside Act (1981 as amended) making it an offence to plant or cause its spread in the wild.</p> <p>The design of the Proposed Development has sought to minimise impacts on the Canal and Grazing Marsh, Higham LWS. Spoil removal at the Gravesend Site will be limited to that generated by the sinking of the shaft. All spoil from the tunnelling process will be removed and disposed of at the Tilbury Site, this limiting the requirement for vehicle movements and a larger working area at Gravesend. Habitat creation includes a biodiverse headhouse roof, new wet scrapes, tussocky grassland and grazed pasture as detailed in the Outline Landscape and Ecology Management Plan. A number of general environmental management controls will be secured as part of the CEMP as well as ecology specific measures relating to protected and notable species.</p> <p>The potential impacts from the construction phase of the Proposed Development considered in the assessment included habitat loss/gain/degradation, species mortality, species disturbance/displacement, fragmentation/connectivity of population or habitats and the introduction of will include habitat loss from non-statutory designated sites. The potential impacts from the operational phase of the Proposed Development considered habitat degradation/disturbance from operational lighting only.</p> <p>No additional mitigation has been identified to be required. The assessment concludes with no likely significant effects.</p>	No likely significant effect.
Chapter 16: Landscape and Visual - Gravesend	<p>The Proposed Development is situated in the immediate context of the existing TKRE 400 kV cable and infrastructure. It is also situated within the industrial landscape of this area of the River Thames and the associated heavy industrial sites at both Tilbury and the Gravesend Industrial hinterland. The Proposed Development site at Gravesend is adjacent to industrial areas and is therefore likely to be perceived as part of, and an extension to, this existing industrial landscape.</p> <p>Construction would be short-term, reversible and occur in an industrialised context. No landscape elements of value would be lost as a result of the construction, with effects being temporary and of minor adverse or negligible effects.</p> <p>Construction of above ground infrastructure/overhead cables would result in a negligible effect in the view for the majority of potential viewers, including the most sensitive groups of residents in Tilbury/Gravesend, and</p>	No likely significant effect.

Topic	Summary of Environmental Impact Assessment	Conclusion
	<p>recreational receptors. Recreational users of the long distance routes which run to the north of the site, would experience minor adverse effects in views in immediate proximity to the site at Gravesend where the construction plant and activity would be apparent within the context of more prominent industrial elements, within their wide, panoramic views across the Thames estuary.</p> <p>Similarly, in operation the effects on landscape character would be negligible. Any change in character would be small scale and with a localised geographical extent of influence. It would involve no loss of landscape elements of value and occur within the existing context.</p> <p>Once operational the Proposed Development including headhouses and OHL infrastructure would result in a barely perceptible change in the view for the majority of potential viewers and would be perceived as part of, and an extension to, this existing industrial landscape. Once established the network of drainage channels, marshland habitat improvements and scrub planting would provide increased landscape connectivity and habitat improvement to the local landscape character and visual amenity.</p> <p>In summary, there would be no likely significant landscape or visual effects during either the construction or operational phases of the Proposed Development.</p>	
Chapter 17: Historic Environment - Gravesend	<p>The historic environment desk-based assessment (Appendix 9-1) prepared to inform this report has identified seven designated heritage assets and 54 non-designated heritage assets within the combined study area of the Proposed Development. The desk-based assessment also identified potential for the survival of previously unknown archaeological and palaeoenvironmental remains within the alluvial deposits at the Headhouse and CES sites and for remains of the Milton Rifle Range to extend within the Proposed Development.</p> <p>Construction and operation of the Proposed Development will not significantly affect the setting of the seven grade II listed buildings, The Readers, a timber-framed house (NHLE 1089019), cottages at 54-58 Vicarage Lane (NHLE 1089005), a farmhouse at 44 Chalk Road (NHLE 1341493) and a cottage at 1 Chalk Road (NHLE 1089043), Granary at Little Filborough Farm (NHLE 1089062), Barn to North West of Filbrough Farm (NHLE 1341481) and Filborough Farmhouse (NHLE 1089020).</p> <p>There is potential for adverse effects on any surviving non-designated archaeological remains associated with the Milton Rifle Range (TQ 67 SE 1185) in addition to previously unknown buried archaeological and palaeoenvironmental remains within the Proposed Development. It is concluded that the potential adverse effects arising from the loss or disturbance of these remains arising from construction of the Proposed Development could be mitigated by an appropriate programme of archaeological investigation, sampling and recording developed in consultation with the Archaeological Officers at Kent County Council.</p> <p>It is therefore not anticipated that the Proposed Development would give rise to any residual significant effects on the historic environment.</p>	No likely significant effect.
Chapter 17: Traffic and Transport - Gravesend	No significant effects have been identified as a result of the Proposed Development on traffic and transport during any phase with embedded mitigation in place, as all effects have either been categorised as minor adverse or negligible. As such, no additional mitigation (to that already identified) is considered to be necessary as part of the ES.	No likely significant effect.

Topic	Summary of Environmental Impact Assessment	Conclusion
	<p>Public Right of Way NG2 will need to be temporarily closed to ensure pedestrian safety. Pedestrians will be diverted to PRoW NG1 (Footpath)/ England Coast Path/ Saxon Shore Way, which runs along the southern side of the River Thames.</p> <p>NCN Route 1 along the Thames and Medway Canal (immediately to the south of the site) will be temporarily closed to ensure cyclist safety. Going from west to east, cyclists will be diverted onto Chequers Street (in Lower Higham), Chalk Road, Lower Road, Lower Higham Road, A226 Rochester Road, Raphael Road, Prospect Grove (via a subway) and Norfolk Road</p>	
Chapter 18: Noise and Vibration - Gravesend	<p>There are no identified Noise Important Areas and Noise Action Plan Priority Areas within the Noise and Vibration Study Area. Baseline noise monitoring was undertaken at the Gravesend site from 18th April to 19th June 2023. The nearest sensitive noise receptors to the Gravesend Site are the National Maritime Training Centre (NMTC) and the Metropolitan Police Specialist Training Centre (MPSTC), which are non-residential receptors located directly to the west of the Gravesend Site at a minimum distance of approximately 50m. The nearest residential receptors are located near to Dalefield Way, to the south of the Gravesend Site at a distance of approximately 700m south-east.</p> <p>The noise and vibration assessment considers the following:</p> <ul style="list-style-type: none"> • Noise and vibration associated with construction works; and • Road traffic associated with construction works. <p>Mitigation measures have been embedded into the design of the Proposed Development, these measures are provided in the Outline CEMP (ES Volume VI Appendix 3.1) and include a set of generic best practice working methods referred to as Best Practicable Means, as well as closed board fencing to be installed around construction compounds.</p> <p>The assessment concludes with no significant residual effects expected during the during the construction or operational phases.</p>	No likely significant effect.
Chapter 19: Air Quality - Gravesend	<p>In 2022, there were three AQMAs located in Gravesend, near the southern construction site. These AQMAs have been declared by GBC due to exceedances of the annual mean NO₂ or PM₁₀ air quality objective:</p> <ul style="list-style-type: none"> • Northfleet Industrial Area AQMA (Declared 2005 due to elevated PM₁₀); • Gravesham A226 One Way System AQMA (Declared 2005 due to elevated NO₂); and • A227/B621 Wrotham Road/Old Road West Junction AQMA (Declared 2005 due to elevated NO₂). <p>Monitoring of NO₂, PM₁₀ and PM_{2.5} has been undertaken within the red line boundary at both Gravesend and Tilbury sites. This was undertaken for a period of 3 months, between the 18th of April and 24th of July 2023, using Turnkey Osiris monitors (for PM₁₀ and PM_{2.5}) and diffusion tubes (for NO₂).</p> <p>The Proposed Development has the potential to impact on local air quality through construction phase dust emissions, construction phase traffic emissions and construction phase generator plant emissions. These impacts have the potential to impact on amenity, human health and nature conservation receptors close to the site, and human health sensitive receptors adjacent to the road network on the construction traffic route.</p> <p>Mitigation has been embedded into the design of the project which was taken into account when assessing the impacts of the Proposed Development on air quality. This includes the storage and handling of the vast majority</p>	No likely significant effect.

Topic	Summary of Environmental Impact Assessment	Conclusion
	<p>of spoil material generated by the tunnelling element of the works at the Tilbury construction site, rather than at the Gravesend site as well as the good traffic management outlined within the CTMP (ES Volume VI Appendix 10.1). Mitigation measures are also secured within the Outline CEMP (ES Volume VI Appendix 3.1) that will be required to mitigate against the effects on local air quality.</p> <p>The assessment concludes with no residual significant effects on air quality.</p>	
Chapter 20: Water Environment - Gravesend	<p>The Thames Estuary is situated approximately 170m north of the Proposed Development. There are a number of water features within the study area, including drains, ditches and ponds but are not designated as WFD water bodies in their own right. This includes the Thames and Medway Canal which is a disused canal situated south of Wharf Road and approximately 80m south of the Proposed Headhouse Location.</p> <p>There are a series of ditches that are part of Eastcourt Marshes which are recognised as Main River which bound the east and south of the Gravesend Site.</p> <p>The Environment Agency Flood Map shows that the Gravesend Site is located within Flood Zone 3. The majority of the Gravesend Site is in an area where there is a reduction in risk of flooding from rivers and the sea due to flood defences present along the banks of the Thames estuary and therefore the fluvial and tidal flooding from the Thames Estuary is said to have a very low risk to low risk of flooding.</p> <p>A number of activities during construction and operation and maintenance that are likely to generate impacts, which have the potential to affect the water environment, including vegetation clearance, removal of topsoil, areas for plant maintenance, site offices and compound areas, storage areas for construction and for excavated materials; and dust generation.</p> <p>A number of standard and embedded measures have been identified, which would be implemented during construction to manage the impacts and reduce the effects that the construction of the Proposed Development would have on the water environment. For example, suitable spoil material would be sent via River Thames to a suitable receiver. Additional mitigation is required which is detailed in the Outline CEMP (Appendix 3.1) which when implemented, will manage the construction site runoff and sediment effectively, as well as spillage risk and flood risk.</p> <p>The assessment concludes with no likely significant effects on the water environment during construction and operational phases.</p>	No likely significant effect.
Chapter 21: Materials and Waste - Gravesend	<p>There are no historic or authorised landfill, permitted waste sites or waste site applications in the vicinity of the Proposed Development. The closest site is the Shamrock Road historic landfill approximately 480m south west of the works. There is a safeguarded wharf (Clubb's Marine Terminal) approximately 420m from the west of the Proposed Development (policies "CS07 Economy, Employment and Skills" and "CS11 Transport" of the Gravesham Council Local Plan and policies map (Ref 14-20) and policy "CSM 6 Safeguarded Wharves and Rail Depots" of the Kent Minerals and Waste Local.</p> <p>There are no safeguarded mineral or waste sites in the vicinity of the Proposed Development. The Proposed Development lies within a MSA for sub-alluvial river terrace deposits (Policy CSM 5 Land-won Mineral Safeguarding). Whilst MSAs are not considered in a materials and waste assessment further consultation with the Minerals Planning Authority may be required prior to the submission of the planning application, and a Minerals Safeguarding Assessment completed if required.</p>	No likely significant effect.

Topic	Summary of Environmental Impact Assessment	Conclusion
	<p>The assessment of effects has been carried out on a project wide basis, covering both the development at Tilbury and Gravesend. The Proposed Development will aim to prioritise waste prevention, followed by preparing for reuse, recycling and recovery and lastly disposal to landfill as per the internationally recognised waste hierarchy. Additional mitigation is required which is detailed in the Outline CEMP (ES Volume VI Appendix 3.1) and includes such commitments as producing a Materials Management Plan and Site Waste Management Plan.</p> <p>The assessment concludes with no likely significant effects on materials and waste during the construction phase.</p>	

Table 24-3: Summary of Cumulative Effects Assessment

Topic	Summary of Assessment	Conclusion
Chapter 23: Cumulative Effects Assessment	<p>Combined Effects:</p> <p>Combined effects are where receptors could be affected by more than one type of impact. Where a receptor has been identified as only experiencing one effect or where only one topic has identified effects on that receptor, there is no potential for combined effects.</p> <p>Receptors groups and technical chapters were screen for potential combined effects, and those identified included air quality (dust), noise and vibration, visual and traffic and transport. Each receptor was assessed in turn for potential combined effects and whether any additional mitigation was required. None was identified and the assessment concluded there would be no significant combined effects will arise as a result of the Proposed Development.</p> <p>Cumulative Effects:</p> <p>The approach to cumulative assessment follows a staged approach. The Proposed Development's Zone of Influence was established through consideration of the largest study area of the technical EIA chapters. This was used to identify a Long List of other developments from research of the Planning Inspectorate's website for Nationally Significant Infrastructure Projects and Thurrock Council and Gravesham Borough Councils planning portals. The Long List was narrowed down to a Short List of other developments, by reviewing each development identified and considering developments where the potential for cumulative effects.</p> <p>At total of five developments, consisting of two DCO applications, one planning application from Thurrock Council planning portal and two planning applications from Gravesham Borough Council planning portal were identified for further cumulative assessment on the Short List of Other Developments.</p> <p>There is a physical overlap between the Proposed Developments. Fields to be utilised for the construction of the proposed Gravesend SEC and associated spoil storage do not overlap with land required for the Lower Thames Crossing. However, land required to upgrade the terminal pylon and replacing overhead lines in the southeast corner of the Gravesend Site, also falls within area proposed for the Milton Construction Compound. The access to the Milton Construction Compound will be via Wharf Road which is also the access road for the Gravesend Site. As a worst case if construction works co-inside they may result in a combined temporary direct impact on approximately 8.7ha of habitat within the LWS (14% of the LWS). The extent of disturbance to adjoining habitat will be limited by the CEMP measures and construction area noise fencing proposed under the Proposed Development. The Lower Thames Crossing Environmental Statement reports a moderate adverse effect on the Canal and Grazing Marsh Higham LWS, which is Not Significant. However, the cumulative effect of both schemes happening in parallel would (based on the Proposed Development assessment methodology) likely result in a temporary (approximately 4 years) adverse effect on structure and function of the LWS at the District level which is Significant. The loss of the same areas of habitat for the duration of construction will also increase the impacts on remnant grazing marsh habitats and breeding and wintering bird populations utilising these habitat areas. In both cases they are expected to increase the resulting effects to temporary significant adverse effects at the District level. All of these effects will be reversible following completion of construction and reinstatement.</p>	No likely significant effects.

Topic	Summary of Assessment	Conclusion
	<p>The cumulative effects assessment has identified that Filborough Farmhouse (NHLE 1089020) and Granary at Little Filborough Farm (NHLE 1089062) is likely to experience temporary moderate adverse (significant) cumulative effects from visual intrusion during the construction of the Lower Thames Crossing Project, and the Proposed Development. It should be noted that the residual significant cumulative effects are both driven by the moderate adverse (significant) effects as assessed in the Lower Thames Crossing and Thurrock Flexible Generation Plant assessment. It is considered that the cumulative effect identified in this cumulative effects assessment would be no worse than the effect presented in isolation in the other planning application assessments. It is concluded that no other significant cumulative effects will arise as a result of the Proposed Development and the other identified developments.</p>	

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National Grid Cable Tunnel Replacement Project

Design and Access Statement Gravesend

December 2023

Quality information

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1 Introduction

- 1.1.1 This Design and Access Statement has been prepared to support a planning application being made by National Grid Electricity Transmission (hereafter “National Grid”) relating to the Cable Tunnel Replacement Project (hereafter referred to as ‘the Proposed Development’). It covers the elements of the Proposed Development at Gravesend, under Gravesham Borough Council’s jurisdiction. An equivalent Design and Access Statement has been prepared based on the elements of the Proposed Development proposed at Tilbury and submitted with the planning application to Thurrock Council.
- 1.1.2 National Grid own the high voltage electricity transmission system in England and Wales and operates the electricity transmission system across Great Britain, carrying power between power stations and the local electricity supply networks of the Distribution Network Operators (DNOs).
- 1.1.3 National Grid is regulated by the Office for Gas and Electricity Markets (Ofgem). Through the terms of its transmission licence and obligations under Schedule 9 of the Electricity Act 1989¹, National Grid is required to operate its transmission system in an economic, efficient and co-ordinated manner whilst having regard to the preservation of amenity.
- 1.1.4 Schedule 9 requires National Grid to have regard to the desirability of preserving natural beauty, conserving flora, fauna and geological or physiographical features of special interest and of protecting sties, buildings and objects of architectural, historic or archaeological interest. The Schedule also requires National Grid to do what it reasonably can to mitigate any effect which its proposals would have on such features.
- 1.1.5 The Proposed Development comprises the construction of a new bored tunnel under the River Thames to house new cross linked polyethylene (XLPE) cables.
- 1.1.6 In addition, the Proposed Development comprises the following above-ground components at both ends of the new tunnel:
- **A new cable sealing end compound (SEC):** consisting of:
 - **a new tunnel headhouse** which will cover the shaft into the tunnel;
 - **a new overhead line gantry structure** which will connect the overhead line downlead conductors and transfer them to six sealing end structures; and
 - **Modifications to the existing overhead line (OHL):** The new OHL conductors will be connected to the existing 400kV OHL conductors via new terminal pylons. The old OHL conductors and existing pylons will be either replaced, refurbished or removed. This element of the project is not consented via the Town and Country Planning Act so is not discussed any further.
- 1.1.7 The new SECs will fall within Thurrock Council and Gravesham Borough Council’s jurisdiction.
- 1.1.8 National Grid is seeking to secure full planning permission for the two new SECs and new bored tunnel by way of a planning application to be submitted under the Town and Country Planning Act 1990 to Thurrock Council and Gravesham Borough Council. The Planning Application will allow for the construction compounds associated with these works.
- 1.1.9 Section 62 of the Town and Country Planning Act 1990 (as amended)² requires a Design and Access Statement to be submitted with most major developments for both outline and detailed planning applications.
- 1.1.10 This Design and Access Statement addresses those elements of the Proposed Development for which planning permission is being sought, namely the proposed new SECs containing new headhouses and a section of new bored tunnel on each side of the River Thames.
- 1.1.11 The purpose of this Design and Access Statement is to explain how the principles of good design have been considered from the inception of the development process and to explain the concept

¹ <https://www.legislation.gov.uk/ukpga/1989/29/schedule/9>

² <https://www.legislation.gov.uk/ukpga/1990/8/section/62>

and principles relating to use, amount, layout, scale, landscaping, appearance and access of the proposed SEC.

1.1.12 This Design and Access Statement has been prepared in line with the Commission for Architecture and the Built Environment (CABE) guidance 'Design and Access Statements: How to write, read and use them' (2006). This document provides information on the following:

- Use: What the buildings and spaces will be used for;
- Amount: How much will be built on the site;
- Layout: How the buildings and open spaces will be arranged on the site;
- Scale: How large the buildings and spaces will be;
- Landscaping: How the open spaces will be designed;
- Appearance: What the buildings and spaces will look like; and
- Access: How access will be provided.
- Sustainability: How sustainable design has been incorporated

1.1.13 This document is structured as follows:

- Section 1 – Introduction;
- Section 2 - Development Design, Concept and Layout;
- Section 3 – Access; and
- Section 4 – Conclusion.

2 Development Design, Concept and Layout

2.1 Introduction

- 2.1.1 This section describes the key components of the proposed headhouses and SECs including details of the use, amount, scale, layout, landscaping and appearance of the proposed elements.

2.2 Site Description

- 2.2.1 The proposed Gravesend SEC will be located within a vegetated area which is part of the Canal and Grazing Marsh, Higham Local Wildlife Site (LWS), designated for its grassland habitats and on land owned by National Grid at approximately TQ 67455 74158. To the north of the Proposed SEC is the existing SEC serving the existing tunnel. The land immediately east is owned by the Royal Society for the Protection of Birds (RSPB) and is partially leased and used as a Police Training Centre for rifle shooting. The land immediately west comprises of the Thameside Campus (National Maritime Training Centre), Metropolitan Police Specialist Training Centre (MPSTC) and Thames and the Medway Canal Association.
- 2.2.2 The new SEC is approximately 100m north of the Thames Estuary & Marshes (Ramsar Site and Special Protection Area) and South Thames Estuary and Marshes Site of Special Scientific Interest (SSSI). The land required for the development of the new SEC will be within the Canal and Grazing Marsh, Higham Local Wildlife Site (LWS).
- 2.2.3 The land required is not subject to any locally, nationally or internationally important landscape designations.

2.3 Key Components

New Bored Tunnel

- 2.3.1 The new cable tunnel will be approximately 2.2km long (from headhouse to headhouse), 4m in internal diameter (4.5m external diameter) and with the alignment illustrated in Figures 3.1 and 3.2 in ES Volume II Chapter 3: Project Description (also provided below). The depth of the tunnel is approximately -34m Above ordnance Datum (AoD) to - 32mAoD, and approximately three to four tunnel widths below the river bed.
- 2.3.2 Twelve new cross linked polyethylene (XLPE) cables will be installed in the new tunnel, once bored, to match the required 3325 megavolt amperes (MVA) maximum rating.
- 2.3.3 Due to advances in cable technology, XLPE is now being used in preference to the use of fluid filled cable (like those installed in the existing tunnel). In these modern cables, the central conductor is insulated by means of a cross linked polyethylene material, which is extruded around the conductor. The absence of fluid in the cable insulation enables a more mechanically robust overall cable construction. XLPE cables require less maintenance, with no ancillary fluid equipment to monitor and maintain. For example, sulphur hexafluoride (SF6), typically used in electricity transmission and distribution to insulate live electrical parts and to switch the flow of electrical current on and off, is not required to be used in this project.
- 2.3.4 Each cable needs to be well-spaced from others for adequate heat dissipation which will be achieved by forced air ventilation.

Sealing End Compound

- 2.3.5 A new SEC is required to achieve the transition from an underground cable connection to overhead line (OHL).

- 2.3.6 The SEC is located as close to the existing OHL as possible, thus also minimising the extent of new OHL required to connect with the existing OHL.
- 2.3.7 A new terminal pylon (to be situated to the east of the proposed SEC) will be constructed to connect the existing OHL to the new SEC.
- 2.3.8 The planning drawings included in the application present the following:
- Site location of the SEC shown in Planning Drawing TKRE/60677311/Gravesend/Site Location Plan;
 - A ground floor plan of the Gravesend headhouse shown in Planning Drawing PDD-100116-LAY-054;
 - A proposed roof floor plan of the Gravesend headhouse, shown in Planning Drawing PDD-100116-LAY-056;
 - A site layout plan of the Gravesend SEC shown on Planning Drawing PDD-100116-LAY-053;
 - A section plan of the Gravesend SEC shown on Planning Drawing PDD-100116-LAY-184;
 - Elevations of the Gravesend headhouse shown on PDD-100116-ELE-005 including (south east, north east, north west and south west elevations); and
 - Outline cross-sections of the Gravesend headhouse shown on PDD-100116-LAY-057.

Headhouse

- 2.3.9 A permanent headhouse will be located within the SEC at Gravesend. The headhouse will provide access to the tunnel shaft and will contain mechanical and electrical equipment.
- 2.3.10 The main function of the headhouse is to provide means of access into the tunnel as well as contain the primary electrical systems, including the required life safety systems and mechanical equipment required to ventilate the tunnel between Gravesend and Tilbury. The equipment is accommodated in specific areas of the headhouse. There are secondary functions located within the headhouse, including workspaces, and welfare accommodation.
- 2.3.11 The Gravesend headhouse is identified as a passive headhouse, the implications of which are that there is less equipment needing to be accommodated and no fans are located within this building.
- 2.3.12 The building must be located over the shaft, with its precise position being determined as a direct response to the need for shaft access and location of cables.
- 2.3.13 The location of the headhouse is shown in Planning Drawing TKRE/60677311/Gravesend/Site Location Plan. An indicative ground floor plan of the headhouse is shown in Planning Drawing PDD-100116-LAY-054, with elevations of the headhouse shown in Planning Drawing PDD-100116-ELE-005.

2.4 Consideration of Alternatives

- 2.4.1 A full description of the alternatives considered for the Proposed Development is provided in the Environmental Statement (ES), Volume II Chapter 2: Alternatives.
- 2.4.2 Within this chapter, an overview is provided of the Strategic Options Appraisal carried out prior to design stage. The report concluded that the installation of new cables within a new tunnel beneath the River Thames was preferable compared with installing new cables within the existing tunnel or opting for an overhead line crossing the River Thames. The main reasons were due to health and safety concerns associated with working within the existing tunnel, lower and more temporary environmental impact compared to that of a new overhead line. The three strategic options were discussed with relevant consultees in order to receive their feedback, and the emerging preference was for option 2: a new tunnel. No objections to a new tunnel were received from these consultees.
- 2.4.3 Once the decision to adopt the new tunnel was taken, further siting work was carried out to identify areas that were suitable for the temporary and permanent infrastructure required in Tilbury and

Gravesend. A range of considerations including, former land use, access to a major road, environmental constraints, topography, engineering design and cost were factored into the decision to determine the approach and location for the tunnel location and shaft, associated above ground infrastructure.

2.5 Use

- 2.5.1 The operational SEC including the headhouse building will be predominantly an unoccupied facility, with limited numbers of personnel, who only attend site for maintenance, inspection purposes, or in the event of an emergency.

Sealing End Compound

- 2.5.2 The proposed SEC is required to achieve the transition from an underground connection to OHL. The SEC compound will contain cable terminations (cable sealing ends), electrical equipment and support structures, and the tunnel shaft and headhouse, enclosed by security fencing.
- 2.5.3 The SEC will not require day to day access and will not be open to the public.

Headhouse

- 2.5.4 The headhouse within the SEC will provide maintenance access to the shafts and tunnel. The headhouse will accommodate:
- Main entrance and corridor;
 - Staircase to the bottom of the shaft;
 - Electrical room;
 - 110V battery/UPS room;
 - Tally Room;
 - Changing room; and
 - Water Closet (WC).
- 2.5.5 Externally, the new headhouse will have:
- a biodiverse brown roof;
 - a temporary generator (hardwired to the LV Switch Room);
 - an access hatch for cable feed; and
 - a pedestrian access path.

2.6 Design

Sealing End Compound (SEC)

- 2.6.1 The construction of the proposed SEC and terminal pylon will facilitate the connection from cable connection to the existing 400kV OHL.
- 2.6.2 An indicative layout for the SEC has been derived following considerations of the spatial requirements of the key components of the SEC together with technical/site constraints. The SEC compound design is based on safely and efficiently containing the required plant and equipment whilst complying with the relevant safety, security and technical standards.

Headhouse

- 2.6.3 The headhouse within the SEC has been designed as a predominantly functional building to serve the proposed use of the development, whilst being mindful of the sensitive ecological habitats in its vicinity.

2.6.4 The headhouse building is split into two main areas:

- Tunnel damper room; and
- Ancillary accommodation

Tunnel Damper Room

2.6.5 This is positioned over the shaft, with the footprint and height of this space being determined by the required ventilation duct assemblies and areas of ventilation louvres needed.

2.6.6 The ductwork from the shaft connects via a plenum to the exhaust air louvres in the external walls.

2.6.7 Also installed in this room will be an access hatch, with a lifting beam over, which will primarily be used to lower the equipment and the tunnel vehicle (electric trike) down the shaft and into the tunnel below. The lifting beam will also facilitate the installation and subsequent replacement of any equipment within the shaft or this end of the tunnel.

2.6.8 There will be storage cabinets and space for the charging of the tunnel vehicle within the room.

2.6.9 The large roller shutter, to the north elevation, is located to align with the site access road and the internal access hatch. This enables easy access for delivery and movement of any items that need to be off loaded into the building and lowered down the shaft.

2.6.10 A personnel door has been located adjacent to the roller shutter primarily for fire escape, which is guarded from the site road by galvanised barriers, for safety reasons.

Ancillary Accommodation:

2.6.11 The remainder of the building contains the following accommodation:

- Main entrance and corridor;
- Staircase to the bottom of the shaft;
- Electrical room;
- 110V battery/UPS room;
- Tally Room;
- Changing room; and
- WC.

Main Entrance

2.6.12 This is located on the west elevation directly opposite the 6 new site car parking spaces. The entrance will have a level threshold and gives direct access to the main circulation corridor within the building, off which all rooms are accessible.

Staircase

2.6.13 This is the access for operatives into the shaft and tunnel. The staircase is enclosed above the headhouse floor level and has a door opening from the staircase into the corridor for ease of escape in the case of an emergency.

Electrical Room

2.6.14 This room contains the main electrical panels and control equipment to be located at this end of the tunnel.

Battery / UPS room

2.6.15 Within this room is located banks of the required 110V batteries as well as the UPS (Uninterruptible Power Supply) equipment serving systems in the building

Tally Room

- 2.6.16 This provides a small area with a worksurface where operatives can process any necessary documentation without the need to access the electrical room. It also provides a specific location identifying any personnel who have access to the tunnel.

Shower/Changing and WC

- 2.6.17 Welfare facilities within the headhouse are limited due to the low occupancy and infrequent use of the building. Minimal accommodation is therefore provided within these two rooms.
- 2.6.18 The arrangement and size of the WC is based upon the requirements of a disabled toilet.

Temporary Generator Provision

- 2.6.19 External to the building, provision has been made for a hardstanding area where a temporary electrical generator can be located, should a failure of the mains electrical power supply to the building occur. This has been located close to the building, so that connections can be made to the generator connection panel on the external wall, without affecting vehicle or personnel access to the building.

2.7 Amount and Scale

Sealing End Compound (including headhouse)

- 2.7.1 The footprint of the sealing end compound including the headhouse is approximately 6, 210 m².

Sealing End Compound

- 2.7.2 The SEC site will comprise the following equipment as shown on Planning Drawing PDD-100116-LAY-046 attached:
- 12 new XLPE cables;
 - 12 new cable terminations (polymeric);
 - 12 new cable support steel structures with buried concrete foundations;
 - Concrete surface troughs for new cables;
 - 6 Surge Arresters for protection of underground cables; and
 - 6 earth switches.
- 2.7.3 The highest equipment within the SEC will be the compound gantry which will be approximately 13 m and is shown on Planning Drawing PDD-100116-LAY-180.

Headhouse

- 2.7.4 The proposed footprint of the headhouse building alone will be approximately 233m² (15.550m x14.985m).
- 2.7.5 The proposed internal floor level for the headhouse building has been established at 3.500m Above Ordnance Datum (AOD) and has an overall height of 7.865m (level above AOD is 11.365m).
- 2.7.6 The size of the headhouse is determined by the requirement for mechanical and electrical equipment to ventilate and access the tunnel and tunnel shaft. The size is also driven by spacings required between the overhead line conductors where they connect to the building before transitioning to the cable sealing end structures.
- 2.7.7 A ground floor plan of the headhouse is shown on Planning Drawing PDD-100116-LAY-054 with the proposed roof floor plan for the headhouse shown on Planning drawing PDD-100116-LAY-056, elevations shown on PDD-100116-ELE-005 and cross-sections shown on PDD-100116-LAY-184.

2.8 Layout

- 2.8.1 The indicative layout for the SEC has been designed to respond to the sense of place of the local landscape whilst taking into account a number of technical and environmental constraints. The layout and positioning of the SEC has reflected the need to minimise impacts on sensitive habitats in the vicinity.
- 2.8.2 The SEC compound designs also reflect safety and efficiency, containing the required plant and equipment whilst complying with the relevant safety, security and technical standards.

2.9 Sustainability

- 2.9.1 The Proposed Development is one of 17 key projects that National Grid has identified across the country as being critical to enabling the country's rapid transition toward decarbonisation and ultimately net zero carbon emissions, in line with the commitments in the Climate Change Act 2008.
- 2.9.2 Against this backdrop, sustainable design and construction has been a key focus during the optioneering and design stages of the Proposed Development. National Grid has numerous environmental and sustainability commitments and targets that all projects must work towards and a bespoke Sustainability Action Plan has been developed and regularly updated for the Proposed Development to capture opportunities and make alterations to the design.
- 2.9.3 The Sustainability Action Plan is wide ranging and includes measures that reduce emissions, minimise waste, sustainable resource use, incorporate biodiversity net gain and care for the natural environment.
- 2.9.4 For further information, see the Sustainability Statement submitted with this planning application.

2.10 Landscaping

- 2.10.1 The SEC compound and associated headhouse and immediate landscape proposals have been sited and designed taking into account a number of technical and environmental constraints. The landscape proposals around the SEC have sought to support the surrounding sensitive habitats and species. Refer to the Outline Landscape and Ecological Management Plan, (oLEMP) including Appendix A Landscape Masterplan.

2.11 Appearance

Sealing End Compound

- 2.11.1 The general appearance of the SEC primarily derives from the functional need and the safety requirements. The majority of the structures will be finished in galvanised steel; busbars connectors and fittings will be copper/aluminium, and HV Plant insulators will be brown glazed porcelain (or grey as an option), CSE insulator will be glass reinforced silicon rubber in grey, the cable core insulation will be XLPE. All supporting structures will be set in concrete.

Headhouse

Architectural Treatment

- 2.11.2 The form of the building has been kept as a simple rectangular plan, with a simple curved roof. The profiled fascias include an integral gutter to the lowest part of the roof. The curved roof will take the form of a biodiverse roof, to assist in reducing rainwater runoff and allow provision for biodiversity.
- 2.11.3 Externally the building's wall finishes consist of flat faced composite cladding panels, laid horizontally. There are two main ventilation louvre banks, with powdercoated metal class A louvres. Two banks have been chosen to enable the height of the building to be kept to a sensible minimum. All internal walls are intended to be constructed in blockwork.

Materials

2.11.4 The roof will comprise the following:

- Curved standing seam with applied green roof.
- Dark grey powder aluminium fascias, integral gutters and rainwater pipes

2.11.5 The walls will comprise the following:

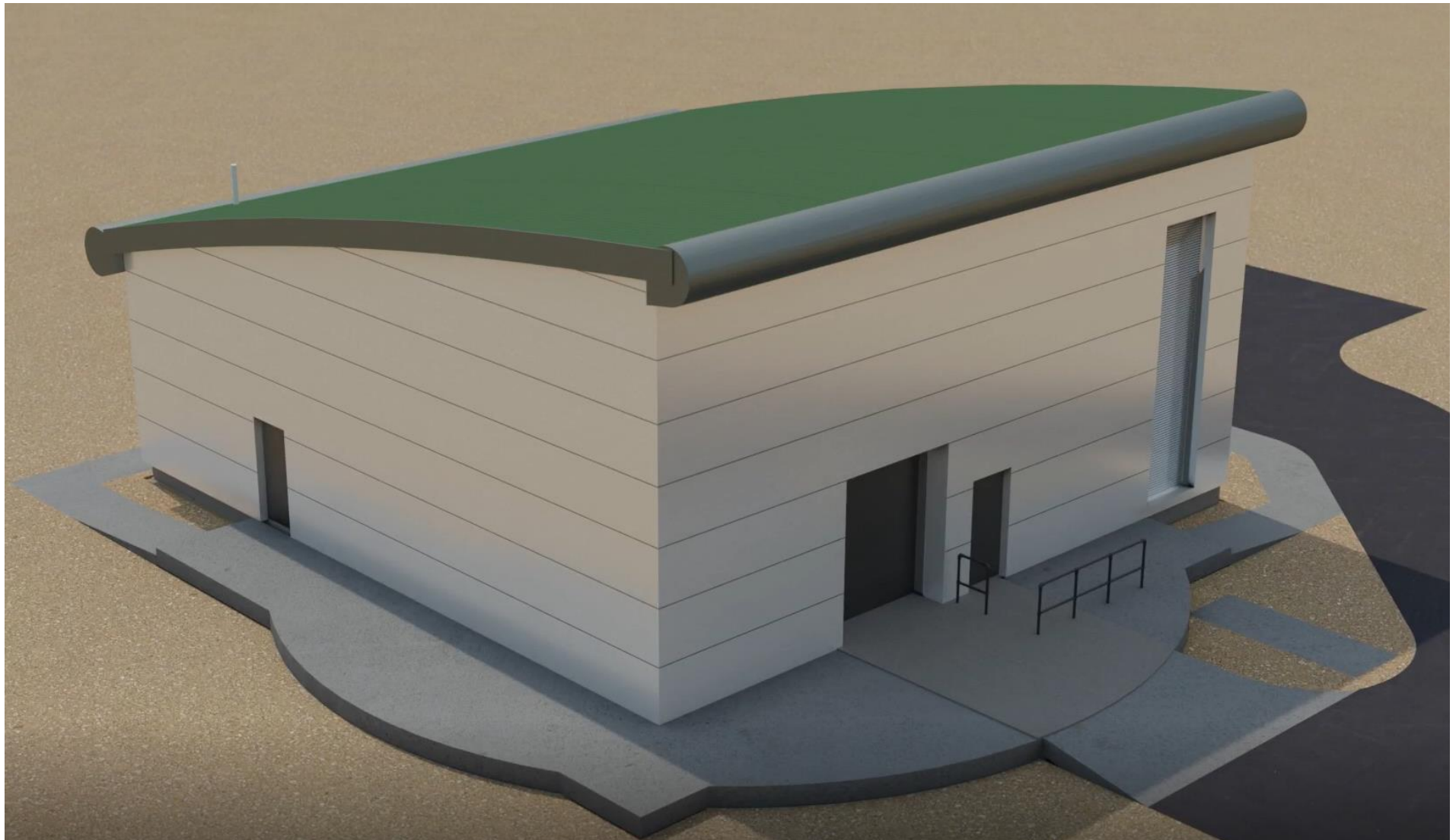
- Light Grey composite cladding wall panels
- Dark grey powder coated metal doors
- Dark grey powder coated metal louvres

2.11.6 The external works will comprise the following:

- Asphalt roads and parking
- Concrete hardstandings and paths
- Gravel ground coverings
- Security fencing with a 1m high electrified section to the top. Overall height of the fence is therefore 3.4m above ground level.

2.11.7 The external appearance of the headhouse will be finished in weathered steel cladding with a roller shutter and ventilation louvre on the north west elevation.

Plate 2-1: Indicative visualisation of the proposed Gravesend Headhouse



Source: Baker Hicks, 2023

3 Access

- 3.1.1 Access for vehicles will be via the main entrance gate to the compound and utilise the new site roads. This will include any private vehicles, access equipment (e.g., MEWPS), light goods vehicles or heavy goods vehicles.

