AA/KM/2

PLANNING / CONSENTS

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

STATEMENT OF EVIDENCE - APPENDICES

Kate McGregor Senior Consents Manager National Grid Electricity Transmission plc

AA/KM/2

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Appendix 1 – Site Location Plan (Figure 1.1)



ΑΞϹΟΜ

PROJECT

TKRE Cable Tunnel **Replacement Project**

CLIENT

National Grid

CONSULTANT

AECOM Limited 100 Embankment Cathedral Approach Manchester, M3 7FB www.aecom.com

LEGEND



Planning Application – Red Line Boundary (Above Ground)

Indicative Tunnel Alignment Planning Application – Red Line Boundary (Below Ground)

National Grid Land Ownership

NOTES

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ISSUE PURPOSE

Environmental Statement

PROJECT NUMBER

60677311

FIGURE TITLE

Site Location Plan

FIGURE NUMBER

Figure 1.1

Appendix 2 – Section 37 Consent Application and Notice

John McKenna Head of Network Consents Energy Infrastructure Planning Department for Business, Energy & Industrial Strategy Level 3, Victoria 1 1 Victoria Street, London SW1H 0ET

18th December 2023

Tilbury to Gravesend Tunnel Project (TKRE)

Section 37 application relating to the connection of new tunnel cables under the river Thames to the existing 4VG (Tilbury to Grain) 400 kV overhead line including the removal of 3 towers and construction of two new towers

Dear John,

National Grid Electricity Transmission (NGET) is proposing to construct a new cable tunnel beneath the River Thames between Tilbury and Gravesend which will provide additional transmission capacity and accommodate increased wind energy generated off the east coast of England and new sea cables connecting with the continent. This tunnel will replace an existing cable tunnel in a similar location that has reached the end of its asset life.

Context of the Section 37 application

To facilitate this replacement tunnel project, new cables in the replacement 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.

The TKRE project will run from Tilbury substation near the Port of Tilbury, under the River Thames and emerge on the south side of the River at East Court Marshes, east of Gravesend. The tunnel is approximately 2.3km long and, in addition to new overhead lines, the project includes new Cable Sealing End compounds, head houses and associated electrical infrastructure.

Proposed Section 37 works

As part of this scheme, the 4VG overhead line will need to be re-aligned to connect into the proposed new Cable Sealing End compounds.

At Tilbury, three existing towers will be removed, and one new tower will be erected (a net loss of two towers) along with a slight change of alignment of the existing overhead line so that it connects into the proposed new Cable Sealing End Compound; this short new span of approximately 209m will result in the net loss (removal) of approximately 393m of overhead line that is currently associated with the two towers to be removed.

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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.

EIA Screening

The Electricity Works (EIA) (England and Wales) Regulations 2017 apply to applications for consent under Section 37 of the Electricity Act. As the overhead line works would follow this consenting route, NGET has taken account of the EIA Regulations and requested a Screening Opinion from both Thurrock Council and Gravesham Borough Council on 2nd June 2023.

Gravesham Borough Council provided its Screening Opinion on 3rd August 2023 stating that the proposed project is an EIA development. A copy of the Council's EIA Screening Opinion is submitted as part of this Section 37 application. Thurrock provided its Screening Opinion on 7th July 2023 stating that the project was not an EIA development. Due to the two opposing opinions and presence of the Overhead Line work in a proposed SSSI at Tilbury, National Grid sought legal advice and has proceeded with an EIA for the entire project.

A further EIA Screening Opinion request was made with the Marine Maritime Organisation (MMO) who have jurisdiction up to Mean High Water Mark of the River Thames. However, 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 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.

Similarly, a further EIA Screening opinion request under The Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2017 was not required as the project does not fall under Schedule 1, and Schedule 2 is for development requiring screening if no EIA report is provided. This project is providing an EIA report by virtue of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 that considers the proposed modifications to the overhead line.

National Significant Infrastructure Project

The erection of the new tower and the re-alignment of the span does not meet the definition of a nationally significant infrastructure project for the purposes of the Planning Act 2008.

