

YG-DCO-029

Yorkshire Green Energy Enablement (GREEN) Project

Volume 5

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nationalgrid

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Non-Technical Summary

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1. Introduction

1.1 Overview

- 1.1.1 This Non-Technical Summary (NTS) presents a summary of the Environmental Impact Assessment (EIA) of the Yorkshire Green Energy Enablement (GREEN) Project (referred to as the Project or Yorkshire GREEN throughout the Environmental Statement (ES)).
- 1.1.2 Yorkshire GREEN is a project proposed by National Grid Electricity Transmission plc (referred to as National Grid) to upgrade and reinforce the high-voltage power network. It comprises new electricity infrastructure, such as new overhead lines, substations, cables and equipment to connect overhead lines to buried cables, known as Cable Sealing End Compounds (CSECs), as well as works to existing overhead lines and substations.
- 1.1.3 The findings of the EIA are reported in an ES. This and a number of other documents have been prepared to support an application for consent for the Project (see **Section 1.6** of this NTS for more information about the application and consenting process). These documents form a number of volumes for which references are provided, where relevant, through this NTS. The ES forms **Volume 5** of the application.

1.2 Purpose of this Non-Technical Summary

- 1.2.1 The purpose of the NTS is to enable local communities and other stakeholders to understand the likely environmental effects arising from the Project in a concise manner which is easily understood and accessible by all. Effects are assessed in terms of how ‘significant’ they would be, and EIA is primarily concerned with ‘likely significant effects’ and not those unlikely to be significant. The ES also sets out measures to mitigate (to avoid, prevent, reduce or if possible offset) the negative effects of the Project.
- 1.2.2 This NTS includes a description of Yorkshire GREEN, a summary of the consultation process and the EIA findings. **Table 1.1** sets out a summary of each of the sections of this NTS.

Table 1.1 – What’s included

Chapter	What is it about?
1: Introduction	This introduces what Yorkshire GREEN is, where it is located and why it is needed. An introduction is also given to National Grid, the applicant.
2: Overhead line route selection and alternatives	This chapter explains the alternative designs considered to date and provides a summary of how the design has evolved and developed to date.
3: What is being proposed?	This chapter explains how Yorkshire GREEN would be built (should it be consented), what new electricity infrastructure would be implemented and how long construction would take.

Chapter	What is it about?
4: The Environmental Impact Assessment	This chapter provides a summary of how the EIA has been undertaken, how it has been informed by consultation and stakeholder engagement, and the likely significant environmental effects arising from Yorkshire GREEN. For each of the environmental aspects considered in the assessment, the chapter provides an overview of how the environmental effects have been assessed, a description of the existing environment, overview of the environmental measures proposed to avoid or reduce adverse impacts where possible, and the potential environmental effects arising from Yorkshire GREEN.
NTS Sections 5 - 17	<p>The following sections (5 – 17) of this NTS summarise how the effects associated with Yorkshire GREEN were determined and whether they are concluded as being significant or not. These being in the following topics:</p> <ul style="list-style-type: none"> 5. Landscape and Visual; 6. Historic Environment; 7. Biodiversity; 8. Hydrology; 9. Geology and Hydrogeology; 10. Agriculture and Soils; 11. Traffic and Transport; 12. Air Quality; 13. Noise and Vibration; 14. Health and Wellbeing; 15. Socio-economics; 16. Climate Change; and 17. Cumulative Effects.
18: Conclusion	This summarises the findings of the EIA

1.3 Yorkshire GREEN

- 1.3.1 National Grid is proposing to upgrade and reinforce the electricity system in Yorkshire to satisfy increases in power flows and energy demand. Yorkshire GREEN is necessary to support growth in green energy in Scotland and the north-east of England and to assist the delivery of the Government’s commitment to quadruple the UK’s offshore wind capacity by 2030¹.

¹ Prime Minister's Office, 10 Downing Street, Department for Business, Energy & Industrial Strategy, The Rt Hon Boris Johnson MP, and The Rt Hon Alok Sharma MP (2020). New plans to make UK world leader in green energy (Online) Available at: <https://www.gov.uk/government/news/new-plans-to-make-uk-world-leader-in-green-energy> (Accessed October 2021).

1.3.2 Yorkshire GREEN comprises both new infrastructure and works to existing transmission infrastructure and facilities. The Project is divided into six sections and is described below (see **Figure 1.2, Volume 5, Document 5.4.1**):

