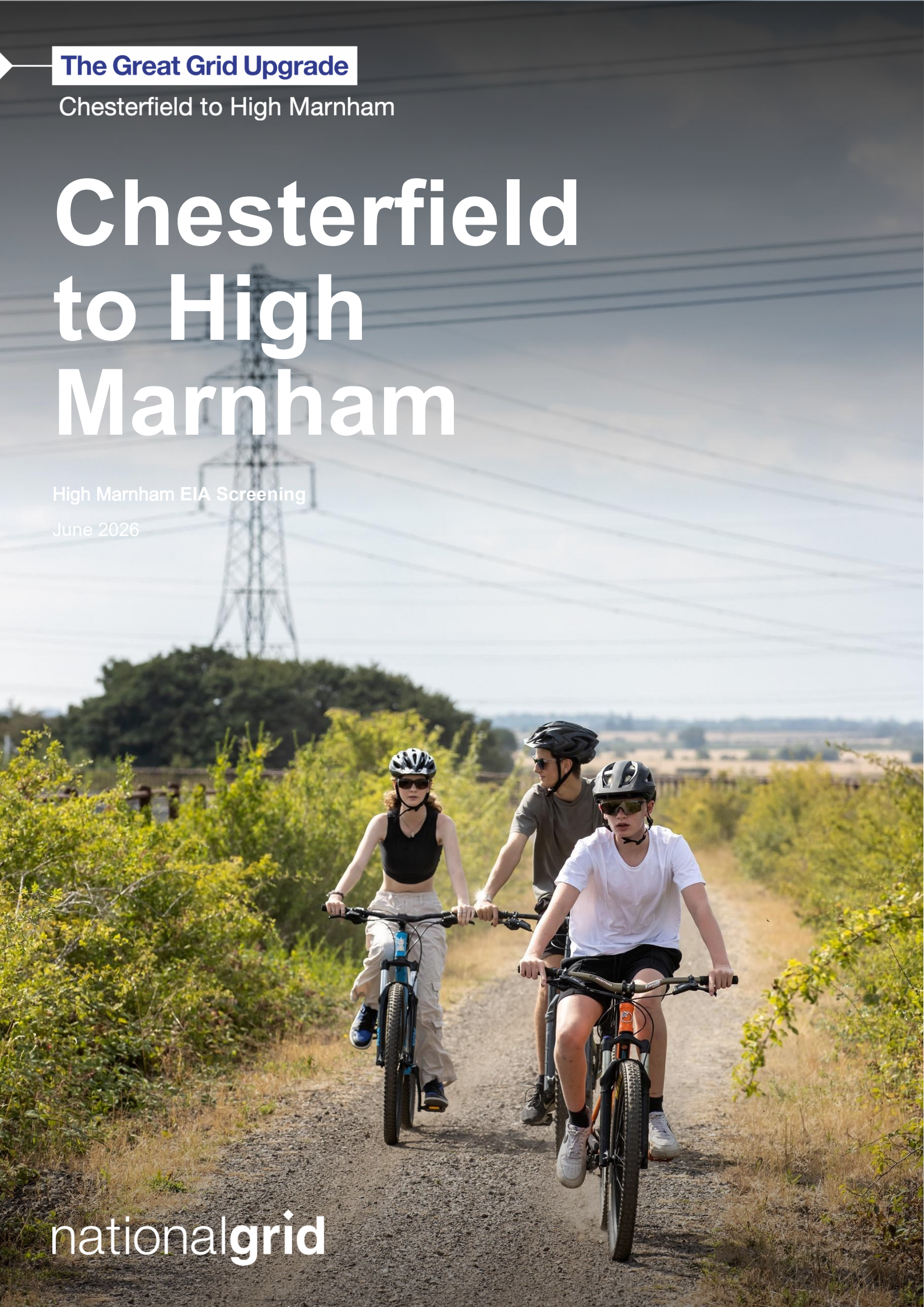
The Great Grid Upgrade

Chesterfield to High Marnham

Chesterfield to High Marnham

High Marnham EIA Screening

June 2026



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1. Introduction

1.1 Request for an Environmental Impact Assessment (EIA) Screening Opinion

1.1.1 National Grid Electricity Transmission plc (NGET) is proposing to develop a new 400kV substation on land near High Marnham ('the Site') as part of the Chesterfield to High Marnham reinforcement project ('the Project'), the purpose of which is to reinforce the electricity network, uprating the existing 275kV transmission in between Chesterfield and High Marnham to operate at 400kV. The Project forms part of the 'Great Grid Upgrade'[1], which aims to provide additional resilience within the electricity network. The Great Grid Upgrade will enable the electricity grid to carry more clean energy from renewable sources to communities, homes and businesses in every part of England and Wales, helping the UK to reach net zero. The proposals will also increase the security and resilience of the UK's electricity network. This EIA Screening Report is in relation to the overhead line 'Tie In' works ('the Scheme') required to facilitate the Project and the connection of the new 400kV substation to the National Grid network.

1.1.2 Consent for elements of the overhead line 'Tie In' works will be sought under Section 37 of the Electricity Act 1989 from the Secretary of State for Energy Security and Net Zero. The remaining elements of the overhead line 'Tie In' works will be delivered under a combination of existing rights, exemptions or permitted development, as set out in Section 2 of this report.

1.1.3 In accordance with Regulation 10(1) and 12(1) of The Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2017 (the 'EIA Regulations'), NGET requests that the Department for Energy Security and Net Zero (DESNZ) adopts a Screening Opinion as to whether the proposed 'Tie In' works at High Marnham would be likely to have significant effects on the environment by virtue of factors such as its nature, size or location.

1.1.4 A separate Town and Country Planning Act 1990 (TCPA) application for the proposed 400kV substation has been submitted to Bassetlaw District Council. To ensure that this application is robust and has fully considered the potential environmental impact of the substation proposal and the Scheme, an appraisal of cumulative impacts has been carried out within that application. Additionally, the potential for cumulative impacts with these and other committed developments is considered in Section 3 of this report.