Consultation with statutory consultees

NGET and has consulted with the Environment Agency, Natural England and Historic England, alongside the local community and other interested parties, and opportunity has been given for them to lodge objections or concerns to the project. At the time of writing, no objections had been received. The Consultation Period expired on 29th October 2023. Further opportunity will be given for statutory consultees to comment when the planning application, which include details on the overhead line modifications, is submitted to each local authority in December 2023.

Gravesham Borough Council and Thurrock Council have been sent a copy of the Form B Part II at the time this application has been submitted.

Copies of the statutory consultees' letters and the Form B are submitted as part of our Section 37 application.

Land rights

The land on which the Section 37 works are to be undertaken is owned by the RSPB and the Port of Tilbury. NGET is in discussions to secure voluntary rights over this land. NGET intends to make a Compulsory Purchase Order in mid-2024 to ensure that it can acquire rights in the event that they cannot be secured voluntarily but NGET remains committed to negotiating voluntary rights in parallel.

Further matters

A table which provides more detail and information on further matters that require consideration by applicants in Section 37 Applications is appended to this letter.

Yours sincerely,

lenn

Consents Officer

Application	National Grid Response
Requirement	
Scheme need Guidance Note para 3.4	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.
	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 government's 2030 power section decarbonisation target.
	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 400 kilovolt (kV) circuits will be significantly overloaded in their current capacity and require uprating. A replacement tunnel underneath the Thames to facilities this uprating is the preferred solution.

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Application Requirement	National Grid Response
Scheme solution Guidance Note para 3.4	New spans of overhead line connecting the uprated cables within the new tunnel to existing 4VG line is considered to be the best solution. It is a cost effective method and minimises environmental impacts in sensitive locations. This solution was discussed with relevant specialists throughout the optioneering phase of this project.
Scheme Programme <i>Guidance Note</i> <i>para 3.3</i>	OHL works unlikely to take place until Spring 2028. Full programme for project shown below. January/February 2023 Survey works September/October 2023 Public Consultation Spring/Summer 2024 Planning decision Spring 2028 Overhead line works Winter 2028 Project completion
Prior consultation Guidance Note para 3.5	National Grid has consulted extensively with stakeholders and relevant parties including all Statutory Environmental Bodies throughout the design of this project. A summary of this process is recorded in Chapter 5 of Volume II of the Environmental Statement and the Statement of Community Involvement (see attachment).
Reasons why exemptions not possible <i>Guidance Note</i> <i>para 3.6</i> Protection of the environment	This project cannot seek exemptions to Section 37 Consents under the OHL (Exemption) Regulations 2010 because the works at Tilbury are within a SSSI that will be designated by Natural England in the near future (timescale currently not known). Also, Gravesham Borough Council has undertaken an EIA Screening assessment and found the works to require and Environmental Statement (specifically landscape impacts associated with overhead line works are described as 'significant'). These two aspects mean that exemptions cannot be pursued. Please see accompanying Environmental Statement
Guidance Note para 3.7 Mitigation of environmental impacts Guidance Note para 3.7	Please see accompanying Environmental Statement

Application Requirement	National Grid Response
Form B	A completed version of the Form B has been submitted to the Local Planning Authority with a copy of the Environmental Statement at the same time as this
Guidance Note para 3.12	S37 Consent Application has been made.
Public notification <i>Guidance Note</i> <i>para 3.13 and 3.15</i>	At the same time as this S37 Consent Application has been made, this application has been notified to the public by placing notices in local newspapers and the London Gazette so that members of the public can make representations for 28 days. These notices explain that paper copies of the Environmental Statement can be obtained using any of the following methods:
	Phone: 020 3398 1599 (lines are open Monday to Friday, 9am to 5:30pm) Email: <u>contact@graintotilbury.nationalgrid.com</u> Post: Freepost GRAIN TO TILBURY PROJECT
	It is possible that this project may affect a SSSI (designation underway) and so Natural England has been made aware that this Section 37 Consent application has been made.
Public Health	Please see accompanying Environmental Statement for an assessment of impacts of this project on human health.
Guidance Note para 3.18	
Civil Aerodromes	The position of National Grid's proposed new overhead line does not infringe on safeguarded airspace or need to be cleared with the Civil Aviation Authority
Guidance Note para 4.2	and Controllers of non-safeguarded airports.