- Section A (Osbalwick Substation): Minor works would take place at the existing Osbalwick Substation to facilitate the connection of new infrastructure with existing infrastructure.
- Section B (North west of York Area): Works would comprise:
 - reconductoring of 2.4km of the 400kV Norton to Osbalwick (2TW/YR) overhead line and replacement of one pylon on this overhead line;
 - the new 400kV YN overhead line (2.8km), north of the proposed Overton Substation;
 - the new Shipton North and South 400kV cable sealing end compounds (CSECs) and 230m of cabling to facilitate the connection of the new YN 400kV overhead line with the existing Norton to Osbalwick YR overhead line;
 - a new substation (Overton 400kV/275kV Substation) approximately 1km south of Shipton by Beningbrough;
 - two new sections of 275kV overhead line which would connect into Overton Substation from the south (the 2.1km XC overhead line to the south-west and the 1.5km SP overhead line to the south-east);
 - works to 5km of the existing XCP Poppleton to Monk Fryston overhead line between Moor Monkton in the west and Skelton in the east comprising a mixture of decommissioning, replacement and realignment. To the south and south-east of Moor Monkton the existing overhead line would be realigned up to 230m south from the current overhead line and the closest pylon to Moor Monkton (340m south-east) would be permanently removed. A 2.35km section of this existing overhead line would be permanently removed between the East Coast Mainline (ECML) Railway and Woodhouse Farm to the north of Overton.
- Section C (Moor Monkton – Tadcaster - existing 275kV Poppleton to Monk Fryston (XC) overhead line north of Tadcaster (Section D)): Works proposed to this existing 275kV overhead line include replacing existing overhead line conductors, replacement of pylon fittings, strengthening of steelwork and works to pylon foundations.
- Section D (Tadcaster): Two new CSECs would be installed approximately 3km south-west of Tadcaster and north-east of the A64/A659 junction where two existing overhead lines meet. One pylon on the existing 275kV Tadcaster Tee to Knaresborough (XD) overhead line would be replaced.
- Section E (Tadcaster – Monk Fryston - existing 275kV Poppleton to Monk Fryston (XC) overhead line south of Tadcaster (Section D)): Works proposed to this existing 275kV overhead line include replacing existing overhead line conductors, replacement of pylon fittings, strengthening of steelwork and works to pylon foundations..
- Section F (Monk Fryston Area): A new substation would be constructed to the east of the existing Monk Fryston Substation which is located approximately 2km south-west of the village of Monk Fryston and located off Rawfield Lane, south of the A63. A 1.45km section of the 275kV Poppleton to Monk Fryston (XC overhead line to the

west of the existing Monk Fryston Substation and south of Pollums House Farm) would be realigned to connect to the proposed Monk Fryston Substation. East of the existing Monk Fryston Substation the existing 4YS 400kV Monk Fryston to Eggborough overhead line, which currently connects to the existing substation, would be connected to the proposed Monk Fryston Substation.

Order Limits and Limits of Deviation

- 1.3.3 The Order Limits form the boundary of the entire area within which Yorkshire GREEN would take place, including temporary and permanent works as well as the works to the existing infrastructure.
- 1.3.4 Within the Order Limits, parameters known as Limits of Deviation (LoD) are set out. These incorporate a proportionate degree of flexibility into the design for the Project so that unforeseen issues that may be encountered following development consent can be dealt with. For example, previously unidentified poor ground conditions may require a pylon to be moved slightly for geotechnical reasons, such as ground stability. These limits set specific parameters to moving infrastructure on the ground as well as control changes to the vertical height of the infrastructure. More information about the Order Limits and Limits of Deviation can be found in **Chapter 3** of the ES (**Volume 5, Document 5.2.3, Volume 5**).

1.4 Who is National Grid?

- 1.4.1 National Grid owns the high voltage electricity transmission system in England and Wales and operates the high voltage electricity network throughout Great Britain, transporting electricity from generators (such as power stations and wind farms) to local distribution network operators (DNOs). DNOs, such as Northern Powergrid, are the companies that own and operate the local power lines and infrastructure that delivers electricity to individual properties. National Grid's network does not connect directly to homes and businesses, because the voltage at which it transmits electricity is too high for domestic and commercial properties.

1.5 Why is Yorkshire GREEN needed?

- 1.5.1 Growth in offshore wind generation and interconnectors to Europe, in line with the UK government's Net Zero agenda, has led to a significant number of planned connections in Scotland and the North of England. The existing electricity transmission network was not designed to transfer the current and increasing volume of generation capacity from the North to major centres of electricity demand which continue to exist in central and southern England. The network will require significant reinforcement in the Yorkshire area to provide capacity for these connections and customers to ensure that power can be transferred securely to onshore demand centres in the south to meet the needs of Great Britain electricity consumers. Further information on why the Project is needed can be found in **Chapter 2: Project need and alternatives, Volume 5, Document 5.2.2**.

1.6 The consenting process

- 1.6.1 Yorkshire GREEN includes a new overhead electricity transmission connection of more than 2km in length, with an operating voltage above 132kV. Therefore, unlike regular planning applications submitted to local authorities, it is defined as a Nationally

Significant Infrastructure Project (NSIP) under Section 14 of the Planning Act 2008 (as amended) (“the Act”)². This means that the Applicant, National Grid, is required to apply to the Secretary of State for Business, Energy and Industrial Strategy (Secretary of State) for development consent. The application for the Development Consent Order (DCO) will be submitted to the Planning Inspectorate, who will appoint an Examining Authority to consider the application and make a recommendation to the Secretary of State, who will decide whether development consent should be granted.

- 1.6.2 Before applying for a DCO, an applicant must consult interested parties on its preliminary assessment of likely environmental impacts (the Preliminary Environmental Information Report (PEIR)). These interested parties include a range of organisations, such as local authorities, the Environment Agency and Natural England, as well as affected landowners, tenants and occupiers and members of the public. This process is known as statutory consultation³ and it took place in relation to Yorkshire GREEN between 28 October and 9 December 2021. Following statutory consultation and before finalising its proposals for the Project and applying for a DCO, National Grid reviewed the comments received, having regard to the representations made. A record of the comments received as well as the Applicant’s responses can be found within the Consultation Report (**Volume 6, Document 6.1**).
- 1.6.3 The ES is then produced after statutory consultation has taken place taking into account the responses to statutory consultation which are considered in developing the final design, which is assessed in the ES.
- 1.6.4 The DCO application is submitted to the Planning Inspectorate who oversee the administrative process on behalf of the Secretary of State. The Secretary of State’s first task is to determine whether to accept the application for examination i.e., does it contain sufficient information to formally assess the proposals. If accepted, the Secretary of State will appoint an independent examiner or panel of examiners (known as the Examining Authority) to consider the application on their behalf. The examination is a public process, in which interested parties are able to participate.
- 1.6.5 Following the examination, the Examining Authority will make a recommendation to the Secretary of State. The Secretary of State determines the application in accordance with the relevant National Policy Statements for NSIPs in accordance with the decision making framework set out in the Act² and may take account of any other matters which are considered to be important and relevant to the decision.
- 1.6.6 Relevant National Policy Statements for the Project are:
 - Overarching National Policy Statement for Energy (EN-1); this document sets out the national policy for energy infrastructure; and
 - National Policy Statement for Electricity Networks Infrastructure (EN-5) this provides the national policy in relation to electricity networks infrastructure.