1.1.5 A summary of the information which must be provided with such a request is set out in Table 1.1 alongside where it may be found in this report.

[1] https://www.nationalgrid.com/the-great-grid-upgrade

Table 1.1 Summary of information required by The Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2017 to accompany a screening request

Information Required by the EIA Regulations	Content within this Screening Report
10(2)(b) a plan of the site of the development	Section 2 provides a description of the location of the Scheme. Drawings are provided in Appendix A: • Site Location and Works Plan; and • Environmental Features Plan.
12(1)(a) a description of the development, including in particular – (i) a description of the physical characteristics of the whole development and, where relevant, of demolition works; (ii) a description of the location of the development, with particular regard to the environmental sensitivity of geographical areas likely to be affected.	Section 2 provides a description of the Scheme and outlines its main physical characteristics including approximate dimensions and details of its appearance. Section 3 provides information about the key environmental sensitivities of the proposed Scheme areas.
12(1)(b) a description of the aspects of the environment likely to be significantly affected by the development.	Section 3 provides a description of the aspects of the environment likely to be significantly affected by the construction or operation of the Scheme.
12(1)(c) a description of any likely significant effects, to the extent of the information available on such effects, of the development resulting from— (i) the expected residues and emissions and the production of waste, where relevant; (ii) the use of natural resources, in particular soil, land, water and biodiversity.	Section 3 provides a description of the aspects of the environment likely to be significantly affected by the construction and operation of the Scheme.
12(3) When providing information under paragraph (1)— (a) the developer must take into account, where relevant, the available results of other relevant assessments of the effects on the environment undertaken under requirements imposed in accordance with assimilated law other than any law that implemented the EIA Directive; (b) the developer may also provide a description of any features of the development and measures envisaged to avoid or prevent what might otherwise be significant adverse effects on the environment.	Section 3 provides information about the control measures which are envisaged to avoid or prevent significant adverse effects on the environment.

1.2 The Proposed Scheme and EIA Regulations

1.2.1 The EIA Regulations define EIA development as either:

- Schedule 1 development; or
- Schedule 2 development likely to have significant effects on the environment by virtue of factors such as its nature, size or location, taking into account the selection criteria set out in Schedule 3, identified through this process of screening.

1.2.2 The Scheme, described in Section 2, does not fall under the activities listed in Schedule 1 of the EIA Regulations, but it does fall under paragraph (3)(b)(ii) of Schedule 2 of the EIA Regulations.

1.2.3 The Scheme also does not fall within a sensitive area as defined by the EIA Regulations.

1.2.4 As the Scheme falls within Schedule 2 of the EIA Regulations, consideration will be provided against the criteria provided in Schedule 3 of the EIA Regulations to establish whether significant effects on the environment are likely. Schedule 3 criteria include the characteristics and location of the development and the characteristics of the potential impact. The subsequent sections of this report consider the potential for significant adverse environmental effects on the environment by the proposed Scheme, taking into consideration the criteria in Schedule 3.

1.3 Consultation

1.3.1 Consultation is ongoing with a variety of different statutory and non-statutory consultees with regard to the Scheme and its potential environmental impacts. NGET will proactively engage with statutory consultees such as Bassetlaw District Council, Environment Agency, Natural England and Historic England. Non-statutory consultation with the wider public will also be undertaken for the Scheme as part of the Great Grid Upgrade. All matters arising from consultation will be taken into consideration as appropriate.

2. Scheme Characteristics and Location

2.1 Site Location and Surroundings

2.1.1 The overhead lines shown in Appendix A, Figures illustrate the extent of the Scheme, located to the north of High Marnham, Nottinghamshire. The red line boundary shows the extent of the new 400kV substation TCPA application. Land within 50m of the overhead lines, and within 70m of pylons, will be required for the Scheme and for construction purposes, including temporary welfare and laydown areas. The full design and requirements for land will be detailed within the application for consent. Post construction, any remaining areas of land only temporarily required would be restored to their former land use.

2.1.2 Currently, the Site predominantly comprises agricultural parcels and hedgerows, as well as containing part of the existing High Marnham Substation. The Site is bound by local roads and agricultural parcels to the north, west and south, and by the River Trent to the east. The land directly adjacent to the Site in all directions is predominantly agricultural in nature, the wider area is rural in nature and includes village settlements, such as Normanton on Trent, High Marnham and Low Marnham, North and South Clifton, and Ragnall.

2.1.3 There are no international or nationally designated sites or receptors within the Site boundary, however the Local Wildlife Site (LWS) 'Fledborough to Harby Dismantled Railway' is included within the northern portion of the Site, as is the Candidate LWS 'Marnham Railway Yard'.

2.2 The Scheme

2.2.1 The Scheme is composed of several elements, set out below, to enable the connection of the new 400kV substation at High Marnham (subject to a separate EIA Screening report and TCPA application) to the Project and the wider network. This will comprise the installation of short stretches of overhead line between the new 400kV substation and the existing overhead line network, as well as the removal of some existing stretches of overhead line, together with the temporary works (such as temporary masts) required to make these permanent changes.

Consenting the Scheme

2.2.2 Certain elements require consent under Section 37 of the Electricity Act 1989 (as amended) where they fall outside permitted development or NGET land ownership boundaries, or where an exemption does not apply under the Overhead Lines (Exemption) (England and Wales) Regulations 2009 ('Exemption Regulations. This includes:

- permanent tie-in works and overhead line installations that exceed exemptions or fall outside NGET land ownership;
- permanent turn-ins and modifications to overhead line alignment that are not within NGET land ownership or are not classed as repair/renewal; and
- any temporary diversions requiring longer than six months where the exemption is not applicable.

2.2.3 Temporary overhead line works that meet the exemption criteria may proceed under the Exemption Regulations without a Section 37 consent, subject to the following limits:

- temporary overhead lines not exceeding 850m in aggregate length;
- time-limited (not exceeding six months per exemption); and
- temporary diversions that remain within the exemption thresholds and do not involve position changes that negate the exemption.