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Online application form boxes

Project Description (4000 characters not words!)

Consent Need

Modifications to OHLs and pylons are required to facilitate National Grid's (NG) tunnelling project from Tilbury, Essex to Gravesend, Kent.

The OHL modifications are to NG's '4VG' 400kV OHL, on land not owned by NG and for a distance of 1km. For these reasons, the criteria set out in paragraphs 2 and 2A of S37 of the Electricity Act 1989 are not met and consent is required.

Whilst the OHL modifications meet may of the criteria under the OHL (Exemption) Regulations 2010, consent is still applicable for two reasons:

- At Gravesend, the LPA has been determined the project likely to have a significant adverse effect on the environment (with landscape impacts associated with new pylons explicitly mentioned)
- At Tilbury, the works fall within land that Natural England has earmarked as a proposed SSSI and this designation could be made before works commence in 2027/2028

For these reasons, para 3C and 3E of the Exemption Regulations cannot be enacted and the further limitations set out in paragraph 5(1) come into force.

Wider Project Background

The wider project is part of the Ofgem's new Accelerated Strategic Transmission Investment framework. Under this framework, NG is responsible for delivering the enhancements required to achieve the government's 2030 decarbonisation target.

In recent years, a significant amount of renewable/low carbon energy generation, has been forecasted to connect into the network on the east coast of England, together with interconnectors from the continent. Through these forecasts, NG has identified that the Tilbury to Grain and Kingsnorth circuits will be significantly overloaded in their current capacity and require uprating.

The circuits are predominantly OHL, with a section installed within a deep tunnel beneath the River Thames. In its current state, the existing tunnel would not safely accommodate an upgrade to the new cables. Therefore, a tunnel replacement project has been designed. The project consists of a boring a new tunnel in a similar location and installing the following above-ground components at both ends:

- A new CSEC consisting of a new:
 - \circ $\ \ \,$ tunnel headhouse to cover the tunnel shaft
 - OHL gantry structure which will connect the OHL downlead conductors and transfer them to sealing end structures
- Modifications to the existing OHL

OHL Work Required

Once the tunnel is constructed and new cables installed, the cables will need connecting into the wider OHL network. This activity will be carried out during a formally arranged outage which will allow the existing pylons and OHL spans to be removed, and new pylons and OHL cables to be installed.

The proposes changes to the OHL are shown in drawing number PDD-100116-OHL-022 (Rev 02).

<u>Tilbury</u>

Existing terminal pylon 4VG045A will be replaced with a new terminal pylon (also to be named 4VG045A), which will be erected 40.4m west of its existing location. The new pylon will form the start of the 400kV OHL, taking cables via gantries within the new CSEC to Tilbury substation. The length of new span that travels northwards from landing gantries to new pylon 4VG045A is 82m. The length of new span that travels northwards from new pylon 4VG045A to existing pylon 4VG045B is 127m. Existing pylons 4VG044 and 4VG043 will be removed and the existing terminal

pylon 4VG045B will be refurbished. To facilitate this new arrangement, a total of 602m of OHL conductor will be removed and 209m of new double span OHL will be installed.

Gravesend

Existing pylon 4VG042 will be removed and replaced with a new pylon (with same name) which will be erected adjacent to the new CSEC. The new pylon will be 94.6m southeast of existing pylon 4VG042 and the widest distance between the existing and new OHL will be 52.8m. Existing Pylon 4VG041 will be refurbished. To facilitate this new arrangement, 403m of OHL will be permanently removed and 325m of new OHL will be installed.

3883 characters

Are you adding or replacing any poles? Provide a description of the construction works and methods of work (4000 characters)

Yes, a replacement pylon will be needed at both the Tilbury and Gravesend sites. See drawing PDD-100116-OHL-022 (Rev 02). The replacement pylons are known as terminal towers because they are positioned where the OHL finishes before transitioning down onto landing gantries within each CSEC.