Inclusive Access

- 3.1.2 The approach to the new headhouse main entrance will comply with the provisions of Approved Document Part M of the Building Regulations³. The immediate site will have gradients enabling access to be level and easy to navigate from the new car parking. A level threshold will be provided to the main entrance and fire escape to the east end of the corridor.
- 3.1.3 The Gravesend compound and headhouse is a controlled Power Industry facility, where most of the activities undertaken are unsuitable to be carried out by people with either visual or physical disability. In this instance the requirements of safety and operation of the facility need to take priority over provisions of the Equalities Act. It is not practical for wheelchair users to work within the facility without compromising themselves or the installations within the facility. For this reason, the design of the headhouse can be separated into two distinct parts in relation to provision of disabled facilities:
- The Operational areas of the facility – It has been acknowledged, by National Grid, that these areas will not need to be designed to comply with all aspects of Approved Doc. Part M and the Equality Act 2010⁴.
 - The Non-Operational areas – The main entrance, main corridor and toilet provision, which will comply with the requirements of Approved Doc. Part M.
- 3.1.4 One disabled car parking space will be provided, within the six main parking spaces, as close to the main entrance of the building as practical. There will be dropped kerbs between the access path and the side road.

Refuse Collection

- 3.1.5 Due to the site and building being fundamentally an unoccupied facility there is no expectation for the generation of general waste, so no provision is deemed necessary.
- 3.1.6 Any waste created by maintenance works will be required to be cleared from site by those personnel, or contractors, undertaking the works and disposed of responsibly through their existing, established procedures.

³ <https://www.gov.uk/government/publications/access-to-and-use-of-buildings-approved-document-m>

⁴ <https://www.legislation.gov.uk/ukpga/2010/15/contents>

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4 Conclusion

- 4.1.1 The SEC location was selected as part of the options appraisal process which included discussions with stakeholders. The layout of the SEC and headhouse has reflected the need to minimise impacts on surrounding sensitive habitats, hence the co-location of equipment within the same compound and in close proximity to the existing SEC so to minimise the overhead line changes required.
- 4.1.2 The SEC, in particular the headhouse within the SEC, is first and foremost a functional building to support the purpose of the development.
- 4.1.3 The SEC have been designed to be unmanned during operation. Infrequent visits will be required to visually inspect condition of non-mechanical equipment and structures at the SEC. Maintenance checks of the head house will be undertaken and would cover elements including the lighting, pumps and gas detection. The cables will be subjected to maintenance inspections over the length of the tunnel comprising at least one annual inspection.

5 Abbreviations

Abbreviations	Meaning
aOD	Above Ordnance Datum
CABE	Commission for Architecture and the Built Environment
DNO	Distribution Network Operators
ES	Environmental Statement
LV	Low Voltage
MVA	megavolt amperes
Ofgem	Office for Gas and Electricity Markets
OHL	Overhead Line
oLEMP	Outline Landscape and Ecological Management Plan
SEC	Sealing End Compound
SF6	Sulphur Hexafluoride
TKRE	Tilbury to Grain and Tilbury to Kingsnorth
WC	Water Closet
XLPE	Cross Linked Polyethylene

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National Grid Cable Tunnel Replacement Project

Design and Access Statement Tilbury

December 2023

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1 Introduction

- 1.1.1 This Design and Access Statement has been prepared to support a planning application being made by National Grid Electricity Transmission (hereafter “National Grid”) relating to the TKRE Cable Tunnel Replacement Project (hereafter referred to as ‘the Proposed Development’). It covers the elements of the Proposed Development at Tilbury, under Thurrock Council’s jurisdiction. An equivalent Design and Access Statement has been prepared based on the elements of the Proposed Development proposed at Gravesend and submitted with the planning application to Gravesham Borough Council.
- 1.1.2 National Grid own the high voltage electricity transmission system in England and Wales and operates the electricity transmission system across Great Britain carrying power between power stations and the local electricity supply networks of the Distribution Network Operators (DNOs).
- 1.1.3 National Grid is regulated by the Office for Gas and Electricity Markets (Ofgem). Through the terms of its transmission licence and obligations under Schedule 9 of the Electricity Act 1989¹, National Grid is required to operate its transmission system in an economic, efficient and co-ordinated manner whilst having regard to the preservation of amenity.
- 1.1.4 Schedule 9 requires National Grid to have regard to the desirability of preserving natural beauty, conserving flora, fauna and geological or physiographical features of special interest and of protecting sties, buildings and objects of architectural, historic or archaeological interest. The Schedule also requires National Grid to do what it reasonably can to mitigate any effect which its proposals would have on such features.
- 1.1.5 The Proposed Development comprises the construction of a new bored tunnel under the River Thames to house new cross linked polyethylene (XLPE) cables.
- 1.1.6 In addition, the Proposed Development comprises the following above-ground components at both ends of the new tunnel:
- **A new cable sealing end compound (SEC):** consisting of:
 - **a new tunnel headhouse** which will cover the shaft into the tunnel;
 - **a new overhead line gantry structure** which will connect the overhead line downlead conductors and transfer them to six sealing end structures; and
 - **Modifications to the existing overhead line (OHL):** The new OHL conductors will be connected to the existing 400kV OHL conductors via new terminal pylons. The old OHL conductors and existing pylons will be either replaced, refurbished or removed. This element of the project is not consented via the Town and Country Planning Act so is not discussed any further.
- 1.1.7 The required new SECs will fall within Thurrock Council and Gravesham Borough Council’s jurisdiction.
- 1.1.8 National Grid is seeking to secure full planning permission for the two new SECs and new bored tunnel by way of a planning application to be submitted under the Town and Country Planning Act 1990 to Thurrock Council and Gravesham Borough Council. The Planning Application will allow for the construction compounds associated with these works.
- 1.1.9 Section 62 of the Town and Country Planning Act 1990 (as amended)² requires a Design and Access Statement to be submitted with most major developments for both outline and detailed planning applications.

¹ <https://www.legislation.gov.uk/ukpga/1989/29/schedule/9>

² <https://www.legislation.gov.uk/ukpga/1990/8/section/62>

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- 1.1.10 This Design and Access Statement addresses those elements of the Proposed Development for which planning permission is being sought, namely the proposed new SECs containing new headhouses and a section of new bored tunnel on each side of the River Thames.
- 1.1.11 The purpose of this Design and Access Statement is to explain how the principles of good design have been considered from the inception of the development process and to explain the concept and principles relating to use, amount, layout, scale, landscaping, appearance and access of the proposed SEC.
- 1.1.12 This Design and Access Statement has been prepared in line with the Commission for Architecture and the Built Environment (CABE) guidance 'Design and Access Statements: How to write, read and use them' (2006). This document provides information on the following:
- Use: What the buildings and spaces will be used for;
 - Amount: How much will be built on the site;
 - Layout: How the buildings and open spaces will be arranged on the site;
 - Scale: How large the buildings and spaces will be;
 - Landscaping: How the open spaces will be designed;
 - Appearance: What the buildings and spaces will look like;
 - Access: How access will be provided; and
 - Sustainability: How sustainable design has been incorporated.
- 1.1.13 This document is structured as follows:
- Section 1 – Introduction;
 - Section 2 - Development Design, Concept and Layout;
 - Section 3 – Access; and
 - Section 4 – Conclusion.

2 Development Design, Concept and Layout

2.1 Introduction

- 2.1.1 This section describes the key components of the proposed headhouses and SECs including details of the use, amount, scale, layout, landscaping and appearance of the proposed elements.

2.2 Site Description

- 2.2.1 The new SEC is proposed to be developed on an area of existing hardstanding in Tilbury, Thurrock, approximate grid reference TQ 66317 75873, on land owned on all sides by the Port of Tilbury, London, which was formerly Tilbury Power Station. To the north of the proposed SEC is the existing Tilbury Substation. The land east is part of Ingrebourne Valley's Goshems Farm restoration project, raising the land on an historical landfill back to high quality, arable farmland. The existing Tilbury SEC, serving the existing tunnel is approximately 290m south of the proposed Tilbury SEC. The River Thames is approximately 400m south of the permanent footprint of the proposed Tilbury SEC.
- 2.2.2 The new SEC will be surrounded by an industrial and agricultural landscape with the River Thames adjacent to the south. The new SEC is approximately 45m north of a section of the Tilbury Power Station Local Wildlife Site (which is large, multi-site designation that encompasses a number of previously designated sites including Lytag Brownfield, Tilbury Centre and Goshems Farm). The land required for the development of the new SEC is not subject to any locally, nationally or internationally important landscape designations.

2.3 Key Components

New Bored Tunnel

- 2.3.1 The new cable tunnel will be approximately 2.2km long (from headhouse to headhouse), 4m in internal diameter (4.5m external diameter) and with the alignment illustrated in Figures 3.1 and 3.2 in ES Volume II Chapter 3: Project description (also provided below). The depth of the tunnel is approximately -34m Above ordnance Datum (AoD) to - 32mAoD, and approximately three to four tunnel widths below the river bed.
- 2.3.2 Twelve new cross linked polyethylene (XLPE) cables will be installed in the new tunnel, once bored, to match the required 3325 megavolt amperes (MVA) maximum rating.
- 2.3.3 Due to advances in cable technology, XLPE is now being used in preference to the use of fluid filled cable (like those installed in the existing tunnel). In these modern cables, the central conductor is insulated by means of a cross linked polyethylene material, which is extruded around the conductor. The absence of fluid in the cable insulation enables a more mechanically robust overall cable construction. XLPE cables require less maintenance, with no ancillary fluid equipment to monitor and maintain. For example, sulphur hexafluoride (SF6), typically used in electricity transmission and distribution to insulate live electrical parts and to switch the flow of electrical current on and off, is not required to be used in this project.
- 2.3.4 Each cable needs to be well-spaced from others for adequate heat dissipation which will be achieved by forced air ventilation.

Sealing End Compound

- 2.3.5 A new SEC is required to achieve the transition from an underground cable connection to overhead line.
- 2.3.6 The SEC is located as close to the existing OHL as possible, thus also minimising the extent of new OHL required to connect with the existing OHL.
- 2.3.7 A new terminal pylon (to be situated to the north of the proposed SEC) will be constructed to connect the existing OHL to the new SEC.
- 2.3.8 The planning drawings included in the application present the following:
- Site location of the SEC shown in Planning Drawing TKRE/60677311/Tilbury/Site Location Plan;
 - A ground floor plan of the Tilbury headhouse shown in Planning Drawing PDD-100116-LAY-047;
 - A proposed roof floor plan of the Tilbury headhouse, shown in Planning Drawing PDD-100116-LAY-049;
 - A site layout plan of the Tilbury SEC shown on Planning Drawing PDD-100116-LAY-046;
 - A section plan of the Tilbury SEC shown on Planning Drawing PDD-100116-LAY-180;
 - Elevations of the Tilbury headhouse shown on PDD-100116-ELE-003 T including (north, west, south and east elevations); and
 - Outline cross-sections of the Tilbury headhouse shown on PDD-100116-LAY-050.

Headhouse

- 2.3.9 A permanent headhouse will be located within the SEC at Tilbury. The headhouse will provide access to the tunnel shaft and will contain mechanical and electrical equipment.
- 2.3.10 The main function of the headhouse is to provide means of access into the tunnel as well as contain the primary electrical systems, including the required life safety systems and mechanical equipment required to ventilate the tunnel between Gravesend and Tilbury. The equipment is accommodated in specific areas of the headhouse. There are secondary functions located within the headhouse including workspaces, and welfare accommodation.
- 2.3.11 The Tilbury headhouse is identified as an active headhouse and therefore contains the majority of the required equipment. This is the building in which the tunnel ventilation fans are located.
- 2.3.12 The building needs to be located over the shaft, with the precise position being determined as a direct response to the need for shaft access and location of cables. A critical consideration for the layout for the building is the requirement for an external access hatch, to allow the main cables to be fed into the shaft and tunnel from the Tilbury site. This hatch must be external to the headhouse building footprint, allow access for cable laying equipment and located in a specific relationship relative to the cable routing.
- 2.3.13 The location of the headhouse is shown in Planning Drawing TKRE/60677311/Tilbury/Site Location Plan. An indicative ground floor plan of the headhouse is shown in Planning Drawing PDD-100116-LAY-047, with elevations of the headhouse shown in Planning Drawing PDD-100116-ELE-003.

2.4 Consideration of Alternatives

- 2.4.1 A full description of the alternatives considered for the Proposed Development is provided in the Environmental Statement (ES), Volume II Chapter 2: Alternatives.
- 2.4.2 Within this chapter, an overview is provided of the Strategic Options Appraisal carried out prior to design stage. The report concluded that the installation of new cables within a new tunnel beneath the River Thames was preferable compared with installing new cables within the existing tunnel or opting for an overhead line crossing the River Thames. The main reasons were due to health and safety concerns associated with working within the existing tunnel, lower and more temporary

environmental impact compared to that of a new overhead line. The three strategic options were discussed with relevant consultees in order to receive their feedback, and the emerging preference was for option 2: a new tunnel. No objections to a new tunnel were received from these consultees.

- 2.4.3 Once the decision to adopt the new tunnel was taken, further siting work was carried out to identify areas that were suitable for the temporary and permanent infrastructure required in Tilbury and Gravesend. A range of considerations including, former land use, access to a major road, environmental constraints, topography, engineering design and cost were factored into the decision to determine the approach and location for the tunnel location and shaft, and associated above ground infrastructure.

2.5 Use

- 2.5.1 The operational SEC including the headhouse building will be predominantly an unoccupied facility, with limited numbers of personnel, who only attend site for maintenance, inspection purposes, or in the event of an emergency.

Sealing End Compound

- 2.5.2 The proposed SEC is required to achieve the transition from an underground connection to OHL. The SEC compound will contain cable terminations (cable sealing ends), electrical equipment and support structures, and the tunnel shaft and headhouse, enclosed by security fencing.
- 2.5.3 The SEC will not require day to day access and will not be open to the public.

Headhouse

- 2.5.4 The headhouse within the SEC will provide maintenance access to the shafts and tunnel and contain ventilation equipment to regulate the temperature in the tunnel. The headhouse will accommodate:
- Ventilation plant for the tunnel and shafts;
 - A control room, with tally room, communications control, panels, mechanical plant and control panels;
 - Low Voltage (LV) Switch Room;
 - 110V Battery / Uninterruptable Power Supply Room;
 - Main fans room;
 - Shaft access via a staircase (but with space allocation for a lift, and lift motor room (if required));
 - Changing and shower room; and
 - Water Closet (WC).
- 2.5.5 Externally, the new headhouse will have:
- a biodiverse brown roof;
 - a temporary generator (hardwired to the LV Switch Room);
 - an access hatch for cable feed; and
 - a pedestrian access path.
- 2.5.6 Small ventilation fans will be installed in the headhouse to provide air to the sealed staircase. These will be used only when the tunnel is accessed for maintenance.

2.6 Design

Sealing End Compound (SEC)

- 2.6.1 The construction of the proposed SEC and terminal pylon will facilitate the connection from cable connection to the existing 400kV OHL.
- 2.6.2 An indicative layout for the SEC has been derived following considerations of the spatial requirements of the key components of the SEC together with technical/site constraints. The SEC compound design is based on safely and efficiently containing the required plant and equipment whilst complying with the relevant safety, security and technical standards.

Headhouse

- 2.6.3 The headhouse within the SEC has been designed as a predominantly functional building to serve the proposed use of the development, whilst being mindful of the sensitive ecological habitats in its vicinity.
- 2.6.4 The headhouse building is split in to two main areas:
- Main Fans room; and
 - Ancillary Accommodation.

Main Fans Room

- 2.6.5 This is positioned over the shaft, with the footprint and height of this space being determined by the required ventilation ducts, attenuators, fan assemblies and required area of ventilation louvres.
- 2.6.6 The two ductwork routes, from the shaft, connect, via an attenuator, to the fans. One fan is provided for each duct run. The ductwork then connects from the fan, via a further acoustic attenuator, to a plenum, through which the intake air is drawn via the louvres in the external walls. The ducts rise to high level within the fan room, to enable a reduced footprint to be provided for the building, whilst still allowing external delivery access into the Main Fans room from outside. This increased the height at which the intake louvres are positioned and thus the overall height of the building to the south. However, raising the louvres does enable personnel to pass externally below the louvres.
- 2.6.7 Also installed in this room will be an access hatch, with a lifting beam over. This will primarily be used to lower the equipment and the tunnel vehicle (electric trike) down the shaft and into the tunnel below. The lifting beam will also facilitate the installation and subsequent replacement of any equipment with the shaft or the tunnel.
- 2.6.8 There is space allocated for the charging of the tunnel vehicle within the room.
- 2.6.9 The large roller shutter, to the east elevation, has been located to afford direct access from the site road for deliveries.
- 2.6.10 Two personnel doors will be provided to this room primarily as a safety precaution in the event of a fire.

Ancillary Accommodation

- 2.6.11 The remainder of the building contains the following accommodation:
- Main entrance and corridor;
 - Staircase to the bottom of the shaft;
 - Control Room;
 - Lift, and Lift Motor Room;
 - LV Switch room;
 - 110V battery/UPS room;
 - Shower/Changing room;
 - WC facility; and
 - Storage room.

Main Entrance

- 2.6.12 The main entrance is located within the west elevation and has a dedicated footpath from the 6 new site car parking spaces at the east of the site. The entrance will have a level threshold and gives direct access to the main circulation space within the building, off which all rooms are entered.

Staircase

- 2.6.13 The staircase is the access for operatives into the shaft and tunnel. The staircase is enclosed above the headhouse floor level and has a door opening from the staircase into the corridor for ease of escape in the case of an emergency. The entrance to the staircase is positioned to provide a line of sight from the Control Room.

Control Room

- 2.6.14 The control room is the main operational base for operatives when on site and will be provided with worksurface / desks where operatives can process any necessary documentation without the need to access the LV Switch room. It also provides a specific location for identifying any personnel who have access to the tunnel.
- 2.6.15 The control room also houses the control panels for the key operational systems within the building, shaft, and tunnel.

Lift and Lift Motor room

- 2.6.16 Provision has been made within the footprint of the building for a lift and associated motor room. The provision of the lift is for the transportation of operatives and equipment within the shaft, and for the emergency evacuation of an injured person. The lift size has therefore been based upon the requirements to accommodate a stretcher and an attendant.

LV Switch Room

- 2.6.17 The LV switch room contains the main electrical equipment and panels required to be located at this end of the tunnel.

Battery/ Uninterruptible Power Supply room

- 2.6.18 The battery / Uninterruptible Power Supply room will contain banks of the required 110V batteries as well as the UPS equipment serving systems in the building.

Shower, Changing and WC

- 2.6.19 Welfare facilities within the headhouse are limited due to the low occupancy and infrequent use of the building, therefore minimal accommodation is therefore provided within these two rooms.
- 2.6.20 The arrangement and size of the WC has been designed based on the requirements of a disabled toilet.

Store

- 2.6.21 A small store has been provided to accommodate any spares, small equipment and consumables that may be necessary to the maintenance of the facility.

Permanent Generator Provision

- 2.6.22 For the Tilbury SEC and headhouse it is a requirement to include an external permanent standby generator, to provide electrical supply to the headhouse in the case of a main power failure. This is

situated on concrete hardstanding to the north of the headhouse at roughly mid-way towards the main site access road.

Temporary Generator Provision

- 2.6.23 In addition to the permanent generator described above, provision has been made for a hardstanding area where a temporary electrical generator can be located, should a failure of the mains electrical power occur to the building and failure of the permanent generator. This has been located close to the site entrance and to the side of the road, so that connections can be made to the generator connection panel on the external wall, without affecting vehicle or personnel access to the building.

2.7 Amount and Scale

Sealing End Compound (including headhouse)

- 2.7.1 The footprint of the sealing end compound including the headhouse is approximately 7, 339 m².

Sealing End Compound

- 2.7.2 The SEC site will comprise the following equipment as shown on Planning Drawing PDD-100116-LAY-046 attached:
- 12 new XLPE cables;
 - 12 new cable terminations (polymeric);
 - 12 new cable support steel structures with buried concrete foundations;
 - Concrete surface troughs for new cables;
 - 6 Surge Arrester for protection of underground cables; and
 - 6 earth switches.
- 2.7.3 The highest equipment within the SEC will be the compound gantry which will be approximately 13 m and is shown on Planning Drawing PDD-100116-LAY-180.

Headhouse

- 2.7.4 The proposed footprint of the headhouse building alone will be approximately 481m² (23.5m x 20.5m).
- 2.7.5 The proposed internal floor level for the headhouse building has been established at 3.500m above Ordnance Datum (AOD) and has an overall height of 9.510m (level above AOD is 13.010m).
- 2.7.6 The size of the headhouse is determined by the requirement for mechanical and electrical equipment to ventilate and access the tunnel and tunnel shaft. The size is also driven by spacings required between the overhead line conductors where they connect to the building before transitioning to the cable sealing end structures.
- 2.7.7 A ground floor plan of the headhouse is shown on Planning Drawing PDD-100116-LAY-047 with the proposed roof floor plan for the headhouse shown on Planning drawing PDD-100116-LAY-049, elevations shown on PDD-100116-ELE-003 and cross-sections shown on PDD-100116-LAY-050.

2.8 Layout

- 2.8.1 The indicative layout for the SEC has been designed to reflect safety and efficiency, containing the required plant and equipment whilst complying with the relevant safety, security and technical standards. The layout and positioning of the SEC and headhouse has reflected the need to minimise impacts on sensitive habitats and species in the vicinity.

- 2.8.2 The SEC compound designs also reflect safety and efficiency, containing the required plant and equipment whilst complying with the relevant safety, security and technical standards.

2.9 Sustainability

- 2.9.1 The Proposed Development is one of 17 key projects that National Grid has identified across the country as being critical to enabling the country's rapid transition toward decarbonisation and ultimately net zero carbon emissions, in line with the commitments in the Climate Change Act 2008.
- 2.9.2 Against this backdrop, sustainable design and construction has been a key focus during the optioneering and design stages of the Proposed Development. National Grid has numerous environmental and sustainability commitments and targets that all projects must work towards and a bespoke Sustainability Action Plan has been developed and regularly updated for the Proposed Development to capture opportunities and make alterations to the design.
- 2.9.3 The Sustainability Action Plan is wide ranging and includes measures that reduce emissions, minimise waste, sustainable resource use, incorporate biodiversity net gain and care for the natural environment.
- 2.9.4 For further information, see the Sustainability Statement submitted with this planning application.

2.10 Landscaping

- 2.10.1 The SEC compound and associated headhouse and immediate landscape proposals have been sited and designed taking into account a number of technical and environmental constraints. The landscape proposals around the SEC have sought to support the surrounding sensitive habitats and species. Refer to the Outline Landscape and Ecological Management Plan, (oLEMP) including Appendix A Landscape Masterplan

2.11 Appearance

Sealing End Compound

- 2.11.1 The general appearance of the SEC primarily derives from the functional need and the safety requirements. The majority of the structures will be finished in galvanised steel; busbars connectors and fittings will be copper/aluminium, and HV Plant insulators will be brown glazed porcelain (or grey as an option), CSE insulator will be glass reinforced silicon rubber in grey, the cable core insulation will be XLPE. All supporting structures will be set in concrete.

Headhouse

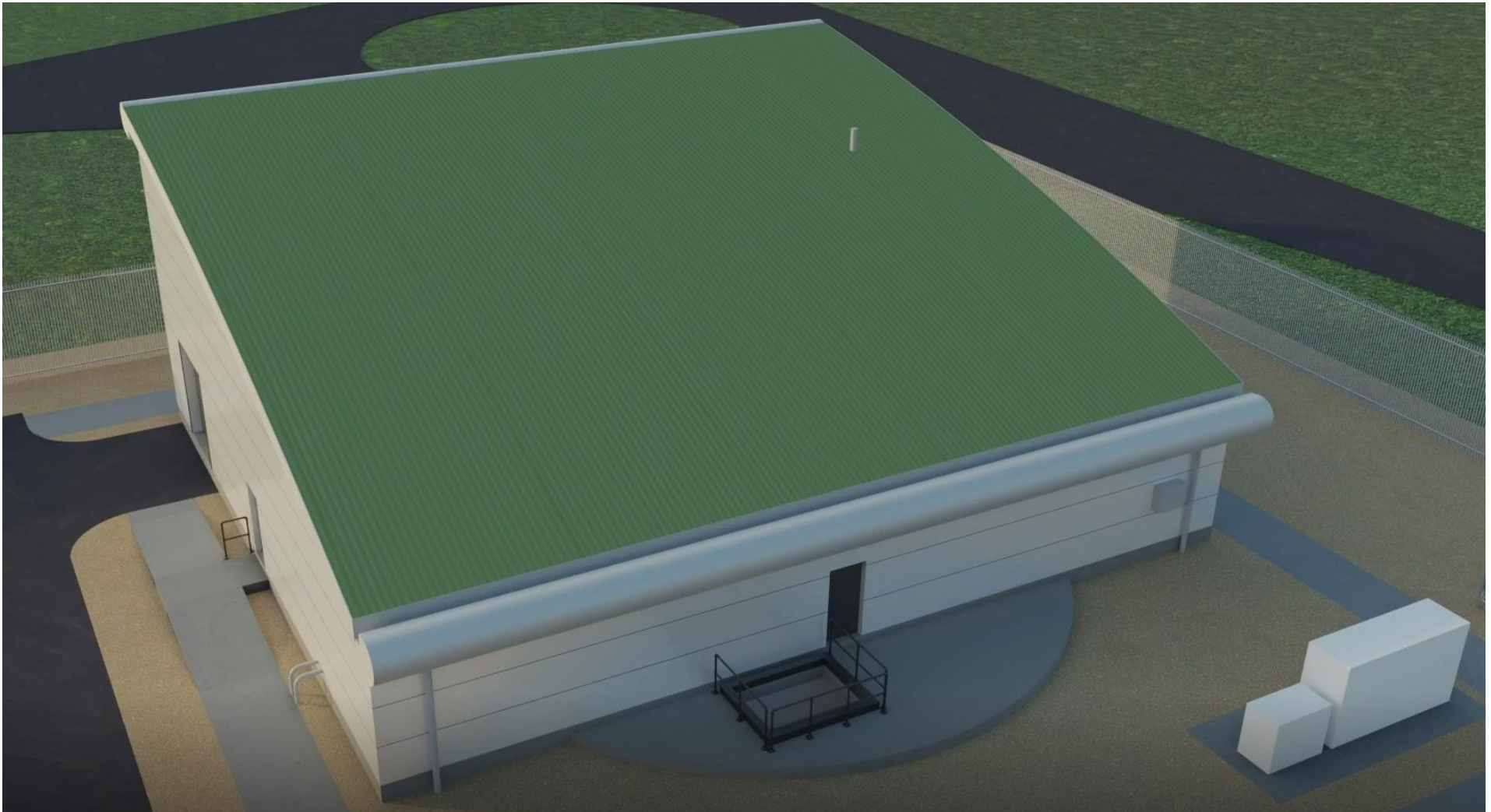
Architectural Treatment

- 2.11.2 The form of the building has been kept as a simple rectangular plan, with a simple curved roof. The profiled fascia's include an integral gutter to the lowest part of the roof. The curved roof will take the form of a biodiverse roof, to assist in reducing rainwater runoff and allow provision for biodiversity.
- 2.11.3 Externally the building's wall finishes consist of flat faced composite cladding panels, laid horizontally.
- 2.11.4 The main ventilation louvre bank, with powdercoated metal class A louvres are located to the south of the building facing the existing and future public highways. The louvre bank position and thus the height of the building has been driven by the internal arrangement of the ventilation ductwork.
- 2.11.5 All internal walls are intended to be constructed in blockwork.
- 2.11.6 The proposed elevations and sections for the headhouse are shown on the following Planning Drawings, PDD-100116-ELE-003 (Elevations) and PDD-100116-LAY-050 (Sections).

Materials

- 2.11.7 The roof will comprise the following:
- Curved standing seam with applied biodiverse roof.
 - Dark grey powder aluminium fascias, integral gutters and rainwater pipes
- 2.11.8 The walls will comprise the following:
- Light Grey composite cladding wall panels
 - Dark grey powder coated metal doors
 - Dark grey powder coated metal louvres
- 2.11.9 The external works will comprise the following:
- Asphalt roads and parking
 - Concrete hardstanding and paths
 - Gravel ground coverings
 - Security fencing will include a 1m high electrified section to the top. The overall height of the fence is therefore at a height of 3.4m above ground level.
- 2.11.10 The external appearance of the headhouse will be finished in weathered steel cladding with a roller shutter and ventilation louvre on the north west elevation.

Plate 2-1: Indicative visualisation of the proposed Tilbury Headhouse



Source: Baker Hicks, 2023

3 Access

- 3.1.1 Access for vehicles will be via the main entrance gate to the SEC and utilise the existing site roads. This will include any private vehicles, light goods vehicles or heavy goods vehicles.

Inclusive Access

- 3.1.2 The approach to the new headhouse main entrance will comply with the provisions of Approved Document Part M (Access to and use of buildings) of the Building Regulations³. The immediate site will have gradients enabling access to be level and easy to navigate from the new car parking area. A level threshold will be provided to the main entrance.
- 3.1.3 The Tilbury SEC is a controlled Power Industry facility, where most of the activities undertaken are unsuitable to be carried out by people with either visual or physical disability. In this instance the requirements of safety and operation of the facility need to take priority over provisions of the Equality Act 2010. It is not practical for wheelchair users to work within the facility without compromising themselves or the installations within the facility. For this reason, the design of the SEC can be separated into two distinct parts in relation to provision of disabled facilities:
- The Operational areas of the facility – It has been acknowledged, by National Grid, that these areas will not need to be designed to comply with all aspects of Approved Document M and the Equality Act 2010⁴.
 - The Non-Operational areas – The main entrance, main corridor, control room and toilet provision will comply with the requirements of Approved Document M.
- 3.1.4 One disabled car parking space will be provided, within the six main parking spaces, as close to the main entrance of the building as practical. There will be dropped kerbs between the access path and the side road.

Refuse Collection

- 3.1.5 Due to the site and building being fundamentally an unoccupied facility there is no expectation for the generation of general waste, so no provision is deemed necessary.
- 3.1.6 Any waste created by maintenance works will be required to be cleared from site by those personnel, or contractors, undertaking the works and disposed of responsibly through their existing, established procedures.

³ <https://www.gov.uk/government/publications/access-to-and-use-of-buildings-approved-document-m>

⁴ <https://www.legislation.gov.uk/ukpga/2010/15/contents>

December 2023

4 Conclusion

- 4.1.1 The SEC location was selected as part of the options appraisal process which included discussions with stakeholders. The layout of the SEC and headhouse has reflected the need to minimise impacts on surrounding sensitive habitats, hence the co-location of equipment within the same compound and in close proximity to the existing SEC so to minimise the overhead line changes required.
- 4.1.2 The SEC, in particular the headhouse within the SEC, is first and foremost a functional building to support the purpose of the development.
- 4.1.3 The SEC has been designed to be unmanned during operation. Infrequent visits will be required to visually inspect condition of non-mechanical equipment and structures at the SEC. Maintenance checks of the head house will be undertaken and would cover elements including the fans, lighting, pumps and gas detection. The cables will be subjected to maintenance inspections over the length of the tunnel comprising at least one annual inspection.

5 Abbreviations

Abbreviations	Meaning
aOD	Above Ordnance Datum
CABE	Commission for Architecture and the Built Environment
DNO	Distribution Network Operators
ES	Environmental Statement
LV	Low Voltage
MVA	megavolt amperes
Ofgem	Office for Gas and Electricity Markets
OHL	Overhead Line
oLEMP	Outline Landscape and Ecological Management Plan
SEC	Sealing End Compound
SF6	Sulphur Hexafluoride
TKRE	Tilbury to Grain and Tilbury to Kingsnorth
WC	Water Closet
XLPE	Cross Linked Polyethylene

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National Grid Cable Tunnel Replacement Project

Planning Statement - Gravesend

December 2023

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1 Introduction

1.1 Overview of the Cable Tunnel Replacement Project

- 1.1.1 The Tilbury to Gravesend Cable Tunnel Replacement Project (hereafter referred to as ‘the Proposed Development’) relates to the replacement of National Grid’s 400 kiloVolt (kV) circuits beneath the River Thames.
- 1.1.2 The Proposed Development comprises the construction of a new bored tunnel under the River Thames to house new cross linked polyethylene (XLPE) cables.
- 1.1.3 In addition, the Proposed Development comprises the following above-ground components at both ends of the new tunnel:
- **A new cable sealing end compound (SEC):** consisting of:
 - **a new tunnel headhouse** which will cover the shaft into the tunnel;
 - **a new overhead line gantry structure** which will connect the overhead line downlead conductors and transfer them to six sealing end structures; and
 - **Modifications to the existing overhead line (OHL):** The new OHL conductors will be connected to the existing 400kV OHL conductors via new terminal pylons. The old OHL conductors and existing pylons will be either replaced, refurbished or removed.
- 1.1.4 It should be noted that modifications to the existing overhead lines are consented via Section 37 of the Electricity Act 1989 and, although described in the Environmental Statement accompanying the planning applications, do not form part of the Town and Country Planning Act planning application. An application for Section 37 consent is being submitted at the same time as the planning applications.
- 1.1.5 Each required SEC would fall within Thurrock Council and Gravesham Borough Council’s jurisdiction.
- 1.1.6 Figure 1.1 in Environmental Statement (ES) Volume II Chapter 1: Introduction in provides a site location plan.

1.2 Background

Project Need

- 1.2.1 National Grid Electricity Transmission (hereafter referred to as ‘National Grid’) owns and operates the national high-voltage electricity transmission system throughout England and Wales. The key role of the transmission system is to connect the electricity generators’ power stations with the local distribution networks of the regional electricity companies. National Grid holds the Transmission Licence for England and Wales and is thus obligated to develop and maintain an efficient, co-ordinated and economical system of electricity transmission and to facilitate competition in the generation and supply of electricity, as set out in the Electricity Act 1989.
- 1.2.2 The Proposed Development is part of the Ofgem’s new accelerated strategic transmission investment (ASTI) framework (published December 2022). National Grid is responsible for delivering the extensive onshore transmission system enhancements that are required to achieve the UK Government’s 2030 decarbonisation targets.
- 1.2.3 National Grid’s operations are dictated by the latest Future Energy Scenarios (FES) (Ref 1) and Electricity Ten Year Station (ETYS) reports (Ref 2). In recent years, these reports have begun forecasting a large amount of renewable and low carbon energy generation, connecting into the transmission network in the east coast of England, together with three interconnectors from the continent. Through these forecasts, National Grid Electricity System Operator (ESO) has identified

that the 400 kV circuits will be significantly overloaded in their current capacity and require upgrading. National Grid has named this wider project 'Grain to Tilbury'.

- 1.2.4 Each year, the ESO undertakes an assessment of the options National Grid has available for meeting forecasted energy demands (the Network Options Assessment, NOA). This assessment comprises economic analysis to understand the balance between managing power flows across network boundaries. In the most recent NOA (2021/22), the ESO has recommended investment in upgrading the TKRE 400 kV circuits giving the project a 'proceed' signal with an Earliest in Service Date (EISD) of 2028. This was reconfirmed in the NOA refresh published July 2022.
- 1.2.5 The TKRE 400 kV circuits are currently predominantly overhead line, with a section installed within a deep tunnel beneath the River Thames. As the Transmission Licence Holder with responsibility for the TKRE circuits, National Grid are required to upgrade the existing circuits.

Options Appraisal

- 1.2.6 In 2022, National Grid undertook a Strategic Options Appraisal to inform the selection of a preferred option for the upgrade of the TKRE circuits. Three options were initially identified:
- the installation of new cables within the existing tunnel;
 - the installation of new cables within the new tunnel; and
 - the installation of a new overhead line across the River Thames.
- 1.2.7 The installation of new cables within the existing tunnel is not feasible due to the health and safety risks. The installation of a new overhead line across the River Thames, given its location and scale, would have had greater permanent environmental impacts. On balance, it was considered that the installation of new cables within a new tunnel was the most viable preferable option overall.
- 1.2.8 It should be noted the use of Horizontal Directional Drilling (HDD) as a construction method for the tunnel was initially reviewed. However, the ground profile contains a gravel layer which would present a significant challenge with horizontal penetration for any appreciable distance. The number and length of bores required would be significant resulting in larger launch and reception pits to accommodate. HDD is therefore considered high risk and without significant benefits when compared to the option for a new tunnel.

2 The Proposed Development

2.1 Overview

2.1.1 The Proposed Development comprises the construction of a new bored cable tunnel and the following above-ground components at both ends of the new tunnel:

- **A new cable sealing end compound:** consisting of:
 - **a new tunnel headhouse** which will cover the shaft into the tunnel;
 - **a new overhead line gantry structure** which will connect the overhead line downlead conductors and transfer them to six sealing end structures; and
- **Modifications to the existing overhead line (OHL):** The new OHL conductors will be connected to the existing TKRE 400kV OHL conductors via new terminal pylons. The old OHL conductors and existing pylons will be either replaced, refurbished or removed. This element of the project is not consented via the Town and Country Planning Act so is not discussed any further.

2.1.2 A full description of the Proposed Development is provided in ES Volume II Chapter 3: The Project Description and is summarised below.

Cable Tunnel

2.1.3 The new cable tunnel will be approximately 2.2km long (from headhouse to headhouse), 4m in internal diameter (4.5m external diameter) and with the alignment illustrated in Figures 3.1 and 3.2 in ES Volume II Chapter 3: Project Description (also provided below). The depth of the tunnel is approximately -34mAoD to - 32m above Ordnance Datum (aOD), and approximately three to four tunnel widths below the river bed.

2.1.4 Twelve new XLPE cables will be installed in the new tunnel, once bored, to match the required 3325 megavolt amperes (MVA) maximum rating.