² UK Government (2008). Planning Act 2008 (online). Available at:

<https://www.legislation.gov.uk/ukdsi/2019/9780111187654> (Accessed October 2022).

³ National Grid also undertook an earlier consultation, known as non-statutory consultation, between 11 March and 15 April 2021, with an extension to 4 May 2021 agreed for Skelton and Wigginton Parish Council. This provided consultees an opportunity to provide their views on the emerging Project design. Each consultation response received was analysed by National Grid, and, where relevant, requests for change were considered in order to further develop the design of the Project during the next stage of the Project

- 1.6.7 In September 2021, the Department of Business, Energy and Industrial Strategy published draft revised national policy statements for energy infrastructure. The Secretary of State may also consider these to be important and relevant to the consideration of the application.
- 1.6.8 The National Planning Policy Framework (NPPF) sets out the Government's economic, environmental and social planning policies for England and how these should be applied. The NPPF helps inform decision-making on planning applications and includes policies and principles regarding the protection and conservation of the natural and built environment as well as sustainable growth and development which might affect Yorkshire GREEN. As outlined in Paragraph 5 of the NPPF, the NPPF does not contain specific policies for NSIPs and applications in relation to NSIPs are to be determined in accordance with the decision making framework set out in the Act² and relevant NPSs.
- 1.6.9 Yorkshire GREEN lies within the administrative boundaries of Hambleton District Council, City of York Council, Harrogate Borough Council, Selby District Council, Leeds City Council and North Yorkshire County Council⁴. Relevant local development plans have been reviewed so that any planning policy conflicts can be identified and avoided wherever possible (**Chapter 5: Legislation and policy, Volume 5, Document 5.2.5**).
- 1.6.10 A range of environmental legislation at International, European and National level is relevant to the EIA for Yorkshire GREEN and considered in each of the aspect chapters as relevant (**Chapters 6 to 18, Volume 5, Documents 5.2.6 to 5.2.18**). The EIA has been undertaken in line with the identified legislation and policies, specifically in accordance with the requirements of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. In addition, to promote the application of EIA and aid the interpretation of these regulatory requirements, government and other institutions have published a series of guidance documents. For NSIPs, advice notes have been published by the Planning Inspectorate. These advice notes are non-statutory, however, they provide guidance and information on a range of issues arising throughout the whole EIA process.

⁴ The local authorities' boundaries and titles are correct at the time of submission November 2022. North Yorkshire County Council, Hambleton District Council, Selby District Council, Ryedale District Council, Scarborough Borough Council, Harrogate Borough Council, Craven District Council and Richmondshire District Council are expected to form a new single council (North Yorkshire Council) on 1 April 2023 as a result of Local Government Reorganisation.

2. Overhead line route selection and alternatives

2.1 Introduction

- 2.1.1 The selection of points to connect to the existing electricity network, the overhead route alignment and locations for new infrastructure such as substations form part of the design evolution process, which is a fundamental part of the EIA. The design evolution process has been guided by detailed specialist engineering considerations, environmental assessment and engagement with local stakeholders, regulatory stakeholders and non-governmental organisations.
- 2.1.2 This iterative and informed design process has allowed National Grid to identify, develop and adopt mitigation measures that will reduce the potential for environmental effects. These have been incorporated into the design of Yorkshire GREEN and are referred to as ‘embedded environmental measures’. A range of embedded environmental measures have been identified at this ES stage. Examples include using best practice environmental measures to avoid sensitive receptors (i.e. timing the removal of vegetation to avoid the bird breeding season where practicable).