At Tilbury, the replacement terminal pylon will be located 94.6m west of the existing pylon 4VG045A and this corresponds with the widest distance between the new and existing OHLs. In addition, 3 existing pylons will be dismantled.

At Gravesend, the replacement terminal pylon will be located 94.6m south east of existing pylon 4VG042 and the widest distance between the existing and new OHL will be 52.8m.

Infrastructure Installation

Pylon foundation installation would take place before any circuit outages on the existing OHL. Temporary working areas around the proposed new tower locations would be prepared and taped off to delineate the working area and ensure impacts on sensitive habitats are minimised.

An area of c. 6m by 6m is then excavated for each pylon leg. Piled foundations are required to a depth of between 14-20m. The first 4m depth will be concrete filled.

The steelwork required for the new terminal pylons will either be erected by a Mobile Hydraulic Crane, or with a derrick to erect the pylon in small sections. This requires a large laydown and assembly area of c. 50m x 50m before lifting the steelwork sections. A tractor with a light crane or tele-handler may assist in the moving of and erecting steelwork on the ground. The first panel will be lifted by the crane and manoeuvred into position over the foundation stubs and fixed into place with connecting bolts.

Once in place, the panel will be stayed to hold its position. Subsequent sections will be assembled using a controlled lift via a crane and staying sequence with each panel or boxed section bolted in turn to the previous erected panel until the pylon is complete and secured.

Infrastructure Removal

The existing OHL conductors would be removed by lowering them on to trestles rollers or wooden batons which are placed in line underneath the conductor and rolled in.

Pylon dismantling and removal can be carried out using a variety of methods depending on the pylon type, location and accessibility. Due to the location of these existing pylons, their surrounding land uses and habitats, it is likely the pylons will be dismantled via cranes.

Before the pylon structures can be removed, the conductor and fittings are removed. For safety reasons, it may be necessary to 'backstay' the pylons. This would involve c. three 1.2 tonne concrete blocks (2m by 1m), called 'backstays' being placed onto a sledge (via tractor) at strategic locations. The concrete blocks act as a safety device, typically placed c. 35m back from the new pylon and connected by wire rope.

Once all backstays are in position, working platforms will be raised to working height at the pylons, and insulators and fittings will be lowered to the ground via tractor and winch. Once this is completed, each conductor is lowered to the ground where it will rest on trestles tables or tarpaulin. Operatives with handheld hydraulic cutters, cut the conductor into manageable pieces for disposal. The pylons are then dismantled. A large mobile hydraulic crane will be positioned on a crane pad c. 20m x 10m constructed from plastic or metal panelling. It will take c. 1 day to dismantle a pylon using a crane. As they are lowered to the ground, the sections of the pylon will be broken up using mechanical shears fitted to an excavator.

Foundations are generally removed to a depth of 1m below ground level, with excavation usually no more than 0.5m by 0.5m. The excavator then breaks the concrete around the steel 'raker' and cuts to a depth of c. 1m. This action would then be repeated for the remaining pylon legs and the land reinstated.

3883 characters

Are you adding or replacing any OHLs? Provide a description of the construction works and methods of work (4000 characters)

Yes, replacement line will be needed at both the Tilbury and Gravesend sites.

At Tilbury, two new lengths of OHL will be needed:

- 1) A new length that travels northwards from the landing gantries in the new SEC to new pylon 4VG045A. This stretch of OHL is 82m.
- 2) A new length that travels northwards from new pylon 4VG045A to existing pylon 4VG045B within Tilbury substation. This new stretch of OHL is 127m.

To facilitate this new arrangement, a total of 209m of new double span OHL will be installed and a total of 602m of OHL conductor will be removed.

At Gravesend, the replacements are simpler with c. 403m of single span OHL to be permanently removed and replaced with c. 325m of new double span OHL.

There are two elements to the construction works and methods are the same at both Tilbury and Gravesend. These are:

- 1) Stringing of the new OHL cables
- 2) Stringing of the downleads between the terminal towers and landing gantries

Dismantling of the existing overhead cables is described in the previous answer.