2.1.5 Due to advances in cable technology, XLPE is now being used in preference to the use of fluid filled cable (like those installed in the existing tunnel). In these modern cables, the central conductor is insulated by means of a cross linked polyethylene material, which is extruded around the conductor. The absence of fluid in the cable insulation enables a more mechanically robust overall cable construction. XLPE cables require less maintenance, with no ancillary fluid equipment to monitor and maintain¹. For example, sulphur hexafluoride (SF₆)², typically used in electricity transmission and distribution to insulate live electrical parts and to switch the flow of electrical current on and off, is **not required** to be used in this project.

2.1.6 Each cable needs to be well-spaced from others for adequate heat dissipation which will be achieved by forced air ventilation.

Table 2-1: New Bored Cable Tunnel - Summary of Key Characteristics

New Bored Cable Tunnel - Summary of Key Characteristics	
Length of tunnel	Approximately 2.2km (headhouse to headhouse)
Width of tunnel (diameter)	4m (internal) 4.5m (external)
Depth of tunnel	Approximately -34mAoD to - 32mAoD
Design life	120 years

¹ National Grid (2015). Undergrounding high voltage electricity transmission lines. Available at: https://www.nationalgrid.com/sites/default/files/documents/39111-Undergrounding_high_voltage_electricity_transmission_lines_The_technical_issues_INT.pdf.

² National Grid (2022). What is SF₆? Sulphur hexafluoride explained. Available at: <https://www.nationalgrid.com/stories/energy-explained/what-is-sf6-sulphur-hexafluoride-explained#:~:text=What%20is%20SF6%20used%20for,in%20electricity%20transmission%20and%20distribution.&text=Medium%2D%20and%20high%2Dvoltage%20electrical,electrical%20current%20on%20and%20off.>

Gravesend Sealing End Compound

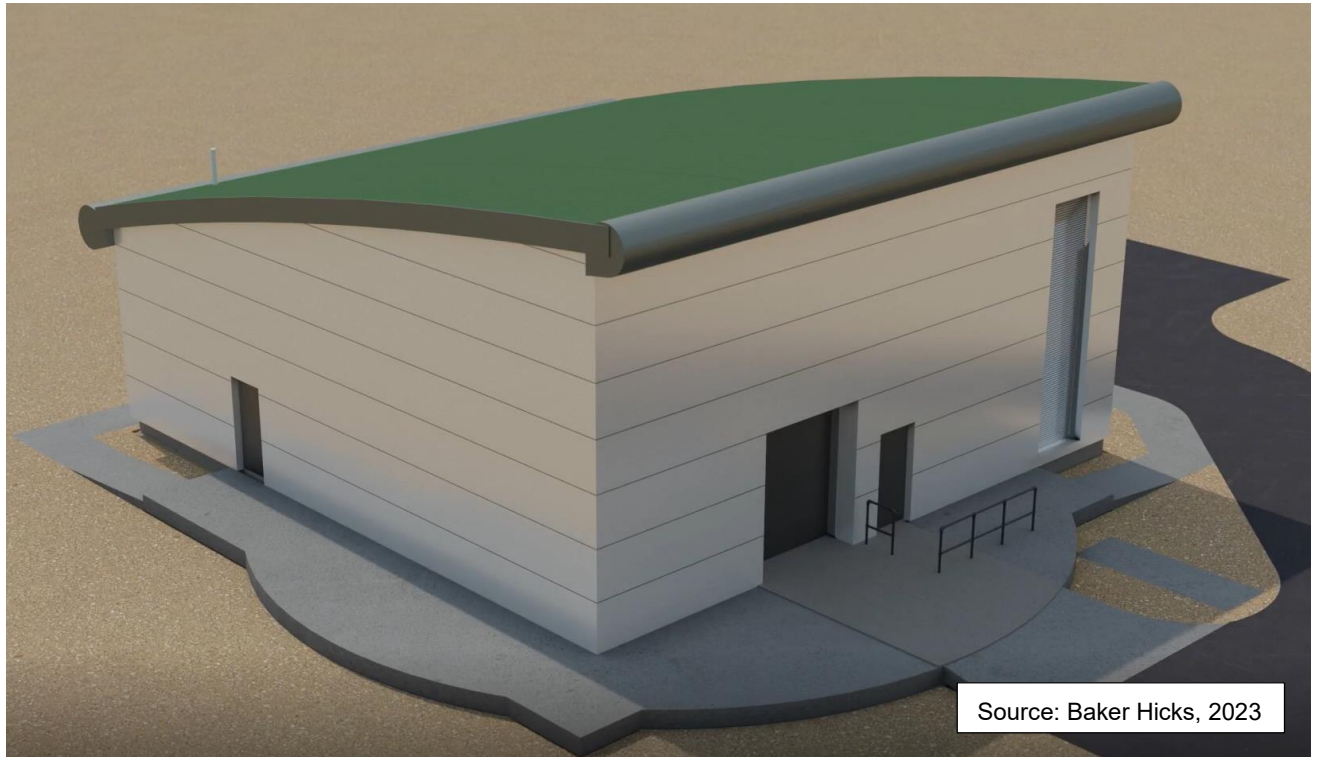
- 2.1.7 The proposed Gravesend SEC will be located within a vegetated area which is part of the Canal and Grazing Marsh, Higham Local Wildlife Site (LWS), designated for its grassland habitats and on land owned by National Grid at approximately TQ 67455 74158. To the north of the Proposed SEC is the existing SEC serving the existing tunnel. The land immediately east is owned by the Royal Society for the Protection of Birds (RSPB) and is partially leased and used as a Police Training Centre for rifle shooting. The land immediately west comprises of the Thameside Campus (National Maritime Training Centre), Metropolitan Police Specialist Training Centre and Thames and the Medway Canal Association.
- 2.1.8 The Gravesend SEC will occupy an area of approximately 6,328m² / 0.6328ha, however a larger area of approximately 37,000 m² / 3.7 ha will be required during installation to accommodate construction equipment and storage areas.
- 2.1.9 Subject to final detailed design, the two new overhead line gantry structures within the Gravesend SEC will have a maximum height of approximately 13m.
- 2.1.10 The Gravesend SEC will be surrounded by a 2.4m mesh or palisade security fence topped with an electric pulse fence to a height of 3.4 m.
- 2.1.11 Nine new carparking spaces will be provided, six to the west of the new headhouse, and three to the north, just outside of the SEC.
- 2.1.12 The roads within the SEC will be tarmacked, however all other surfacing will comprise of gravel or other free draining stone material with a Type 3 sub-base.

Gravesend Tunnel Headhouse

- 2.1.13 The Gravesend headhouse will be situated within the Gravesend SEC. The purpose of the Gravesend headhouse is to:
- allow controlled safe and secure access into the tunnel shafts;
 - to locate mechanical and electrical equipment; and
 - to house control equipment for the cable circuits.
- 2.1.14 The Gravesend headhouse will occupy an area of approximately 230m² / 0.023ha (based on an indicative footprint of 15 m x 16 m) and have an approximate maximum building height of 8 m above ground level. This will be confirmed during the detailed design stage.
- 2.1.15 The new headhouse at Gravesend will accommodate:
- Tunnel dampers room with access hatch for shaft hoist;
 - Electric room; containing Low Voltage (LV) switch gear, communication panels, Motor Control Centre (MCC) panels;
 - Tally Room;
 - 110V Battery / Uninterruptible Power Supply Room;
 - Shaft access via a staircase;
 - Changing and shower room; and
 - Water Closet (WC).
- 2.1.16 Externally, the new headhouse will have:
- a biodiverse roof;
 - a temporary generator (hardwired to the electrical room); and
 - a pedestrian access path.

- 2.1.17 An indicative visualisation of the proposed headhouse at Gravesend is shown in Plate 2-1.

Plate 2-1: Indicative visualisation of the proposed Gravesend headhouse Source: Baker Hicks, 2023



2.1.18 The exteriors and internal layout of the headhouse are shown on the Planning Drawings, referenced below:

- PDD-100116-LAY-053 Gravesend SEC - Site Plan;
- PDD-100116-LAY-054 Gravesend Headhouse - Outline Ground Floor Plan;
- PDD-100116-LAY-056 Gravesend Headhouse - Outline Roof Floor Plan;
- PDD-100116-LAY-184 Gravesend Headhouse - Proposed Site Sections;
- PDD-100116-ELE-005 Gravesend Headhouse - Outline Elevations; and
- PDD-100116-LAY-057 Gravesend Headhouse - Outline Sections.

Gravesend Utility Provision

Incoming Water Supply

- 2.1.19 A mains water supply will be required for each headhouse to facilitate amenity features such as sinks, basins, showers and toilets. Installation of below ground mains water shall be in accordance with Southern Water guidance.
- 2.1.20 At Gravesend, an existing clean water pipeline running parallel to the road that is assumed to connect to Eastcourt Marshes Sealing End Compound Site was identified - a connection from the existing water main is proposed that will deliver potable water to the new headhouse.

Foul Water Drainage Design

- 2.1.21 The Gravesend SEC will not be permanently manned and as such the preference will be to discharge foul water to the existing sewer. However, the Ground Penetrating Radar (GPR) survey results suggest there are no public foul sewers available for either site, therefore a 9,000 litre underground cess pit will be installed at the proposed Gravesend SEC. More information can be found in the Drainage Management Plan (Document Reference 30003364-BHK-XX-XX-RP-C-02060).

Operational Access to the Gravesend SEC

- 2.1.22 The proposed Gravesend SEC will be accessible from an existing private road belonging to National Grid. This connects to another private road, the Thames and Medway Canal Road owned by Network Rail, which runs alongside the Thames and Medway Canal. The Thames and Medway Canal Road connects to Mark Lane, then Norfolk Road, which then connects to Prospect Grove, then the A226 Milton Road and the wider Strategic Road Network (SRN).
- 2.1.23 No new permanent access roads will be required for operational access into the proposed Gravesend SEC.
- 2.1.24 Temporary access changes are required to facilitate the construction of the cable tunnel and Gravesend SEC.
- 2.1.25 A summary of the key characteristics of the Gravesend SEC is outlined in Table 2-2.

Table 2-2: Tunnel Headhouses and SECs – Summary of Key Characteristics

Factor	Tunnel Headhouses	Sealing End Compound
Permanent footprint	230m ² / 0.023ha	6,328m ² / 0.6328ha
Temporary working area	37,000m ² / 3.71 ha	
Max. heights	Approximately 8m	Approximately 13m (overhead line gantries)
Technology	<ul style="list-style-type: none"> Ventilation dampers; and Tunnel shaft including stairwell and access hatches, electrical room with equipment, mechanical and electrical supplies, welfare room and domestic supplies. 	<ul style="list-style-type: none"> 12 new XLPE cables; 12 new cable terminations (polymeric); 12 new cable support steel structures with buried concrete foundations; Concrete surface troughs for new cables; 6 Surge Arrester for protection of underground cables; 6 Earth switch; and 1 water tank for fire fighting purposes
Exterior lighting	External lighting will be within the compound area for ease of access and maintenance at night. The lighting system will include sensors based on motion and day light availability and will be LED with a downward spill. Given the very low frequency of maintenance visits (6-12 visits per year), the use of external lighting is considered minimal.	
Access	The proposed Gravesend SEC is accessible from an existing private road belonging to National Grid, which connects to a private road, the Thames and Medway Canal Road owned by Network Rail, which runs alongside the Thames and Medway Canal. The Thames and Medway Canal Road connects first to Mark Lane, then Norfolk Road, which then connects to Prospect Grove, then the A226 Milton Road and the wider SRN.	
Fencing	The Gravesend SEC will be surrounded by a 2.4m mesh or palisade security fence topped with an electric pulse fence to a height of 3.4 m.	
Headhouse Roof	Biodiverse roof	

3 The Site and Surroundings

3.1 Land Use

- 3.1.1 The proposed Gravesend SEC will be located within a vegetated area which is part of the Canal and Grazing Marsh, Higham LWS, designated for its grassland habitats and on land owned by National Grid at approximately TQ 67455 74158. To the north of the Proposed SEC is the existing SEC serving the existing tunnel. The land immediately east is owned by the RSPB and is partially leased and used as a Police Training Centre for rifle shooting. The land immediately west comprises of the Thameside Campus (National Maritime Training Centre), Metropolitan Police Specialist Training Centre and Thames and the Medway Canal Association.

3.2 Physical Environment

- 3.2.1 The Gravesend site is situated just south of the Thames estuary at an approximate elevation of around 3 to 7maOD. To the west is Milton Rifle Range which is partially leased and used as a Police Training Centre for rifle shooting. The land immediately west comprises of the Thameside Campus (National Maritime Training Centre), Metropolitan Police Specialist Training Centre MPSTC and Thames and the Medway Canal Association. To the south is the Thames and Medway Canal.
- 3.2.2 The Thames Estuary is situated approximately 170m north of the Proposed Development. It is the only Water Framework Directive (WFD) designated surface water body within the site boundary and study area. It is a large heavily modified water body with a surface area of 44.2km². The Gravesend Site has a freshwater ditch which flows around its perimeter and enters the Thames via a sluice gate at TQ 67492 74271. The ditch starts from TQ 68953 73890 to the east of the site and runs parallel to the Thames and Medway Canal until TQ 67469 74089 where the ditch the splits north and west. Connected at TQ 67553 74043 is another ditch located the east of the site at the rifle range, it has several tributaries. The Thames and Medway Canal was used until 1934 but is now disused and only an isolated open reach approximately 3 km still exists. It is separated from the Proposed Development by Wharf Road. Refer to Figure 21.1 (ES Volume IV Chapter 21: Water Environment) for the locations of the above ditches and the canal.
- 3.2.3 The Environment Agency Flood Map for Planning (Ref 3) shows that the Gravesend site is located within Flood Zone 3. Flood Zone 3 is defined as land which in any year has a 1% or more chance of flooding from rivers, or a 0.5% or more chance of flooding from the sea when flood defences are not considered.
- 3.2.4 The Environment Agency's Reduction in Risk of Flooding from Rivers and the Sea due to Defences (Ref 4) shows that the majority of the Gravesend site is in an area where there is a reduction in risk of flooding from rivers and the sea due to defences present along the banks of the Thames estuary. The design standard of protection of the defences for both sites is up to the 0.1% Annual Exceedance Probability (AEP) event. The main source of flooding for the site is due to the Thames estuary.
- 3.2.5 There are two unnamed ordinary watercourses within proximity to the Gravesend site. See Figure 21.1 in ES Volume IV Chapter 21: Water Environment of the ES.
- 3.2.6 There are no historic or authorised landfill, permitted waste sites or waste site applications in the vicinity of the Gravesham site.

3.3 Biodiversity and Designated Areas

- 3.3.1 The Planning Application – Red Line Boundary is approximately 30m south of the Thames Estuary and Marshes Ramsar and South Thames Estuary and Marshes Site of Special Scientific Interest (SSSI) at its nearest point. The site comprises a complex of brackish, floodplain grazing marsh ditches, saline lagoons and intertidal saltmarsh and mudflat. The habitats support internationally important numbers of wintering waterfowl, and the saltmarsh and grazing marsh are of international importance for their diverse assemblages of wetland plants and invertebrates.
- 3.3.2 The Proposed Development is within Canal and Grazing Marsh, Higham LWS. Coastal and floodplain grazing marsh is found on low-lying coasts and along slow-flowing rivers and estuaries.

Some 500 plants have been recorded from the most diverse grazing marshes, but these comprise just 5% of grazing marshes - most have been agriculturally 'improved' and are of limited botanical interest. Perennial rye-grass (*Lolium perenne*), Yorkshire fog (*Holcus lanatus*) and rushes tend to dominate the sward, enlivened by damper patches of floating sweet-grass (*Glyceria fluitans*), creeping bent (*Agrostis stolonifera*) and silverweed (*Argentina anserina*).

3.3.3 Land adjacent to the eastern boundary of the Site is part of the Shorne Marshes RSPB reserve. This is a reserve not accessible to the public but managed for its nature conservation importance, including value to a range of bird species.

3.3.4 Refer to ES Volume IV Chapter 15: Biodiversity – Gravesend and Figure 15.1.

3.4 Landscape

3.4.1 The Proposed Development lies within the National Character Area (NCA) 81 (Ref 5) Greater Thames Estuary. The key characteristics of this NCA include:

- *Predominantly flat, low-lying coastal landscape;*
- *Extensive open spaces...dominated by the sky;*
- *The pervasive presence of water;*
- *Open grazing pastures patterned by a network of ancient and modern reed-fringed drainage ditches; and*
- *Highly urbanised areas...on marsh edges subject to chaotic activity of various major developments.*

3.4.2 These are shown on Figure 16.3 in ES Volume IV Chapter 16: Landscape and Visual – Gravesend.

County Landscape Character

3.4.3 At the county level, the Gravesend site incorporates the Eastern Thames Marshes Landscape Character Assessment (LCA) and Hoo Peninsula LCA defined in The Landscape Assessment of Kent landscape character assessment (2004) (Ref 6). These are shown on Figure 16.4.

3.4.4 Eastern Thames Marshes LCA is characterised by:

- *Remote, wild, remote and quiet. Influence of sea and sky;*
- *Creeks, dykes, marsh and patches of scrub, extensive areas of cultivated marsh, a simple landscape;*
- *Overhead power lines; and*
- *Wild birds and grazing animals.*

3.4.5 Hoo Peninsula LCA is characterised by:

- *Prominent hills and low-lying alluvial marshes; and*
- *Flat/undulating farmland.*

Local Character Types and Local Character Areas

3.4.6 At the local level, the Gravesend site and study area incorporates the Shorne and Higham Marshes LCA and the Higham Arable Farmland LCA defined in the Gravesend Landscape Character Assessment (Ref 7) and illustrated on Figure 16-4.

3.4.7 Shorne and Higham Marshes LCA is characterised by:

- *Flat grazing marsh with a lack of vegetation; and*
- *Network of ditches and meandering waterways divide the marshes in an irregular pattern leaving parcels of land of a medium scale.*

3.4.8 Higham Arable Farmland LCA is characterised by:

- *Very gently undulating topography;*

- *Open arable farmland; and*
- *Views out to the marshes and the River Thames in the north.*

- 3.4.9 There are no statutory landscape designations associated with the site. The nearest Area of Outstanding National Beauty (AONB) is the Kent Downs located 3.2km south of the Gravesend site. Whilst there are no landscape designations, there are a number of ecological and cultural heritage designations within the study area and these can inform landscape value and are of importance in terms of visitor destinations and visual amenity for the area. These include the Scheduled Monument of Tilbury Fort which can be viewed from the Kent coastline, and listed buildings within the Gravesend study area. In addition to these cultural heritage designations, there are ecological designations including the South Thames Estuary and Marshes SSSI, Ramsar site, and SPA approximately 200m south, and 700m to the west of the Gravesend site.
- 3.4.10 The Gravesend Site sits within the London Area Green Belt (LAGB) within the Gravesham District B LAGB. This indicates landscape value as a result of openness, rather than intrinsic quality.
- 3.4.11 Chapter 16: Landscape and Visual in ES Volume IV sets out further detail of the landscape character of the site.

3.5 Historic Environment

Designated Sites

- 3.5.1 There are no World Heritage Sites, scheduled monuments, registered parks and gardens or registered battlefields located within 1km of the Proposed Development.
- 3.5.2 Seven grade II listed buildings are located within the 1km of the Proposed Development to the south-west. These comprise:
- The Readers;
 - 54-58 Vicarage Lane;
 - 44 Chalk Road and a cottage at 1 Chalk Road ;
 - Granary at Little Filborough Farm;
 - Barn to North West of Filbrough Farm; and
 - Filborough Farmhouse .
- 3.5.3 The significance of designated heritage assets is discussed in Section 6 of the Desk Based Assessment (DBA) (Volume VI Appendix 9.1: Historic Environment Desk-Based Assessment). The location of all designated heritage assets in relation to the Proposed Development is shown in Figure 17-1: Designated Heritage Assets (see ES Volume IV Chapter 17: Historic Environment – Gravesend)

Non-Designated Sites

- 3.5.4 A single non-designated archaeological asset, Milton Rifle Range (**TQ 67 SE 1185**) has been recorded within the limits of the Proposed Development. A further 53 non-designated archaeological assets have been recorded within 1km of the Proposed Development.
- 3.5.5 The significance of non-designated heritage assets is discussed in Section 6 of the DBA (Volume II Appendix 9.1: Historic Environment Desk-Based Assessment). The location of all non-designated heritage assets in relation to the Proposed Development is shown on Figure 17-2: Non-designated Heritage Assets (see ES Volume IV Chapter 17: Historic Environment) .
- 3.5.6 A geo-archaeological deposit model was undertaken in September 2023 by Quest (Refer to ES Volume VI Appendix 9.2: Desk-Based Geo-archaeological Deposit Modelling Report), to determine the depth of deposits within the Proposed Development site and the wider study area, and to assess the potential for Palaeolithic, Mesolithic and later prehistoric alluvial gravels and peat deposits to be located within the Proposed Development.

- 3.5.7 At the Proposed Development, the Shepperton Gravels have been recorded at a depth of between -11m and -14m OD. The geo-archaeological report highlights that whilst the Shepperton Gravels have been recorded at a depth of -14m OD they have been more consistently recorded at a depth of -11m OD.
- 3.5.8 The lower alluvial deposits have been identified as dating to the early to mid-Holocene Period, when the River Thames was a single channel. Horizons and lenses of organic peat have been identified within the lower alluvium. The lower alluvium is present within the Proposed Development, with the top of these alluvial deposit recorded at a depth of between 0 and 1m aOD and extending to a maximum depth of -14.5m OD.
- 3.5.9 The lenses and horizons of peat within the lower alluvium have been defined in the Quest deposit model as Lower Peat. Whilst Lower Peat deposits have not been identified in the Proposed Development, they have been identified in close proximity to the Proposed Development. The report therefore highlights that there is a high probability these are present within the Gravesend Site. There is a good potential for palaeoenvironmental data to be present within these lower peat deposits.
- 3.5.10 The Quest deposit model also highlighted that very thin deposits of Middle Peat, which date to between the late Mesolithic and Neolithic periods, were identified at the nearby Metropolitan Police Specialist Training Centre at a depth of approximately -3m OD. Middle Peat deposits were not identified within the boundary of the Proposed Development, but there is potential for these deposits to extend within the Proposed Development based on their thin nature and may have been missed due to the nature of the geotechnical drilling and recovery.
- 3.5.11 Based upon the deposit model evidence there is a **high** potential to encounter peat and alluvial deposits that date to the Palaeolithic period
- 3.5.12 ES Chapter 17: Historic Environment - Gravesend in ES Volume IV sets out further detail.

4 Planning Context

Requirement for EIA

The Town and Country Planning (Environmental Impact Assessment) Regulations 2017

- 4.1.1 EIA Development is defined in The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (Ref 8) as either:
- Schedule 1 development for which EIA is mandatory; or
 - Schedule 2 development for which EIA may be required taking account factors such as the Proposed Development's nature, size or location.
- 4.1.2 The Proposed Development does not fall within the definition of Schedule 1 development.
- 4.1.3 Schedule 2 development is defined by the EIA Regulations as:
- "Development of a description mentioned in Column 1 of the table in Schedule 2³ where:*
- any part of that development is to be carried out in a sensitive area⁴; or*
 - any applicable threshold or criterion in the corresponding part of Column 2 of that table is respectively exceeded or met."*
- 4.1.4 The closest description for the Proposed Development within Schedule 2 is Category 10(b) 'urban development', which the relevant corresponding threshold reads are as follows:
- "In the case of Urban Development Projects,*
- the development includes more than 1 hectare of development which is not dwelling house development; or*
 - the development includes more than 150 dwellinghouses; or*
 - the area of the development exceeds 5 hectares."*
- 4.1.5 The Proposed Development would exceed the threshold set at 10(b)(i) because it would consist of more than 1 hectare of development (at approximately 1.1 hectares (ha)) which is not dwellinghouse development. Therefore, an EIA Screening Opinion was sought from Thurrock Council and Gravesham Borough Council to determine whether the development is likely to give rise to likely significant environmental effects on its own or cumulatively with other developments.
- 4.1.6 On 7 July 2023 Thurrock Council confirmed through their screening opinion that the Proposed Development would not be considered EIA development.
- 4.1.7 On 3 August 2023 Gravesham Borough Council confirmed through their screening opinion that the Proposed Development would be considered EIA development.

The Marine Works (Environmental Impact Assessment) Regulations 2007

- 4.1.8 Of interest to the Marine Management Organisation (MMO) is the proposed boring of new tunnel. The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) (Ref 9) set out the procedure that must be followed before approval is granted for a range of plans and projects. These require an EIA to be carried out in support of an application for consent for categories of project listed in Schedule A1 and Schedule A2 of the Regulations.
- 4.1.9 The boring of a new tunnel does not fall under Schedule A1 or Schedule A2 of the EIA Regulations. However National Grid requested an EIA Screening Opinion to confirm if the MMO consider a statutory EIA is required. On 1 August 2023, the MMO requested National Grid withdraw their EIA screening application, advising that an EIA screening request is only for projects which fall under

³ <https://www.legislation.gov.uk/uksi/2017/571/schedule/2/made>

⁴ A Sensitive Area is defined as land designated as a National Park, Site of Special Scientific Interest (SSSI), Area of Outstanding Natural Beauty (AONB), UNESCO World Heritage Site (WHS), Scheduled Monument or European Protected Site.
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either Schedule A1 or A2 of the Marine Works (Environmental Impact Assessment) Regulations 2007, which the MMO did not believe the Proposed Development fell under.

Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2017

4.1.10 Development requiring EIA is defined in Schedule 1 of The Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2017 (Ref 10) as:

“1. Development to provide any of the following—

(a) a nuclear generating station;

(b) a thermal generating station with a heat output of 300 megawatts or more;

(c) an electric line installed above ground with—

(i) a voltage of 220 kilovolts or more; and

(ii) a length of more than 15 kilometres.

4.1.11 The Proposed Development falls within the definition of Schedule 1 (c)(i), as it would be at a voltage of 400kV but does not meet the length threshold of 15 km Schedule 1 (c) (ii). Therefore, the Proposed Development does not meet the criteria in Schedule 1. The Proposed Development falls within the criteria within Schedule 2 (2)(a), as it would be an electric line installed above ground with a voltage of 132 kilovolts or more but does not meet the criteria for Schedule 2 (2)(b) (above ground in a sensitive area) and therefore did not require EIA screening. The modifications to the existing overhead lines are consented via Section 37 of the Electricity Act 1989 and, although described in the Environmental Statement accompanying the planning application, do not form part of the Town and Country Planning Act planning application. A Section 37 consent application will be sought from the Department of Energy Security and Net Zero..

Planning Permission

4.1.12 National Grid is seeking to secure full planning permission for specific elements of the Proposed Development by way of a planning application under the Town and Country Planning Act 1990 (Ref 11) to Gravesham Borough Council. This is for the proposed new Sealing End Compound (SEC) and headhouse. The Planning Application will also allow for the temporary working areas and construction compounds associated with these works.

4.1.13 For the equivalent works north of the River Thames (Gravesend) National Grid is seeking to secure full planning permission for specific elements of the Proposed Development by way of a planning application under the Town and Country Planning Act 1990 to Thurrock Council for proposed new SEC and tunnel headhouse.

4.1.14 Table 4-1 provides a summary of the different consenting regimes relevant to the Proposed Development.

Table 4-1: Summary of Primary Consenting Regimes

Project Compound	Primary Consent	Determining Authority
Permanent Work at Tilbury		
New Cable Tunnel, Sealing End Compound and Tunnel Headhouse	Full Planning Permission, Town and Country Planning Act 1990 (TCPA) (as amended) (Ref 11)	Thurrock Council
Permanent Work at Gravesend		
New Cable Tunnel, Sealing End Compound and Tunnel Headhouse	Full Planning Permission, Town and Country Planning Act 1990 (TCPA) (as amended) (Ref 11)	Gravesham Borough Council
New Bored Tunnel		
New Bored Tunnel (from Mean High Water Spring)	No consent required (Section 35 of The Marine Licensing (Exempted Activities) Order 2011 (Ref 12))	Marine Management Organisation (MMO)
Overhead Line Works and reconfiguration (at Tilbury and Gravesend)		

Project Compound	Primary Consent	Determining Authority
Overhead Line Works and reconfiguration	Section 37 Consent under the Electricity Act 1989 (Ref 13)	Department of Energy Security and Net Zero (DESNZ)

5 Planning Policy Summary

5.1 Introduction

- 5.1.1 This Planning Application to be determined by the Authority in accordance with Section 38(6) of the Planning and Compulsory Purchase Act 2004 (Ref 14). Gravesham Borough Council is required to determine the planning application in accordance their Development Plan and other material considerations, including national planning policy.
- 5.1.2 This section sets out a summary of the planning policy context relevant to the Proposed Development, including the Development Plan, plus relevant policies of the emerging Development Plan and other national and local policies that are likely to be material considerations in the planning decision.

5.2 Gravesham Development Plan

- 5.2.1 The Development Plan for Gravesham currently consists of:
- Gravesham Local Plan Core Strategy and Local Plan Policies Map (2014) (Ref 15);
 - Gravesham Local Plan First Review (1994) – saved Policies (Ref 16); and
 - Kent County Council Minerals and Waste Local Plan 2013-30 (2020) (Ref 17).
- 5.2.2 The Local Plan Core Strategy (Ref 15) is the main document in the Gravesham Local Plan. It was adopted in September 2014.
- 5.2.3 The Local Plan Core Strategy comprises 18 strategic objectives, with seven spatial policies and 14 thematic policies to help shape the future of the Borough up to 2028 so as to build a successful and sustainable future in which land and sites are made available for health, education, open space, industry and housing, together with improved accessibility to these facilities by all sections of the community.
- 5.2.4 Objectives SO7, SO11, SO13, SO14 and SO16 are considered most relevant to the consideration of the Proposed Development and are reflected throughout the policies.
- 5.2.5 The relevant spatial policies comprise:
- **CS01: Sustainable Development** sets out the Council's strategy for the consideration of projects which work in favour of sustainable development contained in the NPPF and the Core Strategy;
- 5.2.6 The relevant thematic policies comprise:
- **Policy CS12: Green Infrastructure**
 - **Policy CS18: Climate Change** sets out the Council's approach to climate change, including adaption and mitigation;
 - **Policy CS19: Development and Design Principles** sets out the Council's approach for new development to be fit for purpose; and
 - **Policy CS20: Heritage and the Historic Environment**
- Kent County Council Minerals and Waste Local Plan 2013-30 (2020) (Ref 17)**
- 5.2.7 Kent County Council are the minerals and waste planning authority for Kent, and plan for waste management capacity and mineral supply through their Minerals and Waste Local Plan. The plan includes strategic policies for minerals and waste development as well as development management policies used to determine planning applications.

New Local Plan

- 5.2.8 Gravesham Borough Council is the process of reviewing the Gravesham Local Plan Core Strategy which was adopted in 2014. The new plan (the Local Development Scheme) will set out the planning framework for the borough until 2037. Gravesham Borough Council have consulted at Regulation 18 stages 1 and 2 on their Site Allocations and Development Management Policies Document. The next step will be Regulation 19 which will take the Local Plan Partial Review to examination and adoption. No draft was available at the time of writing this Planning Statement.

5.3 National Planning Policy and Guidance

- 5.3.1 The National Planning Policy Framework (NPPF) (Ref 18) was revised on 5 September 2023 and sets out the government's planning policies for England and how these are expected to be applied. The NPPF was first published in March 2012, revised in 2018, 2019 and finally 2023.

- 5.3.2 The NPPF sets out national policies that guide plan-making and decision taking at a local level. At its heart is a *"presumption in favour of sustainable development"* (Paragraph 10) that is necessary to allow sustainable development to be pursued in a positive way. Paragraph 11 explains that...:

"...For decision-taking this means:

c) approving development proposals that accord with an up-to-date development plan without delay; or

d) where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date, granting permission unless:

i. the application of policies in this Framework that protect areas or assets of particular importance provides a clear reason for refusing the development proposed; or

ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole."

- 5.3.3 In addition, Paragraph 12 sets out that planning authorities also may take decisions that depart from an up-to-date Development Plan if material considerations indicate that the plan should not be followed. Paragraph 38 expands on this, stating that that *"planning authorities should approach decisions on proposed development in a positive and creative way"* and *"should seek to approve applications for sustainable development where possible"*. Paragraph 6 sets out that statements of government policy represent material considerations in planning decisions:

"Other statements of government policy may be material when preparing plans or deciding applications, such as relevant Written Ministerial Statement and endorsed recommendations of the National Infrastructure Commission."

- 5.3.4 Paragraph 20(b) explains that strategic policies of Development Plans should set out an overall strategy that makes sufficient provision for infrastructure, including energy infrastructure.

- 5.3.5 Sections 5 to 17 of the NPPF set out how planning policies and decisions should contribute to achieving particular thematic objectives.

- 5.3.6 Section 6 describes how planning policies and decisions should help to build a strong, competitive economy. At Paragraph 81 it states that:

"Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development. The approach taken should allow each area to build on its strengths, counter any weaknesses and address the challenges of the future."

- 5.3.7 Section 11 address the theme 'making effective use of land. It states that:

"Planning policies and decisions should promote an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions" (Paragraph 119).

- 5.3.8 Section 12 addresses the theme of ‘achieving well designed places’. It states that:
“Good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities.” (Paragraph 126).
- 5.3.9 Paragraph 130 sets out that planning decisions should ensure that developments (inter alia):
- function well over the long term;
 - make use of good architecture, layout and effective landscaping in order to be
 - visually attractive; and
 - are sympathetic to local character, landscape and history, whilst not preventing or discouraging appropriate innovation or change.
- 5.3.10 ‘Meeting the challenge of climate change, flooding and coastal change’ is the theme of Section 14. This sets out that “the planning system should support the transition to a low carbon future in a changing climate”, and “support renewable and low carbon energy and associated infrastructure” (Paragraph 152).
- 5.3.11 Paragraph 158 states that:
“When determining planning applications for renewable and low carbon development, local planning authorities should:
- a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and*
- b) approve the application if its impacts are (or can be made) acceptable...”*
- 5.3.12 Regarding flood risk, Paragraph 159 sets out that inappropriate development in areas at risk of flooding should be avoided. It also states that any development in development in flood risk areas should not increase flood risk elsewhere and should be safe for its lifetime.
- 5.3.13 In determining planning applications for development in areas at risk of flooding, Paragraph 167 sets out that the sequential and exception tests should be applied, and that:
- within the site, the most vulnerable development to flooding is located in the areas of lowest flood risk;
 - the development is appropriately flood resistant and resilient;
 - sustainable drainage systems are incorporated;
 - any residual risk can be safely managed; and
 - safe access and escape routes are available and included in an emergency plan.
- 5.3.14 The Sequential Test is described and provides that “development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding” (Paragraph 162).
- 5.3.15 Paragraph 164 explains the exception test, stating that:
“To pass the exception test it should be demonstrated that:
- a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and*
- b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.”*
- 5.3.16 Section 15 considers the theme of ‘conserving and enhancing the natural environment. This sets out at Paragraph 174 that planning decisions should:
- protect and enhance valued landscapes, sites of biodiversity value and soils in a manner commensurate with their statutory status;

- recognise the value of the countryside, including best and most versatile agricultural land, trees and woodland;
- maintain the character of undeveloped coast;
- minimise impacts on biodiversity and provide net gains, including by establishing ecological networks;
- prevent new development from contributing to unacceptable levels of soil, air, water or noise pollution; and
- remediate and mitigate despoiled, degraded, contaminated and unstable land, where appropriate.

5.3.17 Paragraph 175 explains that planning should distinguish between the hierarchy of international, national and locally designated sites, and Paragraphs 179 to 182 address 'habitats and biodiversity'. Paragraph 179 sets out that planning authorities should apply the below principles when determining planning applications:

- Planning permission should be refused if significant harm to biodiversity cannot be avoided, adequately mitigated, or (as a last resort) compensated for;
- Development that would have an adverse effect on a Site of Special Scientific Interest (SSSI) should only normally be permitted if the benefits of the development in the location outweigh its impact on the features of the site that make it of special scientific interest; and
- Only approve development that would result in the loss or deterioration of irreplaceable habitats such as ancient woodland or veteran trees if there are wholly exceptional reasons and a suitable compensation strategy.

5.3.18 Paragraph 181 sets out that projects that would be likely to have a significant effect on habitats sites (Special Protection Areas (SPA), Special Areas of Conservation (SAC), and Ramsar sites) should be subject to appropriate assessment. Paragraph 182 explains that the presumption in favour of sustainable development would not apply unless that assessment has concluded that the project would not adversely affect the integrity of the habitats site.

5.3.19 Paragraphs 183-188 address 'ground conditions and pollution'. It describes how policies and decisions should ensure that appropriate assessment of ground conditions is undertaken, taking into account historical use, requirement for remediation, and future proposed use. Paragraph 184 identifies that *"Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner"*.

5.3.20 In considering the effects of pollution resulting from the proposed development, paragraph 185 states that:

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development."

5.3.21 Section 16 of the NPPF addresses the theme of 'conserving and enhancing the historic environment'. It sets out that heritage assets should be conserved in a manner appropriate to their significance. Paragraph 202 states that where a development would lead to less than substantial harm to the significance of a designated heritage asset, the harm should be weighed against the public benefits of the development.

5.3.22 Section 17 of the NPPF addresses the theme of 'facilitating the sustainable use of minerals' and identifies that "it is essential that there is a sufficient supply of minerals to provide the infrastructure, buildings, energy and goods that the country needs" (Paragraph 209) and therefore "Local planning authorities should not normally permit other development proposals in Mineral Safeguarding Areas if it might constrain potential future use for mineral working" (Paragraph 212).

5.3.23 The NPPF includes three Annexes; with Annex 1 and 3 being considered relevant to the Proposed Development:

- Annex 1 (Implementation) sets out how the policies within the NPPF are to be applied in both decision and plan making. In both cases, policies within the NPPF material considerations which should be taken into account in dealing with applications from the day of its publication. Annex 1 also describes that due weight should be given to them Local Plan policies, according to their degree of consistency with this NPPF.
- Annex 3 (Flood Risk Vulnerability Classification) sets out 5 different 'risk' classifications. As noted, the entirety of the Site is within Flood Zone 1. Notwithstanding, the nature of the Proposed Development is considered to fall under the following classification:

“Essential Infrastructure - Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including infrastructure for electricity supply including generation, storage and distribution systems; and water treatment works that need to remain operational in times of flood.”