2.2.4 These exemptions apply only where the temporary lines stay within the 850m limit and meet all other exemption criteria; they do not apply if the temporary line is in a different position from existing lines, or would exceed height limits.

2.2.5 Section 37(2)(b) provides that Section 37(1) will not apply in relation to so much of an electric line as is or will be within premises in the occupation or control of NGET. The effect of Section 37(2)(b) would be to remove the need for consent under Section 37(1) for the installation of electric lines within land occupied and controlled by NGET. Where Section 37(1) does not apply to electric line works by virtue of Section 37(2)(b) this means that NGET can carry out certain overhead line works as permitted development under Class B(a) of Part 15 of The Town and Country Planning (General Permitted Development) (England) Order 2015 including:

- construction of short overhead line sections and installation of new terminal/tower structures within NGET land ownership; and
- replacement/repair/renewal works to existing overhead lines that do not increase height beyond current structures and remain within NGET land ownership.

Scheme Elements

2.2.6 The overhead line 'Tie In' works at High Marnham include the following elements:

- Section 37 Consent;
  - Overhead line 4ZV is an overhead electric line between Chesterfield and High Marnham. Permanent turn-ins measuring 154m in line length require Section 37 consent.
  - Overhead line XE is an overhead electric line Thurcroft/ West Milton to High Marnham. Permanent turn-ins measuring 183m in line length require Section 37 consent.
  - Overhead line ZDF is an overhead electric line to High Marnham. Permanent turn-ins measuring 181m in line length and 1 new line tower require Section 37 consent.
  - Overhead line ZDA is an overhead electric line to High Marnham. It is a temporary diversion that is required for longer than six months, measuring 296m in line length and comprising one new angle tower. It will require Section 37 consent.
- Section 37 Exemption/ permitted development;
  - Overhead line 4ZV – 200m of overhead electric line. Downleads measuring 74m and 73m. One new terminal pylon. One new line pylon.

- Overhead line ZDA – 107m of permanent overhead electric line (High Marnham to West Burton, Cottam to High Marnham). Permanent downleads measuring 52m and 56m. 1,847m of temporary overhead electric line for longer than six months (High Marnham to West Burton) with downleads measuring 41m and 48m. 16m of temporary overhead electric line for longer than six months (High Marnham to Staythorpe). One new permanent terminal pylon. One new temporary terminal pylon.
- Overhead line ZDF – 163m of overhead electric line. Downleads measuring 62m and 62m. One new terminal pylon.
- Overhead line XE – 82m of overhead electric line. Downleads measuring 60m. One new terminal pylon.

- Installation of approximately 1.3km of temporary overhead line, in two sections to the south of the new 400kV substation (Chesterfield-High Marnham 1, 4ZV0003T and Stoke Bardolph-High Marnham, ZDF004T), and two temporary structures, in place for less than six months. This does not require Section 37 consent.
- Removal of approximately 9.3km of existing overhead line, in five sections, predominantly to the north, east, south and south west of the existing High Marnham Substation, and the removal of 24 pylons (4ZV001A to 4ZV003, 4ZV001B to 4ZV003, XE001 to XE004, ZDA252A to ZDA252B, ZDA248, ZDA248B, ZDA249 to ZDA253, ZDF002 to ZDF004, ZDA248F to ZDA248B, ZDA249 to ZDA253 and ZDF002 to ZDF004). The removal of overhead line does not require Section 37 consent.

2.2.7 The overhead line 'Tie In' works at Chesterfield comprise the installation of approximately 137m of new overhead line (Chesterfield to High Marnham) in one section to the south of the new 400kV substation. This requires Section 37 consent and is dealt with under separate Section 37 Consent.

2.2.8 During construction, access will be required to the Site from:

- Skegby Road;
- Fledborough Road;
- Hollowgate Lane (north of High Marnham);
- Polly Taylors Road;
- Sparrow Lane;
- Hollow Gate Lane (west of Fledborough); and
- Main Street.

2.2.9 The works required to construct the Scheme will include:

- installation of haul road;
- laydown/working platforms around existing pylons and proposed pylon locations;
- conductor/earth wire pulling;
- installation of new permanent structures;
- dismantling of existing structures;
- installation of temporary structures;
- erection and use of scaffolding; and
- laydown areas.

3. Environmental Baseline and Screening Assessment

3.1.1 This section sets out baseline information, potential for significant environmental effects and the proposed approach and mitigation for further environmental appraisal to be submitted with the application to DESNZ for Section 37 consent, including an Environmental Appraisal Report (EAR). The following information should be read in conjunction with the enclosed figures shown within Appendix A, Figures.

Ecology

3.1.2 The baseline information for the Scheme is presented below:

- The land required to construct the Scheme is not within (or within 2km of) any statutory international or national ecological designations.
- There are a number of non-statutory sites within 2km of the land required to construct the Scheme; these include LWSs and potential LWSs. The nearest to the land required to construct the Scheme are Marnham Railway Yard candidate LWS (cLWS) and Fledborough to Harby Dismantled Railway LWS, which are within the land required to construct the Scheme. The entire LWS will not be impacted by the construction or operational phases of the Scheme. Works within the LWS will be limited to works to individual overhead line structures that are already present within the LWS boundary.

3.1.3 An Ecological Appraisal, including the results of the Preliminary Ecological Appraisal and species surveys, will form part of an EAR to be submitted alongside the application for Section 37 consent. The surveys undertaken to date found the majority of the land required to construct the Scheme supports predominantly arable land and scrub land with some poor semi-improved grassland. The boundary also extends over areas of hardstanding and bare ground.

3.1.4 Mitigation will be incorporated into the design of the Scheme where practicable and will be implemented through relevant environmental and landscape management plans.

3.1.5 The potential for significant environmental effects arising from the Scheme is presented below:

- Significant effects on ecological assets are not anticipated during the construction or operational phases of the Scheme, following the application of appropriate mitigation.
- Appropriate consultation with regard to the cLWS and the LWS will be undertaken.
- Further surveys are ongoing to inform the Ecological Appraisal and any mitigation required will be agreed as part of the application for Section 37 consent.