2.2 Strategic proposal: Identifying potential connection points

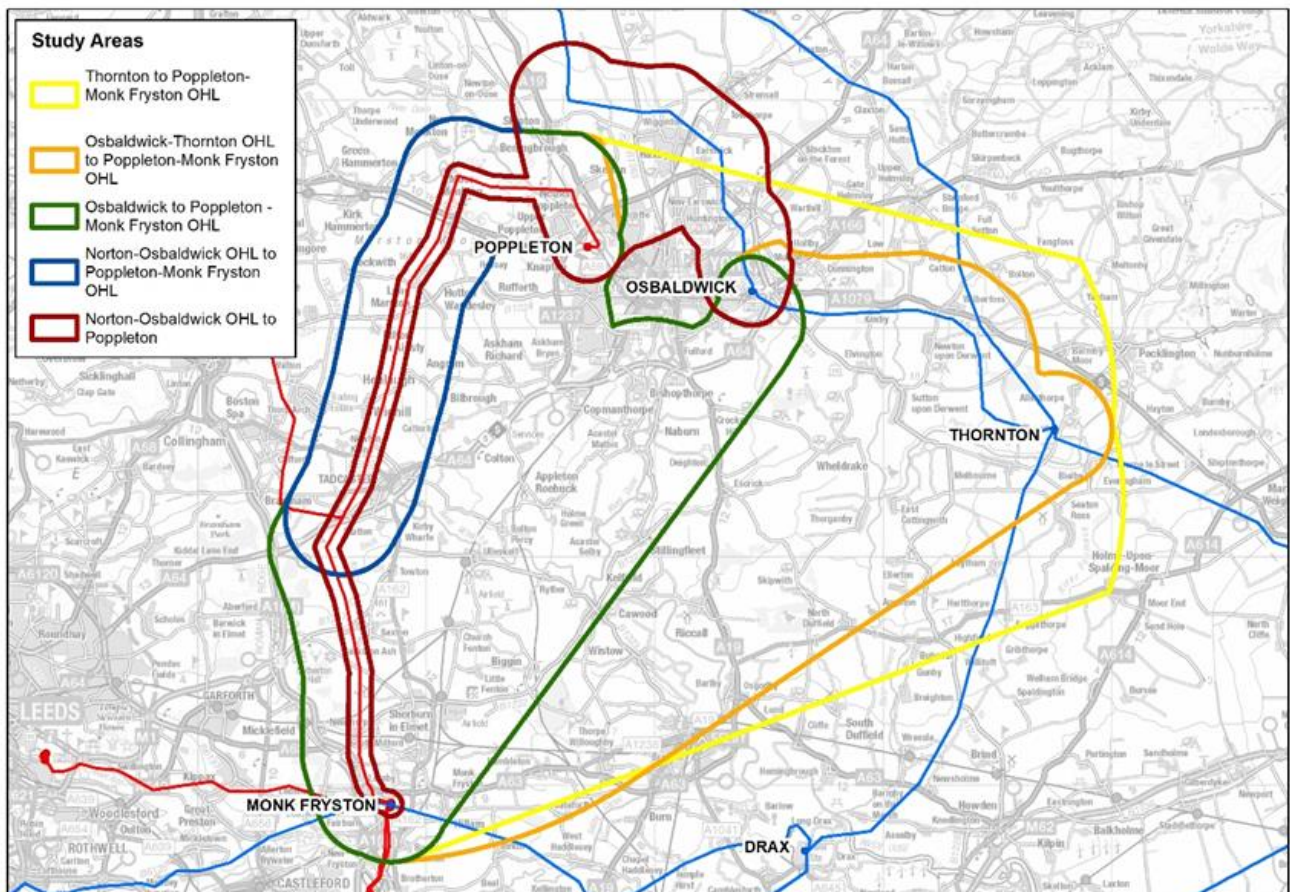
- 2.2.1 To identify a strategic proposal, National Grid identified a ‘long-list’ of options by selecting different geographical ‘start’ and ‘end’ points which would meet the needs of the Project. A number of filters were then applied to reduce these options to a short-list. Further information on these filters and the wider process can be found in **Section 2.5** of **Chapter 2** of the ES (**Volume 5, Document 5.2.2**).
- 2.2.2 Over 300 options were initially identified which could meet the need outlined by National Grid to reinforce the electricity transmission network in this area. These options comprised overhead lines, underground cable connections and gas insulated lines which could connect various potential ‘start’ and ‘end’ points throughout Yorkshire.
- 2.2.3 A number of strategic options were discounted, many of which would require longer connection routes than shorter length alternatives which would achieve the same Project objectives. Selecting options of a shorter length ensured that National Grid met its statutory duties under the Electricity Act 1989 (Section 9 and Schedule 9) as well as the Holford Rules (a set of rules on the routing of overhead transmission lines), compliance with which is required by National Policy Statement EN-5⁵.
- 2.2.4 A short list of 105 options was produced from the long-list. This list was then reviewed against a range of technical, environmental, socio-economic, programme and cost criteria. Options which met the following requirements were preferred:
- Options which allowed the re-use of existing infrastructure because building completely new infrastructure could increase environmental effects and cost.

⁵ Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). (Online) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf (Accessed October 2022).

- Options which ensured that National Grid could meet its legal requirements to preserve amenity and implement measures to mitigate effects on such features, including:
 - preserving natural beauty;
 - conserving flora and fauna as well as geological and physical features of special interest; and
 - protecting sites, buildings or objects with architectural, historic or archaeological interest.
- Options with shorter connection routes (where feasible) to minimise potential environmental impacts and costs.

2.2.5 Five main strategic options were identified (see **Figure 2.1**) which met these criteria as well as the Project need. These connected a combination of different ‘start’ points (an existing overhead line between Norton and Osbaldwick overhead line, Thornton Substation or an existing overhead line between Osbaldwick and Thornton) and ‘end points’ (either Poppleton Substation or the existing overhead line between Poppleton and Monk Fyston). These options comprised a combination of new infrastructure and upgrades to existing infrastructure. All options however would result in the need to do work (known as refurbishment or reconductoring) to an existing overhead line between Poppleton and Monk Fyston.

Figure 2.1 - 2019 Strategic Options connecting to Poppleton Substation or the Poppleton to Monk Fyston overhead line