Planning Practice Guidance

5.3.24 The Planning Practice Guidance⁵ (PPG) (Ref 19) was first published in the 2014 and with together with the NPPF it set out what the Government expects of local authorities. The PPG is separated into 42 pieces of guidance covering all aspects of the planning process. The relevant sections are:

- Air quality – 1 November 2019;
- Climate change – 15 March 2019;
- Design: process and tools – 1 October 2019;
- Determining a planning application – 24 June 2021;
- Effective use of land – 22 July 2019;
- Flood risk and coastal change – 25 August 2022;
- Healthy and safe communities – 7 August 2022;
- Historic environment – 23 July 2019;
- Light pollution – 1 November 2019;
- Minerals – 17 October 2014;
- Natural environment – 21 July 2019;
- Noise – 22 July 2019;
- Open space, sports and recreation facilities, public rights of way and local green space - 6 March 2014;
- Renewable and low carbon energy – 14 August 2023; and
- Tree Preservation Orders and trees in conservation areas – 6 March 2014.

⁵ <https://www.gov.uk/government/collections/planning-practice-guidance>

National Character Area profiles

- 5.3.25 The Proposed Development lies within The Greater Thames Estuary NCA (Ref 5) which is defined as forming *“the eastern edge of the London Basin, and its extensive underlying geology of London Clay provides links with the Northern Thames Basin NCA and, further west, the Inner London NCA”*.
- 5.3.26 The NCA is characterised as lying between the North Sea and the rising ground of the adjacent North Kent Plain and Northern Thames Basin NCAs which provide a backdrop to the extensive flat open spaces of the estuary. Uninterrupted, far-reaching views out across the Thames to the opposite banks are possible from this higher ground, and industrial and historic military landmarks are highly visible in this predominantly low-lying marshy coastal landscape.
- 5.3.27 The NCA has identified four ‘Statement of Environmental Opportunity’ (SEO) which identify ways that could help to achieve sustainable growth and a more secure environmental future:
- **SEO1:** Maintain and enhance the expansive, remote coastal landscape – with its drowned estuaries, low islands, mudflats, and broad tracts of tidal salt marsh and reclaimed grazing marsh – maintaining internationally important habitats and their wildlife, and underlying geodiversity, while addressing the impacts of coastal squeeze and climate change and considering dynamic coastal processes;
 - **SEO2:** Work with landowners and managers to incorporate measures to improve biodiversity, geodiversity, pollination, water quality, soil quality and climate adaptation and to prevent soil erosion in this important food providing landscape, while maintaining its historic character;
 - **SEO3:** Ensure that the tranquil and remote character of the estuary is maintained by conserving and enhancing important coastal habitats and distinctive historic and geological features, while providing increased opportunities for recreation and enjoyment of the landscape;
 - **SEO4:** Encourage a strategic approach to development that is informed by and makes a positive contribution to local character, incorporates green infrastructure which provides ecosystem services where they are needed most, and promotes recreation and addresses climate change, while maintaining important open mosaic and coastal habitats, and historic and geological features.

Government Papers

The Energy White Paper – Powering our Net Zero Future (2020)

- 5.3.28 The Energy White Paper – Powering our Net Zero Future (EWP) (Ref 20) was presented to Parliament in December 2020 and builds on the Prime Minister’s Ten Point Plan. At the core of the EWP is the commitment to achieve net zero and tackle climate change. The EWP seeks to put in place a strategy for the wider energy system that transforms energy, supports a green recovery, and creates a fair deal for consumers (page 4).
- 5.3.29 Chapter 2 of the EWP deals with ‘Power’ with the stated goal being to use electricity to enable the transition away from fossil fuels and decarbonise the economy cost-effectively by 2050. Figure 3.2 of the plan, ‘Electricity demand, Net Zero scenarios’ (page 42) highlights how electricity demand could double by 2050 as electricity replaces the use of petrol and diesel in transport and to some extent, gas for heating. This would require a four-fold increase in clean electricity generation with the decarbonisation of electricity being required to underpin the delivery of the net zero target. On page 76 of the EWP it is recognised that in order to maintain a resilient and reliable electricity network that can accommodate this increase in generation further investment is needed in physical infrastructure, and that this investment is supported by the government.
- 5.3.30 The EWP commits to complete a review of the existing energy National Policy Statements (NPS), with the aim of designating updated NPS by the end of 2021.

Net Zero Strategy: Build Back Greener October 2021

5.3.31 The Net Zero Strategy Policy Paper (Ref 21) sits alongside the EWP and sets out the government's vision of using the necessary action to tackle climate change as an economic opportunity to create prosperity. It builds on the Ten Point Plan for a Green Industrial Revolution (Ref 23), setting out four key principles to achieve net zero:

- "We will work with the grain of consumer choice: no one will be required to rip out their existing boiler or scrap their current car;
- We will ensure the biggest polluters pay the most for the transition through fair carbon pricing;
- We will ensure that the most vulnerable are protected through Government support in the form of energy bill discounts, energy efficiency upgrades, and more;
- We will work with businesses to continue delivering deep cost reductions in low carbon tech through support for the latest state of the art kit to bring down costs for consumers and deliver benefits for businesses."

5.3.32 Part 3i (Power) makes a number of key commitments to deliver a decarbonised power system by 2035, including:

- Subject to supply, all electricity will come from low carbon sources by 2035;
- Deliver 40GW of offshore wind by 2030;
- Investing in supply chains, infrastructure and early-coordination of offshore transmission networks for the offshore wind sector;
- Ensure the planning system can support the deployment of low carbon energy infrastructure.

British Energy Security Strategy April 2022

5.3.33 The British Energy Security Strategy (Ref 21) sets out the government's energy security strategy for Britain. It refers to the Ten Point Plan (Ref 9) and delivery so far in terms of green job generation and private investment. The strategy sets out eight points to achieve energy security comprising:

- **Immediate support on energy bills** including help for families including financial packages of support, reductions in energy bills and funds including Warm Home Discount, Household Support Funds and support for cost of living, as well as help for industry by increasing aid intensity;
- **Energy efficiency** – by improving the efficiency of British homes through various strategies including the Heat and Buildings Strategy with accompanying financial support as well as Home Upgrade Grant, the Social Housing Decarbonisation Fund, upgrading public sector buildings, and expanding the Energy Company Obligation;
- **Oil and gas** – by sending clear signals on the role of gas in the transition to net zero, by fully utilising the North Sea reserve through new licensing, establishing Gas and Oil New Project Regulatory Accelerators, reducing the emissions of offshore oil and gas further, as well as delivering the four Carbon Capture, Usage and Storage (CCUS) clusters by 2030;
- **Renewables** – accelerating the transition from fossil fuels through investment in offshore and offshore wind projects, and solar and other technologies;
- **Nuclear** – through investment in the nuclear sector by launching the Future Nuclear Enabling Fund, the setup of the Great British Nuclear Vehicle and backing Great British Nuclear with funding;
- **Hydrogen** – through doubling ambition up to 10GW of low carbon hydrogen production capacity by 2030, aiming to run annual allocation rounds for electrolytic hydrogen, designing new business models for hydrogen transport and storage infrastructure and setting up a hydrogen certification scheme by 2025;

- **Networks, storage and flexibility** – accelerating the domestic supply of clean and affordable electricity also requires accelerating the connecting network infrastructure to support it. Total costs will be lowered by various mechanisms including establishing the Future System Operator as soon as practicable, publishing a strategic framework with Ofgem, appointing an Electricity Networks Commissioner, updating National Policy Statements, setting out blueprints for the whole system in the Holistic Network Design and Centralised Strategic Network Plan and more; and
- **International Delivery** – working with international partners to maintain stable energy markets and prices, reducing global reliance on Russian fossil fuels and supporting other countries to make the same transition to clean, affordable and secure energy.

5.4 Emerging National Planning Policy

Energy National Policy Statements (NPS)

Overarching National Policy Statement for Energy (EN-1) (2011)

- 5.4.1 The ‘Overarching National Policy Statement for Energy (EN-1)’ (NPS EN-1) (Ref 24) sets out national policy for energy infrastructure developments that meet the Planning Act 2008 definition of ‘Nationally Significant Infrastructure Projects’ (NSIPs). Applications for NSIP developments are determined by the Secretary of State in accordance with the Planning Act 2008. The Proposed Development does not meet the definition of a NSIP under Part 3, Sections 15-21, and the regime does not cover tunnelled cables under rivers. The Proposed Development therefore remains subject to the need for Planning Permission under the Town and Country Planning Act 1990, with the Application determined by the Local Planning Authority. However, Paragraph 5 of the NPPF states that “National policy statements form part of the overall framework of national planning policy and may be a material consideration in preparing plans and making decisions on planning applications.”
- 5.4.2 In NPS EN-1, the Government sets out that energy is essential to our wellbeing, stating that “it is difficult to overestimate the extent to which our quality of life is dependent on adequate energy supplies” (Paragraph 3.2.1). It also explains that the way in which we use energy is being transformed as we seek to become less dependent on fossil fuels, including by embracing new and innovative low carbon technologies. Whilst becoming less reliant on some forms of energy, it says we will also “become more dependent on others – for example, demand for electricity will increase if we electrify large parts of transport, heating and industry”.
- 5.4.3 In Paragraph 3.2.3 the Government sets out that “without significant amounts of new large-scale energy infrastructure, the objectives of its energy and climate change policy cannot be fulfilled”. It therefore considers that “the need for such infrastructure will often be urgent” and acknowledges that “it will not be possible to develop the necessary amounts of such infrastructure without some significant residual adverse impacts”.
- 5.4.4 Section 3.7 focuses on the need for new electricity network infrastructure, building in better distribution to where energy is needed adding network resilience to meet growth and demand. Paragraph 3.7.3 sets out this position, advising that “new electricity network infrastructure projects, which will add to the reliability of the national energy supply, provide crucial national benefits, which are shared by all users of the system”.
- 5.4.5 The Electricity Networks Strategy Group (ENSG) was tasked with:
- *“developing electricity generation and demand scenarios consistent with the EU target for 15% of the UK’s energy to be produced from renewable sources by 2020; and*
 - *identifying and evaluating a range of possible electricity transmission networks solutions that would be required to accommodate these scenarios.”* (paragraph 3.7.4)
- 5.4.6 The report looked at a range of scenarios to overcome the issues identified. Paragraph 3.7.5 highlights that “in particular, the scenarios examined the potential new transmission infrastructure needed to connect the large volumes of onshore and offshore wind generation required to meet the 2020 renewables target”.

- 5.4.7 ENSGs report identifies a number of scenarios to change the direction of net electricity flows, including from Scotland but that in order to do so significant investment would be need in transmission infrastructure as the “kinds of flows of power cannot be accommodated by the existing network” (paragraph 3.7.7).
- 5.4.8 Paragraph 3.7.8 states that “the Government believes that the ENSG work represents the best available overview of where the electricity networks will need to be reinforced and augmented in order to achieve the UK’s renewable energy and security of supply targets and will therefore be relevant to the IPC’s consideration of electricity network proposals”. Whilst other solutions may present themselves, such as new generating stations, these come with barriers. As such, and as noted in paragraph 3.7.10, “there is an urgent need for new electricity transmission and distribution infrastructure (and in particular for new lines of 132 kV and above) to be provided”,
- 5.4.9 Section 4 of the NPS sets out a suite of assessment principles for which applications relaying to energy will be tested against however the overarching position is a presumption in favour of granting consent. Section 5 sets out the generic impacts by which relevant development will need to consider and respond to accordingly.

National Policy Statement for Electricity Networks Infrastructure (EN-5) (2011)

- 5.4.10 The ‘National Policy Statement for Electricity Networks Infrastructure (EN-5)’ (NPS EN-5) (Ref 25) “provides the primary basis for decisions taken by the Infrastructure Planning Commission (IPC) on applications it receives for electricity networks infrastructure” (Paragraph 1.2.1). Section 1.8 sets out the types of electricity network infrastructure covered by the NPS EN-5, and includes transmission and distribution systems, and associated infrastructure including convertor stations to convert DC power to AC power (and vice versa).
- 5.4.11 NPS EN-5 is considered helpful when considering energy infrastructure under the Town and Country Planning Act 1990, with Part 2 focusing on ‘Assessment and Technology-Specific Information’. Section 2.2 discuss site selection, with paragraph 2.2.2 stating:
- “The general location of electricity network projects is often determined by the location, or anticipated location, of a particular generating station and the existing network infrastructure taking electricity to centres of energy use. This gives a locationally specific beginning and end to a line. On other occasions the requirement for a line may not be directly associated with a specific power station but rather the result of the need for more strategic reinforcement of the network. In neither circumstance is it necessarily the case that the connection between the beginning and end points should be via the most direct route (indeed this may be practically impossible), as the applicant will need to take a number of factors, including engineering and environmental aspects, into account.”*
- 5.4.12 Whilst NPS EN-5 sets out its own policies, it makes regular reference to the generic policies in EN-1 so it should be read in conjunction.

Update: Energy National Policy Statements

- 5.4.13 The EWP (Ref 20) sets out how the UK will clean up its energy system and reach net zero emissions by 2050. The EWP announced that the government would review the current Energy NPS’ to reflect the policies and broader strategic approach set out in the white paper and ensure that we continue to have a planning policy framework which can support the infrastructure required for the transition to net zero.
- 5.4.14 Consultation ran from 6 September 2021 to 29 November 2021; with the consultation responses being reviewed by the Department for Energy Security and NetZero (DESNZ), known at the time as the Department for Business, Energy & Industrial Strategy (BEIS).
- 5.4.15 A government response to the public consultation was published in September 2021, concentrating on the key themes from the consultation. In March 2023, updated NPSs EN-1 to EN-5 were released for consultation, closing in June 2023.

Overarching National Policy Statement for Energy (EN-1) (2023)

- 5.4.16 The forthcoming National Policy Statements (2023) will be coming into force in early 2024. In the revised overarching policy statement (EN-1) (Ref 26), the government acknowledged that much of

its plans to decarbonise the UK's economy involves electrification, such as in the areas of transport, heat and industry, and that this in itself would likely result in more than half of the UK's energy demand being met by electricity by 2050, up from just 17% in 2019.

- 5.4.17 The revised EN-1 policy (2023) also states the need to ensure that there is security of energy supply in the UK and that the cost of energy is affordable for end-users. It states the need for new energy infrastructure in this regard is "urgent" and has proposed that the UK's energy infrastructure be made up of a mix of energy sources, including renewables, nuclear, low carbon hydrogen, residual use of unabated natural gas and crude oil fuels for heat, electricity, transport, and industrial applications.
- 5.4.18 The revised EN-1 also acknowledges that different types of electricity infrastructure will be needed and includes an explanation of the need for new generation, network, storage and interconnection infrastructure, alongside energy efficiency and demand-side response measures.

National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023)

- 5.4.19 The revised NPS EN-5 has been updated (Ref 27) to reflect the importance of building electricity network infrastructure that not only connects new generation with centres of demand, but also guarantees system robustness and security of supply even as the energy system grows increasingly complex. It has also been revised to reflect the current policy and regulatory landscape.
- 5.4.20 A new section has been added specifically dealing with the question of rights and interests in land, which encourages developers to pursue permanent land rights wherever possible, rather than relying on wayleaves, to provide a more stable and secure footing, as well as ensuring better value for electricity billpayers in the long run. Guidance has also been clarified around developers pursuing the compulsory acquisition of rights in land for the purposes not only of the construction itself, but also for any necessary mitigation and/or biodiversity net gain schemes.
- 5.4.21 Bringing the document in line with updates to relevant environmental regulations, requirements have been added on developers to safeguard the soil quality of the land they use, and to take measures to reduce or eliminate the fugitive emission of sulphur hexafluoride (SF6) from network assets into the atmosphere. The document also contains guidance on the types of biodiversity net gain scheme best suited to the linear nature of electricity networks infrastructure, such as reconnecting habitats via green corridors.

5.5 Other Policy and Legislation

Environment Act 2021

- 5.5.1 The Environment Act 2021 (Ref 28) will set clear statutory targets for the recovery of the natural world in four priority areas: air quality, biodiversity, water and waste, and includes an important new target to reverse the decline in species abundance by the end of 2030. The 2021 Act has been shrouded into law and will come into force in January 2024 for TCPAs.

Climate Change Act 2008

- 5.5.2 The Climate Change Act 2008 (Ref 29) establishes a legally binding target to reduce the UK's greenhouse gas emissions by at least 80% in 2050 from 1990 levels. To drive progress and set the UK on a pathway towards this target, the Act introduced a system of carbon budgets including a target that the annual equivalent of the carbon budget for the period including 2020 is at least 34% lower than 1990. The Climate Change Act 2008 also requires the government to:
- assess regularly the risks to the UK of the current and predicted impact of climate change;
 - set out its climate change adaptation objectives; and
 - set out its proposals and policies for meeting these objectives.

Planning and Compulsory Purchase Act 2004

- 5.5.3 Section 19(1A) of the Planning and Compulsory Purchase Act 2004 requires local planning authorities to include in their Local Plans "policies designed to secure that the development and use

of land in the local planning authority's area contribute to the mitigation of, and adaptation to, climate change". This will be a consideration when a Local Plan is examined.

6 Planning Appraisal

6.1 Introduction

- 6.1.1 This section of the Planning Statement contains an appraisal of the Proposed Development against the planning policy framework as set out in Section 0, focusing on the strategic and core land use policies to consider the acceptability of the 'principle' of the Proposed Development.
- 6.1.2 Following the review of the Gravesham Development Plan and other main planning policy material considerations, the following main policy themes have been identified:
- **Theme 1:** The urgent need for electricity network reinforcement;
 - **Theme 2:** Flood Risk;
 - **Theme 3:** Biodiversity and Nature Conservation;
 - **Theme 4:** Archaeology; and
 - **Theme 5:** Waste and Minerals.
- 6.1.3 This section presents an appraisal of the Proposed Development in accordance with the above policy themes.

6.2 Theme 1: The urgent need for electricity network reinforcement

- 6.2.1 The purpose of the Proposed Development is in direct accordance with national and local planning policy and other national policy and legislation which sets out a clear need for new electricity transmission infrastructure in order to support delivery of objectives and commitments for the energy system and climate change.
- 6.2.2 In particular, the Proposed Development will directly address the specific need for the uprating of the TKRE 400 kV circuits in the existing tunnel under the River Thames, which will be significantly overloaded in their current capacity as a result of the large amount of renewable and low carbon energy generation connecting in to the transmission network in the east coast of England, together with the three interconnectors from the continent as set out by paragraphs 3.3.46, 3.3.66 and 3.3.67 of draft NPS EN-1.
- 6.2.3 The NPSs and draft NPSs can be material considerations in the determination of Planning Applications. Therefore, the contribution the Proposed Development would make to meeting this need, which paragraph 3.3.63 of NPS EN-1 sets out to be urgent, is considered to be a material consideration that weighs heavily in favour of planning permission being granted for the Proposed Development.
- 6.2.4 Other national and local planning policy is aligned with the urgent need for new electricity transmission infrastructure that is set out by the NPS EN-1 and draft NPS EN-1. This includes paragraph 152 of the NPPF which states that the planning system should support the transition to a low carbon future, including by supporting the development of infrastructure that supports low carbon energy. By being an essential element of NETS that is needed to transport renewable energy from where it is generated to where it is needed, the Cable Tunnel Replacement Project is an important part of the infrastructure that paragraph 152 of the NPPF supports in principle.
- 6.2.5 At a local level, the Gravesham Borough Council's Local Plan expresses support for developments that will help to address the causes of climate change, as set out below.
- **Policy CS18: Climate Change** sets out that Gravesham Borough Council will seek to reduce the overall carbon footprint of the Borough, in particular, the council will (in the context of national policy on the transition to zero carbon development) support renewable or low carbon energy development. The Proposed Development will make an important contribution to enabling the objectives and commitments for the energy system and climate change to be achieved.

6.3 Theme 2: Flood Risk

- 6.3.1 The Flood Risk Assessment (FRA) submitted with the planning application (document reference 30003364-BHK-XX-XX-RP-C-02060) reviews the risks associated with the Proposed Development, assessing the sources of flood risk to the Proposed Development as well as the impact of the Proposed Development on flood risk elsewhere.
- 6.3.2 In line with local and national policy and guidance a Sequential Test has been undertaken and is described in the Flood Risk Assessment. The purpose of a sequential test is to seek to steer development to areas with the lowest risk of flooding. A number of alternative solutions were identified for the upgrade of the cable crossing. The selection of the strategic option and site of the Proposed Development is explained and justified in Volume II Chapter 2: Alternatives, of the ES. No other suitable sites are reasonably available for provide practical or viable options for construction of a shaft or cable tunnel which meet the requirements for the Proposed Development.
- 6.3.3 Given the nature of the Proposed Development it is considered to align closely with the vulnerability classification of 'Essential Infrastructure' land use (based on Table 2 of the PPG Technical Guidance).
- 6.3.4 Essential Infrastructure includes:
- “Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including infrastructure for electricity supply including generation, storage and distribution systems...”*
- 6.3.5 In accordance with Paragraph 159 of the NPPF, Table 3: Flood Risk Vulnerability and Flood Zone Compatibility in PPG, states that the Proposed Development is appropriate in Flood Zone 1 and 2, and subject to the Exception Test in Flood Zone 3a and 3b.
- 6.3.6 The Proposed Development in Gravesend is in Flood Zone 3 and for the Exception Test to be passed it must be demonstrated that;
- The development would provide wider sustainability benefits to the community that outweigh flood risk and;
 - The development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible will reduce flood risk overall.
- 6.3.7 The need for the Proposed Development is set out in Section 1.5 and in Theme 1 of this Planning Statement. It concludes that the Proposed Development is important energy infrastructure that is urgently needed in order for the government's objectives and commitments for the energy system, including net zero, to be met. Paragraph 152 of the NPPF and the Gravesham Borough Council Local Plan express support for development that will help to address the causes of climate change. The sustainability benefits of the Proposed Development, as per the first bullet point above, are therefore considered to be substantial and outweigh the flood risk associated with the Proposed Development (which is discussed below).
- 6.3.8 The FRA identifies there is potential flood risk to the Proposed Development from tidal and pluvial sources. The Gravesham SEC is located in a Thames Estuary 2100 Policy 3 (P3) area for the North Kent Marshes Policy Unit. This area will benefit from flood defences with climate change and sea level rise and the risk of tidal flood is expected to not change for the lifetime of the project.
- 6.3.9 The location of the Proposed Development necessitates construction work to take place in Flood Zone 3, and it is not possible to avoid working in Flood Zone 3. All temporary works of the construction project should be limited to the following:
- Water compatible facilities;
 - Flood-resilient facilities;
 - Flood repairable facilities; and
 - Site roads and underground utilities.
- 6.3.10 The Contractor would be responsible for preparing a site-specific flood risk assessment to demonstrate that the site set up and temporary works comply with the requirements of the NPPF.

- 6.3.11 The Contractor would establish emergency response measures for construction activities in flood risk areas. The two key emergency response measures are:
- Readiness for the possibility of flooding; and
 - Development of a flood response plan (based on the Flood Warning and Evacuation Plan included in the Planning Application).
- 6.3.12 The Drainage Management Plan (included in the Planning Application, document reference 30003364-BHK-XX-XX-RP-C-02060) will be further developed during detailed design and include the following:
- Construction flood risk for each of the Gravesend and Tilbury Sites;
 - Temporary drainage design;
 - Construction water management;
 - Dewater management plan;
 - Protection of watercourses during works;
 - Infiltration ponds and drains during construction;
 - Silt retention ponds during construction;
 - Compensatory flood storage areas; and
 - Avoiding impacts on ground water resources.
- 6.3.13 The Proposed Development is therefore considered to meet the requirements of the Exception Test as set out by Paragraph 164 of the NPPF (reiterated in Section 6.3.6).
- 6.3.14 With the incorporation of embedded design mitigation and operational specific mitigation for flood risk, as the Proposed Development would have only a minor to negligible impact on surface water, which is not significant. It would not represent inappropriate development in its flood zone, would pass the Sequential and Exception tests, would be safe from flooding for its lifetime and would not increase the risk of flooding elsewhere. As such, the Proposed Development is considered to accord with Gravesham Borough Council's Policy CS18, and paragraphs 159, 162, 164 and 167 of the NPPF.

6.4 Theme 3: Biodiversity and Nature Conservation

- 6.4.1 Chapter 15: Biodiversity - Gravesend in ES Volume IV undertakes an assessment of the impacts of the Proposed Development on biodiversity, taking account of statutory and non-statutory designations, habitats and species.

Statutory and Non-Statutory Designations

- 6.4.2 The likely significant effects of the Proposed Development on statutory and non-statutory designations have been assessed. The impacts of the Proposed Development are not likely to result in any significant effect on the structure and function of:
- Thames Estuary and Marshes SPA/Ramsar site;
 - South Thames Estuary and Marshes SSSI;
 - Medway Estuary and Marshes SPA;
 - Canal and Grazing Marsh, Higham LWS;
 - A226 Gravesend Road, Chalk Road Nature Reserve (RNR); and
 - Nr Queens Farm RNR.

Habitats

- 6.4.3 There will be permanent and temporary habitat loss of approximately 9600m² and 45800m² respectively to provide the permanent development as well as for temporary construction

compounds and to enable the overhead line diversion works. The temporary habitat loss will be reinstated on completion of the works. Overall, following the implementation of proposed mitigation it is expected that the Proposed Development will during construction result in a temporary (approximately 4 years) adverse effect on the habitats at the Site level that is Not Significant. Following reinstatement and establishment this effect will be reversible and within 12 months of completion of construction.

Species

- 6.4.4 The ES outlines that no significant effects on species have been identified by the Ecological Impact Assessment (EclA). Appropriate precautionary mitigation to ensure legislative compliance will be employed prior to the commencement of site establishment and clearance works including where required a precautionary method of working (PMoW) under an Ecological Clerk of Works (ECOW). Measures to specifically address potential effects of temporary disturbance to habitats and protected species they support are also proposed.

Biodiversity Net Gain

- 6.4.5 A biodiversity net gain (BNG) assessment has been undertaken for the Proposed Development in accordance with the published Natural England Biodiversity Metric 4.0, with a target of 10% net gain in biodiversity (striving for 15%) to be delivered to meet emerging planning policy, and to meet National Grid's corporate BNG commitment to the delivery of 10% BNG on all construction projects.
- 6.4.6 The ES provides a summary of the habitat reinstatement and enhancement measures that are committed to and are embedded into the BNG metric assessment. Options to deliver the minimum 10% net gain are outlined in the BNG Assessment and Strategy Report.

Summary

- 6.4.7 On the basis that the impacts of the Proposed Development on biodiversity are not significant and that the Applicant is seeking to deliver a minimum of 10% BNG, the Proposed Development in Gravesham Borough Council's jurisdiction accords with Policy CSTP19 and Paragraphs 174, 175 and 181 of the NPPF.

6.5 Theme 4: Archaeology

- 6.5.1 Chapter 17: Historic Environment of ES Volume IV, presents an assessment of the impact of the Proposed Development in Gravesend on designated and non-designated heritage assets. It concludes that the construction and operation of the Proposed Development will not affect the setting of the seven grade II listed buildings. The Proposed Development in Gravesham Borough Council is therefore in accordance with Policy CS20 and Paragraph 202 of the NPPF in relation to designated heritage assets.
- 6.5.2 Regarding buried archaeology, Chapter 17 of the ES sets out that mitigation measures have been embedded into the Proposed Development in order to minimise potential impacts on archaeology, which could be significant with the proposed mitigation. These mitigation measures include the development of a detailed archaeological mitigation strategy prior to construction. With the application of this mitigation the ES Chapter concludes with minor adverse (not significant) effects on buried archaeological remains, however the harm to archaeological remains is offset through the mitigation. The Proposed Development within Gravesham Borough Council is therefore in accordance with Policy CS20 and Paragraph 202 of the NPPF in relation to designated heritage assets.

6.6 Theme 5: Mineral Safeguarding Areas

- 6.6.1 Gravesham Borough Council's current local development plan in relation to minerals comprises the Kent County Council Minerals and Waste Local Plan 2013-30 (September 2020).
- 6.6.2 The Kent County Council Minerals and Waste Local Plan Proposals Map shows the Gravesham SEC as being within a Minerals Safeguarding Area (MSA) for Sub Alluvial River Terrace Deposits. Policy CSM 5 (land won mineral safeguarding) of the adopted Kent County Council Minerals and Waste Local Plan (2016, updated in 2020) therefore applies. From a review of the Kent County

Council website, the Gravesham SEC does not appear to lie within close proximity to any safeguarded mineral infrastructure (including wharves and rail depot as identified by Policy CSM 6 or other mineral plant infrastructure as identified in Policy CSM 7). The site also does not lie in close proximity to any areas identified for future sand and gravel extraction in the Kent County Council Minerals Sites Plan (2020).

- 6.6.3 Policy CSM 5 seeks to safeguard known resources of brickearth, sharp sand and gravel, soft sand (including silica sand), ragstone and building stone from permanent development that would unnecessarily sterilise them or hinder their future extraction.
- 6.6.4 Policy DM7 (safeguarding mineral resources) sets out the criteria by which development proposals that may sterilise or hinder future extraction of safeguarded minerals resources will be assessed against. It requires development in an area of known mineral resource to demonstrate that:
1. the mineral is not of economic value or does not exist; or
 2. that extraction of the mineral would not be viable or practicable; or
 3. the mineral can be extracted satisfactorily, having regard to Policy DM9, prior to the non-minerals development taking place without adversely affecting the viability or deliverability of the non-minerals development; or
 4. the incompatible development is of a temporary nature that can be completed and the site returned to a condition that does not prevent mineral extraction within the timescale that the mineral is likely to be needed; or
 5. material considerations indicate that the need for the development overrides the presumption for mineral safeguarding such that sterilisation of the mineral can be permitted following the exploration of opportunities for prior extraction; or
 6. it constitutes development that is exempt from mineral safeguarding policy, namely householder applications, infill development of a minor nature in existing built-up areas, advertisement applications, reserved matters applications, minor extensions and changes of use of buildings, minor works, non-material amendments to current planning permissions; or
 7. it constitutes development on a site allocated in the adopted development plan where consideration of the above factors (1-6) concluded that mineral resources will not be needlessly sterilised.
- 6.6.1 Prior extraction of any safeguarded mineral in the area of the Proposed Development would not be commercially practicable, given the size and scale of the Proposed Development. Prior extraction would generate adverse impacts upon the environment, particularly given the sensitivities of the environs within the vicinity.
- 6.6.2 There is an overriding national need for the Proposed Development to be undertaken in order for the essential energy network upgrades to happen in Kent and Essex, helping the UK reach net zero by 2050.
- 6.6.3 The operational life of the Proposed Development is approximately 120 years. It is therefore also the case the any safeguarded mineral would not be sterilised permanently but that its availability for extraction would be delayed.

7 Conclusion and Planning Balance

- 7.1.1 The Proposed Development will comprise an essential part of the major reinforcement to the National Electricity Transmission System (NETS). The Proposed Development will directly address the specific need for the uprating of the TKRE 400kV circuits in the existing tunnel under the River Thames, which will be significantly overloaded in their current capacity as a result of the large amount of renewable and low carbon energy generation connecting in to the transmission network in the east coast of England, together with the three interconnectors from the continent as set out by paragraph 3.3.33., of NPS EN-1 (2023) (Ref 26).
- 7.1.2 As such, the Proposed Development represents enhanced electricity infrastructure that national planning policy sets out is urgently needed in order for the government's objectives and commitments for a secure and low carbon energy system to be achieved. The requirement to meet this urgent national need weighs heavily in favour of planning permission being granted. Local planning policy also supports the delivery of electricity infrastructure.
- 7.1.3 This Planning Statement and the supporting ES describe the approach taken by the Applicant that has mitigated many of the identified impacts of the Proposed Development. The ES identifies that no significant environmental effects are anticipated as a result of the construction, operation and decommissioning of the Proposed Development.
- 7.1.4 The policy appraisal in Section 6 demonstrates broad compliance with Gravesham Borough Council Local Plan. The overarching need and benefits of the Proposed Development are clear and should be afforded significant weight in the determination of the planning application. In light of the national need and compliance with the Development Plan, it is considered that the evidence weighs heavily in favour of planning permission being granted.

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9 Abbreviations

Abbreviation	Meaning
AEP	Annual Exceedance Probability
aOD	above Ordnance Datum
ASTI	Accelerated Strategic Transmission Investment
BEIS	Department for Business, Energy & Industrial Strategy
BNG	Biodiversity Net Gain
CCUS	Carbon Capture, Usage and Storage
DBA	Desk Based Assessment
DESNZ	Department of Energy Security and Net Zero
EcIA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
ENSG	Electricity Networks Strategy Group
ES	Environmental Statement
ETYS	Electricity Ten Year Station
EWP	Energy White Paper
FES	Future Energy Scenarios
FRA	Flood Risk Assessment
GPR	Ground Penetrating Radar
HDD	Horizontal Directional Drilling
kV	Kilovolt
LAGB	London Area Green Belt
LCA	Landscape Character Assessment
LV	Low Voltage
LWS	Local Wildlife Site
MCC	Motor Control Centre
MMO	Marine Management Organisation
MSA	Minerals Safeguarding Area
MVA	megavolt amperes
NCA	National Character Area
NETS	National Electricity Transmission System
NOA	Network Options Assessment
NPPF	National Planning Policy Framework
NPS	National Policy Statements
NSIP	Nationally Significant Infrastructure Projects
OHL	Overhead line

Abbreviation	Meaning
PMoW	Precautionary Method of Working
PPG	Planning Practice Guidance
RSPB	Royal Society for the Protection of Birds
SAC	Special Areas of Conservation
SEC	Sealing End Compound
SF ₆	sulphur hexafluoride
SPA	Special Protection Areas
SRN	Strategic Road Network
SSSI	Site of Special Scientific Interest
TCPA	Town and Country Planning Act 1990
TKRE	Tilbury to Grain and Tilbury to Kingsnorth
WC	Water closet
WFD	Water Framework Directive
XLPE	Cross linked polyethylene

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National Grid

Cable Tunnel Replacement Project

Planning Statement – Tilbury
(Revision 1)

| ~~December 2023~~ July 2024

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1 Introduction

1.1 Overview of the Cable Tunnel Replacement Project

- 1.1.1 The Tilbury to Gravesend Cable Tunnel Replacement Project (hereafter referred to as ‘the Proposed Development’) relates to the replacement of National Grid’s 400 kV circuits beneath the River Thames.
- 1.1.2 The Proposed Development comprises the construction of a new bored tunnel under the River Thames to house new cross linked polyethylene (XLPE) cables.
- 1.1.3 In addition, the Proposed Development comprises the following above-ground components at both ends of the new tunnel:
- **A new cable sealing end compound:** consisting of:
 - **a new tunnel headhouse** which will cover the shaft into the tunnel;
 - **a new overhead line gantry structure** which will connect the overhead line downlead conductors and transfer them to six sealing end structures; and
 - **Modifications to the existing overhead line (OHL):** The new OHL conductors will be connected to the existing 400kV OHL conductors via new terminal pylons. The old OHL conductors and existing pylons will be either replaced, refurbished or removed.
- 1.1.4 It should be noted that modifications to the existing overhead lines are consented via Section 37 of the Electricity Act 1989 and, although described in the Environmental Statement accompanying the planning applications, do not form part of the Town and Country Planning Act planning application. An application for Section 37 consent is being submitted at the same time as the planning applications.
- 1.1.5 Each required SEC would fall within Thurrock Council and Gravesham Borough Council’s jurisdiction.
- 1.1.6 Figure 1.1 in Environmental Statement (ES) Volume II Chapter 1: Introduction in provides a site location plan.

1.2 Background

Project Need

- 1.2.1 National Grid Electricity Transmission (hereafter referred to as ‘National Grid’) owns and operates the national high-voltage electricity transmission system throughout England and Wales. The key role of the transmission system is to connect the electricity generators’ power stations with the local distribution networks of the regional electricity companies. National Grid holds the Transmission Licence for England and Wales and is thus obligated to develop and maintain an efficient, co-ordinated and economical system of electricity transmission and to facilitate competition in the generation and supply of electricity, as set out in the Electricity Act 1989.
- 1.2.2 The Proposed Development is part of the Ofgem’s new accelerated strategic transmission investment (ASTI) framework (published December 2022). National Grid is responsible for delivering the extensive onshore transmission system enhancements that are required to achieve the UK Government’s 2030 decarbonisation targets.
- 1.2.3 National Grid’s operations are dictated by the latest Future Energy Scenarios (FES) (Ref 1) and Electricity Ten Year Station (ETYS) reports (Ref 2). In recent years, these reports have begun forecasting a large amount of renewable and low carbon energy generation, connecting into the transmission network in the east coast of England, together with three interconnectors from the continent. Through these forecasts, National Grid Electricity System Operator (ESO) has identified

that the 400 kilovolt (kV) circuits will be significantly overloaded in their current capacity and require upgrading. National Grid has named this wider project 'Grain to Tilbury'.

- 1.2.4 Each year, the ESO undertakes an assessment of the options National Grid has available for meeting forecasted energy demands (the Network Options Assessment, NOA). This assessment comprises economic analysis to understand the balance between managing power flows across network boundaries. In the most recent NOA (2021/22), the ESO has recommended investment in upgrading the TKRE 400 kV circuits giving the project a 'proceed' signal with an Earliest in Service Date (EISD) of 2028. This was reconfirmed in the NOA refresh published July 2022.
- 1.2.5 The TKRE 400 kV circuits are currently predominantly overhead line, with a section installed within a deep tunnel beneath the River Thames. As the Transmission Licence Holder with responsibility for the TKRE circuits, National Grid are required to upgrade the existing circuits.