Landscape and Visual

3.1.6 The baseline information for the proposed Scheme is presented below:

- The land required to construct the Scheme is not located within areas designated nationally or locally for their landscape value. There are no National Landscapes or National Parks within 2km of the land required to construct the Scheme. The Scheme is located within National Character Area (NCA) Profile 48: Trent and Belvoir Vales (NE429).
- The Scheme is located within a primarily agricultural area north and west of High Marnham. The land required to construct the Scheme itself is predominantly characterised by agricultural land use and the existing High Marnham Substation, as well as the former High Marnham Power Station which is adjacent to the land required to construct the Scheme to the north east. Pylons and overhead lines are visible throughout the area.
- There are six Public Rights of Way (PRoW) within the land required to construct the Scheme:
  - Fledborough footpath 10 and Fledborough footpath 12 is located to the north east and falls within the land required to construct the Scheme;
  - Marnham footpath 7 is located to the east and falls within the land required to construct the Scheme;
  - Marnham footpath 4 and Marnham footpath 5 is located to the south west and falls within the land required to construct the Scheme; and
  - Normanton on Trent footpath 7 is located to the south west and falls within the land required to construct the Scheme.
- There are also several PRoW in the near vicinity.
- National Cycle Route (NCR) 647 crosses the land required to construct the Scheme to the north east and south west.

3.1.7 A landscape and visual appraisal will form part the EAR to be submitted alongside the application for Section 37 consent. This will consider impacts on landscape and visual receptors.

3.1.8 Landscape mitigation will be implemented within the Scheme where practical. Construction best practice methods will also be implemented to reduce any temporary effects during the construction phase. Where possible existing vegetation will be retained, in line with the mitigation hierarchy.

3.1.9 There will be visual receptors that will have views of the land required to construct the Scheme during the construction and operational phases, including residential properties and users of local highways. Where possible existing vegetation will be retained. There are likely to be visual impacts arising from construction phase activities as well as changes to the overhead line network, including the removal of some existing stretches of overhead line and the introduction of new infrastructure in the longer term. Construction phase impacts will be temporary and short term in nature.

3.1.10 Given the nature of the area and the existing intervening vegetation extending from the land required to construct the Scheme, it is anticipated that the combination of these elements would reduce any potential long term significant effects that could occur during construction or operational phases.

Cultural Heritage and Archaeology

3.1.11 The baseline information for the Scheme is presented below:

- A Desk Based Assessment (DBA) has been undertaken for the Scheme. A 2km study area has been applied to the construction work area. Within this 2km of land required to construct the Scheme are the following designated heritage assets; three Schedule Monuments (Whimpton Moor medieval village and moated site (1017567), the Moat, three fishponds, enclosures, hollow way and part of a road at Hall Yard (1008247), and the Roman Vexillation Fortress, two Roman Marching Camps, and a Royal Observer Corps monitoring post, Newton on Trent (1003608)), 49 Listed Buildings and one Conservation Area (South Clifton), as shown in Appendix A, Figures. There are no designated heritage assets within the land required to construct the Scheme.
- The Listed Buildings within the 2km study area, are clustered around settlements such as in High Marnham, Low Marnham, Skegby, South Clifton, North Clifton, Ragnall, Normanton on Trent, Grassthorpe and Weston. The Grade I Church of St Gregory, the Grade II listed group of five headstones in the churchyard of St Gregory and the Grade II Manor House are within the settlement of Fledborough and are approximately 10m north and 30m of the Scheme. Marnham Hall, within the settlement of High Marnham, is approximately 120m south of the Scheme.
- There are three Scheduled Monuments within 2km of the land required to construct the Scheme, as shown in Appendix A, Figures. Whimpton Moor Medieval village and moated site Scheduled Monument is located approximately 1.5km north west of the land required to construct the Scheme. The Roman Vexillation Fortress, two Roman Marching Camps, and a Royal Observer Corps monitoring post, Newton on Trent Scheduled Monument is located approximately 1.6km north east of the land required to construct the Scheme. The Moat three fishponds, enclosures, hollow way and part of a road at hall Yard Scheduled Monument is located approximately 1.8km south west of the land required to construct the Scheme.
- Whilst the construction and demolition of the former High Marnham Power Station is considered to have destroyed any archaeological remains in its vicinity, areas which have remained in use as arable land are considered to have a higher potential for preserved below ground remains.

3.1.12 The EAR to be submitted with the application for Section 37 consent will include an appraisal of potential impacts on heritage and archaeology. Relevant best practice construction mitigation measures will be included within a Construction Environmental Management Plan (CEMP).

3.1.13 Geophysical surveys will be undertaken to investigate any archaeological potential on the land required to construct the Scheme, and results will be reported within the EAR alongside any required mitigation.

3.1.14 Given the type of works proposed, i.e. temporary use of an existing access for construction, it is not anticipated that there would be any likely significant direct or indirect effects on the Listed Buildings as a consequence of construction or operation of the Scheme.

Air Quality

3.1.15 The baseline information for the Scheme is presented below:

- The land required to construct the Scheme is not within an Air Quality Management Area (AQMA).
- There are a number of residential receptors within 500m of the Site, the majority located in High Marnham, Normanton on Trent and Ragnall, as well as smaller areas of residential dwellings and individual properties to the north and west. To the east of the site is the River Trent, beyond which there are residential receptors in both North and South Clifton. Most residential receptors in the area are separated from the land required to construct the Scheme by agricultural parcels and vegetation.

3.1.16 During the construction phase of the proposed Scheme, there is the potential for fugitive dust emissions from activities such as excavation, ground works, cutting, construction and storage of materials. Vehicle movements both on-site and on the local road network also have the potential to result in the resuspension of dust from haul roads and highway surfaces. There is also the potential for air quality impacts from road traffic exhaust emissions from additional construction vehicles on local highways; however, this would be temporary.

3.1.17 Best-practice mitigation measures, taken from the Institute of Air Quality Management guidance[2] on the assessment of dust from demolition and construction, would further minimise any construction dust effects. These would be adopted and included in a CEMP.