Stringing of the New Overhead Cables

Once the pylons are built, the new conductors are hung. This is known as 'stringing'. Stringing is the method of positioning and pulling the new conductors between two pylons. There are two different ways to carry out this operation.

The first is none tension pulling. This involves pulling the new conductor from the required point A to B via a tractor winch at ground level. The new conductor can be pulled over trestle tables, rather than the ground, so to protect the new conductor as well as the underlying habitats.

Once the conductor is pulled to its required position, it is raised via a winch to its respective landing points on the pylon arms.

Once the conductor is secure, a working platform can be raised to the working height point. This ensures operatives work at height safely. The conductor is then 'sagged' (tensioned to ensure mechanical and electrical correctness) via a winch. Once completed, the conductor is then attached to its landing point on the pylon via its fittings, insulators and jumpers. This process is then repeated for each conductor.

The second stringing method is called tension stringing. This method keeps the conductor off the ground entirely. Working platforms are raised at each pylon and a running wheel attached to the arms of each pylon.

Two hydraulic puller/tension machines are set up at each pylon, one acting to pull the conductor and one acting to tension (pull back) the conductor. This enables the operatives to control the height and tension of conductor, ensuring it is kept off the ground.

One puller tension machine is set at the base of the pylon, whilst the other is positioned behind the other pylon (set back by c.50m).

Lighter pilot rope is pulled through the puller tension machines and up to the running wheels. These will be pulled through the total span and this enables the conductor to be attached at the tension end, and the conductor to be pulled through the span without coming in to contact with the ground.

Once this is complete, the conductor is then sagged to the required tension, and secured with fittings, insulators and jumpers from the working platform.

Stringing of the Downleads (between the terminal tower and OHL gantries)

The conductor which runs from the new pylon to the gantry within the SECs is called a downlead. This is attached via an insulated connection.

Downleads are installed via two tractor winches. These will pull the conductor to its landing point. The downleads are laid out on the ground and cut to their appropriate length. They are then attached to the tractor winches.

Once pulled to position, a mobile elevated work platform would be raised to working height on the pylon. The downlead is then attached to its landing point on the pylon via fittings, insulators and jumpers.

3844 characters

Are you adding or replacing any existing equipment as part of this project? Provide a description of the construction works and methods of work (4000 words)

All addition and replacement works have been described in previous answers to questions.

Why have all wayleaves not been obtained?

Work is subject to a CPO that will be launched when this application has been submitted.

The CPO cannot begin until then because a condition of the CPO is that consents are being actively progressed.

It is hoped that the CPO will be unnecessary and that voluntary agreements with landowners can be achieved.

Do you have any comments to make in support of your application? (optional)

Please note, the question within this application refer to 'poles'. National Grid uses the terms 'towers' or 'pylons' in the attached evidence.

The OHL diversions, from foundations, pylon build, and stringing will be completed as the final phase of the Proposed Development in 2028 and be completed in under one year. The removal of the existing pylons at Tilbury will be completed only once the new equipment is energised, and removal is expected to take approx. 3 months.

Finally, at Gravesend, there may be a requirement to reinforce the foundations of existing pylon 4GV041. This will require excavating a pit approximately 6m x 6m at each foot to expose the foundation. Once exposed, a new concrete slab is binded to the existing foundation, adding strength and integrity. Once complete, the excavations are back filled.

Please note that this Section 37 application is closely link to a Compulsory Purchase Order which is anticipated to be made in Summer 2024. This is because it's the policy of the Department for Energy and Net Zero that it will only issue a Section 37 consent in circumstances where the applicant can confirm that all land rights are in place. This includes any arrangements in the promotion of a CPO to secure such rights.

The OHL works for this project are not programmed to begin until 2028. However, this application is being progressed early because it is needed in order for the CPO to be confirmed by the Secretary of State. National Grid are anticipating the CPO will be confirmed in September 2025 so it would be logical for the s37 to be confirmed on or around that date too. This slight delay to the normal consenting regime would also prevent the consent reaching the three year expiry date to the start of works.