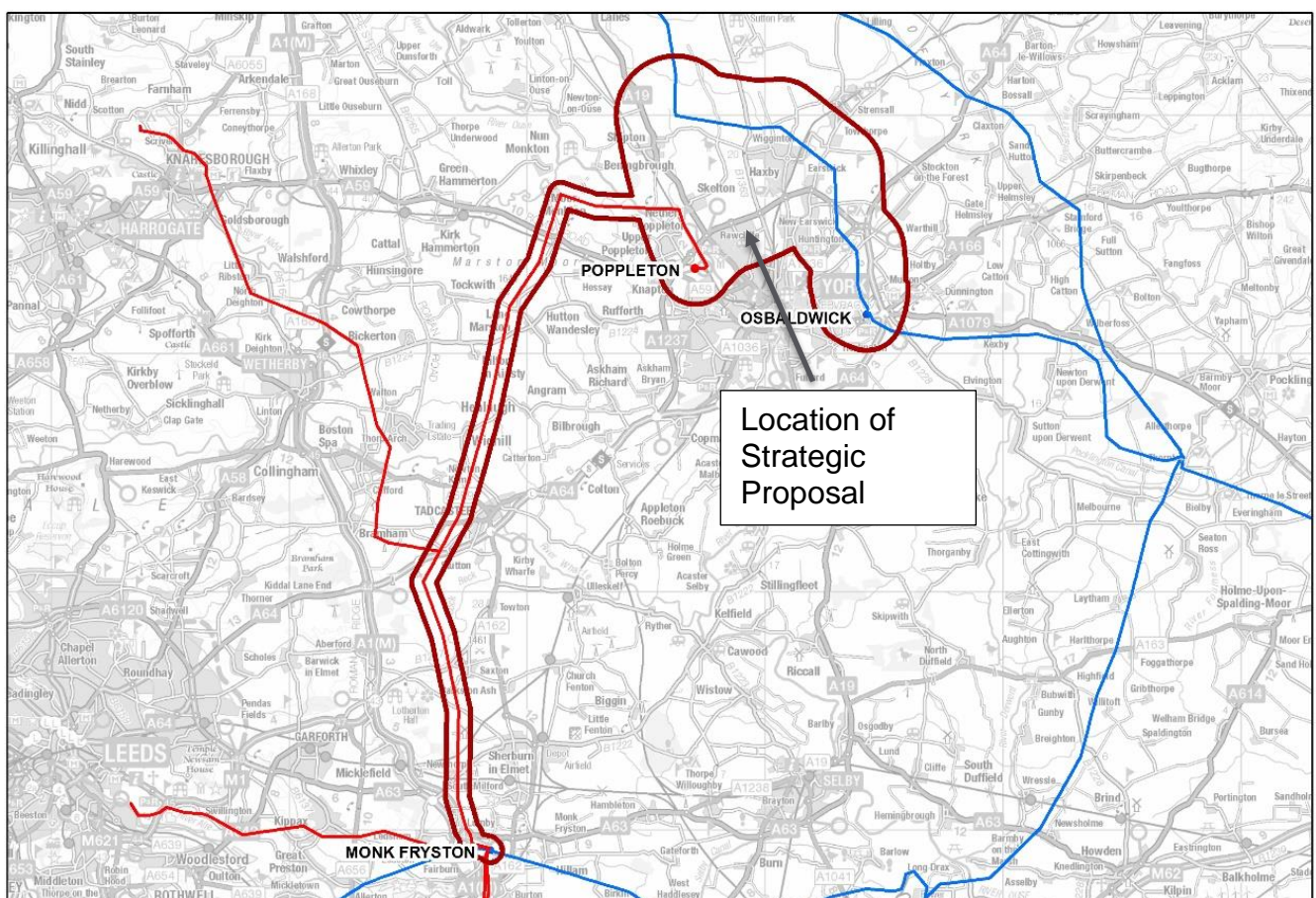
2.2.6 A number of the strategic options had ‘start’ points located to the east of Poppleton and York which would have required longer new build routes around the south of York, resulting in the potential for greater environmental effects, in particular on landscape and views, as well as increased cost. Therefore, to minimise such effects options with ‘start’ points to the north or west of York were preferred.

2.2.7 The preferred Strategic Proposal was identified comprising a new 6km overhead line route from the Norton–Osbaldwick overhead line to the existing Poppleton Substation. This option had comparatively less environmental and socio-economic impact than other new build alternative options which would be approximately 19km to 40km long.

2.2.8 The preferred Strategic Proposal (**Figure 2.2** indicates the location where this connection would be implemented) comprised:

- A new 6km 400kV overhead line which would provide a connection between the existing overhead line between Norton and Osbaldwick and Poppleton Substation.
- Works (known as reconductoring) to the existing overhead line between Poppleton and Monk Fyston to increase the capacity of this overhead line.

Figure 2.2 - 2019 Strategic Proposal



2.2.9 In 2020, the UK Government announced its intention to increase the offshore wind energy target from 30 gigawatts to 40 gigawatts (since increased to 50 gigawatts) and additional projects with signed connection agreements with National Grid which needed to connect to the National Grid electricity transmission network were identified that had not been considered previously. The equipment at existing substations at Poppleton

and Monk Fryston could not accommodate the electricity flows from these additional projects and therefore Yorkshire GREEN was reviewed, and previous short listed strategic options reconsidered.

- 2.2.10 Six new options, which were variants of previous options, were identified which comprised various options to build new substations at Monk Fryston, Poppleton or to the north-west of York. Some options would also involve the realignment of the existing overhead line between Monk Fryston and Poppleton.
- 2.2.11 The final preferred option selected as the ‘Strategic Proposal’ and taken forward for consent comprised a new 400kV overhead line which, as before, would connect to the existing overhead line between Norton and Osbaldwick but the proposal would also include a new substation to the north of York and a new substation at Monk Fryston. The new 400kV overhead line would connect to the new substation north of York, and the existing overhead line between Monk Fryston and Poppleton would be altered so that this also connected into the new substation north of York as well.
- 2.2.12 The other five options were discounted because they would involve longer connection routes or were considered to be less technically feasible. In addition, some of the options to construct a new substation at Poppleton were limited because of planned housing developments in this area. Whilst a new substation to the north of York could result in some landscape and visual effects on the local area, a new substation at Poppleton would also lead to some additional environmental effects including local landscape and visual effects as well as potential effects on a nationally important nature conservation site. Some options would also introduce new electricity overhead line infrastructure into areas where none exists at present.