3.1.18 Due to the nature of the Scheme, it is not anticipated that operation or maintenance would result in significant effects on air quality for receptors in the local area. Overall, any air quality/dust impacts on the nearest sensitive receptors are therefore expected to be minimal and temporary.

Water Resources and Flood Risk

3.1.19 The baseline information for the Scheme is presented below:

- Within the land required to construct the Scheme, mapping does not show any large water courses or features, however, there are approximately seven smaller features such as drains and ditches within the boundary.
- The River Trent runs to the east of the land required to construct the Scheme, adjacent to the boundary at its closest point.
- Environment Agency mapping shows that the majority of the land required to construct the Scheme is within Flood Zone 1 (land assessed as having a less than 1 in 1000 annual probability (<0.1%) of river or sea flooding). Areas of Flood Zone 2 and 3 associated with the River Trent are also within the land required to construct the Scheme, predominantly to the north and east of the boundaries. Flood Zone 2 is defined as land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding. Flood Zone 3 is defined as land having a 1% or greater

[2] Institute of Air Quality Management (2024) Guidance on the assessment of dust from demolition and construction

annual probability of river flooding; or Land having a 0.5% or greater annual probability of sea flooding.

- Certain areas within the land required to construct the Scheme are also shown on the Environment Agency mapping to experience high risk of flooding from surface water, although the majority of the land required to construct the Scheme experiences very low risk. When there is flooding from Rivers the areas to the north, east and south of the land required to construct the Scheme is also shown to be at risk from flood from reservoirs.
- The land required to construct the Scheme is noted as being underlain by a Secondary B aquifer. The Department of Environment, Food and Rural Affairs Groundwater Vulnerability Map[3] indicates that the land required to construct the Scheme has a 'medium' to 'high' vulnerability to groundwater flooding.

3.1.20 Flood risk and drainage will be suitably considered during the design process. It is considered that due to the location of land required to construct the Scheme, the nature of the Scheme and with the appropriate design and mitigation in place that there is not likely to be any significant effects during construction and operation on flood risk, drainage or water quality.

3.1.21 During the construction phase, works will be undertaken in accordance with environment and health and safety legislation requirements and best practice measures will be implemented to minimise the risks of pollution incidents that would have effects on the water environment.

Land and Ground Conditions

3.1.22 The baseline information for the Scheme is presented below:

- The British Geological Survey ma[4]p identifies the bedrock geology at the land required to construct the Scheme as Mercia Mudstone Group - Mudstone.
- The land required to construct the Scheme falls within the Mineral Safeguarding Area.
- There are no historic landfill sites within the land required to construct the Scheme, although there are two historical landfill sites within the vicinity, as shown in Appendix A, Figures.
- The risk of Unexploded Ordnance (UXO) at the land required to construct the Scheme is identified at low risk from freely available UXO mapping sources, and therefore no further action is required for construction workers in regard to UXO.

3.1.23 The overall risk for the land required to construct the Scheme is likely low to high with the potential for active pathways on the land required to construct the Scheme. This risk is primarily given due to the lack of recent site-specific ground investigation and chemical data, the risk of a possible contamination source within the land required to construct the Scheme remains. Made Ground may be found on the land required to construct the Scheme due to current and previous uses. Identified areas of contaminated ground, if found, may require localised remediation as part of the site

[3] Department of Environment, Food and Rural Affairs (2025) Groundwater Vulnerability Maps

[4] https://www.bgs.ac.uk/map-viewers/bgs-geology-viewer/

preparation programme to mitigate any potential impacts to maintenance workers and contractors.

3.1.24 Given the location of the land required to construct the Scheme and with appropriate mitigation measures in place, significant impacts from the Scheme on ground conditions are not expected. Further investigation into ground conditions will be undertaken prior to the application for Section 37 consent, any results will be taken into account for both design and planning purposes.

3.1.25 During construction, best practice measures will be used to reduce the risk of contamination of soil and water through the implementation of appropriate management measures via the CEMP.

Noise and Vibration

3.1.26 The baseline information for the Scheme is presented below:

- There is no existing dominant road or rail noise source in the area. The existing substation within and directly to the centre of the land required to construct the Scheme will produce some noise.
- There are no noise important areas (NIA) within the land required to construct the Scheme or the surrounding area.
- There are noise sensitive receptors within 500m of the land required to construct the Scheme, including residential, socio-economic and ecological receptors.

3.1.27 Construction activities have the potential to generate elevated noise levels with potential for adverse effects on the surrounding residential properties. Appropriate mitigation measures would be implemented via the CEMP and would be sufficient to avoid significant adverse effects on sensitive receptors. Mitigation measures applied for construction noise would be in accordance with BS5228. Best practice measures would be adopted to minimise construction noise and vibration levels where practicable during construction.

3.1.28 During construction appropriate mitigation would be put in place, via the CEMP, and any effects are expected to be intermittent and temporary in nature.

3.1.29 During the operational phase, noise generation by the proposed Scheme is anticipated to be limited. Given the nature of the proposed works, it is not anticipated that there would be a likely significant noise effect during operation.

3.1.30 It is considered that there would be no significant noise and vibration environmental effects during the construction and operation of the Scheme.

Traffic and Transport

3.1.31 The baseline information for the Scheme is presented below:

- The land required to construct the Scheme is likely to be accessed via an existing site access off Fledborough Road, to the west of the land required to construct the Scheme.
- There are five Public Rights of Way (PRoW) within the land required to construct the Scheme:
  - Fledborough footpath 10 and Fledborough footpath 12 is located to the north east and falls within the land required to construct the Scheme.

- Marnham footpath 7 is located to the east and falls within the land required to construct the Scheme.
- Marnham footpath 4 and Marnham footpath 5 is located to the south west and falls within the land required to construct the Scheme.

- There are also several PRoWs in the near vicinity.
- National Cycle Route (NCR) 647 bisect through the land required to construct the Scheme in north east and south west orientation.
- There are also two Definitive Map Modification Orders (DMMO) within the land required to construct the Scheme.