Options Appraisal

- 1.2.6 In 2022, National Grid undertook a Strategic Options Appraisal to inform the selection of a preferred option for the upgrade of the TKRE circuits. Three options were initially identified:
- the installation of new cables within the existing tunnel;
 - the installation of new cables within the new tunnel; and
 - the installation of a new overhead line across the River Thames.
- 1.2.7 The installation of new cables within the existing tunnel is not feasible due to the health and safety risks. The installation of a new overhead line across the River Thames, given its location and scale, would have had greater permanent environmental impacts. On balance, it was considered that the installation of new cables within a new tunnel was the most viable preferable option overall.
- 1.2.8 It should be noted the use of Horizontal Directional Drilling (HDD) as a construction method for the tunnel was initially reviewed. However, the ground profile contains a gravel layer which would present a significant challenge with horizontal penetration for any appreciable distance. The number and length of bores required would be significant resulting in larger launch and reception pits to accommodate. HDD is therefore considered high risk and without significant benefits when compared to the option for a new tunnel.

2 The Proposed Development

2.1 Overview

2.1.1 The Proposed Development comprises the construction of a new bored cable tunnel and the following above-ground components at both ends of the new tunnel:

- **A new cable sealing end compound:** consisting of:
 - **a new tunnel headhouse** which will cover the shaft into the tunnel;
 - **a new overhead line gantry structure** which will connect the overhead line downlead conductors and transfer them to six sealing end structures; and
- **Modifications to the existing overhead line (OHL):** The new OHL conductors will be connected to the existing TKRE 400kV OHL conductors via new terminal pylons. The old OHL conductors and existing pylons will be either replaced, refurbished or removed. This element of the project is not consented via the Town and Country Planning Act so is not discussed any further.

2.1.2 A full description of the Proposed Development is provided in ES Volume II Chapter 3: The Project Description and is summarised below.

Cable Tunnel

2.1.3 The new cable tunnel will be approximately 2.2km long (from headhouse to headhouse), 4m in internal diameter (4.5m external diameter) and with the alignment illustrated in Figures 3.1 and 3.2 in ES Volume III Chapter 3: Project Description (also provided below). The depth of the tunnel is approximately -34mAoD to - 32mAoD, and approximately three to four tunnel widths below the river bed.

2.1.4 Twelve new cross linked polyethylene (XLPE) cables will be installed in the new tunnel, once bored, to match the required 3325 megavolt amperes (MVA) maximum rating.

2.1.5 Due to advances in cable technology, XLPE is now being used in preference to the use of fluid filled cable (like those installed in the existing tunnel). In these modern cables, the central conductor is insulated by means of a cross linked polyethylene material, which is extruded around the conductor. The absence of fluid in the cable insulation enables a more mechanically robust overall cable construction. XLPE cables require less maintenance, with no ancillary fluid equipment to monitor and maintain¹. For example, sulphur hexafluoride (SF₆)², typically used in electricity transmission and distribution to insulate live electrical parts and to switch the flow of electrical current on and off, is **not required** to be used in this project.

2.1.6 Each cable needs to be well-spaced from others for adequate heat dissipation which will be achieved by forced air ventilation.

Table 2-1: New Bored Cable Tunnel - Summary of Key Characteristics

New Bored Cable Tunnel - Summary of Key Characteristics	
Length of tunnel	Approximately 2.2km (headhouse to headhouse)
Width of tunnel (diameter)	4m (internal) 4.5m (external)
Depth of tunnel	Approximately -34mAoD to - 32mAoD
Design life	120 years

¹ National Grid (2015). Undergrounding high voltage electricity transmission lines. Available at: https://www.nationalgrid.com/sites/default/files/documents/39111-Undergrounding_high_voltage_electricity_transmission_lines_The_technical_issues_INT.pdf.

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Tilbury Sealing End Compound

- 2.1.7 The new Tilbury SEC is proposed to be developed on an area of existing hardstanding in Tilbury, Thurrock, approximate grid reference TQ 66317 75873, on land owned on all sides by the Port of Tilbury, London, and which was formerly Tilbury Power Station. To the north of the proposed SEC is the existing Tilbury Substation. The land east is part of Ingrebourne Valley's Goshems Farm restoration project, raising the land on an historical landfill back to high quality, arable farmland. The existing Tilbury SEC, serving the existing tunnel is approximately 290m south of the proposed Tilbury SEC. The River Thames is approximately 400m south of the permanent footprint of the proposed Tilbury SEC.
- 2.1.8 The Tilbury SEC will occupy an area of approximately 7,339m² / 0.73ha. During construction, a larger area of approximately ~~138,000~~81,430m² / ~~13.88~~8.14ha will be required during installation to accommodate construction equipment and storage areas.
- 2.1.9 The two new overhead line gantry structures within the Tilbury SEC will have a maximum height of approximately 13m.
- 2.1.10 The SEC will contain:
- 12 new XLPE cables;
 - 12 new cable terminations (polymeric);
 - 12 new cable support steel structures with buried concrete foundations;
 - Concrete surface troughs for new cables;
 - 1 water tank for fire fighting purposes
 - 6 Surge Arresters for protection of underground cables;
 - 6 earth switches; and
 - Tilbury headhouse.
- 2.1.11 The Tilbury SEC will be surrounded by a 2.4m mesh or palisade security fence topped with an electric pulse fence to a height of 3.4m.
- 2.1.12 Six new carparking spaces will be provided, to the east of the new headhouse, with three EV charging posts (comprising two charge outlets per post). One of the spaces will be a disabled parking bay.
- 2.1.13 The roads within the SEC will be tarmacked, however all other surfacing will comprise of gravel or other free draining stone material with a Type 3 sub-base.

Tilbury Tunnel Headhouse

- 2.1.14 The Tilbury headhouse will be situated within the Tilbury SEC. The purpose of the Tilbury headhouse is to:
- allow controlled safe and secure access into the tunnel shafts;
 - provide enclosure for ventilation fans and equipment to regulate the temperature in the tunnel;
 - to locate mechanical and electrical equipment; and
 - to house control equipment for the cable circuits.
- 2.1.15 The Tilbury headhouse will occupy an area of up to 481.75 m² / 0.048ha (based on an indicative footprint of 23.5 m x 20.5 m and have an approximate maximum building height of approximately 10m above ground level). This will be confirmed during the detailed design stage.
- 2.1.16 The new headhouse at Tilbury will accommodate:
- Ventilation plant for the tunnel and shafts;
 - A control room, with tally room, communications control, panels, mechanical plant and control panels;

- Low Voltage (LV) Switch Room;
- 110V Battery / Uninterruptible Power Supply Room;
- Main fans room;
- Shaft access via a staircase (but with space allocation for a lift, and lift motor room (if required));
- Changing and shower room; and
- Water Closet (WC).

2.1.17 Externally, the new headhouse will have:

- a biodiverse roof;
- a temporary generator (hardwired to the LV Switch Room);
- an access hatch for cable feed; and
- a pedestrian access path.

2.1.18 The details of the ventilation equipment have not yet been finalised, however the headhouse will be acoustically insulated (where required) in line with BS8233:2014 to ensure operational noise levels are acceptable.

2.1.19 An indicative visualisation of the proposed headhouse at Tilbury is shown in Plate 2-1.

Plate 2-1: Indicative visualisation of the proposed Tilbury Headhouse



2.1.20 The exteriors and internal layout of the headhouse are shown on the Planning Drawings, referenced below:

- PDD-100116-LAY-046 - Tilbury SEC Site Plan;
- PDD-100116-LAY-047 - Tilbury Headhouse - Outline Ground Floor Plan;
- PDD-100116-LAY-049 - Tilbury Headhouse - Outline Roof Floor;
- PDD-100116-LAY-180 - Tilbury Headhouse - Proposed Site Sections;
- PDD-100116-ELE-003 - Tilbury Headhouse - Outline Elevations; and
- PDD-100116-LAY-050 - Tilbury Headhouse - Outline Sections.

Tilbury Headhouse Utility Provision

Incoming Water Supply

- 2.1.21 A mains water supply will be required for each headhouse to facilitate amenity features such as sinks, basins, showers and toilets. Installation of below ground mains water shall be in accordance with Southern Water guidance.
- 2.1.22 At Tilbury, a connection from the existing water main is proposed that will deliver potable water to the new headhouse.

Foul Water Drainage Design

- 2.1.23 The Tilbury SEC will not be permanently manned and as such the preference will be to discharge foul water to the existing sewer. The Ground Penetrating Radar (GPR) survey results suggest there are no public foul sewers available, therefore a 9000 litre underground cess pit will be installed at the proposed Tilbury SEC. More information can be found in the Drainage Management Plan (Document Reference 30003364-BHK-XX-XX-RP-C-02060).

Operational Access to the Tilbury SEC

- 2.1.24 The proposed Tilbury SEC will be accessible from an existing private road belonging to Port of Tilbury. This private road connects to Fort Road and then the A1089 Ferry Road and the wider Strategic Road Network (SRN). No new permanent access roads will be required for operational access into the proposed Tilbury SEC. One new bellmouth will be required from the existing private road.
- 2.1.25 Temporary access changes are required to facilitate the construction of the cable tunnel and Tilbury SEC.
- 2.1.26 A summary of the key characteristics of the Tilbury SEC is outlined in Table 2-2.

Table 2-2: Summary of the key characteristics of the Tilbury SEC

Factor	Tunnel Headhouses	Sealing End Compound
Permanent footprint	481.75 m ² / 0.048 ha	7339 m ² / 0.73 ha
Temporary working area	47,20040,983 m ² / 4.724.098 ha	
Max. heights	Approximately 10m	Approximately 13m (overhead line gantry structures)
Technology / infrastructure	<ul style="list-style-type: none"> Ventilation fans for tunnel Tunnel shaft including stairwell and access hatches, control room with equipment, mechanical and electrical supplies, welfare room and domestic supplies. 	<ul style="list-style-type: none"> 12 new XLPE cables; 12 new cable terminations (polymeric); 12 new cable support steel structures with buried concrete foundations; Concrete surface troughs for new cables; 6 Surge Arrester for protection of underground cables; 6 earth switches; and 1 water tank for fire fighting purposes
Exterior lighting	External lighting will be within the compound area for ease of access and maintenance at night. The lighting system will include sensors based on motion and day light availability and will be LED with a downward spill. Given the very low frequency of maintenance visits (12 to 24 visits per year), the use of external lighting is considered minimal.	
Access	During operation, the Tilbury headhouse and SEC will be accessed via an existing private road belonging to Port of Tilbury, which connects first to local road, Fort Road, and then the A1089 Ferry Road and the wider Strategic Road Network (SRN).	
Fencing	The SEC will be surrounded by a 2.4m mesh or palisade security fence. Electric fencing is required around its entirety with a minimum height of 3.4 m.	

Factor	Tunnel Headhouses	Sealing End Compound
Headhouse Roof	Biodiverse roof	

3 The Site and Surroundings

3.1 Land Use

- 3.1.1 The new Tilbury SEC is proposed to be developed on an area of existing hardstanding in Tilbury, Thurrock, approximate grid reference TQ 66317 75873, on land owned on all sides by the Port of Tilbury, London, on land which was formerly Tilbury Power Station. To the north of the proposed SEC is the existing Tilbury Substation. The land east is part of Ingrebourne Valley's Goshems Farm restoration project, raising the land on an historical landfill back to high quality, arable farmland. The existing Tilbury SEC, serving the existing tunnel is approximately 290m south of the proposed Tilbury SEC. The River Thames is approximately 400m south of the permanent footprint of the proposed Tilbury SEC.

3.2 Physical Environment

- 3.2.1 The Tilbury site is situated just north of the Thames estuary at an approximate elevation of around 5m AOD. To the east of the former power station concrete base in the southern portion of the Site, there is an overwide drain that runs generally north to south. This may be connected to the Thames via a sluice gate or other similar structure, with tide locking events a contributing factor to the overwide nature of the drain.
- 3.2.2 To the southeast the land has been extensively worked which has led to significant changes to natural land drainage, that would likely have been coastal marsh in the past before the creation of river flood defences.
- 3.2.3 Another linear drainage feature runs north to south to the east of West Road, then east to west to the north of an access road and the area of ash deposition for the former power station. To the east of this area of ash placement, another linear drainage feature is located. These two features are also over wide and it is not evident from online aerials and digital mapping whether they have any flow or connectivity with the Thames Estuary. Rather than being drains, they may alternatively be artificial linear ponds and wetland features that are a product of past land use change.
- 3.2.4 The Environment Agency Flood Map for Planning (Ref 1) shows that the Tilbury site is located within Flood Zone 3. Flood Zone 3 is defined as land which in any year has a 1% or more chance of flooding from rivers, or a 0.5% or more chance of flooding from the sea when flood defences are not considered.
- 3.2.5 The Environment Agency's Reduction in Risk of Flooding from Rivers and the Sea due to Defences (Ref 4) shows that the majority of the Tilbury site is in an area where there is a reduction in risk of flooding from rivers and the sea due to defences present along the banks of the Thames estuary. The design standard of protection of the defences for both sites is up to the 0.1% Annual Exceedance Probability (AEP) event. The main source of flooding for the site is due to the Thames estuary.
- 3.2.6 There are two unnamed ordinary watercourses within proximity to the Tilbury site. See Figure 13.1 in ES Volume III Chapter 13: Water Environment - Tilbury.
- 3.2.7 The Proposed Development lies within the boundary of one historic landfill (Tilbury B Power Station Fort Road authorised for inert waste with first input in 1978) (Ref 39) and two authorised landfills (RWE nPower plc Tilbury B Power Station Fort Road and Ingrebourne Valley Ltd Tilbury Ash Disposal Tip). See Figure 14.1 in ES Volume III Chapter 14: Materials and Waste – Tilbury.

3.3 Biodiversity and Designated Areas

- 3.3.1 The Planning Application – Red Line Boundary is approximately 2km west of the Thames Estuary and Ramsar Marshes Special Protection Area (SPA) and at its nearest point which is designated based on its internationally important bird populations and associated wetland habitats.
- 3.3.2 Tilbury Marshes Local Wildlife Site (LWS) is approximately 0.5 km to the west of the Tilbury site but is separated from the site by the Port of Tilbury.

3.3.3 Land adjoining the southern and eastern boundaries of the SEC, headhouses and associated working area forms part of the “Tilbury Power Station” LWS. Limited works are proposed within this area to enable the removal of an existing overhead line and one pylon base. This area is designated on the basis of remnant floodplain grazing marsh habitats, areas of open mosaic habitat and importance for invertebrates and reptiles. These areas and others in the wider local area have been proposed for statutory designation as a Site of Special Scientific Interest (SSSI) based on botanical interest and terrestrial invertebrate populations.

3.3.4 Refer to ES Volume III Chapter 7: Biodiversity -Tilbury and Figure 7.1.

3.4 Landscape

3.4.1 The Proposed Development lies within the National Character Area (NCA) 81 (Ref 6) Greater Thames Estuary. The key characteristics of this NCA include:

- *Predominantly flat, low-lying coastal landscape;*
- *Extensive open spaces...dominated by the sky;*
- *The pervasive presence of water;*
- *Open grazing pastures patterned by a network of ancient and modern reed-fringed drainage ditches; and*
- *Highly urbanised areas...on marsh edges subject to chaotic activity of various major developments.*

3.4.2 This is shown on Figure 8.4 in ES Volume III Chapter 8: Landscape and Visual – Tilbury..

Local Character Types and Local Character Areas

3.4.3 The Tilbury site incorporates Landscape Character Areas (LCA) C5 Tilbury Marshes, and E5 Tilbury and Docks Urban Area. A smaller part of the outer extents of the study area also lies at the transitional edge of the D6 Chadwell Escarpment Urban Fringe and D7 West Tilbury Urban Fringe defined in the Thurrock Landscape Capacity Study 2005 (Ref 11). These are shown on Figure 8.5 in ES Volume III Chapter 8: Landscape and Visual – Tilbury.

3.4.4 LCA C5 Tilbury Marshes is characterised by:

- Low lying, level landscape;
- Horizontal landform;
- Large scale landscape;
- Network of linear ditches;
- Southern skyline of dock cranes, chimneys, pylons and power lines; and
- Close proximity of residential areas.

3.4.5 E5 Tilbury and Docks Urban Area is characterised by:

- Tilbury nucleated settlement, predominantly post-war with some tower blocks and flat-roofed housing;
- The docks, part of the Port of London, containing large commercial warehouses and distinctive vertical cranes;
- A large industrial and commercial area of large warehouse
- Several areas of publicly accessible greenspace distributed within housing areas.

3.4.6 D6 Chadwell Escarpment Urban Fringe Area is characterised by:

- Irregular fields of rough grassland and pasture.

3.4.7 D7 West Tilbury Urban Fringe Area is characterised by:

- Large, open fields; and
- Absence of hedgerows and woodland cover.

- 3.4.8 There are no statutory landscape designations associated with the site. However, there are a number of ecological and cultural heritage designations within the landscape and visual study area and these can inform landscape value and are of importance in terms of visitor destinations and visual amenity for the area. These include the Scheduled Monument of Tilbury Fort and listed buildings. There are ecological designations including the South Thames Estuary and Marshes SSSI, Ramsar site, and SPA approximately 200m south, and 700m to the west of the Gravesend site.
- 3.4.9 The site and respective study areas sit within the London Area Green Belt (LAGB). This indicates landscape value as a result of openness, rather than intrinsic quality.
- 3.4.10 Chapter 8: Landscape and Visual in ES Volume III sets out further detail of the landscape character of the site.

3.5 Historic Environment

- 3.5.1 There are no World Heritage Sites, registered parks and gardens, registered battlefields or Conservation Areas located within the 1km study area.

Designated Heritage Assets

- 3.5.2 A single scheduled monument asset, the Tilbury Fort scheduled monument is located within the study area, located approximately 400m south-west of the Proposed Development. The main defensive structure of the star fort itself is located just west of the study area. The associated grade II* listed Officers' Barracks lies within the fort approximately 840m south-west of the Proposed Development. The significance of designated heritage assets is discussed in Section 6 of the DBA (Volume VI Appendix 9-1: Historic Environment Desk-Based Assessment). The location of all designated heritage assets in relation to the Proposed Development is shown on Figure 9-1: Designated Heritage Assets (see ES Volume Chapter 9: Historic Environment – Tilbury).

Non-Designated Heritage Assets

- 3.5.3 ~~A single~~[Two](#) non-designated heritage assets, Medieval Sea Wall [and Tilbury Power Station](#) ~~have~~[s](#) been identified within the limits of the Proposed Development.
- 3.5.4 A further ~~24~~[34](#) non-designated heritage assets have been recorded within the 1km of the Proposed Development.
- 3.5.5 The significance of non-designated heritage assets is discussed in Section 6 of the DBA (Volume IV Appendix 19.1: Historic Environment Desk-Based Assessment).
- 3.5.6 The location of all non-designated heritage assets in relation to the Proposed Development is shown on Figure 9-2: Non-designated Heritage Assets (see ES Volume III Chapter 9: Historic Environment – Tilbury).

Archaeology

- 3.5.7 A geo-archaeological deposit model was undertaken in September 2023 by Quest (Volume VI Appendix 9.2), to determine the depth of deposits within the Site and the wider study area, and to assess the potential for Palaeolithic, Mesolithic and later prehistoric alluvial gravels and peat deposits to be located within the Proposed Development.
- 3.5.8 The deposit model identified the underlying bedrock at the Proposed Development is chalk bedrock at a depth of between -17m and -17.5m OD (Ordnance Datum).
- 3.5.9 Shepperton gravels have been observed at a depth of between -13m and -14.5m OD within the Proposed Development, with a thickness of approximately 3-3.5m.
- 3.5.10 Alluvial deposits were recorded within the Proposed Development, with the deposit model highlighting two distinct alluvial deposits; the lower alluvial deposits that have a higher sand

component, and an upper alluvium which has more silt and clay deposits within it. Both alluvial layers have organic material and plant remains within them.

- 3.5.11 The lower alluvium has been identified as dating to the early to mid-Holocene Period, when the River Thames was a single channel. Horizons and lenses of organic peat have been identified within the lower alluvium. The horizon of these alluvial deposit recorded at a depth of between 0 and 1m aOD and extending to a maximum depth of -14.5m OD.
- 3.5.12 Three distinct peat deposits have been identified extending within the Proposed Development, these include Lower Peat deposit, which were identified at between -10.10 and 10.60m OD with a thickness of approximately 0.5m. These have been dated to between the Palaeolithic and Mesolithic periods.
- 3.5.13 The Middle Peat separates the two alluvial deposits and was observed at a depth of between -6.13 and -3.44m OD, with a variable thickness of between 1.2 and 2.1m. The Middle Peat has been dated to between the Late Mesolithic and Bronze Age period.
- 3.5.14 The Upper Peat seals the Upper Alluvial deposits and was identified at a level of 0.47m aOD with a general thickness of 0.5m. The Upper Peat was dated to the Iron Age.
- 3.5.15 The Quest deposit model concludes that the peat deposits likely represent marsh conditions that may be representative of semi-terrestrial sedge-fen, reed-swamp, saltmarsh and carr woodland type communities.
- 3.5.16 Based upon the survival and presence of the lower peat deposits within the Proposed Development, there is **high** potential for surviving Mesolithic to Iron Age environmental remains within this Site that may contain palaeoenvironmental and macrofaunal data that may help contribute to the ongoing study of sea level rises at Tilbury and the Lower Thames Valley
- 3.5.17 ES Chapter 9: Historic Environment in ES Volume III sets out further detail of the Historic Environment of the Site.

4 Planning Context

Requirement for EIA

The Town and Country Planning (Environmental Impact Assessment) Regulations 2017

- 4.1.1 EIA Development is defined in The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (Ref 9) as either:
- Schedule 1 development for which EIA is mandatory; or
 - Schedule 2 development for which EIA may be required taking account factors such as the Proposed Development's nature, size or location.
- 4.1.2 The Proposed Development does not fall within the definition of Schedule 1 development.
- 4.1.3 Schedule 2 development is defined by the EIA Regulations as:
- "Development of a description mentioned in Column 1 of the table in Schedule 2³ where:*
- any part of that development is to be carried out in a sensitive area⁴; or*
 - any applicable threshold or criterion in the corresponding part of Column 2 of that table is respectively exceeded or met."*
- 4.1.4 The closest description for the Proposed Development within Schedule 2 is Category 10(b) 'urban development', which the relevant corresponding threshold reads are as follows:
- "In the case of Urban Development Projects,*
- the development includes more than 1 hectare of development which is not dwelling house development; or*
 - the development includes more than 150 dwellinghouses; or*
 - the area of the development exceeds 5 hectares."*
- 4.1.5 The Proposed Development would exceed the threshold set at 10(b)(i) because it would consist of more than 1 hectare of development (at approximately 1.1 hectares (ha)) which is not dwellinghouse development. Therefore, an EIA Screening Opinion was sought from Thurrock Council and Gravesham Borough Council to determine whether the development is likely to give rise to likely significant environmental effects on its own or cumulatively with other developments.
- 4.1.6 On 7 July 2023 Thurrock Council confirmed through their screening opinion that the Proposed Development would not be considered EIA development.
- 4.1.7 On 3 August 2023 Gravesham Borough Council confirmed through their screening opinion that the Proposed Development would be considered EIA development.

The Marine Works (Environmental Impact Assessment) Regulations 2007

- 4.1.8 Of interest to the MMO is the proposed boring of new tunnel. The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) (Ref 10) set out the procedure that must be followed before approval is granted for a range of plans and projects. These require an EIA to be carried out in support of an application for consent for categories of project listed in Schedule A1 and Schedule A2 of the Regulations.
- 4.1.9 The boring of a new tunnel does not fall under Schedule A1 or Schedule A2 of the EIA Regulations. However National Grid requested an EIA Screening Opinion to confirm if the MMO consider a statutory EIA is required. On 1 August 2023, the MMO requested National Grid withdraw their EIA screening application, advising that an EIA screening request is only for projects which fall under

³ <https://www.legislation.gov.uk/ukxi/2017/571/schedule/2/made>

⁴ A Sensitive Area is defined as land designated as a National Park, Site of Special Scientific Interest (SSSI), Area of Outstanding Natural Beauty (AONB), UNESCO World Heritage Site (WHS), Scheduled Monument or European Protected Site.

either Schedule A1 or A2 of the Marine Works (Environmental Impact Assessment) Regulations 2007, which the MMO did not believe the Proposed Development fell under.

Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2017

4.1.10 Development requiring EIA is defined in Schedule 1 of The Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2017 (Ref 11) as:

“1. Development to provide any of the following—

(a) a nuclear generating station;

(b) a thermal generating station with a heat output of 300 megawatts or more;

(c) an electric line installed above ground with—

(i) a voltage of 220 kilovolts or more; and

(ii) a length of more than 15 kilometres.

4.1.11 The Proposed Development falls within the definition of Schedule 1 (c)(i), as it would be at a voltage of 400kV but does not meet the length threshold of 15 km Schedule 1 (c) (ii). Therefore, the Proposed Development does not meet the criteria in Schedule 1. The Proposed Development falls within the criteria within Schedule 2 (2)(a), as it would be an electric line installed above ground with a voltage of 132 kilovolts or more but does not meet the criteria for Schedule 2 (2)(b) (above ground in a sensitive area) and therefore did not require EIA screening. The modifications to the existing overhead lines are consented via Section 37 of the Electricity Act 1989 and, although described in this Environmental Statement accompanying the planning application, do not form part of the Town and Country Planning Act planning application. A Section 37 consent application will be sought from the Department of Energy Security and Net Zero. A

Planning Permission

4.1.12 National Grid is seeking to secure full planning permission for specific elements of the Proposed Development by way of a planning application under the Town and Country Planning Act 1990 (Ref 9) to Thurrock Council. This is for the proposed new Sealing End Compound (SEC) and headhouse. The Planning Application will also allow for the temporary working areas and construction compounds associated with these works.

4.1.13 For the equivalent works south of the River Thames (Gravesend) National Grid is seeking to secure full planning permission for specific elements of the Proposed Development by way of a planning application under the Town and Country Planning Act 1990 to Gravesham Borough Council for the proposed new SEC and tunnel headhouse.

4.1.14 Table 4-1 provides a summary of the different consenting regimes relevant to the Proposed Development.

Table 4-1: Summary of Primary Consenting Regimes

Project Compound	Primary Consent	Determining Authority
Permanent Work at Tilbury		
New Cable Tunnel, Sealing End Compound and Tunnel Headhouse	Full Planning Permission, Town and Country Planning Act 1990 (TCPA) (as amended) (Ref 12)	Thurrock Council
Permanent Work at Gravesend		
New Cable Tunnel, Sealing End Compound and Tunnel Headhouse	Full Planning Permission, Town and Country Planning Act 1990 (TCPA) (as amended) (Ref 12)	Gravesham Borough Council
New Bored Tunnel		
New Bored Tunnel (from Mean High Water Spring)	No consent required (Section 35 of The Marine Licensing (Exempted Activities) Order 2011 (Ref 13))	Marine Management Organisation (MMO)

Project Compound	Primary Consent	Determining Authority
Overhead Line Works and reconfiguration (at Tilbury and Gravesend)		
Overhead Line Works and reconfiguration	Section 37 Consent under the Electricity Act 1989 (Ref 14)	Department of Energy Security and Net Zero (DESNZ)

5 Planning Policy Summary

5.1 Introduction

- 5.1.1 This Planning Application to be determined by the Authority in accordance with Section 38(6) of the Planning and Compulsory Purchase Act 2004 (Ref 15). Thurrock Council is required to determine the planning application in accordance their Core Strategy and Policies for Management of Development and other material considerations, including national planning policy.
- 5.1.2 This section sets out a summary of the planning policy context relevant to the Proposed Development, including the Development plan, plus relevant policies of the emerging Development Plan and other national and local policies that are likely to be material considerations in the planning decision.

5.2 The Core Strategy and Policies for Management of Development (Thurrock Council)

- 5.2.1 The Core Strategy and Policies for Management of Development (Core Strategy) (Ref 16) is currently Thurrock Council's main local plan document. It was originally adopted on 21 December 2011 and updated on 28 January 2015 following an independent examination.
- 5.2.2 The Core Strategy comprises 19 objectives, three spatial policies, 10 thematic policies and 16 policies for management of development to provide the framework for the council's jurisdiction up to 2026 so as to build a successful and sustainable future in which land and sites are made available for health, education, open space, industry and housing, together with improved accessibility to these facilities by all sections of the community.
- 5.2.3 Objectives SSO1, SSO2, SSO7, SSO14, SSO16, SSO17 and SSO18 are considered most relevant to the consideration of the Proposed Development and are reflected throughout the policies.
- 5.2.4 The relevant spatial policies comprise:
- **CSSP3: Sustainable Infrastructure** sets out the Council's strategy for the delivery of modern, effective social and physical infrastructure and identified Key Strategic Infrastructure Projects as essential to the delivery of the Core Strategy;
 - **CSSP4: Sustainable Green Belt** sets out the purposes of the green belt and appropriate development within it, as well as the council's strategic planning approach to sustaining the Green Belt in Thurrock; and
 - **CSSP5: Sustainable Greengrid** sets out the Thurrock Greengrid Strategy, of which one of the key elements is green infrastructure, such as green roofs.
- 5.2.5 The relevant thematic policies comprise:
- **Policy CSTP13: Emergency Services and Utilities** sets out the Council's approach to ensuring adequate infrastructure for public utilities including electricity;
 - **Policy CSTP19: Biodiversity** sets out the Council's approach to encouraging development to include measures to contribute positively to the overall biodiversity in the borough;
 - **Policy CSTP22: Thurrock Design** sets out the Council's approach to promoting high quality design in Thurrock which balances physical, social, economic and environmental outcomes;
 - **Policy CSTP24: Heritage Assets and the Historic Environment** sets out the Council's approach to preserving or enhancing the historic environment;
 - **Policy CSTP25: Climate Change** sets out the Council's approach to climate change, including adaption and mitigation;

- **Policy CSTP26: Renewable or Low-Carbon Energy Generation** sets out the Council's approach to promoting and facilitating the shift to low-carbon, including the promotion of the delivery of energy networks in appropriate locations;
- **Policy CSTP27: Management and Reduction of Flood Risk** sets out the Council's approach to ensuring flood risk management is implemented and in accordance with the NPPF;
- **Policy CSTP28: River Thames** sets out the Council's approach to ensure that the economic and commercial function of the River Thames continues to be promoted;
- **Policy CSTP29: Waste Strategy** sets out the Council's strategic approach toward planning for the additional waste management capacity throughout the Plan period and sets the strategic planning policy context for site allocations within the Minerals and Waste Development Plan Document (MWDPD); and
- **Policy CSTP31: Provision of Minerals** sets out the Council's position on encouraging greater recycling and re-use of construction and demolition (C&D) waste.

5.2.6 The relevant policies for the management of development comprise;

- **Built Environment:**
 - **PMD1: Minimising Pollution and Impacts on Amenities;**
 - **PMD2: Design and Layout;**
 - **PMD4: Historic Environment.**
- **Natural Environment:**
 - **PMD6: Development in the Green Belt; and**
 - **PMD7: Biodiversity, Geological Conservation and Development;**
- **Transport and Access:**
 - **PMD10: Transport Assessments and Travel Plans.**
- **Climate Change:**
 - **PMD12: Sustainable Buildings;**
 - **PMD13: Decentralised, Renewable and Low Carbon Energy Generation; and**
 - **PMD 14: Carbon Neutral Development.**
- **Flood Risk:**
 - **PMD15: Flood Risk Assessment.**
- **Developers Contribution:**
 - **PMD16: Developer Contributions.**

Essex Minerals Local Plan – Adopted First Review, Jan 1997

5.2.7 Thurrock Council's development plan for minerals is comprised of both the adopted Core Strategy and the saved Essex Minerals Local Plan adopted first review, November 1996 (Ref 17). These will remain the adopted policies for minerals until the new local plan is adopted.

New Local Plan

5.2.8 In February 2014, Thurrock Council started work on a new Local Plan. Two 'issues and options' consultations have taken place in 2016 and 2018 respectively. Thurrock Council now in the process of preparing a draft Local Plan building on the Issues and Options stages and considering new and updated evidence. No draft was available at the time of writing this Planning Statement, though it is understood the submission of the Regulation 18 consultation is imminent. .

5.3 National Planning Policy and Guidance

5.3.1 The National Planning Policy Framework (NPPF) (Ref 18) was revised on 5 September 2023 and sets out the government's planning policies for England and how these are expected to be applied. The NPPF was first published in March 2012, revised in 2018, 2019 and finally 2023.

5.3.2 The NPPF sets out national policies that guide plan-making and decision taking at a local level. At its heart is a *"presumption in favour of sustainable development"* (Paragraph 10) that is necessary to allow sustainable development to be pursued in a positive way. Paragraph 11 explains that...:

"...For decision-taking this means:

c) approving development proposals that accord with an up-to-date development plan without delay; or

d) where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date, granting permission unless:

i. the application of policies in this Framework that protect areas or assets of particular importance provides a clear reason for refusing the development proposed; or

ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole."

5.3.3 In addition, Paragraph 12 sets out that planning authorities also may take decisions that depart from an up-to-date Development Plan if material considerations indicate that the plan should not be followed. Paragraph 38 expands on this, stating that that *"planning authorities should approach decisions on proposed development in a positive and creative way"* and *"should seek to approve applications for sustainable development where possible"*. Paragraph 6 sets out that statements of government policy represent material considerations in planning decisions:

"Other statements of government policy may be material when preparing plans or deciding applications, such as relevant Written Ministerial Statement and endorsed recommendations of the National Infrastructure Commission."

5.3.4 Paragraph 20(b) explains that strategic policies of Development Plans should set out an overall strategy that makes sufficient provision for infrastructure, including energy infrastructure.

5.3.5 Sections 5 to 17 of the NPPF set out how planning policies and decisions should contribute to achieving particular thematic objectives.

5.3.6 Section 6 describes how planning policies and decisions should help to build a strong, competitive economy. At Paragraph 81 it states that:

"Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development. The approach taken should allow each area to build on its strengths, counter any weaknesses and address the challenges of the future."

5.3.7 Section 11 address the theme 'making effective use of land. It states that:

"Planning policies and decisions should promote an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions" (Paragraph 119).

5.3.8 Section 12 addresses the theme of 'achieving well designed places'. It states that:

"Good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities." (Paragraph 126).

5.3.9 Paragraph 130 sets out that planning decisions should ensure that developments (inter alia):

- function well over the long term;

- make use of good architecture, layout and effective landscaping in order to be
- visually attractive; and
- are sympathetic to local character, landscape and history, whilst not preventing or discouraging appropriate innovation or change.

5.3.10 'Meeting the challenge of climate change, flooding and coastal change' is the theme of Section 14. This sets out that "the planning system should support the transition to a low carbon future in a changing climate", and "support renewable and low carbon energy and associated infrastructure" (Paragraph 152).

5.3.11 Paragraph 158 states that:

"When determining planning applications for renewable and low carbon development, local planning authorities should:

a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and

b) approve the application if its impacts are (or can be made) acceptable..."

5.3.12 Regarding flood risk, Paragraph 159 sets out that inappropriate development in areas at risk of flooding should be avoided. It also states that any development in development in flood risk areas should not increase flood risk elsewhere and should be safe for its lifetime.

5.3.13 In determining planning applications for development in areas at risk of flooding, Paragraph 167 sets out that the sequential and exception tests should be applied, and that:

- within the site, the most vulnerable development to flooding is located in the areas of lowest flood risk;
- the development is appropriately flood resistant and resilient;
- sustainable drainage systems are incorporated;
- any residual risk can be safely managed; and
- safe access and escape routes are available and included in an emergency plan.

5.3.14 The Sequential Test is described and provides that "development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding" (Paragraph 162).

5.3.15 Paragraph 164 explains the exception test, stating that:

"To pass the exception test it should be demonstrated that:

a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and

b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall."

5.3.16 Section 15 considers the theme of 'conserving and enhancing the natural environment. This sets out at Paragraph 174 that planning decisions should:

- protect and enhance valued landscapes, sites of biodiversity value and soils in a manner commensurate with their statutory status;
- recognise the value of the countryside, including best and most versatile agricultural land, trees and woodland;
- maintain the character of undeveloped coast;

- minimise impacts on biodiversity and provide net gains, including by establishing ecological networks;
- prevent new development from contributing to unacceptable levels of soil, air, water or noise pollution; and
- remediate and mitigate despoiled, degraded, contaminated and unstable land, where appropriate.

5.3.17 Paragraph 175 explains that planning should distinguish between the hierarchy of international, national and locally designated sites, and Paragraphs 179 to 182 address 'habitats and biodiversity'. Paragraph 179 sets out that planning authorities should apply the below principles when determining planning applications:

- Planning permission should be refused if significant harm to biodiversity cannot be avoided, adequately mitigated, or (as a last resort) compensated for;
- Development that would have an adverse effect on a Site of Special Scientific Interest (SSSI) should only normally be permitted if the benefits of the development in the location outweigh its impact on the features of the site that make it of special scientific interest; and
- Only approve development that would result in the loss or deterioration of irreplaceable habitats such as ancient woodland or veteran trees if there are wholly exceptional reasons and a suitable compensation strategy.

5.3.18 Paragraph 181 sets out that projects that would be likely to have a significant effect on habitats sites (Special Protection Areas (SPA), Special Areas of Conservation (SAC), and Ramsar sites) should be subject to appropriate assessment. Paragraph 182 explains that the presumption in favour of sustainable development would not apply unless that assessment has concluded that the project would not adversely affect the integrity of the habitats site.

5.3.19 Paragraphs 183-188 address 'ground conditions and pollution'. It describes how policies and decisions should ensure that appropriate assessment of ground conditions is undertaken, taking into account historical use, requirement for remediation, and future proposed use. Paragraph 184 identifies that *"Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner"*.

5.3.20 In considering the effects of pollution resulting from the proposed development, paragraph 185 states that:

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development."

5.3.21 Section 16 of the NPPF addresses the theme of 'conserving and enhancing the historic environment'. It sets out that heritage assets should be conserved in a manner appropriate to their significance. Paragraph 202 states that where a development would lead to less than substantial harm to the significance of a designated heritage asset, the harm should be weighed against the public benefits of the development.

5.3.22 Section 17 of the NPPF addresses the theme of 'facilitating the sustainable use of minerals' and identifies that "it is essential that there is a sufficient supply of minerals to provide the infrastructure, buildings, energy and goods that the country needs" (Paragraph 209) and therefore "Local planning authorities should not normally permit other development proposals in Mineral Safeguarding Areas if it might constrain potential future use for mineral working" (Paragraph 212).