2.3 Identifying potential route corridors and substation locations

- 2.3.1 Following confirmation of the Strategic Proposal, a Corridor and Preliminary Routeing and Siting Study (the CPRS Study) was undertaken to identify corridors for potential routes of the new overhead lines and potential locations for the new substations (as well as CSECs) needed as part of the Strategic Proposal. New infrastructure was identified as being needed in three key areas:
- York North: A new substation in the vicinity of the existing overhead line between Skelton and Moor Monkton and two new CSECs along the existing overhead line between Norton and Osbaldwick. The CSECs needed to be as close to the existing overhead line as feasible in order to minimise the length of underground cabling needed to connect these to reduce the associated cost and potential for more environmental effects which could occur from a longer cable length.
 - Tadcaster: Two new CSECs; one on each of the existing overhead lines in this area. These also needed to be as close to the existing overhead line as feasible to minimise the length of connecting underground cable.
 - Monk Fryston: A new substation which needed to be as close to the existing substation as feasible to minimise length of connections and infrastructure between the new and existing substations.
- 2.3.2 Initially four corridors (broad areas within which a new overhead line could be routed) were identified within which the infrastructure at York North, including new overhead lines, could be located. A number of areas, known as Siting Areas, were identified for the potential locations of the CSECs and new substations. The options identified were appraised against a range of environmental and planning policy criteria and the

technical feasibility of each option was also considered to identify a Preferred Corridor and Preferred Siting Area for the new infrastructure. Once the Preferred Corridor was identified a preliminary route alignment within the corridor was developed which took into consideration the environmental and socio-economic constraints identified, where present. Areas, known as 'graduated swathes' (for overhead lines) or 'graduated Siting Areas' (for substations and CSECs) were developed to indicate the areas where the new infrastructure was likely to be located. The darker areas of the graduated swathe indicated a greater preference for the location of the required infrastructure.

York North

- 2.3.3 **Figure 2.3, Volume 5, Document 5.4.2** illustrates the locations of the four route corridors identified.
- 2.3.4 Within the four corridors, four Siting Areas were identified for the new CSECs on the existing Norton to Osbaldwick overhead line and 12 Siting Areas for the new substation. The appraisal considered 21 different combinations of the corridors and CSEC and substation Siting Areas.
- 2.3.5 Corridor B was selected as the Preferred Corridor (shown in blue on **Figure 2.2 above**) as it would allow one of the shortest and most direct routes for the new 400kV overhead line where it would connect between the new substation and the existing Norton to Osbaldwick overhead line. It was also considered more compliant with a set of rules for identifying the alignment of overhead lines known as the Holford Rules.
- 2.3.6 The preferred Siting Area for the new substation north of York (now known as Overton Substation) was identified south of Shipton by Beningbrough and adjacent to the East Coast Mainline Railway within corridor B. This Siting Area was selected because of its distance from residential properties (at least 800m), its closeness to the A19 (which would avoid construction traffic having to travel along minor roads) and because the substation could be located to avoid areas at higher risk of flooding. The substation site is an arable field which would limit the number of trees and length of hedgerow which may need to be removed to build the substation. In addition, there would be land for new planting to help minimise effects on the landscape and ecology if required.
- 2.3.7 The Strategic Proposal required works to be undertaken on the existing overhead line to the south of Overton Substation which connects Monk Fryston and Poppleton Substations, to enable this overhead line to connect to the new Overton Substation. This would effectively 'split' this overhead line into two new overhead lines, partly using and amending sections of the existing overhead line. Graduated swathes for the new overhead lines were developed with two options identified and subject to non-statutory consultation:
- Option 1 (**Figure 2.3**): A new section of overhead line running south-west from the proposed Overton Substation, east of Overton Wood and across the River Ouse with a second new section running approximately parallel to the eastern side of the East Coast Mainline railway line. This option would enable the dismantling of up to 2.5km of the existing overhead line.
 - Option 2 (**Figure 2.4**): Two new sections of overhead line broadly parallel with the East Coast Mainline railway line; one would be located to the eastern side of the East Coast Mainline Railway and the other to the west. This would enable the dismantling of up to 700m of the existing overhead line.