3.1.32 There is the potential that PRoWs will require diversion and potential temporary closure depending on the works required, but permanent closures are not anticipated. The DMMOs will be treated as PRoWs for the purposes of managing Scheme impacts. Further information will be available within the EAR submitted with the application for Section 37 consent.

3.1.33 Due to the nature of the Scheme and the vehicle numbers required for the construction and operational phases, with the appropriate traffic management in place, it is unlikely that significant effects will occur.

3.1.34 A Construction Traffic Management Plan (CTMP) will be submitted alongside the application for Section 37 consent. Consultation will be undertaken with the relevant bodies. The approach to any potential temporary PRoW closure or diversion would be undertaken in liaison with the relevant bodies at Bassetlaw District Council as well as wider consultation. Further information on traffic movements and PRoWs, implications and mitigation will be provided in the Transport Appraisal within the EAR.

3.1.35 The CTMP for the Scheme would set out how any potential impacts of road-based construction traffic would be reduced by identifying measures such as clear controls, hours of site operation, routes for large goods vehicles, and the timing management of deliveries. Operational traffic would be minimal; it is expected that under normal circumstances up to approximately ten vehicles/light vans would visit the land required to construct the Scheme each year.

Agriculture and Soils

3.1.36 A desktop survey of the Provisional Natural England Agricultural Land Classification Map has identified that the land required to construct the Scheme is classified as Grade 3 Good to Moderate and some portion to the south west is classified as Grade 2 Very Good Quality Agricultural Land. Best and Most Versatile (BMV) soils are Grades 1 – 3a.

3.1.37 Publicly available information via the Bassetlaw District Council planning portal shows that Agricultural Land Classification (ALC) surveys have been undertaken on some of the land required to construct the Scheme in recent years. These results show that the Site potentially has Grade 2, Grade 3a and Grade 3b soils present. The mapping suggests that the soil in the area is largely slightly acid loamy and clayey soils with impeded drainage.

3.1.38 The works required as part of the Scheme will not require the entire land required to construct the Scheme as permanent land take, and not all soils will be disturbed.

3.1.39 Further Agricultural Land Classification surveys have been undertaken and will be reported on within the application for Section 37 consent.

Materials and Waste

3.1.40 A desktop survey of the British Geological Survey GeoIndex Onshore Map[5] has identified that the land required to construct the Scheme is not within a Mineral Assessment Area and is not located close to significant mineral occurrences.

3.1.41 New development has the potential to result in the generation of waste during the construction and operational phases, as well as the use of materials for construction purposes.

3.1.42 The construction of the Scheme will use natural resources such as land, water, materials and energy. However, this would be in the short term and would be mitigated through the use of sustainable design practices where possible and the use of suitable construction practices and is therefore not expected to be significant in nature. Waste produced during the construction phase would be dealt with accordingly, including any material from existing structures such as pylons, being dismantled. Negligible volumes of waste are anticipated during the operational lifetime of the Scheme.

3.1.43 Significant effects on waste and materials are not anticipated to occur during the construction or operational periods. Use of natural resources would be mitigated through the use of sustainable design practices where possible and the use of sustainable construction practices. Waste management measures will be included in the CEMP.

Socio-economics, Population and Human Health

3.1.44 The baseline information for the Scheme is presented below:

- The land required to construct the Scheme is predominantly agricultural in nature.
- There are some nearby socio-economic receptors within 500m; mostly centred in High Marham to the south, including the Brownlow Arms and Marnham Meadows Holiday Park.
- There are five PRoWs within the land required to construct the Scheme:
  - Fledborough footpath 10 and Fledborough footpath 12 are located to the north east and fall within the land required to construct the Scheme.
  - Marnham footpath 7 is located to the east and falls within the land required to construct the Scheme.
  - Marnham footpath 4 and Marnham footpath 5 are located to the south west and fall within the land required to construct the Scheme.
- There are also several PRoWs in the near vicinity.
- National Cycle Route (NCR) 647 bisects the land required to construct the Scheme in a north east and south west orientation.

[5] https://www.bgs.ac.uk/map-viewers/bgs-geology-viewer/

- Two DMMOs located to the north of Hollowgate Lane and one Common Land at Sparrow Lane also fall within the land required to construct the Scheme.
- The land required to construct the Scheme is likely to be accessed via an existing site access off Fledborough Road, which connects into the wider networks of the A57 in the north and the A1 in the south and west.

3.1.45 The works required are unlikely to permanently affect socio-economic receptors.

3.1.46 The risks to human health in association with the Scheme are considered to be negligible and there would be no significant adverse environmental impact during construction or operation, following application of mitigation.

3.1.47 Significant effects on socio-economic receptors are not anticipated given the location of the receptors in relation to the land required to construct the Scheme. It is considered that human health would be appropriately considered within the relevant topic sections (e.g. ground conditions, traffic and transport, and noise and vibration). It is not anticipated that there would be significant effects on human health as a consequence of either construction or operation of the Scheme following mitigation.

Risk of Major Accidents and Disasters

3.1.48 New development has the potential to be affected by major accidents or disasters (and therefore has the potential to impact the environment). 'Accidents' are considered to be an occurrence resulting from uncontrolled events in the course of construction and operation of a development. 'Disasters' are considered to be naturally occurring extreme weather events or ground-related hazard events. For such events to pose a risk to the environment, there must be a source (the event), a pathway (a process by which a receptor could be affected by the event), and a receptor.

3.1.49 The Scheme will be designed, constructed and operated in accordance with applicable environment, health and safety legislation. It will also comply with relevant design safety standards. As the overhead lines will be managed under these existing health and safety regimes, it is not expected that likely significant effects relating to major accidents and disasters will result.

3.1.50 Significant effects are not anticipated during construction or operation due to the applicable legislation and standards that would be followed and applied.

Light, Heat and Electromagnetic Radiation

3.1.51 Lighting of the land required to construct the Scheme during construction and operation is expected to be in keeping with the nature of the Scheme, and as such is expected to be minimal, particularly during operation where no permanent lighting is proposed.