5.3.23 The NPPF includes three Annexes; with Annex 1 and 3 being considered relevant to the Proposed Development:

- Annex 1 (Implementation) sets out how the policies within the NPPF are to be applied in both decision and plan making. In both cases, policies within the NPPF material considerations which should be taken into account in dealing with applications from the day of its publication.

Annex 1 also describes that due weight should be given to them Local Plan policies, according to their degree of consistency with this NPPF.

- Annex 3 (Flood Risk Vulnerability Classification) sets out 5 different 'risk' classifications. As noted, the entirety of the Site is within Flood Zone 1. Notwithstanding, the nature of the Proposed Development is considered to fall under the following classification:

“Essential Infrastructure - Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including infrastructure for electricity supply including generation, storage and distribution systems; and water treatment works that need to remain operational in times of flood.”

Planning Practice Guidance

5.3.24 The Planning Practice Guidance⁵ (PPG) (Ref 19) was first published in the 2014 and with together with the NPPF it set out what the Government expects of local authorities. The PPG is separated into 42 pieces of guidance covering all aspects of the planning process. The relevant sections are:

- Air quality – 1 November 2019;
- Climate change – 15 March 2019;
- Design: process and tools – 1 October 2019;
- Determining a planning application – 24 June 2021;
- Effective use of land – 22 July 2019;
- Flood risk and coastal change – 25 August 2022;
- Healthy and safe communities – 7 August 2022;
- Historic environment – 23 July 2019;
- Light pollution – 1 November 2019;
- Minerals – 17 October 2014;
- Natural environment – 21 July 2019;
- Noise – 22 July 2019;
- Open space, sports and recreation facilities, public rights of way and local green space - 6 March 2014;
- Renewable and low carbon energy – 14 August 2023; and
- Tree Preservation Orders and trees in conservation areas – 6 March 2014.

⁵ <https://www.gov.uk/government/collections/planning-practice-guidance>

December 2023 July 2024

National Character Area profiles

- 5.3.25 The Proposed Development lies within The Greater Thames Estuary National Character Area National Character Area (NCA) (Ref 6) which is defined as forming “*the eastern edge of the London Basin, and its extensive underlying geology of London Clay provides links with the Northern Thames Basin NCA and, further west, the Inner London NCA*”.
- 5.3.26 The NCA is characterised as lying between the North Sea and the rising ground of the adjacent North Kent Plain and Northern Thames Basin NCAs which provide a backdrop to the extensive flat open spaces of the estuary. Uninterrupted, far-reaching views out across the Thames to the opposite banks are possible from this higher ground, and industrial and historic military landmarks are highly visible in this predominantly low-lying marshy coastal landscape.
- 5.3.27 The NCA has identified four ‘Statement of Environmental Opportunity’ (SEO) which identify ways that could help to achieve sustainable growth and a more secure environmental future:
- **SEO1:** Maintain and enhance the expansive, remote coastal landscape – with its drowned estuaries, low islands, mudflats, and broad tracts of tidal salt marsh and reclaimed grazing marsh – maintaining internationally important habitats and their wildlife, and underlying geodiversity, while addressing the impacts of coastal squeeze and climate change and considering dynamic coastal processes;
 - **SEO2:** Work with landowners and managers to incorporate measures to improve biodiversity, geodiversity, pollination, water quality, soil quality and climate adaptation and to prevent soil erosion in this important food providing landscape, while maintaining its historic character;
 - **SEO3:** Ensure that the tranquil and remote character of the estuary is maintained by conserving and enhancing important coastal habitats and distinctive historic and geological features, while providing increased opportunities for recreation and enjoyment of the landscape;
 - **SEO4:** Encourage a strategic approach to development that is informed by and makes a positive contribution to local character, incorporates green infrastructure which provides ecosystem services where they are needed most, and promotes recreation and addresses climate change, while maintaining important open mosaic and coastal habitats, and historic and geological features.

Government Papers

The Energy White Paper – Powering our Net Zero Future (2020)

- 5.3.28 The Energy White Paper – Powering our Net Zero Future (EWP) (Ref 20) was presented to Parliament in December 2020 and builds on the Prime Minister’s Ten Point Plan. At the core of the EWP is the commitment to achieve net zero and tackle climate change. The EWP seeks to put in place a strategy for the wider energy system that transforms energy, supports a green recovery, and creates a fair deal for consumers (page 4).
- 5.3.29 Chapter 2 of the EWP deals with ‘Power’ with the stated goal being to use electricity to enable the transition away from fossil fuels and decarbonise the economy cost-effectively by 2050. Figure 3.2 of the plan, ‘Electricity demand, Net Zero scenarios’ (page 42) highlights how electricity demand could double by 2050 as electricity replaces the use of petrol and diesel in transport and to some extent, gas for heating. This would require a four-fold increase in clean electricity generation with the decarbonisation of electricity being required to underpin the delivery of the net zero target. On page 76 of the EWP it is recognised that in order to maintain a resilient and reliable electricity network that can accommodate this increase in generation further investment is needed in physical infrastructure, and that this investment is supported by the government.
- 5.3.30 The EWP commits to complete a review of the existing energy National Policy Statements (NPS), with the aim of designating updated NPS by the end of 2021.

Net Zero Strategy: Build Back Greener October 2021

5.3.31 The Net Zero Strategy Policy Paper (Ref 21) sits alongside the EWP and sets out the government's vision of using the necessary action to tackle climate change as an economic opportunity to create prosperity. It builds on the Ten Point Plan for a Green Industrial Revolution (Ref 23), setting out four key principles to achieve net zero:

- "We will work with the grain of consumer choice: no one will be required to rip out their existing boiler or scrap their current car;
- We will ensure the biggest polluters pay the most for the transition through fair carbon pricing;
- We will ensure that the most vulnerable are protected through Government support in the form of energy bill discounts, energy efficiency upgrades, and more;
- We will work with businesses to continue delivering deep cost reductions in low carbon tech through support for the latest state of the art kit to bring down costs for consumers and deliver benefits for businesses."

5.3.32 Part 3i (Power) makes a number of key commitments to deliver a decarbonised power system by 2035, including:

- Subject to supply, all electricity will come from low carbon sources by 2035;
- Deliver 40GW of offshore wind by 2030;
- Investing in supply chains, infrastructure and early-coordination of offshore transmission networks for the offshore wind sector;
- Ensure the planning system can support the deployment of low carbon energy infrastructure.

British Energy Security Strategy April 2022

5.3.33 The British Energy Security Strategy (Ref 21) sets out the government's energy security strategy for Britain. It refers to the Ten Point Plan (Ref 10) and delivery so far in terms of green job generation and private investment. The strategy sets out eight points to achieve energy security comprising:

- **Immediate support on energy bills** including help for families including financial packages of support, reductions in energy bills and funds including Warm Home Discount, Household Support Funds and support for cost of living, as well as help for industry by increasing aid intensity;
- **Energy efficiency** – by improving the efficiency of British homes through various strategies including the Heat and Buildings Strategy with accompanying financial support as well as Home Upgrade Grant, the Social Housing Decarbonisation Fund, upgrading public sector buildings, and expanding the Energy Company Obligation;
- **Oil and gas** – by sending clear signals on the role of gas in the transition to net zero, by fully utilising the North Sea reserve through new licensing, establishing Gas and Oil New Project Regulatory Accelerators, reducing the emissions of offshore oil and gas further, as well as delivering the four Carbon Capture, Usage and Storage (CCUS) clusters by 2030;
- **Renewables** – accelerating the transition from fossil fuels through investment in offshore and offshore wind projects, and solar and other technologies;
- **Nuclear** – through investment in the nuclear sector by launching the Future Nuclear Enabling Fund, the setup of the Great British Nuclear Vehicle and backing Great British Nuclear with funding;
- **Hydrogen** – through doubling ambition up to 10GW of low carbon hydrogen production capacity by 2030, aiming to run annual allocation rounds for electrolytic hydrogen, designing new business models for hydrogen transport and storage infrastructure and setting up a hydrogen certification scheme by 2025;

- **Networks, storage and flexibility** – accelerating the domestic supply of clean and affordable electricity also requires accelerating the connecting network infrastructure to support it. Total costs will be lowered by various mechanisms including establishing the Future System Operator as soon as practicable, publishing a strategic framework with Ofgem, appointing an Electricity Networks Commissioner, updating National Policy Statements, setting out blueprints for the whole system in the Holistic Network Design and Centralised Strategic Network Plan and more; and
- **International Delivery** – working with international partners to maintain stable energy markets and prices, reducing global reliance on Russian fossil fuels and supporting other countries to make the same transition to clean, affordable and secure energy.

5.4 Emerging National Planning Policy

Energy National Policy Statements (NPS)

Overarching National Policy Statement for Energy (EN-1) (2023)

- 5.4.1 The ‘Overarching National Policy Statement for Energy (EN-1)’ (NPS EN-1) (Ref 24) sets out national policy for energy infrastructure developments that meet the Planning Act 2008 definition of ‘Nationally Significant Infrastructure Projects’ (NSIPs). Applications for NSIP developments are determined by the Secretary of State in accordance with the Planning Act 2008. The Proposed Development does not meet the definition of a NSIP under Part 3, Sections 15-21, and the regime does not cover tunnelled cables under rivers. The Proposed Development therefore remains subject to the need for Planning Permission under the Town and Country Planning Act 1990, with the Application determined by the Local Planning Authority. However, Paragraph 5 of the NPPF states that “National policy statements form part of the overall framework of national planning policy and may be a material consideration in preparing plans and making decisions on planning applications.”
- 5.4.2 In NPS EN-1, the Government sets out that energy is essential to our wellbeing, stating that “it is difficult to overestimate the extent to which our quality of life is dependent on adequate energy supplies” (Paragraph 3.2.1). It also explains that the way in which we use energy is being transformed as we seek to become less dependent on fossil fuels, including by embracing new and innovative low carbon technologies. Whilst becoming less reliant on some forms of energy, it says we will also “become more dependent on others – for example, demand for electricity will increase if we electrify large parts of transport, heating and industry”.
- 5.4.3 In Paragraph 3.2.3 the Government sets out that “without significant amounts of new large-scale energy infrastructure, the objectives of its energy and climate change policy cannot be fulfilled”. It therefore considers that “the need for such infrastructure will often be urgent” and acknowledges that “it will not be possible to develop the necessary amounts of such infrastructure without some significant residual adverse impacts”.
- 5.4.4 Section 3.7 focuses on the need for new electricity network infrastructure, building in better distribution to where energy is needed adding network resilience to meet growth and demand. Paragraph 3.7.3 sets out this position, advising that “new electricity network infrastructure projects, which will add to the reliability of the national energy supply, provide crucial national benefits, which are shared by all users of the system”.
- 5.4.5 The Electricity Networks Strategy Group (ENSG) was tasked with:
- *“developing electricity generation and demand scenarios consistent with the EU target for 15% of the UK’s energy to be produced from renewable sources by 2020; and*
 - *identifying and evaluating a range of possible electricity transmission networks solutions that would be required to accommodate these scenarios.”* (paragraph 3.7.4)
- 5.4.6 The report looked at a range of scenarios to overcome the issues identified. Paragraph 3.7.5 highlights that “in particular, the scenarios examined the potential new transmission infrastructure

needed to connect the large volumes of onshore and offshore wind generation required to meet the 2020 renewables target”.

- 5.4.7 ENSGs report identifies a number of scenarios to change the direction of net electricity flows, including from Scotland but that in order to do so significant investment would be need in transmission infrastructure as the “kinds of flows of power cannot be accommodated by the existing network” (paragraph 3.7.7).
- 5.4.8 Paragraph 3.7.8 states that “the Government believes that the ENSG work represents the best available overview of where the electricity networks will need to be reinforced and augmented in order to achieve the UK’s renewable energy and security of supply targets and will therefore be relevant to the IPC’s consideration of electricity network proposals”. Whilst other solutions may present themselves, such as new generating stations, these come with barriers. As such, and as noted in paragraph 3.7.10, “there is an urgent need for new electricity transmission and distribution infrastructure (and in particular for new lines of 132 kV and above) to be provided”,
- 5.4.9 Section 4 of the NPS sets out a suite of assessment principles for which applications relaying to energy will be tested against however the overarching position is a presumption in favour of granting consent. Section 5 sets out the generic impacts by which relevant development will need to consider and respond to accordingly.

National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023)

- 5.4.10 The ‘National Policy Statement for Electricity Networks Infrastructure (EN-5)’ (NPS EN-5) (Ref 25) “provides the primary basis for decisions taken by the Infrastructure Planning Commission (IPC) on applications it receives for electricity networks infrastructure” (Paragraph 1.2.1). Section 1.8 sets out the types of electricity network infrastructure covered by the NPS EN-5, and includes transmission and distribution systems, and associated infrastructure including convertor stations to convert DC power to AC power (and vice versa).
- 5.4.11 NPS EN-5 is considered helpful when considering energy infrastructure under the Town and Country Planning Act 1990, with Part 2 focusing on ‘Assessment and Technology-Specific Information’. Section 2.2 discuss site selection, with paragraph 2.2.2 stating:
“The general location of electricity network projects is often determined by the location, or anticipated location, of a particular generating station and the existing network infrastructure taking electricity to centres of energy use. This gives a locationally specific beginning and end to a line. On other occasions the requirement for a line may not be directly associated with a specific power station but rather the result of the need for more strategic reinforcement of the network. In neither circumstance is it necessarily the case that the connection between the beginning and end points should be via the most direct route (indeed this may be practically impossible), as the applicant will need to take a number of factors, including engineering and environmental aspects, into account.”
- 5.4.12 Whilst NPS EN-5 sets out its own policies, it makes regular reference to the generic policies in EN-1 so it should be read in conjunction.

Update: Energy National Policy Statements

- 5.4.13 The Energy White Paper (EWP) (Ref 20) sets out how the UK will clean up its energy system and reach net zero emissions by 2050. The EWP announced that the government would review the current Energy NPS’ to reflect the policies and broader strategic approach set out in the white paper and ensure that we continue to have a planning policy framework which can support the infrastructure required for the transition to net zero.
- 5.4.14 Consultation ran from 6 September 2021 to 29 November 2021; with the consultation responses being reviewed by the Department for Energy Security and NetZero (DESNZ), known at the time as the Department for Business, Energy & Industrial Strategy (BEIS).
- 5.4.15 A government response to the public consultation was published in September 2021, concentrating on the key themes from the consultation. In March 2023, updated NPSs EN-1 to EN-5 were released for consultation, closing in June 2023.

Overarching National Policy Statement for Energy (EN-1)

- 5.4.16 The forthcoming National Policy Statements (2023) will be coming into force in early 2024. In its revised overarching policy statement (Ref 26), the government acknowledged that much of its plans to decarbonise the UK's economy involves electrification, such as in the areas of transport, heat and industry, and that this in itself would likely result in more than half of the UK's energy demand being met by electricity by 2050, up from just 17% in 2019.
- 5.4.17 The revised EN-1 policy also states the need to ensure that there is security of energy supply in the UK and that the cost of energy is affordable for end-users. It states the need for new energy infrastructure in this regard is "urgent" and has proposed that the UK's energy infrastructure be made up of a mix of energy sources, including renewables, nuclear, low carbon hydrogen, residual use of unabated natural gas and crude oil fuels for heat, electricity, transport, and industrial applications.
- 5.4.18 The draft EN-1 also acknowledges that different types of electricity infrastructure will be needed and includes an explanation of the need for new generation, network, storage and interconnection infrastructure, alongside energy efficiency and demand-side response measures.

National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023)

- 5.4.19 The revised NPS EN-5 has been updated (Ref 27) to reflect the importance of building electricity network infrastructure that not only connects new generation with centres of demand, but also guarantees system robustness and security of supply even as the energy system grows increasingly complex. It has also been revised to reflect the current policy and regulatory landscape.
- 5.4.20 A new section has been added specifically dealing with the question of rights and interests in land, which encourages developers to pursue permanent land rights wherever possible, rather than relying on wayleaves, to provide a more stable and secure footing, as well as ensuring better value for electricity billpayers in the long run. Guidance has also been clarified around developers pursuing the compulsory acquisition of rights in land for the purposes not only of the construction itself, but also for any necessary mitigation and/or biodiversity net gain schemes.
- 5.4.21 Bringing the document in line with updates to relevant environmental regulations, requirements have been added on developers to safeguard the soil quality of the land they use, and to take measures to reduce or eliminate the fugitive emission of sulphur hexafluoride (SF6) from network assets into the atmosphere. The document also contains guidance on the types of biodiversity net gain scheme best suited to the linear nature of electricity networks infrastructure, such as reconnecting habitats via green corridors.

5.5 Other Policy and Legislation

Environment Act 2021

- 5.5.1 The Environment Act 2021 (Ref 28) will set clear statutory targets for the recovery of the natural world in four priority areas: air quality, biodiversity, water and waste, and includes an important new target to reverse the decline in species abundance by the end of 2030. The 2021 Act has been shrined into law and will come in to force in January 2024 for TCPAs.

Climate Change Act 2008

- 5.5.2 The Climate Change Act 2008 (Ref 29) establishes a legally binding target to reduce the UK's greenhouse gas emissions by at least 80% in 2050 from 1990 levels. To drive progress and set the UK on a pathway towards this target, the Act introduced a system of carbon budgets including a target that the annual equivalent of the carbon budget for the period including 2020 is at least 34% lower than 1990. The Climate Change Act 2008 also requires the government to:
- assess regularly the risks to the UK of the current and predicted impact of climate change;
 - set out its climate change adaptation objectives; and
 - set out its proposals and policies for meeting these objectives.

Planning and Compulsory Purchase Act 2004

- 5.5.3 Section 19(1A) of the Planning and Compulsory Purchase Act 2004 requires local planning authorities to include in their Local Plans “policies designed to secure that the development and use of land in the local planning authority’s area contribute to the mitigation of, and adaptation to, climate change”. This will be a consideration when a Local Plan is examined.

6 Planning Appraisal

6.1 Introduction

- 6.1.1 This section of the Planning Statement contains an appraisal of the Proposed Development against the planning policy framework as set out in Section 0, focusing on the strategic and core land use policies to consider the acceptability of the 'principle' of the Proposed Development.
- 6.1.2 Following the review of Thurrock Council's Core Strategy and Policies for Management of Development and other main planning policy material considerations, the following main policy themes have been identified:
- **Theme 1:** The urgent need for electricity network reinforcement;
 - **Theme 2:** Flood Risk;
 - **Theme 3:** Biodiversity and Nature Conservation;
 - **Theme 4:** Archaeology; and
 - **Theme 5:** Waste and Minerals.
- 6.1.3 This section presents an appraisal of the Proposed Development in accordance with the above policy themes.

6.2 Theme 1: The urgent need for electricity network reinforcement

- 6.2.1 The purpose of the Proposed Development is in direct accordance with national and local planning policy and other national policy and legislation which sets out a clear need for new electricity transmission infrastructure in order to support delivery of objectives and commitments for the energy system and climate change.
- 6.2.2 In particular, the Proposed Development will directly address the specific need for the uprating of the TKRE 400 kilovolt (kV) circuits in the existing tunnel under the River Thames, which will be significantly overloaded in their current capacity as a result of the large amount of renewable and low carbon energy generation connecting in to the transmission network in the east coast of England, together with the three interconnectors from the continent as set out by paragraphs 3.3.46, 3.3.66 and 3.3.67 of draft NPS EN-1.
- 6.2.3 The NPSs and draft NPSs can be material considerations in the determination of Planning Applications. Therefore, the contribution the Proposed Development would make to meeting this need, which paragraph 3.3.63 of NPS EN-1 sets out to be urgent, is considered to be a material consideration that weighs heavily in favour of planning permission being granted for the Proposed Development.
- 6.2.4 Other national and local planning policy is aligned with the urgent need for new electricity transmission infrastructure that is set out by the NPS EN-1 and draft NPS EN-1. This includes paragraph 152 of the NPPF which states that the planning system should support the transition to a low carbon future, including by supporting the development of infrastructure that supports low carbon energy. By being an essential element of NETS that is needed to transport renewable energy from where it is generated to where it is needed, the Cable Tunnel Replacement Project is an important part of the infrastructure that paragraph 152 of the NPPF supports in principle.
- 6.2.5 At a local level, the Thurrock Council Local Plan expresses support for developments that will help to address the causes of climate change, as set out below.
- 6.2.6 Policy CSTP26: Renewable or Low-Carbon Energy Generation sets out that Thurrock Council will encourage opportunities to generate energy from non-fossil fuels and low-carbon sources, promoting and facilitate delivery of district energy networks in appropriate locations, in order to increase the proportion of energy delivered from renewable and low-carbon sources in the Borough.

The proposed development would make an important contribution to enabling the objectives and commitments for the energy system and climate change to be achieved.

6.3 Theme 2: Flood Risk

- 6.3.1 The Flood Risk Assessment submitted with the planning application (document reference 30003364-BHK-XX-XX-RP-C-02060) reviews the risks associated with the Proposed Development, assessing the sources of flood risk to the Proposed Development as well as the impact of the Proposed Development on flood risk elsewhere.
- 6.3.2 In line with local and national policy and guidance a Sequential Test has been undertaken and is described in the Flood Risk Assessment. The purpose of a sequential test is to seek to steer development to areas with the lowest risk of flooding. A number of alternative solutions were identified for the upgrade of the cable crossing. The selection of the strategic option and site of the Proposed Development is explained and justified in Volume II Chapter 2: Alternatives, of the ES. No other suitable sites are reasonably available for provide practical or viable options for construction of a shaft or cable tunnel which meet the requirements for the Proposed Development.
- 6.3.3 Given the nature of the Proposed Development it is considered to align closely with the vulnerability classification of 'Essential Infrastructure' land use (based on Table 2 of the PPG Technical Guidance).
- 6.3.4 Essential Infrastructure includes:
- “Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including infrastructure for electricity supply including generation, storage and distribution systems...”*
- 6.3.5 In accordance with Paragraph 159 of the NPPF, Table 3: Flood Risk Vulnerability and Flood Zone Compatibility in PPG, states that the Proposed Development is appropriate in Flood Zone 1 and 2, and subject to the Exception Test in Flood Zone 3a and 3b.
- 6.3.6 The Proposed Development in Tilbury is in Flood Zone 3 and for the Exception Test to be passed it must be demonstrated that;
- The development would provide wider sustainability benefits to the community that outweigh flood risk and;
 - The development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible will reduce flood risk overall.
- 6.3.7 The need for the Proposed Development is set out in Section 1.5 and in Theme 1 of this Planning Statement. It concludes that the Proposed Development is important energy infrastructure that is urgently needed in order for the government's objectives and commitments for the energy system, including net zero, to be met. Paragraph 152 of the NPPF and the Thurrock Council Local Plan express support for development that will help to address the causes of climate change. The sustainability benefits of the Proposed Development, as per the first bullet point above, are therefore considered to be substantial and outweigh the flood risk associated with the Proposed Development (which is discussed below).
- 6.3.8 The FRA identifies there is potential flood risk to the Proposed Development from tidal and pluvial sources. The Tilbury CSEC is located in a Thames Estuary 2100 Policy 3 (P4) area for the Purfleet, Grays and Tilbury Policy Unit. This area will benefit from flood defences with climate change and sea level rise and the risk of tidal flood is expected to not change for the lifetime of the project.
- 6.3.9 The location of the Proposed Development necessitates construction work to take place in Flood Zone 3, and it is not possible to avoid working in Flood Zone 3. All temporary works of the construction project should be limited to the following:
- Water compatible facilities;
 - Flood-resilient facilities;
 - Flood repairable facilities; and

- Site roads and underground utilities.
- 6.3.10 The Contractor would be responsible for preparing a site-specific flood risk assessment to demonstrate that the site set up and temporary works comply with the requirements of the NPPF.
- 6.3.11 The Contractor would establish emergency response measures for construction activities in flood risk areas. The two key emergency response measures are:
- Readiness for the possibility of flooding; and
 - Development of a flood response plan (based on the Flood Warning and Evacuation Plan included in the Planning Application).
- 6.3.12 The Drainage Management Plan (included in the Planning Application, document reference 30003364-BHK-XX-XX-RP-C-02060) will be further developed during detailed design and include the following:
- Construction flood risk for each of the Gravesend and Tilbury Sites;
 - Temporary drainage design;
 - Construction water management;
 - Dewater management plan;
 - Protection of watercourses during works;
 - Infiltration ponds and drains during construction;
 - Silt retention ponds during construction;
 - Compensatory flood storage areas; and
 - Avoiding impacts on ground water resources.
- 6.3.13 The Proposed Development is therefore considered to meet the requirements of the Exception Test as set out by Paragraph 164 of the NPPF (reiterated in Section 6.3.6).
- 6.3.14 With the incorporation of embedded design mitigation and operational specific mitigation for flood risk, as the Proposed Development would have only a minor to negligible impact on surface water, which is not significant. It would not represent inappropriate development in its flood zone, would pass the Sequential and Exception tests, would be safe from flooding for its lifetime and would not increase the risk of flooding elsewhere. As such, the Proposed Development is considered to accord with Thurrock Council's Policy CSTP27, and paragraphs 159, 162, 164 and 167 of the NPPF.

6.4 Theme 3: Biodiversity and Nature Conservation

- 6.4.1 Chapter 7: Biodiversity - Tilbury in ES Volume III undertakes an assessment of the impacts of the Proposed Development on biodiversity, taking account of statutory and non-statutory designations, habitats and species.

Statutory and Non-Statutory Designations

- 6.4.2 The likely significant effects of the Proposed Development on statutory and non-statutory designations have been assessed. The impacts of the Proposed Development are not likely to result in any significant effect on the structure and function of:
- the Thames Estuary & Marshes SPA and Ramsar Site or the Mucking Flats and Marshes SSSI;
 - the Medway Estuary and Marshes SPA;
 - the Swanscombe Peninsula SSSI;
 - the Swanscombe MCZ; and
 - Tilbury Marshes LWS.

- 6.4.3 It is understood that Natural England is considering an extension to the Mucking Flats and Marshes SSSI, which could include some of the habitats within the Tilbury Site. While Natural England have shared the extent of the area that is being considered for inclusion, Natural England have yet to commence the formal process of notifying the interested parties of the proposed new extent, and confirming the reasons for the inclusion of each land parcel. As a consequence, it is not considered possible (or appropriate) at this stage to undertake an ecological assessment of the impacts of the Proposed Development on the structure and function of the expected SSSI extension. As a precaution, the likely designation of these habitat areas have been considered when evaluating the importance of the underlying habitat and species populations/assemblages that those areas earmarked for designation are known to currently support. However, through consultation with Natural England, careful siting of the Tilbury SEC has meant that the Proposed Development avoids direct permanent impacts on the proposed SSSI extension.
- 6.4.4 The proposed development at Tilbury will not result in any permanent loss of habitat from the Tilbury Power Station LWS, however there is some temporary work proposed associated with the removal of existing overhead lines. The corridor below the existing overhead lines and within 5m of it would be subject to temporary (approximately 12 weeks) disturbance by vegetation clearance and vehicles required to remove the cables. The effect of these changes are likely to be reversible within 12 months of the works through natural regeneration.

Habitats

- 6.4.5 There will be permanent and temporary habitat loss of approximately 2100m² and 14, 850m² respectively to provide access to the construction area, creation of new site access road, to enable existing utilities to be removed/upgraded/diverted and to facilitate the removal of existing overhead lines. The temporary habitat loss will be reinstated on completion of the works. Overall, following the implementation of proposed mitigation it is expected that the Proposed Development will during construction result in a temporary (approximately 3 years) adverse effect on the habitats at the Site level that is Not Significant. Following reinstatement and establishment this effect will be reversible and within 12 months of completion of construction and the increased structural diversity of the mosaic habitats is expected to represent a temporary beneficial effect at the Site level that is not significant for the following 1-2 years.

Species

- 6.4.6 The ES outlines that no significant effects on species have been identified by the Ecological Impact Assessment. Appropriate precautionary mitigation to ensure legislative compliance will be employed prior to the commencement of site establishment and clearance works including where required a precautionary method of working (PMoW) under an Ecological Clerk of Works (ECOW). Measures to specifically address potential effects of temporary disturbance to habitats and protected species they support are also proposed.

Biodiversity Net Gain

- 6.4.7 A biodiversity net gain (BNG) assessment has been undertaken for the Proposed Development in accordance with the published Natural England Biodiversity Metric 4.0, with a target of 10% net gain in biodiversity (striving for 15%) to be delivered to meet emerging planning policy, and to meet National Grid's corporate BNG commitment to the delivery of 10% BNG on all construction projects.
- 6.4.8 The ES provides a summary of the habitat reinstatement and enhancement measures that are committed to and are embedded into the BNG metric assessment. Options to deliver the minimum 10% net gain are outlined in the BNG Assessment and Strategy report.

Summary

- 6.4.9 On the basis that the impacts of the Proposed Development on biodiversity are not significant and that the Applicant is seeking to deliver a minimum of 10% BNG, the Proposed Development in Thurrock Council's jurisdiction accords with Policy CSTP19 and Paragraphs 174, 175 and 181 of the NPPF.

6.5 Theme 4: Archaeology

- 6.5.1 Chapter 9: Historic Environment of ES Volume III, presents an assessment of the impact of the Proposed Development in Tilbury on designated heritage assets. It concludes that the construction and operation of the Proposed Development will not significantly affect the setting of the Tilbury Fort (Scheduled Monument) or Tilbury Fort Officers Barracks. The Proposed Development is therefore in accordance with Policy CSTP25 and Paragraph 202 of the NPPF in relation to designated heritage assets.
- 6.5.2 Regarding buried archaeology, Chapter 9 of the ES sets out that mitigation measures have been embedded into the Proposed Development in order to minimise potential impacts on archaeology, which could be significant with the proposed mitigation. These mitigation measures include the development of a detailed archaeological mitigation strategy prior to construction. With the application of this mitigation the ES Chapter concludes with minor adverse (not significant) effects on buried archaeological remains, however the harm to archaeological remains is offset through the mitigation. The Proposed Development within Thurrock Council is therefore in accordance with Policy CSTP25 and Paragraph 202 of the NPPF in relation to designated heritage assets.

6.6 Theme 5: Mineral Safeguarding Areas

- 6.6.1 Thurrock Council's current local development plan in relation to minerals comprises the Thurrock Council Core Strategy and Policies for Management of Development (as amended, adopted 2015), and the saved Essex Minerals Local Plan adopted first review, (November 1996).
- 6.6.2 The Thurrock Council Proposals Map does not display Mineral Safeguarding Areas. Consequently, it is currently unclear at this stage whether the site lies within a MSA or a proposed MSA. In relation to Safeguarding Mineral Resources, Policy CSTP32 of the Thurrock Council Core Strategy and Policies for Management of Development (as amended, adopted January 2015) states:

"1. Mineral Safeguarding Area

All site allocations for mineral extraction identified in the forthcoming Thurrock Local Plan will be based on the MSA to be identified in the forthcoming Thurrock Local Plan and on the Proposals Map. All areas identified in the MSA will be safeguarded from non-mineral related development. Applications for non-mineral related development on the site allocations will be assessed against the policies provided in the forthcoming Thurrock Local Plan.

2. Aggregate Recycling and Secondary Processing Sites

The permanent authorised aggregate recycling capacity will be safeguarded from non-mineral related development, unless the proposals meet the criteria outlined in the forthcoming Thurrock Local Plan and/or the site is identified for alternative use in the forthcoming Thurrock Local Plan. All safeguarded sites will be allocated in the forthcoming Thurrock Local Plan.

3. Coated materials and concrete products

The permanent authorised facilities for concrete batching, manufacture of coated materials and concrete products, and the handling, processing and distribution of substitute, recycled and secondary aggregate material will be safeguarded from non-mineral related development, unless the proposals meet the criteria outlined in the forthcoming Thurrock Local Plan and/or identified for alternative use in forthcoming Thurrock Local Plan. All safeguarded sites will be allocated in the forthcoming Thurrock Local Plan.

4. Aggregate Wharves

All existing aggregate wharves will be safeguarded against proposals which prejudice their use for the importation of aggregates. The Council will favour proposals which contribute to the importation of aggregates where they accord with the policies in the forthcoming Thurrock Local Plan. New sites

for possible aggregate wharves will be encouraged through policies in the forthcoming Thurrock Local Plan. All existing aggregate wharves will be identified in the forthcoming Thurrock Local Plan.”

- 6.6.3 The Essex Minerals Local Plan adopted first review (November 1996) identifies a potential rail and marine depot at Tilbury Power Station approximately 220m to the west of the northern site.
- 6.6.1 Prior extraction of any safeguarded mineral in the area of the Proposed Development would not be commercially practicable, given the size and scale of the Proposed Development. Prior extraction would generate adverse impacts upon the environment, particularly given the sensitivities of the environs within the vicinity and the Proposed SSSI.
- 6.6.2 There is an overriding national need for the Proposed Development to be undertaken in order for the essential energy network upgrades to happen in Kent and Essex, helping the UK reach net zero by 2050.
- 6.6.3 The operational life of the Proposed Development is approximately 120 years. It is therefore also the case the any safeguarded mineral would not be sterilised permanently but that its availability for extraction would be delayed.

7 Conclusion and Planning Balance

- 7.1.1 The Proposed Development will comprise an essential part of the major reinforcement to the National Electricity Transmission System (NETS). The Proposed Development will directly address the specific need for the uprating of the TKRE 400 kilovolt (kV) circuits in the existing tunnel under the River Thames, which will be significantly overloaded in their current capacity as a result of the large amount of renewable and low carbon energy generation connecting in to the transmission network in the east coast of England, together with the three interconnectors from the continent as set out by paragraph 3.3.33 of NPS EN-1 (2023) (Ref 26).
- 7.1.2 As such, the Proposed Development represents enhanced electricity infrastructure that national planning policy sets out is urgently needed in order for the government's objectives and commitments for a secure and low carbon energy system to be achieved. The requirement to meet this urgent national need weighs heavily in favour of planning permission being granted. Local planning policy also supports the delivery of electricity infrastructure.
- 7.1.3 This Planning Statement and the supporting ES describe the approach taken by the Applicant that has mitigated many of the identified impacts of the Proposed Development. The ES identifies that no significant environmental effects are anticipated as a result of the construction, operation and decommissioning of the Proposed Development. However, these significant effects are not considered to result in non-compliance with Thurrock Council's Local Plan. Further, even if it was deemed that these did result in Development Plan non compliances, it is considered that the material consideration of the urgent need for the Proposed Development would outweigh such non compliances and identify that they should not prevent planning permission being granted.
- 7.1.4 The policy appraisal in Section 8 demonstrates broad compliance with Thurrock Council's Local Plan. The overarching need and benefits of the Proposed Development are clear and should be afforded significant weight in the determination of the planning application. In light of the national need and compliance with the Development Plan, it is considered that the evidence weighs heavily in favour of planning permission being granted.

8 References

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Ref 6 Natural England (2014). National Character Areas profiles. Available at: <https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles>

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Ref 9 HM Government (2017). The Town and Country Planning (Environmental Impact Assessment) Regulations 2017. Available at: <https://www.legislation.gov.uk/uksi/2017/571/contents/made>

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Ref 13 HM Government (2011). The Marine Licensing (Exempted Activities) Order 2011. Available at: <https://www.legislation.gov.uk/uksi/2011/409/contents/made>

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Ref 18 UK Government (2023). National Planning Policy Framework (NPPF) (2023). Available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

Ref 19 UK Government (2016, last updated 2021). Planning Practice Guidance. Available at: <https://www.gov.uk/government/collections/planning-practice-guidance>

Ref 20 Department for Business, Energy & Industrial Strategy (2020). Energy White Paper. Available at: <https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future>

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9 Abbreviations

Abbreviation	Meaning
AEP	Annual Exceedance Probability
aOD	above Ordnance Datum
ASTI	Accelerated Strategic Transmission Investment
BEIS	Department for Business, Energy & Industrial Strategy
BNG	Biodiversity Net Gain
CCUS	Carbon Capture, Usage and Storage
DBA	Desk Based Assessment
DESNZ	Department of Energy Security and Net Zero
EcIA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
ENSG	Electricity Networks Strategy Group
ES	Environmental Statement
ETYS	Electricity Ten Year Station
EWP	Energy White Paper
FES	Future Energy Scenarios
FRA	Flood Risk Assessment
GPR	Ground Penetrating Radar
HDD	Horizontal Directional Drilling
kV	Kilovolt
LAGB	London Area Green Belt
LCA	Landscape Character Assessment
LV	Low Voltage
LWS	Local Wildlife Site
MCC	Motor Control Centre
MMO	Marine Management Organisation
MSA	Minerals Safeguarding Area
MVA	megavolt amperes
NCA	National Character Area
NETS	National Electricity Transmission System
NOA	Network Options Assessment
NPPF	National Planning Policy Framework
NPS	National Policy Statements
NSIP	Nationally Significant Infrastructure Projects
OHL	Overhead line
PMoW	Precautionary Method of Working
PPG	Planning Practice Guidance
RSPB	Royal Society for the Protection of Birds
SAC	Special Areas of Conservation
SEC	Sealing End Compound
SF ₆	sulphur hexafluoride
SPA	Special Protection Areas

Abbreviation	Meaning
SRN	Strategic Road Network
SSSI	Site of Special Scientific Interest
TCPA	Town and Country Planning Act 1990
TKRE	Tilbury to Grain and Tilbury to Kingsnorth
WC	Water closet
WFD	Water Framework Directive
XLPE	Cross linked polyethylene

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Delegated Report

Planning Application

Application no:	20230668
Location:	Eastcourt Marshes Electricity Substation Mark Lane Gravesend Kent
Description:	Request for a screening opinion in accordance with The Town and Country Planning Act (Environmental Impact Assessment) Regulations 2017 in respect of one new shaft headhouse and one new cable sealing end compound.
Applicant:	Kate McGregor
Site Visit Date:	Not required for a screening opinion application

Proposal

This application comprises a request for a screening opinion in respect of one new shaft headhouse and one new cable sealing end compound which is one part of the Tilbury to Grain and Tilbury to Kingsnorth (TKRE) Cable Tunnel Replacement Project.