Figure 2.3 - Preferred corridor: Option 1

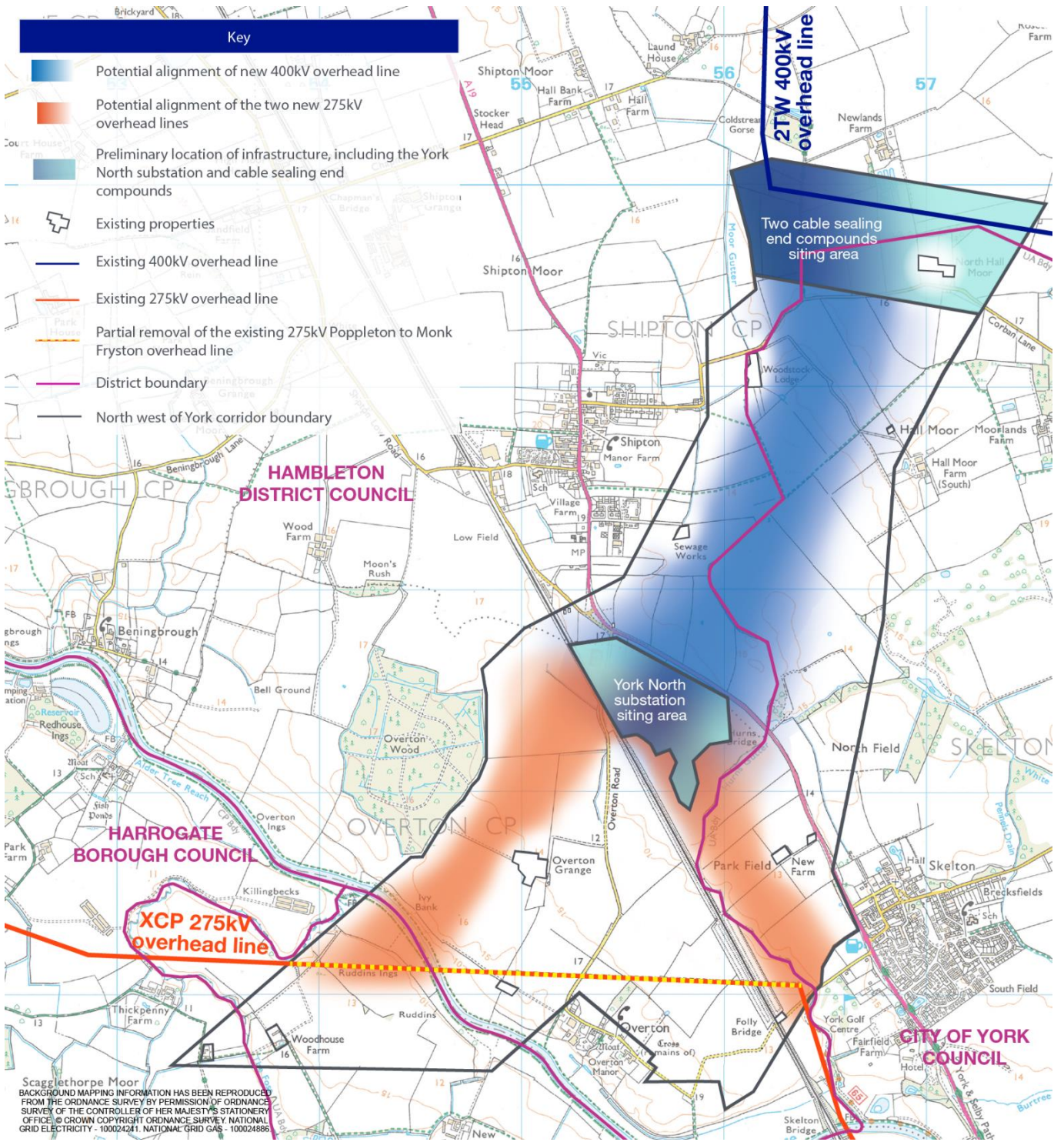
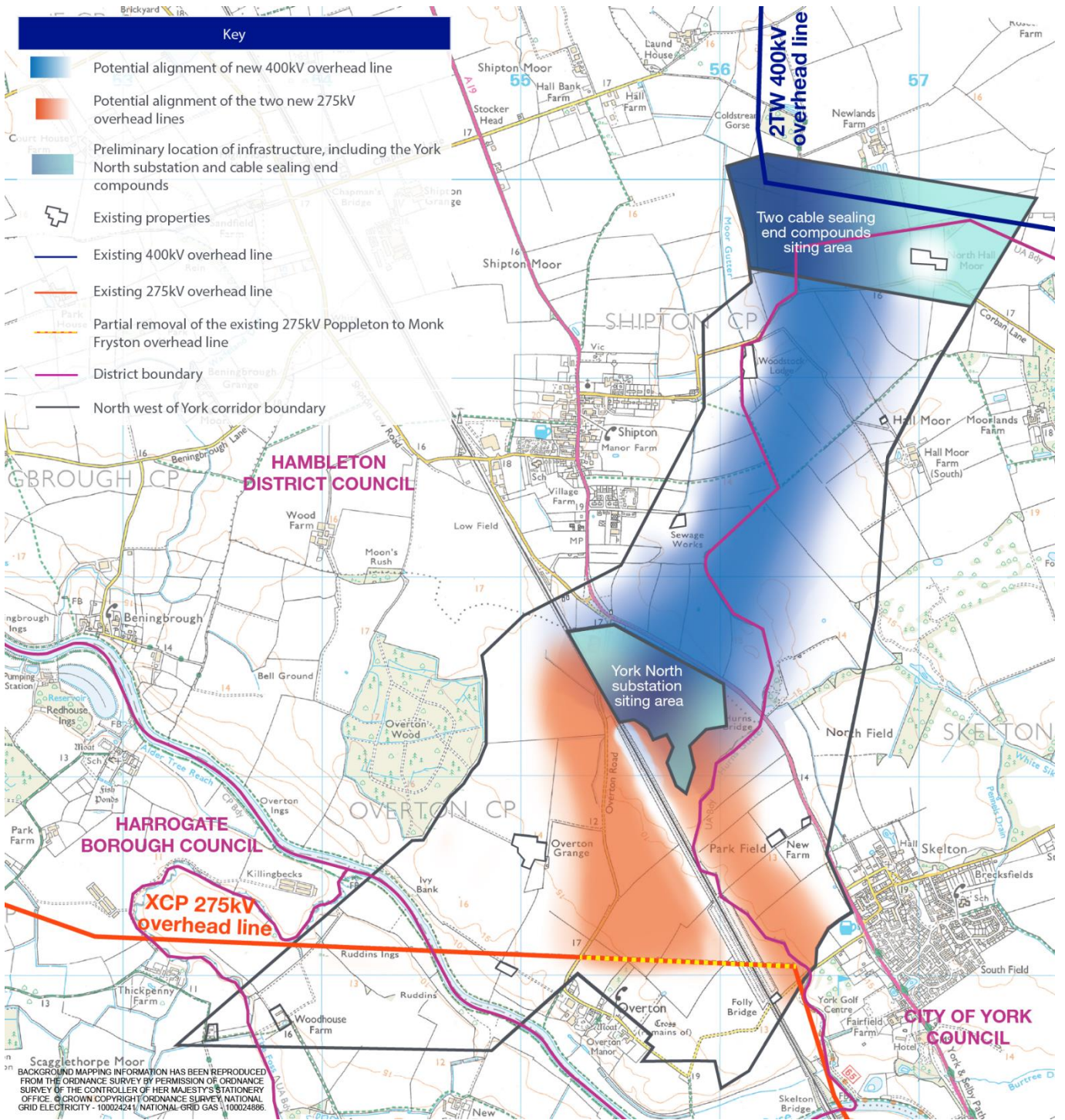