3.1.52 The Scheme will comply with all relevant legislation and electromagnetic field (EMF) exposure limits. NGET will produce an EMF compliance report for the overhead lines. There are not anticipated to be any significant light, heat or electromagnetic radiation effects during construction or operation, and standard good practice will be applied to the design of the Scheme to reduce effects where possible.

Microclimate (Wind, Sunlight, Daylight)

3.1.53 The scale and massing of the Scheme during the construction and operational phases are unlikely to cause microclimate effects such as wind pattern changes, or cause daylight/sunlight overshadowing effects to nearby receptors (such as nearby dwellings).

3.1.54 Significant effects are not anticipated during construction or operation of the Scheme.

Transboundary Effects

3.1.55 Due to the location of the land required to construct the Scheme, and the type of proposed development, transboundary effects (those across national borders) are unlikely to occur and are not considered further.

Cumulative Impacts

3.1.56 A review of available information on the Bassetlaw District Council planning portal has been undertaken, which found a number of current planning applications within 2km of the land required to construct the Scheme. Not all open applications are relevant to this assessment, however, there are some relevant committed developments which could interact with the Scheme and lead to cumulative impacts. These include, but are not limited to, the following:

- Land North Of Polly Taylors Road, High Marnham, Nottinghamshire (planning ref: 25/00639/FUL) - the construction, operation and decommissioning of a battery and energy storage system (BESS) and associated infrastructure;
- H_2East Pipeline, Great North Road, Tuxford, Nottinghamshire (planning reference: 26/00260/SCO) - NSIP EIA Scoping;
- Land South West Of National Grid, High Marnham Substation And East Of Fledborough Road, Fledborough Road, High Marnham, Newark NG22 0FX (planning ref: 26/00147/FUL) - Installation of Underground Cable and Associated Works;
- Land At High Marnham Power Station, Power Station Access, Fledborough Road, High Marnham, Nottinghamshire (planning ref: 23/00801/FUL and 23/00748/HAZ) – Proposed construction and operation of an 8MW electrolytic green hydrogen production plan;
- High Marnham Green Energy Business Park, Fledborough Road, High Marnham, Nottinghamshire NG22 0FX (planning ref: 23/00243/SCR) – 8MW green hydrogen production plant, storage and distribution facility and green ammonia cracker demonstration unit;
- Land At High Marnham Power Station, Power Station Access, Fledborough Road, High Marnham, Newark, Nottinghamshire NG23 6SE (planning ref: 22/01071/FUL) – Warehouse building, packaging plant, odour abatement, solar photovoltaic (PV) and storage;
- Land Adjoining Former High Marnham Power Station, High Marnham, Nottinghamshire (planning ref: 22/00707/FUL) – Construction and operation of a solar PV farm;
- One Earth Solar Farm (planning ref: 23/02003/CONSUL);

- North Humber to High Marnham (DCO application);
- Land East Of Crabtree Lane And North Of Polly Taylors Road, Skegby Notts (planning ref: 24/00717/SCR) – Proposed battery energy storage systems (BESS) substation;
- Land North and South Tuxford Road, Skegby, Tuxford, Nottinghamshire (planning ref: 21/01147/FUL) – Solar farm and battery storage;
- Land At High Marnham Power Station, Power Station Access, Fledborough Road, High Marnham, Nottinghamshire (planning ref: 23/01135/FUL) – Prototype facility for the production of hydrogen from ammonia;
- Land At High Marnham Power Station, Power Station Access, Fledborough Road, High Marnham, Nottinghamshire (planning ref: 24/00033/FUL) – Plant for electrolytic green hydrogen production;
- Marnham Lake Fishing and Camping, Low to High Marnham Road, Low Marnham, Nottinghamshire NG23 6SG (planning ref: 25/00523/FUL) – Seven holiday lodges, shower block and retention of two fishing ponds; and
- Land Off Hawbush Road, Weston (planning ref: 21/01577/FULM) – Solar farm and battery storage.

3.1.57 In addition to the above committed developments, there is the wider Great Grid Upgrade project to consider, in particular the Chesterfield to High Marnham Project, which comprises the construction of the new 400kV substation at High Marnham, as well as one near Chesterfield, and associated overhead line works.

3.1.58 Initial committed developments have been identified and given the nature of the Scheme in combination with the current use of the land required to construct the Scheme (other NGET assets such as pylons) it is not anticipated that these developments would generate significant adverse cumulative impacts with the Scheme.

4. Summary of Screening Assessment

4.1.1 The Scheme does not fall under Schedule 1 of the EIA Regulations but does fall under category 3(b)(ii) of Schedule 2. Consideration of the Scheme in relation to the criteria set out in Schedule 3 has been undertaken as shown in Section 3. A plan of the site of the development is shown in Appendix A. A description of the Scheme is provided in Section 2 and Section 3.

4.1.2 The Scheme comprises a number of elements to enable the connection of the new 400kV substation at High Marnham (subject to a separate EIA Screening report and TCPA application) to the wider overhead line network. This will include the removal of some existing overhead lines and associated pylons, as well as the installation of connections between the existing overhead line network and the new 400kV substation. Some additional overhead line works are required, under existing asset owner and permitted development rights.

4.1.3 The information presented within Section 3 sets out how significant effects on the environment are not likely to occur with the application of appropriate mitigation. Section 3 also provides information about the control measures which are envisaged to avoid or prevent potential adverse impacts where necessary. Mitigation measures include consultation with relevant stakeholders, appropriate scheme design, landscape management, and the implementation of a CEMP and a CTMP.