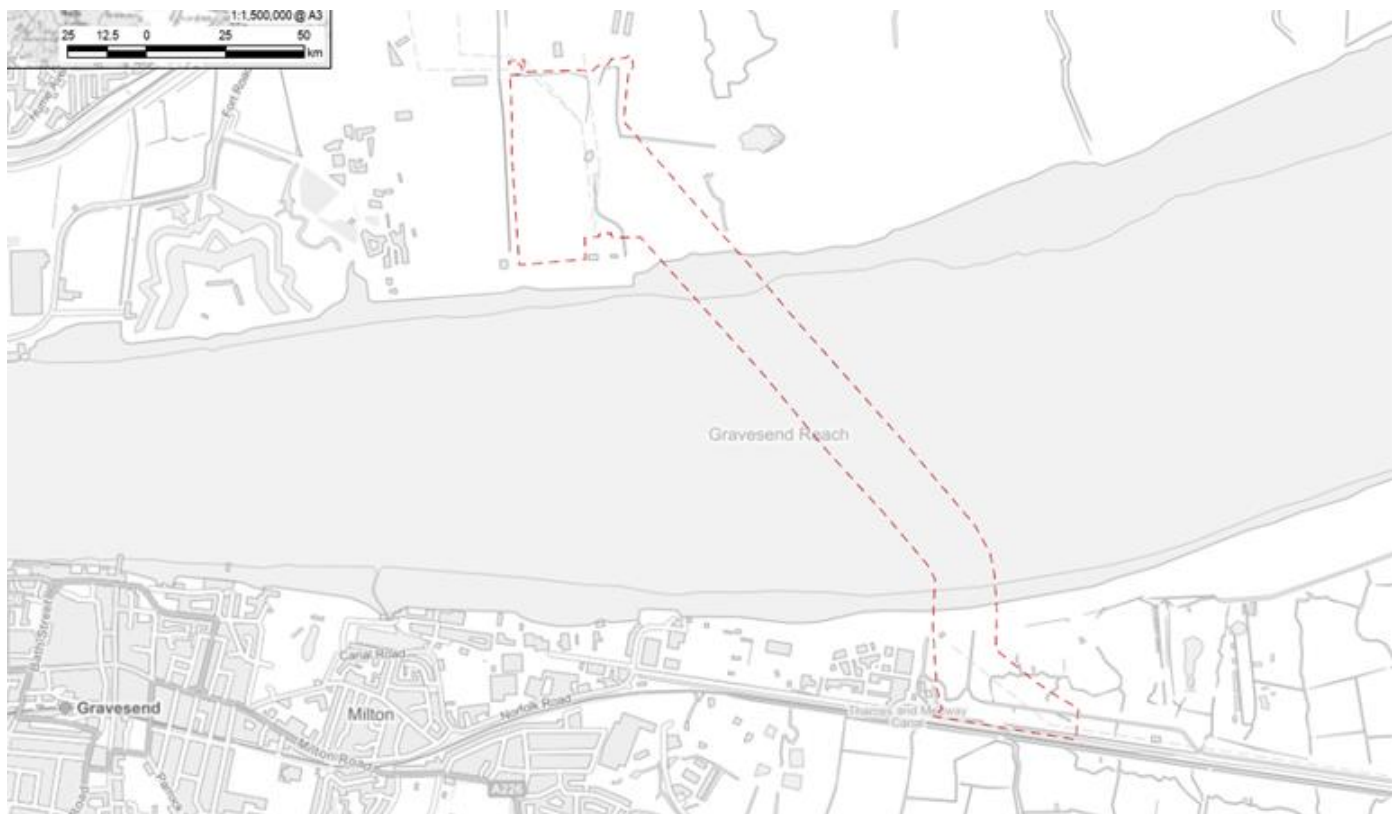
For the TKRE Cable Tunnel Replacement Project a new bored tunnel under the River Thames is proposed to house new cross linked polyethylene (XLPE) cables. In addition, associated new infrastructure is proposed either side of the River Thames in Tilbury and Gravesend comprising:

- Two new headhouses;
- Two Sealing End Compounds (SECs); and
- Overhead line re-stringing to connect the existing overhead lines to each of the new SECs.

Four individual EIA screening opinion requests have been submitted to the relevant authorities with respect to the elements of the TKRE Cable Tunnel Replacement Project which fall within their jurisdiction. For completeness, the relevant authorities and the relevant elements of the project within their jurisdiction comprises of:

- Gravesham Borough Council - EIA Screening under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 for **one new shaft headhouse and one new cable sealing end compound**;
- Thurrock Council - EIA Screening under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 for **one new shaft headhouse and one new cable sealing end compound**;
- Marine Management Organisation (MMO) - EIA Screening under The Marine Works (Environmental Impact Assessment) Regulations 2007 for **the new bored tunnel**; and
- Department for Energy Security and Net Zero (DESNZ) - EIA Screening under The Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2017 for **the overhead line modification works**.

The site location plan as shown in the Environmental Screening Report is as follows:



The EIA Screening Boundary as shown in the Environmental Screening Report is as follows and shows the development proposed:



LEGEND

- EIA Screening Boundary
- Existing Pylons to be Removed
- Existing Pylons to be Removed / Refurbished / Replaced
- Existing Pylons to be Retained
- Indicative Tunnel Alignment
- Existing Overhead Line to be Permanently Diverted
- New Overhead Line
- Permanent Development
- Temporary Working Area

It is stated in the submitted report that the area where the Gravesend Headhouse and SEC is to be located is on land owned by National Grid.

Submitted Documents/Plans

- Covering Letter from the National Grid dated 2 June 2023; and
- TKRE Cable Tunnel Replacement Project Environmental Screening Report, June 2023 prepared by AECOM Limited.

Consultations, Publicity and Representations

Consultees

Internal

GBC Environmental Protection

The EIA screening opinion has been reviewed with regards to the chapters that fall within the remit of Environmental Protection namely, noise and vibration, air quality and geology and hydrology covering contaminated land) and the impact on the Gravesham Borough Council area:

Noise and vibration:

It is anticipated that there will be an impact from noise and vibration during both the construction and operational phases unless appropriate mitigation measures are put in place. Sensitive receptors (daytime use only) are located close to the development site to the west with residential being much further away to the southeast, so not impacted as such. This will be set out in greater detail in the Environmental Report which will accompany the planning application with appropriate mitigation any impact will be minimised and not significant. This approach is acceptable.

Air Quality:

There are likely to be dust emissions during the construction phase which will impact on human health, local amenity, and also ecological receptors. Mitigation will be needed and guidance from the Institute of Air Quality Management (IAQM) has been referred to. There is unlikely to be any impact on air quality during the operational phase. The construction phase impacts relating to dust can be addressed by a suitably detailed Construction Environmental Management Plan (CEMP) which can be submitted with the full planning application (or placed as a condition on planning permission should it be granted). It is not considered that any further work on air quality impact per se is required.

Geology and Hydrology:

This section covers potentially contaminated land. There is the potential for contaminative uses to have been present in the area of the Gravesend site and as such further investigation is required. A staged approach to the investigation is proposed in section 3.8.21 (including an updated Phase 1 Desk Top Study with a risk assessment and conceptual site model). This is acceptable and in line with our usual requirements. The screening assessment advises that once the Phase 1 study is updated, it's likely that mitigation can be addressed via the CEMP.

GBC Highways

Fortunately, this proposal has most of the work being conducted from the Tilbury side of the river, with the spoil from one shaft and the tunnel being removed via the north portal. Similarly, materials for construction of the shaft and tunnel will arrive from the north as will the Tunnel Boring Machine.

The only traffic generation in Gravesend will be in the construction of the southern shaft and the necessary buildings and pylons to receive the cables and connect to the overhead wire system in Gravesend. Plus, the removal of the Tunnel Boring Machine. This level of traffic would not be considered significant, but could involve some abnormal loads which will require careful management.

Given the anticipated time of construction, there could be conflict with the redevelopment at the Canal Basin and Albion Waterside. (Application 20210270), as well as the Lower Thames Crossing and the applicant will need to carefully manage the development and its deliveries and waste removal to minimise any adverse impacts that may be caused by delays outside his control.

It would be desirable that no HGV movements should take place during school arrival and leaving times at Chantry Community Academy due to the age of the children, and parental parking.

External

KCC Biodiversity

We have reviewed the submitted information in regard to determining if an environmental impact assessment (EIA) will need to be carried out and advise there are likely to be significant impacts. Therefore, an EIA for ecology is required.

Schedule 1

Under the Town and Country Planning (EIA) Regulations 2017, developments falling within Schedule 1 always require an EIA and are referred to as 'Schedule 1' developments.

EIA Screening

If the development falls within the selection criteria for a 'schedule 2' development of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, then it needs to be determined whether the proposal is situated within a 'sensitive area' and/or whether it is likely to have significant effects on the environment. Sensitive areas (as identified under Section 2(1), include the following ecologically designated sites: Site of Special Scientific Interest (SSSI), European Sites (Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar Sites)). If the proposed development is located in, partly in, or has the potential to have any negative effect on these sites, then an assessment will be required. The regulations also include World Heritage Sites, schedule monuments, Areas of Outstanding Natural Beauty (AONB) and National Parks, which are not dealt with in these comments.

The site is within 50m of the Thames Estuary & Marshes Ramsar Site and SPA and the submitted information has detailed that the nearby foreshore habitat is potentially suitable to support the species for which the Thames Estuary and Marshes Ramsar and SPA are designated. Grassland habitat adjacent to the site provides suitable habitat for notable overwintering bird species. Therefore the proposal may have an adverse impact on the SPA and Ramsar site.

To consider if the development will have significant effect on the environment, we have considered the selection criteria under 'Schedule 3' (EIA Regulations 2017). The site is within Canal and Grazing Marsh, Higham LWS and there is suitable habitat within adjacent to the site for breeding birds, reptiles, water voles, otter, GCN and foraging/commuting/roosting bats. Due to the fact that the site is within a LWS and the impact on species likely to be present we advise that a significant impact on the environment can not be ruled out.

Based on the above conclusions we advise that for this development an EIA for Ecology is required.

KCC Flood & Water Management

The LLFA understand that the proposed Tunnel Headhouse and SEC at the Gravesend site would have a gross impermeable area of 5000m². This will therefore have the potential to greatly increase surface water runoff compared to the existing greenfield scenario. Statement 3.9.15 within the report highlights that a drainage scheme will be developed to serve this area and a subsequent Drainage Strategy report compiled. The LLFA acknowledge this approach and should ensure that surface water runoff (post construction) is appropriately considered.

With the increase of impermeable areas and the nature of the site post construction, there is the concern around water quality to the receiving watercourses. It is noted in statement 3.9.32 that SuDS or proprietary treatment features will be incorporated into the future drainage scheme serving the site. The LLFA would request that the measures employed to treat water is clearly demonstrated within the future drainage strategy report.

KCC Heritage

The site lies within an area of multi-period archaeological potential adjacent to the Thames. The site is underlain by alluvial deposits which have the potential to contain, or overlie, nationally important, waterlogged archaeological remains from the late glacial to the post-medieval period. The site also includes the western end of the non-designated 19th century Milton Rifle Range. The range consists of a succession of low earthen mound firing points, a target mound and markers' gallery, as well as a weather shelter. The butts were modified in the 1890s and perhaps afterwards and part of the range is still in use today. The range saw continuous use and was used intensively for rifle practice during the First and Second World Wars and mortar firing practice was also carried out. Although the formation of the Metropolitan Police Training Facility has involved some further modifications to the southern end of the butts and to some of the firing points, there are substantial survivals of the original range structures.

The application for a Screening Opinion has been made with a Historic Environment Desk Based Assessment (Aecom, 2023) which usefully records the presently known heritage and archaeological data for the site and immediate surrounding area. The Historic Environment DBA recognises the important palaeoenvironmental potential, and the need for geoarchaeological field evaluation as a next step in understanding the archaeological potential of the site and to allow an appropriate assessment of the impact of the proposals. I am not in agreement, however, with statements in Section 7.2.2 of the DBA, that the site contains no non-designated heritage assets, nor that the Milton Rifle Range lies immediately east of the site boundary. In my opinion, the Milton Rifle Range should be considered as a non-designated heritage asset and the development site boundary lies within the western end of the original range, as is illustrated in the DBA figure 11.

The development has the potential to impact on significant, potentially nationally important, below-ground archaeological remains, as well, potentially having a significant negative impact on the non-designated Milton Rifle Range. The project should, in my opinion, be subject to EIA and the impact assessment process should include the use of purposive field evaluation data to investigate the below-ground archaeological potential and a detailed assessment of the full extent of the historic rifle range and the impact of the proposed development.

KCC Highways

A full Transport Assessment covering the impact on the nearby local highway network should be submitted in support of any application so that it may be assessed by the Local Highway Authority.

KCC Public Rights of Way

I can confirm that I do not have any objections to the above planning application at Eastcourt Marshes Electricity Substation. Public Right of Way Footpaths NG1 and NH2 lay to the north and south of the proposed site respectively. I enclose a copy of the Public Rights of Way network map showing the line of the paths for your information.

The granting of planning permission confers no other permission or consent on the applicant. It is therefore important to advise the applicant that no works can be undertaken on a Public Right of Way without the express consent of the Highways Authority. In cases of doubt the applicant should be advised to contact this office before commencing any works that may affect the Public Right of Way. Should any temporary closures be required to ensure public safety then this office will deal on the basis that:

- The applicant pays for the administration costs.
- The duration of the closure is kept to a minimum.
- Alternative routes will be provided for the duration of the closure.
- A minimum of six weeks notice is required to process any applications for temporary closures.

This means that the Public Right of Way must not be stopped up, diverted, obstructed (this includes any building materials or waste generated during any of the construction phases) or the surface disturbed. There must be no encroachment on the current width, at any time now or in future and no furniture or fixtures may be erected on or across Public Rights of Way without consent.

Environment Agency

We no longer respond to screening opinions and so have no comments to make.

Natural England

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

It is Natural England's advice, on the basis of the material supplied with the consultation, that there are potential likely significant effects on statutorily designated nature conservation sites or landscapes and further assessment is required.

Schedule 3(2) of the Town & Country Planning (Environmental Impact Assessment) Regulations 2017 requires consideration of the selection criteria for Schedule 2 EIA development and identification of

'environmental sensitivity'.

The proposed development is located within/partly within or has the potential for adverse effects on the following designated nature conservation sites or designated landscapes:

- South Thames Estuary & Marshes Site of Special Scientific Interest (SSSI)
- Mucking Flats & Marshes Site of Special Scientific Interest (SSSI)
- Halling to Trottscliffe Escarpment Site of Special Scientific Interest (SSSI)
- North Kent Marshes Functional Land
- North Downs Woodlands Special Area of Conservation (SAC),
- Thames Estuary & Marshes Special Protection Area (SPA)
- Thames Estuary & Marshes Ramsar Site

Methodology (provided within our overarching advice letter). Without this information Natural England will not be in a position to comment on the significance of the impacts. For large scale developments, Natural England may provide advice on a cost recovery basis through our **Discretionary advice service**.

All queries in relation to the application of this methodology to specific applications or development of strategic solutions will be treated as pre-application advice and therefore subject to chargeable services.

Natural England has not assessed the significance of any impacts on these designated sites or landscapes. The proposed development may therefore be likely to have significant effects on the interest features for which these sites are notified or the purposes of designation and we advise you to consider further whether an Environmental Impact Assessment (EIA) is required.

Should you decide that an EIA is not required, Natural England advises that sufficient information on the potential impacts of this proposal upon these designated sites/areas is submitted with any subsequent planning application. We would be pleased to discuss this further with the applicant through our **Discretionary Advice Service**.

Natural England does not hold information on the location of significant populations of protected species, so is unable to advise whether this proposal is likely to affect protected species to such an extent as to require an Environmental Impact Assessment (EIA). The developer must provide sufficient information for your authority to assess whether protected species are likely to be affected and, if so, whether appropriate avoidance, mitigation or compensation measures can be put in place. Further information is included in Natural England's **standing advice** on protected species.

Furthermore, Natural England does not routinely maintain locally specific data on all environmental assets. This development proposal may have environmental impacts on priority species and/or habitats, local wildlife sites, soils and best and most versatile agricultural land or on local landscape character that may be sufficient to warrant an EIA. Information on ancient woodland, ancient and veteran trees is set out in Natural England/Forestry Commission **standing advice**.

We therefore recommend that advice is sought from your ecological, landscape and soils advisers, local record centre, recording society or wildlife body on the local soils, best and most versatile agricultural land, landscape, geodiversity and biodiversity receptors that may be affected by the proposed development before determining whether an EIA is necessary.

Should you determine that an EIA is not required in this case, you should ensure that the application is supported by sufficient biodiversity, landscape and other environmental information in order for you to assess the weight to give these material considerations when determining the planning application. Should the proposal be amended in a way which significantly affects its impact on the natural environment then, in accordance with Section 4 of the Natural Environment and Rural Communities Act 2006, Natural England should be consulted again.

Port of London Authority

The proposed development relates to one new shaft headhouse and one new cable sealing end compound in Gravesham as one element of the TKRE Cable Tunnel Replacement Project. The project relates to a new bored tunnel under the River Thames constructed to house new cross linked polyethylene (XLPE) cables with associated new infrastructure proposed either side of the River Thames in Tilbury and Gravesend. On the tunnel itself table 2.1 (New Bored Cable Tunnel – Summary of Key Characteristics) states that the depth of the tunnel will be approximately 50m with a width of 4m. This will unlikely affect the river channel above it. However if for any reason the proposed depth cannot be achieved or maintained

then the PLA must be reconsulted to establish that the Tidal Thames remains unaffected.

The potential construction effects section (paragraph 3.8.16) states that there is the potential for construction to affect human and controlled waters receptors and for the ground conditions to impact on the design of the proposed development. Potential impacts listed include possible dewatering of the tunnel or the spoil during construction, and the discharge of water from dewatering to surface watercourses. To note if any new outfall to the tidal Thames is required as part of the works a River Works Licence (RWL) will be required with the PLA and the PLA's Statutory Consents and Compliance Team should be contacted at lic.app@pla.co.uk. Further information on this will be required in the forthcoming Drainage Strategy as part of any forthcoming planning application.

A key issue highlighted in the report is the requirement for the permanent disposal of the material/spoil removed from the tunnel during construction. Within the report it is highlighted that it is the applicant's preference that tunnel spoil will be removed by barge on the River Thames to reduce the number of HGVs on the wider road network, and that this will be reviewed further as part of the Environmental Appraisal Report (EAR). Paragraphs 2.3.12 and 3.9.29 of the report also state that some discussion has been held with the RSPB with regard to using excavated material in the formation of wetlands at RSPB Cliffe Pools to contribute to the creation of new habitat, or to support other habitat restoration and wetland projects in the Tilbury area. In principle this preference is supported. Paragraph 3.2.1 also states that it is the applicant's preference to remove the tunnel spoil from the construction site at Tilbury to and from existing jetty structures only. As part of the forthcoming planning application further detail will be required on this preference within the EAR, as well as the Transport Assessment and Construction Environmental Management Plan (CEMP) particularly with regard to maximising the use of the river as part of the construction stage, rather than by road. This should include details on any communication with operators/owners of existing river structures that may be utilised for the proposed development and any implications of barge movements on marine traffic. Furthermore it is noted in paragraph 3.7.12 that potential vessel emissions will also be considered in the forthcoming Air Quality Assessment, this is supported.

On other environmental matters, within the noise and vibration chapter it is noted that this does not specifically consider non-human sensitive receptors. Given the location in relation to various European designated sites it is considered that this must be addressed as part of the forthcoming planning application. It is noted that there are references elsewhere in the report on noise, for example paragraph 3.2.26 on underwater sound disturbance effects to marine mammals and fish, states that based on information available at this stage the applicant considers it unlikely that the proposed activities will generate sufficient underwater sound to exceed ambient levels - however, once full design details are available the impact pathway will be subject to further assessment to confirm that this. The PLA in principle support this approach.

Table 3.1 (Key Ecological Receptors) outlines the geographical scale of biodiversity for various receptors. Within this table the following amendments are required:

- Wintering and wading birds: As these are designated features of the Thames Estuary and Marshes Ramsar and Special Protection Area (SPA), it is considered that this would make them of international importance
- Breeding birds: As these are designated features of the associated Site of Special Scientific importance (SSSI), it is considered that this would make them of national importance

In addition to highlight that the most significant issue relating to birds is that of disturbance because of construction activities, including any potential effects of the noise and vibrations tunnelling activities on underwater feeding waterfowl and marine mammals. This must form a key consideration in the Habitats Regulations Assessment (HRA) as part of the forthcoming planning application. Furthermore to note that depending on the location, any mitigation/compensation identified in the HRA may have additional implications for the PLA.

Finally paragraphs 2.3.38 – 2.3.39 include some information on the decommissioning of existing assets, stating that decommissioning of the existing tunnel and associated infrastructure does not form part of this project. However the report also states that it is expected that the existing cables and cable joints within the existing tunnel will be purged of their oil and sent for recycling and that further tunnel inspection work will be required to assess this. To confirm the PLA consider that, if the existing tunnel is no longer going to be used, the existing tunnel and infrastructure should be removed from the river bed.

Historic England

Our primary remit would be the impact of the development upon the significance of designated assets either through physical impacts or through a development within their setting. This would be either highly graded listed buildings or scheduled monuments.

We confirm that the report is detailed, thorough and adequate for the purposes of this assessment, and we acknowledge there are limited numbers of designated heritage assets affected. We also confirm we broadly support the assessment, the list of the key receptors, cumulative impacts and summary of effects as set out in the Historic Environment section.

We are however mindful of the potential for non-designated heritage assets and archaeological matters within the red line boundary. Specifically, in this case it is the likelihood of archaeological and palaeo environmental remains associated with the Thames foreshore and the former marshlands.

We note this potential has been identified in the report but in our view these deposits should be ascribed a high-value because of the potential provide information on a range of indices, specifically things like climate change, the evolution of the Thames as well as human interaction with that landscape. Although this would not change the need for further assessment and the need for an appropriate approach to mitigation, we do consider the values and assessment of impacts are amended to reflect the significance of these deposits.

Overall, we agree that the historic environment represents a potentially significant issue in EIA terms. We note the applicant has confirmed the historic environment would be fully assessed which is appropriate and which we would support.

Please note however that the setting of heritage assets is not just restricted to visual impacts and other factors would also need to be considered. Noise, light, traffic and landscape assessments for example. Cultural heritage assessment would also need to be cross-referenced against other studies and impacts recorded accordingly

We strongly recommend that the applicant involve the county's specialist advisers on archaeological matters. We recognise that they are best placed to provide advice on non-designated heritage assets and to give advice on how the proposal can be tailored to avoid and minimise potential adverse impacts on the historic environment. They should also be asked to advise on mitigation and on any opportunities for securing wider benefits for the future conservation and management of heritage assets.

Likewise, the LPA's Conservation Officer will need to be consulted in relation to the Grade II listed buildings. Advice on these assets is broadly outside of the remit of Historic England.

Any assessment would also need to be carried out in accordance with established policy and guidance, including the National Policy Statements and National Planning Policy Framework, Planning Practice Guidance on heritage and we highly recommend as stated above use is made of the advice set out in GPA3 when considered the setting of heritage assets.

Whilst standardised EIA matrices are considered in some planning practices to be useful tools, we consider the analysis of setting (and the impact upon it) as a matter of qualitative and expert judgement which cannot be achieved solely by use of systematic matrices or scoring systems.

Historic England therefore recommends that these should be seen as material only to support a clearly expressed and non-technical narrative argument of harm and benefit, which is set out within the cultural heritage chapter. The ES should therefore address ideas of benefit, harm and loss (as described in NPPF) to set out 'what matters and why' in terms of the heritage assets' significance and setting, together with the effects of the development upon them.

We would also be looking for appropriate mitigation for any impacts and this could include actions that enhance the situation of any affected designate heritage assets or would provide an improved understanding of heritage matters.

Recommendation

We support the approach taken to compile this report and agree that the historic environment is an

important consideration. We recommend it is scoped into any further assessment in order to fully address the impact on the historic environment.

No response from:

- Marine Management Organisation

Publicity

Not required for a screening opinion application.

Analysis

The relevant regulations to consider the screening request against is the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (herein after referred to as the Regulations, 2017).

The Council needs to consider if the proposed development is either Schedule 1 or Schedule 2 development and if so whether the development of a new shaft headhouse and one new cable sealing end compound is likely to have a significant effect on the environment and therefore requires an assessment.

Schedule 1

The proposal does not fall within Schedule 1 of the Regulations (2017) that would require mandatory Environmental Impact Assessment (EIA).

Schedule 2

Schedule 2 development” as defined in the Regulations (2017) is

Development of a description mentioned in Column 1 of the table in Schedule 2 1 where:

- a. any part of that development is to be carried out in a sensitive area²; or
- b. any applicable threshold or criterion in the corresponding part of Column 2 of that table is respectively exceeded or met.

In this case, the proposed development subject of this screening request falls most closely within Schedule 2 by reason of Part 10(b)(i) in Column 1 for ‘Urban development projects’ and would exceed the threshold set in column 2 as it would consist of more than 1 hectare of development (at approximately 1.1 hectares (ha)) which is not dwellinghouse development. The proposal therefore now needs to be screened to determine whether significant effects on the environment are likely and whether an EIA is required.

Sensitive areas are defined in Regulation 2 of the 2011 Regulations as any of the following -

- (a) a site of special scientific interest (SSSI);
- (b) a National Park;
- (c) the Broads;
- (d) a property appearing on the World Heritage List;
- (e) a scheduled monument;
- (f) an area of outstanding natural beauty;
- (g) a European site within the meaning of regulation 8 of the Conservation of Habitats and Species Regulations 2010.

The site itself is not within a sensitive area but the screening report submitted with the application states the proximity of the following sensitive areas to the Gravesend site:

- The Thames Estuary and Marshes Special Protection Area and Ramsar Site is located in close proximity to both the south and east of the site. At its closest point it is approximately 50m from an existing pylon where restringing will occur. The headhouse and main works area is approximately 100m from the SPA/Ramsar;
- The foreshore areas adjoining the River Thames to the north of the Gravesend site are also considered to be suitable to support the species for which the Ramsar/SPA are designated;
- The Gravesend site is located within the Canal and Grazing Marsh, Higham Local Wildlife Site (LWS) a non-statutory designated site for nature conservation. The site is designated on the basis of remnant grazing marsh habitat which has been found to support a range of notable plant species;

- Other designated sites nearby include South Thames Estuary and Marshes SSSI, approximately 500m south, Mucking Flats and Marshes SSSI, approximately 2km north-east and Tilbury Marshes LWS approximately 2km north-west;
- The majority of the site consists of horse grazed semi-improved grassland with occasional scattered scrub and trees. In addition, a wet ditch directly adjoins the eastern and southern boundaries of the site. These habitats are potentially suitable to support notable plant species such as those listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006, as amended);
- The habitats at the Gravesend site have suitability to support several protected species. The grassland and scrub have suitability to support foraging bats, widespread species of reptile, notable bird species, badgers, hedgehogs, eels and notable invertebrates. The ditches are potentially suitable to support great crested newt, water vole and otter; and
- A single tree in close proximity to the proposed SEC was identified as having high suitability for roosting bats due to the multiple bark fissures, woodpecker holes and callous rolls in its trunk. There are invasive non-native plant species on site.

In addition Natural England advise the site is within/partly within or has the potential for adverse effects on the following designated nature conservation sites or designated landscapes:

- Halling to Trottiscliffe Escarpment Site of Special Scientific Interest (SSSI)
- North Kent Marshes Functional Land
- North Downs Woodlands Special Area of Conservation (SAC),

Schedule 3 Screening Criteria

Schedule 3 of the Regulations (2017) sets out the selection criteria for screening which are:

Characteristics of development

1. The characteristics of development must be considered with particular regard to—

- (a) the size and design of the whole development;
- (b) cumulation with other existing development and/or approved development;
- (c) the use of natural resources, in particular land, soil, water and biodiversity;
- (d) the production of waste;
- (e) pollution and nuisances;
- (f) the risk of major accidents and/or disasters relevant to the development concerned, including those caused by climate change, in accordance with scientific knowledge;
- (g) the risks to human health (for example, due to water contamination or air pollution).

Location of development

2.—(1) The environmental sensitivity of geographical areas likely to be affected by development must be considered, with particular regard, to—

- (a) the existing and approved land use;
- (b) the relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground;
- (c) the absorption capacity of the natural environment, paying particular attention to the following areas—
 - (i) wetlands, riparian areas, river mouths;
 - (ii) coastal zones and the marine environment;
 - (iii) mountain and forest areas;
 - (iv) nature reserves and parks;
 - (v) European sites and other areas classified or protected under national legislation;
 - (vi) areas in which there has already been a failure to meet the environmental quality standards, laid down in Union legislation and relevant to the project, or in which it is considered that there is such a failure;
 - (vii) densely populated areas;
 - (viii) landscapes and sites of historical, cultural or archaeological significance.

Types and characteristics of the potential impact

3. The likely significant effects of the development on the environment must be considered in relation to criteria set out in paragraphs 1 and 2 above, with regard to the impact of the development on the factors specified in regulation 4(2), taking into account—

- (a) the magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected);
- (b) the nature of the impact;
- (c) the transboundary nature of the impact;
- (d) the intensity and complexity of the impact;
- (e) the probability of the impact;
- (f) the expected onset, duration, frequency and reversibility of the impact;
- (g) the cumulation of the impact with the impact of other existing and/or approved development;
- (h) the possibility of effectively reducing the impact.

To ensure this is all carefully considered, where relevant, the Government provide an Environmental impact assessment screening checklist which they state can be used when screening for EIA although there is no obligation. This has been completed and can be found in Appendix 1 of this report.

Conclusion


Having assessed the available evidence it is the Local Planning Authority's opinion that the proposal is EIA development and that accordingly an Environmental Statement is required to accompany a planning application, please refer to the Screening Matrix in Appendix 1 for full details.

Given the nature of the development, the location and sensitivity of the area and the likely potential impact outlined in respect of biodiversity and ecology, geology and hydrology, noise and vibration, heritage and archaeology, landscape/townscape and visual effects, transport and access and cumulative impacts, it is considered that the proposal would be likely to have a significant impact on the environment. Gravesham Borough Council therefore concludes that the development is EIA development and that an EIA is therefore required.

Recommendation:

EIA Is Required.

See draft Decision

Case Officer:	Ms Rebecca Harrison	Team Leader:	Miss Faye Hobbs
Signed:	<i>Rebecca Harrison</i>	Signed:	
Dated:	3rd August 2023	Dated:	03 August 2023

**THE TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS
2017 SCREENING MATRIX**

1. CASE DETAILS			
Case Reference	20230668	Brief description of the project / development	One new shaft headhouse and one new cable sealing end compound.
Applicant	National Grid.		
LPA	Gravesham Borough Council		
2. EIA DETAILS			
Is the project Schedule 1 development according to Schedule 1 of the EIA Regulations?			N
If YES, which description of development (THEN GO TO Q4)			N/A
Is the project Schedule 2 development under the EIA Regulations?			Y
If YES, under which description of development in Column 1 and Column 2?			10(b) Urban development projects
Is the development within, partly within, or near a 'sensitive area' as defined by Regulation 2 of the EIA Regulations?			Yes
If YES, which area?			<p>The Thames Estuary and Marshes Special Protection Area and Ramsar site is located in close proximity to both the south and east of the site. At its closest point it is approximately 50m from an existing pylon where restringing will occur. The headhouse and main works area is approximately 100m from the Ramsar/SPA.</p> <p>The foreshore areas adjoining the River Thames to the north of the Gravesend site are also considered suitable to support the species for which the Ramsar/SPA are designated.</p> <p>The site is located within the Canal and Grazing Marsh, Higham Local Wildlife Site (LWS) and the Tilbury Marshes LWS is approximately 2km north-west.</p> <p>The South Thames Estuary and Marshes SSSI is approx. 50m south. The Mucking Flats and Marshes SSSI is approx. 2km north-east. The Halling to Trottscliffe Escarpment Site of Special Scientific Interest (SSSI) is also nearby as is the Kent Marshes Functional Land and the North Downs Woodlands Special Area of Conservation (SAC),</p> <p>The semi-natural grassland is a Habitats of Principal Importance supporting protected species.</p> <p>The foreshore contains sensitive intertidal habitats highlighted as sensitive in the Water Framework Directive (WFD).</p> <p>Habitats within the works area and adjacent area are suitable for notable invertebrates.</p>

**THE TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS
2017 SCREENING MATRIX**

	<p>Grassland habitat adjacent to the site provides suitable habitat for notable overwintering bird species.</p> <p>The scrub and grassland habitats have suitability for breeding birds and reptiles.</p> <p>Suitable habitat adjoining main works area for water voles.</p> <p>Ditches adjacent to the site have potential for otters.</p> <p>Possible potential for the ditches adjoining the site to have great crested newt although said to be unlikely.</p> <p>One tree with high suitability for roosting bats and suitable foraging habitat for foraging and commuting bats.</p> <p>The Thames and its banks are suitable for cetaceans and pinnipeds.</p>
Are the applicable thresholds/criteria in Column 2 exceeded/met?	Yes
If yes, which applicable threshold/criteria?	(i) The development is more than 1 hectare of urban development which is not dwelling house development (Total area approx.. 1.1 hectares).
3. LPA/SOS SCREENING	
Has the LPA or SoS issued a Screening Opinion (SO) or Screening Direction (SD)? (In the case of Enforcement appeals, has a Regulation 37 notice been issued)	No
If yes, is a copy of the SO/SD on the file?	N/A
If yes, is the SO/SD positive?	N/A
4. ENVIRONMENTAL STATEMENT	
Has the appellant supplied an ES for the current or previous (if reserved matters or conditions) application?	No

WHEN COMPLETING THIS DOCUMENT IN RELATION TO AN ENFORCEMENT APPEAL, THE UNDERSIGNED OFFICER HAS HAD REGARD TO THE PROJECT AS ALLEGED IN THE RELEVANT ENFORCEMENT NOTICE WHEN REFERRING TO THE PROJECT / DEVELOPMENT.

A Screening Criteria Question		B Response to the Screening Criteria Question in Column A (Yes/No and explanation of reasons)	C Is a Significant Effect Likely? (Yes/No and explanation of reasons (nb if the answer in Column B is 'No', Column C is not applicable))	
		Briefly explain reasons and, if applicable and/or known, include name of feature(s) and proximity to site(s)	Is a significant effect likely, having regard particularly to the magnitude and spatial extent (including population size affected), nature, intensity and complexity, probability, expected onset, duration, frequency and reversibility of the impact and the possibility to effectively reduce the impact? If the finding of no significant effect is reliant on specific features or measures of the project envisaged to avoid, or prevent what might otherwise have been, significant adverse effects on the environment these should be identified in bold .	
5. NATURAL RESOURCES				
5.1 Will construction, operation or decommissioning of the project involve actions which will cause physical changes in the topography of the area?	No	The part of the site in Gravesham consists of relatively flat ground across the area with a gentle sloping north to the Thames foreshore. The proposal for one new shaft headhouse and one new cable sealing end compound would not alter this.	No	N/A
5.2 Will construction or operation of the project use natural resources above or below ground such as land, soil, water, materials/minerals or energy which are non-renewable or in short supply?	Yes	The proposal will use natural resources which are non-renewable.	No	The levels would be unlikely to be significant enough to cause a significant impact on the environment.
5.3 Are there any areas on/around the location which contain important, high quality or scarce resources which could be affected by the project, e.g. forestry, agriculture, water/coastal, fisheries, minerals?	Yes	River Thames, Thames & Medway Canal and unnamed watercourse.	Yes	As 10.1 – see below.
6. WASTE				
6.1 Will the project produce solid wastes during construction or operation or decommissioning?	Yes	Excavation - Spoil from creation of the reception shaft on the Gravesend side (10,250 cubic metres).	No	The majority of the spoil from the project overall is to be excavated on the Tilbury side and National Grid are looking at how the spoil could be re-used to meet their

A Screening Criteria Question	B Response to the Screening Criteria Question in Column A (Yes/No and explanation of reasons)	C Is a Significant Effect Likely? (Yes/No and explanation of reasons (nb if the answer in Column B is 'No', Column C is not applicable))
	<p>Total spoil from the project would be 69,600 cubic metres (49,100 cubic metres for the tunnel and 10,250 cubic metres for each shaft at Gravesend & Tilbury). There would also be other construction waste.</p>	<p>commitment to zero waste to landfill target by 2026. Opportunities being considered include:</p> <ul style="list-style-type: none"> • the infill and restoration of saline lagoon at RSPB Cliffe Pools providing benefits to aquatic invertebrates and located approximately 5.5km east of the Proposed Development on the south side of the River Thames (National Grid's preferred choice); • the infill of similar lagoons on neighbouring land owned by commercial operator, Brett Aggregates; • use as construction material for the various other large developments up and coming in the Tilbury area; and • to support other habitat restoration and wetland projects in the Tilbury area. <p>Mitigation is to be considered for the whole of the proposed development and will aim to prioritise waste prevention, followed by preparing for reuse, recycling and recovery and lastly disposal to landfill as per the internationally recognised waste hierarchy. The following mitigation measures will be considered and implemented where applicable during the design phases and subsequent construction work:</p> <ul style="list-style-type: none"> • Designing for reuse and recovery: identifying, securing, and using materials that already exist on site or can be sourced from other projects. • Designing for materials optimisation: simplifying layout and form to minimise material use, using standard design parameters, balancing cut and fill, maximising the use of renewable materials and materials with recycled content. • Designing for off-site construction: maximising the use of pre-fabricated structure and components, encouraging a process of assembly rather than construction. • Designing for the future (deconstruction and flexibility): identify how materials can be

A Screening Criteria Question	B Response to the Screening Criteria Question in Column A (Yes/No and explanation of reasons)	C Is a Significant Effect Likely? (Yes/No and explanation of reasons (nb if the answer in Column B is 'No', Column C is not applicable))
		<p>designed to be more easily adapted over an asset lifetime and how deconstructability and demountability of elements can be maximised at end of first life.</p> <ul style="list-style-type: none"> • Designing for waste and material efficient procurement: identify and specify materials that can be acquired responsibly, in accordance with a recognised industry standard. • The construction contractor would be required to implement a Construction Environmental Management Plan (CEMP) and a Site Waste Management Plan (SWMP) would be prepared as part of the CEMP. • The construction contractor would be required to implement a Materials Management Plan if one is required under the CL:AIRE Definition of Waste: Development Industry Code of Practice by the construction contractor to support the re-use of excavated materials, minimize off-site disposal; and to demonstrate the necessary lines of evidence to support the proper reuse/offsite disposal of materials and ensure compliance with regulatory guidance. • Incorporation of "appropriate facilities for the storage and recycling of waste" as required by Gravesend Council Policy CS19. • Application of National Grid's materials and waste targets. <p>Taking into account the amount of waste proposed for the Gravesend site and the proposed mitigation it is considered the impact on the environment in respect of waste would not be significant.</p>

7. POLLUTION AND NUISANCES

7.1 Will the project release pollutants or any hazardous, toxic or noxious substances to air?	Yes	The report states that the proposed development has the potential to impact on local air quality through construction phase dust emissions, construction phase traffic emissions and construction phase energy plant	No	The report states the proposed mitigation measures to be incorporated into design and construction will reduce effects such that they are unlikely to be significant. GBC Environmental
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A Screening Criteria Question	B Response to the Screening Criteria Question in Column A (Yes/No and explanation of reasons)	C Is a Significant Effect Likely? (Yes/No and explanation of reasons (nb if the answer in Column B is 'No', Column C is not applicable))
	Emissions and these impacts have the potential to impact on amenity, human health and nature conservation receptors close to the site and human health sensitive receptors adjacent to the road network on the construction traffic route. Also that in the absence of the mitigation, there is potential for increased emissions from construction to result in likely significant effects on local air quality.	Protection advise that the construction phase impacts relating to dust can be addressed by a suitably detailed Construction Environmental Management Plan (CEMP) which can be submitted with the full planning application. Subject to this it is considered the impact on the environment in respect of air pollutants would not be significant.
7.2 Will the project cause noise and vibration or release of light, heat, energy or electromagnetic radiation?	Yes The report states that without mitigation there would be significant noise and vibration effects during the construction or operational phases. GBC Environmental Protection advise that there will be an impact from noise and vibration during the construction and operational phases unless there is appropriate mitigation – sensitive receptors are to the west of the site (daytime only) with residential being located much further away to the south so they state would not be impacted as such.	Yes The report states that appropriate mitigation measures such as the 'best practicable means' as defined in Section 72 of the Control of Pollution Act and the use of attenuators and acoustic louvers will be incorporated into the design and construction such that residual effects are unlikely to be significant. It is proposed that more detail on potential effects and mitigation requirements will be set out in an Environmental Report which accompanies the relevant consent application. GBC Environmental Protection acknowledge that further detail on impact will be given in the Environmental Report along with mitigation and they advise that with appropriate mitigation any potential impact would be minimised and would not be significant. However, it is considered that the impact on the environment would likely to be significant in respect of noise and vibration given that the ditches system forms an integral part of the biodiversity and ecology of the area and any noise and vibration from the development could significantly impact on this.
7.3 Will the project lead to risks of contamination of land or water from releases of pollutants onto the ground or into surface waters, groundwater, coastal waters or the sea?	Yes The report identifies the following: • mobilising existing contamination in soil and groundwater as a result of ground disturbance (due to the installation of foundations/ structures) and dewatering (if needed) during construction;	Yes Assessment of land contamination will take the form of a tiered, risk-based approach: • Tier 1: preliminary risk assessment based on a desktop study of available information to identify

A Screening Criteria Question	B Response to the Screening Criteria Question in Column A (Yes/No and explanation of reasons)	C Is a Significant Effect Likely? (Yes/No and explanation of reasons (nb if the answer in Column B is 'No', Column C is not applicable))
	<ul style="list-style-type: none"> • increasing the potential for contaminants in unsaturated soils to leach to groundwater in open excavations during construction; • increasing the potential for contaminated surface run-off to migrate to surface water and groundwater receptors as a result of leaching from uncovered stockpiles; • discharge of water from dewatering to surface watercourses; • introducing new sources of contamination, such as fuels and oils used in construction plant; • creating preferential pathways for the migration of contamination and gases, for example along new below ground service routes, service ducts and as a result of dewatering; and • introducing new human health receptors such as site staff during construction. 	<p>potential sources of contamination, receptors to contamination and potential pathways between them. The identified sources, pathways and receptors are presented in the form of an initial Conceptual Site Model (CSM) showing the potential contaminant linkages (PCL);</p> <ul style="list-style-type: none"> • Tier 2: If PCL are identified, this means there is a theoretical risk to receptors from contamination. Therefore, intrusive investigation should be used to provide data to inform a generic quantitative risk assessment (GQRA). The GQRA involves comparison of site-specific, laboratory analytical data against appropriate generic assessment criteria (GAC) for human health and/or controlled waters which represent minimal or tolerable risk; and • Tier 3: detailed quantitative risk assessment to identify whether contamination identified above minimal or tolerable risk levels represents an unacceptable risk and therefore requires remediation. <p>A number of environmental design and management measures will be employed as standard best practice to minimise impacts to human health, controlled waters and soil resources during the construction of the proposed development. These will be incorporated into the Outline Construction Environmental Management Plan (CEMP) to be prepared alongside the Environmental Appraisal Report. Potential environmental impacts that will be avoided, prevented, reduced or offset through the implementation of these mitigation measures include:</p> <ul style="list-style-type: none"> • human exposure through direct contact/inhalation/dermal uptake of contaminants; • creation of preferential pathways and mobilisation of contamination; • contamination of natural soils, contamination of groundwater with concrete, paste or grout;

A Screening Criteria Question	B Response to the Screening Criteria Question in Column A (Yes/No and explanation of reasons)	C Is a Significant Effect Likely? (Yes/No and explanation of reasons (nb if the answer in Column B is 'No', Column C is not applicable))
		<ul style="list-style-type: none"> • pollution and degradation of water quality of any underlying aquifer; • infiltration and/or runoff into the local drainage/sewerage network - pollution of drainage and sewerage network and any adjacent surface water features; • run-off and infiltration of contaminants from material stockpiles; • contamination of drainage and sewerage network and/or groundwater; and • spread of nuisance dusts and soils to the wider environment and local roads. <p>A ground investigation is currently on-going at the site, to characterise existing ground conditions which will allow a quantitative assessment as to whether any of the potential risks identified are present and are of material concern to the proposed development. It is stated in the report that subject to the findings of intrusive investigations, a site-specific Remediation Strategy (and subsequent verification reporting) may be required if contamination is encountered or considered to pose an unacceptable risk.</p> <p>A Phase 1 Preliminary Risk Assessment (PRA) report, to be completed and submitted to the Local Planning Authorities. Although the existing Geotechnical and Geoenvironmental Desk Study provides an indication that potential ground contamination may be present at the Site, it does not include a risk assessment. The primary objective of a Phase 1 PRA report is to identify potential land quality liabilities and contamination risks at the sites. Potential liabilities and risks in this context may derive from:</p> <ul style="list-style-type: none"> • Contamination due to past and current uses of the site and surrounding land, in the context of the environmental sensitivity of the site setting; • Changes in land use; and • Potential natural ground hazards and constraints associated with the local ground conditions.

A Screening Criteria Question	B Response to the Screening Criteria Question in Column A (Yes/No and explanation of reasons)	C Is a Significant Effect Likely? (Yes/No and explanation of reasons (nb if the answer in Column B is 'No', Column C is not applicable))
		<p>GBC Environmental Protection state this staged approach is acceptable and in line with their usual requirements.</p> <p>It is stated in the report that it is anticipated that the results and recommendations of the Phase 1 Preliminary Risk Assessment (PRA) once incorporated into the Draft Construction Environmental Management Plan (CEMP) along with the environmental design and management measures for the construction, operation and decommissioning phases, will negate the need for a statutory geology and hydrogeology assessment.</p> <p>However, this view is questioned. The ditches system forms an integral part of the biodiversity and ecology which is present there. There is concern there could be impact given the intricate ecological and hydrological systems at the site. The impact on the environment is therefore considered to have the potential to be significant in respect of geology and hydrology.</p>
7.4 Are there any areas on or around the location which are already subject to pollution or environmental damage, e.g. where existing legal environmental standards are exceeded, which could be affected by the project?	Yes There is the potential for contaminative uses to have been present in the area of the Gravesend site.	No The Phase 1 Preliminary Risk Assessment (PRA) & Construction Environmental Management Plan (CEMP) as discussed in 7.3 above would address this.
8. POPULATION AND HUMAN HEALTH		
8.1 Will there be any risk of major accidents (including those caused by climate change, in accordance with scientific knowledge) during construction, operation or decommissioning?	No No risks identified.	

A Screening Criteria Question	B Response to the Screening Criteria Question in Column A (Yes/No and explanation of reasons)		C Is a Significant Effect Likely? (Yes/No and explanation of reasons (nb if the answer in Column B is 'No', Column C is not applicable))
8.2 Will the project present a risk to the population (having regard to population density) and their human health during construction, operation or decommissioning? (for example due to water contamination or air pollution)	Yes	As discussed in 7.1 & 7.3 above the proposal has the potential to impact on air quality and pollution of waters.	Yes Particularly in relation to water contamination - see 7.3 above.
9. WATER RESOURCES			
9.1 Are there any water resources including surface waters, e.g. rivers, lakes/ponds, coastal or underground waters on or around the location which could be affected by the project, particularly in terms of their volume and flood risk?	Yes	The site is adjoined to the east and south by an unnamed water course. The River Thames is approx. 140m north of the site and the Thames & Medway Canal is approx. 85m south of the site.	No KCC Flood & Water Management state that the impermeable area of the headhouse and Sealing End Compound (SEC) at 5,000 sq. m will have the potential to greatly increase surface water run-off compared to the existing greenfield scenario. They advise that the proposed Drainage Strategy report should ensure that surface water run-off is appropriately considered and that this report should also demonstrate what measures will be used to treat water to ensure no impact on water quality. Subject to this and any necessary mitigation it is considered there would be no significant impact on the environment in respect of flood risk.
10. BIODIVERSITY (SPECIES AND HABITATS)			
10.1 Are there any protected areas which are designated or classified for their terrestrial, avian and marine ecological value, or any non-designated / non-classified areas which are important or sensitive for reasons of their terrestrial, avian and marine ecological value, located on or around the location and which could be affected by the project? (e.g. wetlands, watercourses or other water-bodies, the coastal zone, mountains, forests or woodlands, undesignated nature reserves or parks. (Where designated indicate level of designation	Yes	Site is within or close to: <ul style="list-style-type: none"> The Thames Estuary and Marshes Special Protection Area and Ramsar Site is located in close proximity to both the south and east of the site. At its closest point it is approximately 50m from an existing pylon where restringing will occur. The headhouse and main works area is approximately 100m from the SPA/Ramsar; The foreshore areas adjoining the River Thames to the north of the Gravesend site are also considered to be suitable to support the species for which the Ramsar/SPA are designated; 	Yes Natural England advise that based on the information submitted there are potential likely significant effects on statutorily designated nature conservation sites or landscapes and further assessment is required. KCC Biodiversity advise that there are likely to be significant impacts and therefore an EIA for ecology is required. They advise that due to the proximity to the Thames Estuary & Marshes Ramsar Site and SPA and the nearby foreshore as well as the grassland habitat adjacent to the site providing suitable habitat for notable overwintering birds, the proposal may have an impact on the SPA and Ramsar site. They also advise that due to the site being within the Canal and Grazing Marsh, Higham Local Wildlife Site (LWS) and there being suitable habitat for breeding birds, reptiles, water

A Screening Criteria Question	B Response to the Screening Criteria Question in Column A (Yes/No and explanation of reasons)		C Is a Significant Effect Likely? (Yes/No and explanation of reasons (nb if the answer in Column B is 'No', Column C is not applicable))
(international, national, regional or local))).		<ul style="list-style-type: none"> • The Gravesend site is located within the Canal and Grazing Marsh, Higham Local Wildlife Site (LWS); • South Thames Estuary & Marshes Site of Special Scientific Interest (SSSI); • Mucking Flats & Marshes Site of Special Scientific Interest (SSSI); • Halling to Trottiscliffe Escarpment Site of Special Scientific Interest (SSSI); • North Kent Marshes Functional Land • North Downs Woodlands Special Area of Conservation (SAC); • Habitats for a number of protected and non-protected species. 	<p>voles, otter, great crested newt and foraging/commuting/roosting bats, there is likely to be an impact on species likely to be present and they cannot rule out that the impact on the environment would not be significant.</p> <p>The impact on the environment is therefore considered to have the potential to be significant in respect of biodiversity and ecology.</p>
10.2 Could any protected, important or sensitive species of flora or fauna which use areas on or around the site, e.g. for breeding, nesting, foraging, resting, over-wintering, or migration, be affected by the project?	Yes	See 10.1 above.	Yes See 10.1 above.
11. LANDSCAPE AND VISUAL			
11.1 Are there any areas or features on or around the location which are protected for their landscape and scenic value, and/or any non-designated / non-classified areas or features of high landscape or scenic value on or around the location which could be affected by the project? ¹ Where designated indicate level of designation (international, national, regional or local).	Yes	The Gravesend site is not subject to any locally, nationally or internationally important landscape designations. However, given the scale of the development and that the site is highly visible it is considered there could be an impact in landscape and visual terms.	Yes The design of the new pylon in Gravesend is not known and as an existing pylon on the Gravesend site is to be left in place, it is considered this would cause visual harm and the impact on the environment in terms of townscape, landscape and visual harm would likely to be significant.

¹ See question 8.1 for consideration of impacts on heritage designations and receptors, including on views to, within and from designated areas.

A Screening Criteria Question	B Response to the Screening Criteria Question in Column A (Yes/No and explanation of reasons)		C Is a Significant Effect Likely? (Yes/No and explanation of reasons (nb if the answer in Column B is 'No', Column C is not applicable))
11.2 Is the project in a location where it is likely to be highly visible to many people? (If so, from where, what direction, and what distance?)	Yes	It is situated in close proximity to the River Thames (approx. 150m to the north) and so would be visible from not only surrounding area in Gravesend but also visible from Tilbury opposite.	Yes As stated above in 11.1 due not knowing the design of the new pylon and that an existing pylon is to remain it is considered the impact on the environment in respect of townscape, landscape and visual harm would likely to be significant.
12. CULTURAL HERITAGE/ARCHAEOLOGY			
12.1 Are there any areas or features which are protected for their cultural heritage or archaeological value, or any non-designated / classified areas and/or features of cultural heritage or archaeological importance on or around the location which could be affected by the project (including potential impacts on setting, and views to, from and within)? Where designated indicate level of designation (international, national, regional or local).	Yes	The site lies within an area of multi-period archaeological potential adjacent to the Thames. There are designated and non-designated heritage assets within the surrounding area.	Yes An Historic Environment Desk Based Assessment has been submitted with the application. KCC Heritage advise that the development has the potential to impact on significant, potentially nationally important, below-ground archaeological remains, as well, potentially having a significant negative impact on the non-designated Milton Rifle Range and that the project should be subject to EIA. Historic England acknowledge there would be limited designated heritage assets affected. The are however, mindful of the potential for non-designated heritage assets and archaeological matters within the red line boundary. Specifically, in this case it is the likelihood of archaeological and palaeo environmental remains associated with the Thames foreshore and the former marshlands. They note this potential has been identified in the report but they consider that these deposits should be ascribed a high-value because of the potential to provide information on a range of indices, specifically things like climate change, the evolution of the Thames as well as human interaction with that landscape. They note that although this would not change the need for further assessment and the need for an appropriate approach to mitigation, they do consider the values and assessment of impacts are amended to reflect the significance of these deposits.

A Screening Criteria Question	B Response to the Screening Criteria Question in Column A (Yes/No and explanation of reasons)	C Is a Significant Effect Likely? (Yes/No and explanation of reasons (nb if the answer in Column B is 'No', Column C is not applicable))
		<p>Overall, they consider that the historic environment represents a potentially significant issue in EIA terms.</p> <p>It is therefore considered that the impact on the environment has the potential to be significant in respect of heritage and archaeology.</p>
13. TRANSPORT AND ACCESS		
<p>13.1 Are there any routes on or around the location which are used by the public for access to recreation or other facilities, which could be affected by the project?</p>	<p>Yes</p> <p>Due to the construction of the southern shaft and the necessary buildings and pylons to receive the cables and connect to the overhead wire system in Gravesend. Plus, the removal of the Tunnel Boring Machine.</p>	<p>Yes</p> <p>For the Gravesend site there are expected to be up to 21 HGV vehicle movements a day, with an average of 10 per day. This type of traffic would mainly be associated with the delivery of materials and equipment as follows:</p> <ul style="list-style-type: none"> • Tunnel shaft construction; • Tunnel shaft lining segments delivery; • AILs for the TBM; • Shaft fit out and head house construction; • Sealing end compound construction; and • 400kv overhead line diversions. <p>It is anticipated that all HGV traffic would access the site from Wharf Road. The proposed construction route is the shortest available between the site and the SRN:</p> <ul style="list-style-type: none"> • Arrivals: M2/A2 – A289 – A226 – Ordnance Road – Canal Road – Norfolk Road – Mark Lane – Wharf Road; and • Departures: Wharf Road – Mark Lane – Norfolk Road – Canal Road – Ordnance Road – A226 – A289 – M2/A2. <p>A limited number of light vehicle movements are</p>

A Screening Criteria Question	B Response to the Screening Criteria Question in Column A (Yes/No and explanation of reasons)	C Is a Significant Effect Likely? (Yes/No and explanation of reasons (nb if the answer in Column B is 'No', Column C is not applicable))
		<p>envisaged during the construction phase as a result of construction staff.</p> <p>A Construction Logistic Plan (CLP) would be prepared to ensure that all traffic associated with the construction works operate in a safe and compliant manner at all times. The specific mitigation measures in the CLP would be agreed with Gravesham Borough Council and/ or Kent County Council (through regular liaison) and adhered to by the appointed Contractor. The CLP is expected to include the following:</p> <ul style="list-style-type: none"> • Measures designed to manage construction traffic (e.g. HGVs and construction staff at the start and end of the working day) in order to minimise the impact on local residents, businesses, road users and other potentially sensitive land uses and ensure all third-party traffic interfacing with the proposed development is kept safe from the on-going work; • A traffic routing strategy to ensure vehicles accessing the site do so via the most appropriate route(s) and to avoid (or minimise) conflict with sensitive areas such as residential areas; • Access security personnel and traffic marshals to ensure the access point is managed safely and securely. Swept path analysis will be undertaken to ensure vehicles can safely enter and exit the Proposed Development from/ to the local highway network without impacting road users; • Temporary traffic management/ construction signage at the site access point and on the approach to the site access (as required) to ensure safe movements of all road users; • A parking review to ensure a clear route is available to construction vehicles travelling to/ from the Proposed Development, particularly on local/ access roads;

A Screening Criteria Question	B Response to the Screening Criteria Question in Column A (Yes/No and explanation of reasons)		C Is a Significant Effect Likely? (Yes/No and explanation of reasons (nb if the answer in Column B is 'No', Column C is not applicable))	
				<ul style="list-style-type: none"> • A requirement for vehicles to be correctly maintained and operated in accordance with the manufacturer's recommendations and in a responsible manner; • A Driver Information Pack covering a variety of topics and providing information on the requirements of working on the Proposed Development; • A specialised haulage service to allow AILs to be transported, with the necessary escort, permits and traffic management in place; and • An access route inspection and swept path analysis for the largest equipment/ construction material delivery vehicles and transporters (including AILs) would also be undertaken to determine the need for any additional control measures. <p>GBC Highways advise that the level of traffic would not be considered significant but could involve some abnormal loads which will require careful management.</p> <p>However, it is considered that due to the number of trips proposed which involve HGV's together with how the site will be accessed will impact on biodiversity and ecology as well as other impacts such as noise and disturbance. The impact on the environment is therefore considered to have the potential to be significant in respect of transport and access.</p>
13.2 Are there any transport routes on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected by the project?	No		N/A	
14. LAND USE				
14.1 Are there existing land uses or community facilities on or around the	Yes	To the north of the site is the Saxon Shore Way with more vegetation beyond and the River Thames	Yes	Due to the distance of the nearest sensitive receptors and in respect of certain areas – biodiversity and

A Screening Criteria Question	B Response to the Screening Criteria Question in Column A (Yes/No and explanation of reasons)		C Is a Significant Effect Likely? (Yes/No and explanation of reasons (nb if the answer in Column B is 'No', Column C is not applicable))	
location which could be affected by the project? E.g. housing, densely populated areas, industry / commerce, farm/agricultural holdings, forestry, tourism, mining, quarrying, facilities relating to health, education, places of worship, leisure /sports / recreation.		beyond that. To the east is the Milton Rifle Range, to the west is the Thameside Campus (National Maritime Training Centre), Metropolitan Police Specialist Training Centre (MPSTC) and Thames and the Medway Canal Association and to the south is the railway and Thames and Medway Canal. There is housing to the south.		ecology, geology and hydrology, noise and vibration, townscape/landscape (visual effects) and transport and access it is considered the impact on other land uses or community facilities could be significant.
14.2 Are there any plans for future land uses on or around the location which could be affected by the project?	No		N/A	
15. LAND STABILITY AND CLIMATE				
15.1 Is the location susceptible to earthquakes, subsidence, landslides, erosion, or extreme /adverse climatic conditions, e.g. temperature inversions, fogs, severe winds, which could cause the project to present environmental problems?	No		N/A	
16. CUMULATIVE EFFECTS				
16.1 Could this project together with existing and/or approved development result in cumulation of impacts together during the construction/operation phase?	Yes	Lower Thames Crossing is at the pre-examination phase.	Yes	The effects from a number of matters in this checklist including highways, biodiversity and pollution, amongst others, could have a cumulative impact when other developments such as Lower Thames Crossing are taken into consideration. It considered further information would be needed in this regard.
17. TRANSBOUNDARY EFFECTS				
17.1 Is the project likely to lead to transboundary effects? ²	Yes	The site is located in close proximity to Essex.	No	A separate EIA screening opinion has been submitted to Thurrock Council which has been determined by way of EIA is not required.

² The Regulations require consideration of the transboundary nature of the impact. Due to the England's geographical location the vast majority of TCPA cases are unlikely to result in transboundary impacts.

18. CONCLUSIONS – ACCORDING TO EIA REGULATIONS SCHEDULE 3

The proposed development has been assessed against the criteria in Schedules 2 and 3 to the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended). It is considered that an Environmental Statement is required as the proposed development is likely to result in significant impacts on the environment.

19. SCREENING DECISION

If a SO/SD has been provided do you agree with it?	No
Is it necessary to issue a SD?	Yes
Is an ES required?	Yes

20. ASSESSMENT (EIA REGS SCHEDULE 2 DEVELOPMENT)	OUTCOME	
Is likely to have significant effects on the environment	ES required	✓
<u>Not</u> likely to have significant effects on the environment	ES not required	
More information is required to inform direction	Request further info	

21. REASON FOR SCREENING

At the request of the applicant.

NAME	Rebecca Harrison
DATE	03/08/2023



Development Management, Civic Offices, New Road,
Grays Thurrock, Essex RM17 6SL

Kate McGregor
National Grid PLC
1-3 Strand
London
WC2N 5EJ

Our Ref: 23/00681/SCR

E-Mail: dm@thurrock.gov.uk

Date: 7th July 2023

BY EMAIL

Dear Kate

Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended)– Request for the Screening Opinion of the Local Planning Authority

Proposal:

Request for Environmental Impact Assessment (EIA) Screening Opinion pursuant to Part 2 (6) of the Town and Country Planning (Environmental Impacts Assessment) Regulations 2017 (as amended): National Grid TKRE tunnel project from Tilbury to Gravesend.

Location:

National Power PLC, Tilbury Power Station, Fort Road, Tilbury, RM18 8UJ.

I refer to your recent email request, dated 2nd June 2023, for a Screening Opinion pursuant to Part 2 (6) of the above regulations. You have kindly agreed to an extension of time for determination until Friday 7 July 2023 via Part 2 (6)(6)(b) of the Regulations.

Having undertaken the Environmental Impact Assessment (EIA) screening assessment process (below) the local planning authority considers that the proposal would be unlikely to result in significant effects on the environment. Consequently, the local planning authority has determined as follows:

That an EIA is not required.

I can confirm that in accordance with the Regulations a copy of this decision will be placed

on Part 1 of the Planning Register. Should you have any further queries relating to this matter please do not hesitate to contact me via the email address above.



Nina Hicks
Planning Officer
Place Directorate

EIA SCREENING PROCESS

Town and Country Planning Act 1990 (as amended)
Town and Country Planning (Environmental Impact Assessment) Regulations 2017
(as amended)

		Yes	No
1)	SCHEDULE 1 PROPOSAL?		✓
2)	SCHEDULE 2 PROPOSAL?	✓	
3)	SENSITIVE AREA LOCATION?		✓
	Land in a Site of Special Scientific Interest		✓
	National Park		✓
	The Broads		✓
	UNESCO World Heritage Site		✓
	Schedule Ancient Monument (SAM)		✓
	Area of Outstanding Natural Beauty (ANOB)		✓
	Special Protection Area (SPA)		✓
	Special Area of Conservation (SAC)		✓
	Ramsar wetlands of international importance.		✓
	<i>Although not formal sensitive area the following may be considered sensitive locations</i>		
	Severely contaminated land		✓
	Sites of major archaeological importance		✓
	Local Nature Reserves		✓
	SINCS or County Wildlife Sites		✓
	Registered Parks and Gardens		✓
	Coastal Protection Belts		✓
	Ancient Landscapes		✓
	Country Parks		✓
	Regionally Important Geological Sites		✓
	Areas close to water boreholes		✓
	Within river corridors	✓	

	Sea defences		✓
	National Trust sites		✓
	Air Quality Management Area		✓
4)	DOES THE PROPOSAL MEET SCHEDULE 2 THRESHOLDS AND CRITERIA?		
	1. AGRICULTURE AND AQUACULTURE		
	Projects for the use of uncultivated land or semi natural areas for intensive agricultural purposes (> 0.5 hectares)		✓
	Water management projects for agriculture including irrigation and land drainage projects (> 1 hectare)		✓
	Intensive livestock management (> 500 m ²)		✓
	Fish farming (> 10 tonnes per year)		✓
	Reclamation of land from the sea		✓
	2. EXTRACTIVE INDUSTRY		
	Quarries and mining all development		✓
	Extract by fluvial or marine dredging		✓
	Deep drillings for geothermal, water, nuclear waste (>1 ha, or within 100m of controlled water for nuclear)		✓
	Surface installations for extracting coal, petrol, gas and ores (> 0.5 ha)		✓
	3. ENERGY INDUSTRY		
	Installation for production of electricity, steam and hot water (> 0.5 ha)		✓
	Installation for carrying gas, steam and hot water (> 1 ha)		✓
	Storage of gas and storage of fossil fuel (> 500m ² or within 100m of controlled water)		✓
	Industrial briquetting of coal and lignite (> 1,000 m ²)		✓
	Installation for processing & storage of radioactive waste (> 1,000 m ²)		✓
	Installations for hydroelectric energy projection (> 0.5 megawatts)		✓
	Installations for the harnessing of wind power for energy production (> 2 turbine or hub height of any turbine >15 metres in height)		✓
	Installations to capture carbon dioxide		✓
	4. PRODUCTION & PROCESSING OF METALS (> 1000 m ²)		✓
	5. MINERAL INDUSTRY (> 1000 m ²)		✓
	6. CHEMICAL INDUSTRIES		
	Production of pesticides, chemicals pharmaceutical products, paint, varnishes etc (floor area > 1,000 m ²)		✓
	Storage facilities for petroleum or petroleum products (any building/structure > 0.05 ha or > 200 tonnes stored at a time)		✓
	7. FOOD INDUSTRY		
	Manufacture of vegetable/animal oils/fats (> 1000 m ²)		✓
	Packing and canning of animal/vegetable goods (> 1000 m ²)		✓

	Manufacture of dairy products (> 1000 m ²)		✓
	Brewing and malting (> 1000 m ²)		✓
	Confectionary and syrup making (> 1000 m ²)		✓
	Animal slaughter (> 1000 m ²)		✓
	Starch manufacturing (> 1000 m ²)		✓
	Fish meal/oil factory (> 1000 m ²)		✓
	Sugar factory (> 1000 m ²)		✓
	8. TEXTLE LEATHER WOOD AND PAPER		
	Industrial production of paper/board (> 1000 m ²)		✓
	Washing, bleaching and dying of fibres/textiles (> 1000 m ²)		✓
	Tanning plants (> 1000 m ²)		✓
	9. RUBBER INDUSTRY		
	Manufacture & treatment of elastomer based products (> 1000 m ²)		✓
	10. INFRASTRUCTURE PROJECTS		
	Industrial estate developments (where area of development > 0.5 ha)		✓
	Urban development projects (> 1 ha which is not dwelling house development, or, > 150 dwellings, or > 5ha for overall development)	✓	
	Transshipment facilities and intermodal terminals (> 0.5 ha)		✓
	Railways (> 1 ha)		✓
	Airfields (> 1 ha, or includes extension to a runway)		✓
	Roads (> 1 ha)		✓
	Ports and Harbours (> 1 ha)		✓
	Canals and flood relief works (> 1 ha)		✓
	Oil and gas pipelines/installations (> 1 ha, or pressure to 7 bar)		✓
	Coastal work to combat erosion and associated works		✓
	Groundwater abstraction (> 1 ha)		✓
	Works to transfer of water resources between river basins (> 1 ha)		✓
	Motorway service areas (> 0.5 ha)		✓
	11. OTHER PROJECTS		
	Permanent racing and test tracks for motorised vehicles (> 1 ha)		✓
	Installations for disposal of waste (incineration or >0.5 ha or within 100m of controlled waters)		✓
	Waste water treatment plans (> 1,000 m ²)		✓
	Sludge deposition sites, storage of scrap/vehicles (area > 0.5 ha or within 100m of controlled waters)		✓
	Testing engines, turbines and reactors (> 1,000 m ²)		✓
	Installation of artificial fibres (> 1,000 m ²)		✓
	Installation for recovery of destruction of explosives (> 1,000 m ²)		✓
	Knackers Yard (> 1,000 m ²)		✓
	12. TOURISM AND LIESURE		
	Ski runs, ski lifts and cable cars (> 1 ha or height > 15m)		✓

	Marina's (> 1,000 m ²)		✓
	Holiday villages/theme parks (> 0.5 ha)		✓
	Permanent camp sites and caravan sites (> 1 ha)		✓
	Golf courses and associated developments (> 1 ha)		✓
	13. CHANGES AND EXTENSIONS		✓
	Changes to or extensions to development in Schedule 1		✓
	Changes to or extensions to development in Schedule 2		✓
	New methods or products within Schedule 1		✓

Determination of whether Schedule 1 or Schedule 2 Development

Your request refers to the erection of a new terminal pylon including overhead line modifications, a bored cable tunnel, tunnel headhouse and sealing end compounds. Although the development would be located adjacent to a proposed Site of Special Scientific Interest (SSSI) boundary, no permanent development would be within this area. The table at Schedule 2 of the Regulations describes in Column 1 (10) 'Infrastructure projects' and sub-section (b) refers to 'Urban development projects, including the construction of shopping centres and car parks, sports stadiums, leisure centres and multiplex cinemas. The corresponding Column 2 (Applicable thresholds and criteria) refers at sub-section (i) to *"the development includes more than 1 hectare of urban development which is not dwellinghouse development"*. Therefore, the local planning authority determines that the proposal is a Schedule 2 development.

In accordance with the Regulations, it is necessary to consider whether the development would lie within a "sensitive area" as defined at Part 1(2) of the Regulations. The proposal is not within a "sensitive area", although the site is within the 'Impact Risk Zones' drawn around SSSIs / Ramsar / SPAs close to the site.

Screening Opinion

Schedule 3 of the 2017 Regulations sets out the selection criteria for screening developments that may require an EIA. The key criteria are:

1. characteristics of development;
2. location of the development; and
3. types and characteristics of the potential impact.

On the basis of the submitted request, the local planning authority considers that the proposal is Schedule 2 development, but would not have the potential to generate significant environmental effects in the location proposed so as to require the submission of an EIA. The conclusion is that the proposal **DOES NOT REQUIRE EIA**.

The reasons for this conclusion, based upon the commentary set out in your request for a Screening Opinion, are set out below:

Characteristics of development

1. The characteristics of development must be considered with particular regard to:
 - (a) the size and design of the whole development - *the proposal would not give rise to any significant impacts;*
 - (b) cumulation with other existing development and/or approved development - *the proposals would not give rise to any significant cumulative impacts;*
 - (c) the use of natural resources, in particular land, soil, water and biodiversity - *there would be no significant new use of natural resources, with no resources of special importance to land, soil, water or biodiversity being affected;*
 - (d) the production of waste - *the proposals are unlikely to produce significant levels of waste;*
 - (e) pollution and nuisances - *the proposals would not give rise to any significant pollution or nuisance;*
 - (f) the risk of major accidents and/or disasters relevant to the development concerned, including those caused by climate change, in accordance with scientific knowledge - *the proposed development would not give rise to any significant increased risk of accidents or disasters;*
 - (g) the risks to human health (for example, due to water contamination or air pollution) - *the proposals would not give rise to any significant increased risk to human health.*

Location of development

2. The environmental sensitivity of geographical areas likely to be affected by development must be considered, having regard, in particular, to –
 - (a) the existing and approved land use – *land uses on the site are considered to be of a relatively low environmental sensitivity;*
 - (b) the relative abundance, availability, quality, and regenerative capacity of natural resources (including soil, land, water, and biodiversity) in the area and its underground - *the proposed development would not result in significant effects on any rare or threatened natural resources;*
 - (c) the absorption capacity of the natural environment, paying particular attention to the following areas—
 - (i) wetlands, riparian areas, river mouths – *would not be significantly affected by the proposals;*
 - (ii) coastal zones and the marine environment – *no significant impacts would be likely;*
 - (iii) mountain and forest areas - *no significant impacts would be likely;*
 - (iv) nature reserves and parks – *no significant impacts would be likely;*
 - (v) European sites and other areas classified or protected under national legislation - *although the site is within the 'Impact Risk Zones' drawn around*

SSSIs / Ramsar / SPAs located close to the site it is not considered that the development would give rise to significant effects on these receptors;

- (vi) areas in which there has already been a failure to meet the environmental quality standards, laid down in Union legislation and relevant to the project, or in which it is considered that there is such a failure – *the proposed development would be unlikely to give rise to significant effects;*
- (vii) densely populated areas - *the proposals would be unlikely to give rise to significant effects;*
- (viii) landscapes and sites of historical, cultural, or archaeological significance - *the proposed development would be unlikely to give rise to significant effects.*

Characteristics of the potential impact

3. The potential significant effects of development must be considered in relation to criteria set out under paragraphs 1 and 2 above, and having regard in particular to –
 - (a) the magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected) - *the proposed development would be unlikely to give rise to significant effects at any scale;*
 - (b) the nature of the impact - *the proposals would be unlikely to give rise to significant effects with reference to the nature of impact;*
 - (c) the transboundary nature of the impact - *the development would be unlikely to give rise to significant effects with reference to the transboundary nature of impact;*
 - (d) the intensity and complexity of the impact - *the proposed development would be unlikely to give rise to significant effects with reference to the intensity and complexity of the impact;*
 - (e) the probability of the impact - *the development would be unlikely to give rise to any significant effects;*
 - (f) the expected onset, duration, frequency, and reversibility of the impact - *the proposed development would be unlikely to give rise to new significant effects;*
 - (g) the cumulation of the impact with the impact of other existing and/or approved development - *the proposals would be unlikely to give rise to significant effects*
 - (h) the possibility of effectively reducing the impact - *the proposed development would be unlikely to give rise to any new significant effects.*

With reference to proposed mitigation measures, the local planning authority has taken into account the information to support EIA screening as set out within of your Environmental Screening Report (June 2023) and in accordance with Part 2, 5 (5) (b) of the Regulations are satisfied that features and measures are in place to potentially avoid or prevent what might otherwise have been significant environmental effects:

Conclusion

Overall, based upon the above assessment, it is considered that the proposal would not result in significant environment effects and therefore an EIA is not required for this

proposed development.

Please note that this opinion is given on the basis of the information presented in your covering letter and additional Environmental Screening Report dated June 2023 only.

I trust that these comments are of assistance. Please note that this letter refers to the 2017 Regulations only and this Screening Opinion is given without prejudice to the consideration and determination of any future planning application.



Marine
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Kate McGregor
Consents Officer, NATIONAL GRID VENTURES LIMITED
1-3 Strand
WC2N 5EJ
WC2N 5EJ
Registered No.: 08116497

Case reference: EIA/2023/00026

17th November 2023

Dear Kate McGregor,

**Marine and Coastal Access Act 2009 ("The Act")
Application for an Advice Request (Ref: EIA/2023/00026)**

The Marine Management Organisation (MMO) received the above application.

As we have explained to you in our email on 1 August 2023 and 12 October 2023, the MMO does not consider your proposed works, a bored cable tunnel, to fall under either Schedule A1 or A2 of The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) (MWRs) and have therefore requested you withdraw your EIA screening application. We have given you an opportunity to provide a response to this request following the email on the 12 October 2023 (and sent a reminder email on the 27 October 2023) and to date no response has been forthcoming.

Therefore, without a response or withdrawal, and as we are not able to progress this application, we have made the decision to refuse to proceed with your application under s67(6)(a) of the Act.

This has brought the application to an end.

You are reminded we will not refund any fees that you have paid in relation to the work we have carried out on the application so far, and we may also charge you for any additional work we undertake in refusing to proceed with this application. These charges are in line our statutory charging structure scheme:

<https://www.gov.uk/government/publications/marine-licensing-fees/marine-licensing-fees>

Yours sincerely

Poppy Philipps



Marine
Management
Organisation

...ambitious for our
seas and coasts



2558



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