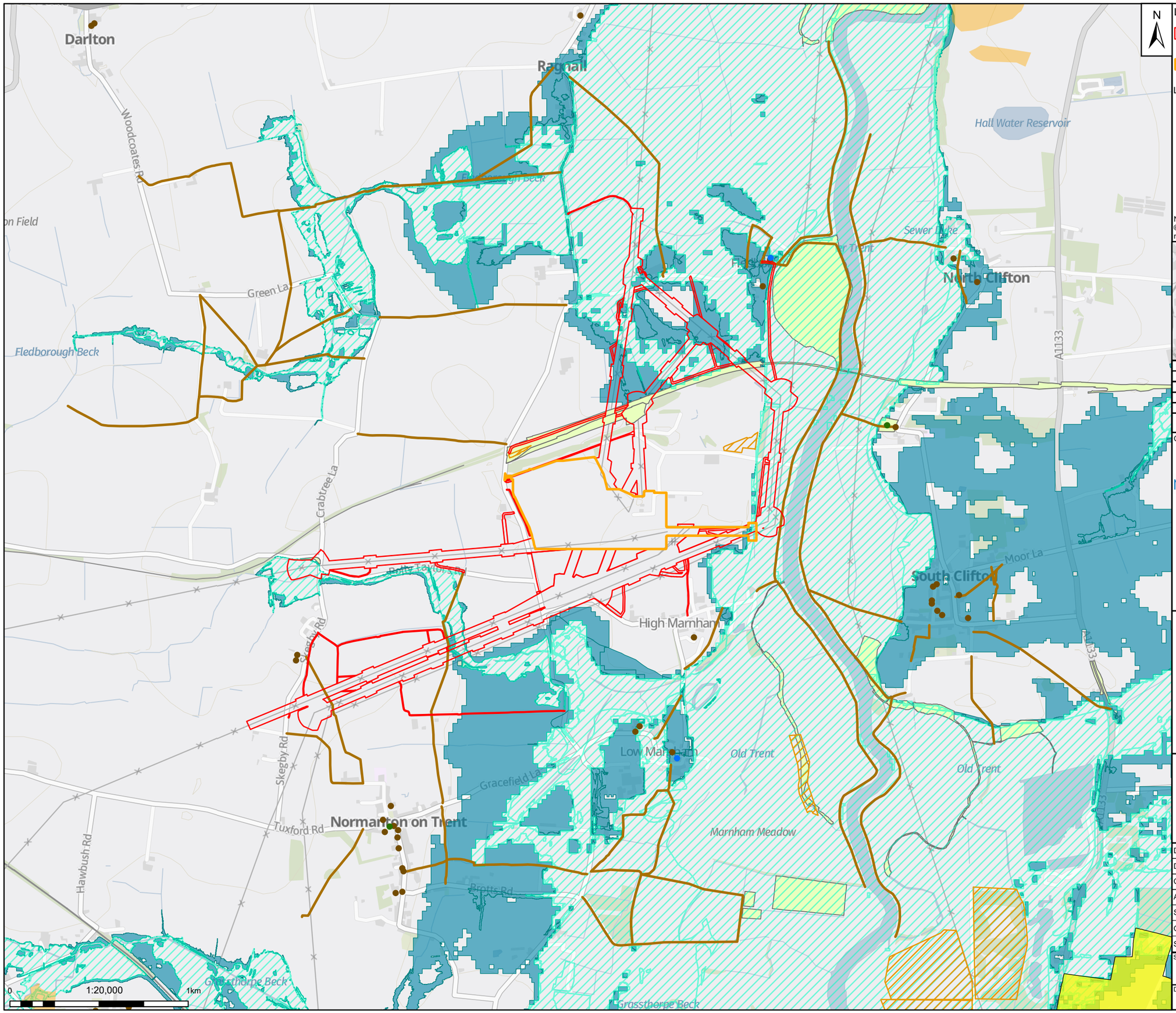
4.1.4 NGET does not consider the Scheme, and new 400kV substation, to be an EIA development by virtue of the nature of the proposals, in combination with information on the sensitivity of the receiving environment. We request that DESNZ adopts an opinion according to the information presented.

5. Abbreviations

Abbreviation	Meaning
BMV	Best and Most Versatile
CEMP	Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
cLWS	Candidate Local Wildlife Site
DMMO	Definitive Map Modification Order
EAR	Environmental Appraisal Report
EIA	Environmental Impact Assessment
EIA Regulations	The Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2017
EMF	Electromagnetic Fields
LWS	Local Wildlife Site
LNR	Local Nature Reserve
NCA	National Character Area
NGET	National Grid Electricity Transmission plc
PEA	Preliminary Ecological Assessment
PRoW	Public Right of Way
UXO	Unexploded Ordnance

Appendix A. Figures

nationalgrid



Legend

- Land required to construct the Scheme
- Substation Planning Application Boundary (PA: 25/01302/FUL)
- Public Right of Way
- Scheduled Monument
- Site of Special Scientific Interest
- Historic Landfill Site
- Flood Zone 2
- Flood Zone 3
- Local Wildlife Site

Listed Building

- Grade I
- Grade II*
- Grade II

Notes

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Rev	Date	Description	Drawn	Check	Approv
02	16/06/26	Amendment	RM	RK	SR
01	26/11/25	INITIAL ISSUE	MB	RK	SR

Client: nationalgrid

PROJECT: CHESTERFIELD TO HIGH MARNHAM

Site: High Marnham

Client: 1-3 Strand, London, WC2N 5EH

ARCADIS

Registered office: 80Fen, 80 Fenchurch Street, London, EC3M 4BY

Coordinating Office: Suite 1A, 4 Piccadilly Place, Manchester, M1 3BN

www.arcadis.com

Title:

High Marnham - Overhead Lines - Environmental Features

Designed	H. Williams	Date: 26 NOV 25	Signed:
Drawn	M. Bargal	Date: 26 NOV 25	Signed:
Checked	R. Khambete	Date: 26 NOV 25	Signed:
Approved	S. Ramsay	Date: 26 NOV 25	Signed:
Scale:	1:20,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	S2	Project Number:	30184504

Suitability Description: For Information

Drawing Number: 30184504-ARC-EGN-ZZ-DR-ZZ-00163-S2

Revision: P02

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National Grid plc
National Grid House,
Warwick Technology Park,
Gallows Hill, Warwick.
CV34 6DA United Kingdom

Registered in England and Wales
No. 4031152
nationalgrid.com