Figure 2.4 - Preferred corridor: Option 2

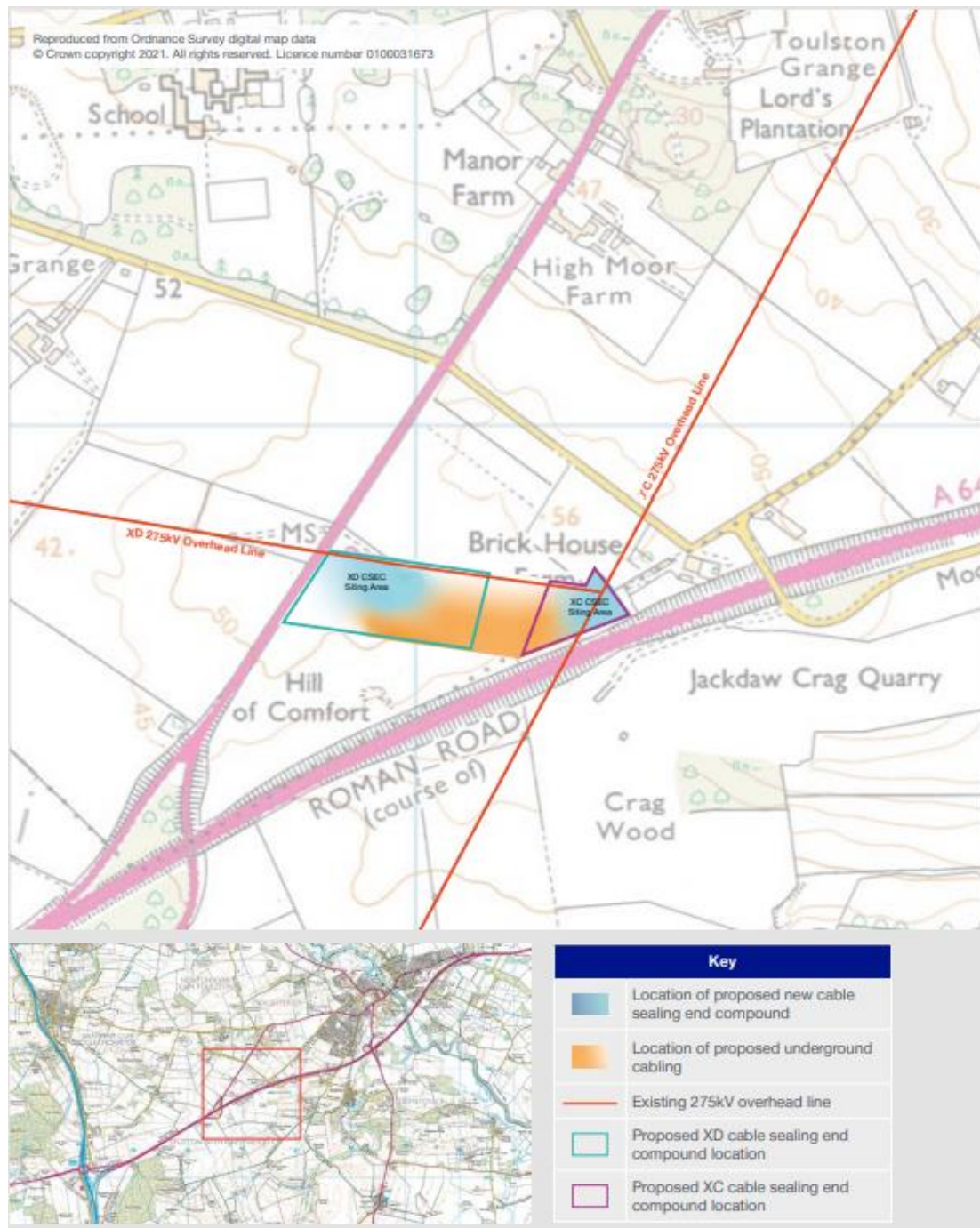


Tadcaster Area

2.3.8 Ten Siting Areas were identified for the two new CSECs which were located along the existing overhead lines in this area. Two preferred Siting Areas were identified north of the A64 and east of the A659 (see **Figure 2.5**). Other Siting Areas were discounted because they would require the removal of, or would impact, existing woodland. Some of the locations would also have greater impacts on the landscape and views, as they were in a slightly more elevated position with open views from Tadcaster. The preferred Siting Areas were considered to have good access due to their proximity to the A64 and

would require shorter sections of underground cable, potentially reducing impacts such as the need to remove trees and hedgerow or the loss of unrecorded archaeology.

Figure 2.5 - Preferred Siting Areas for CSECs at Tadcaster



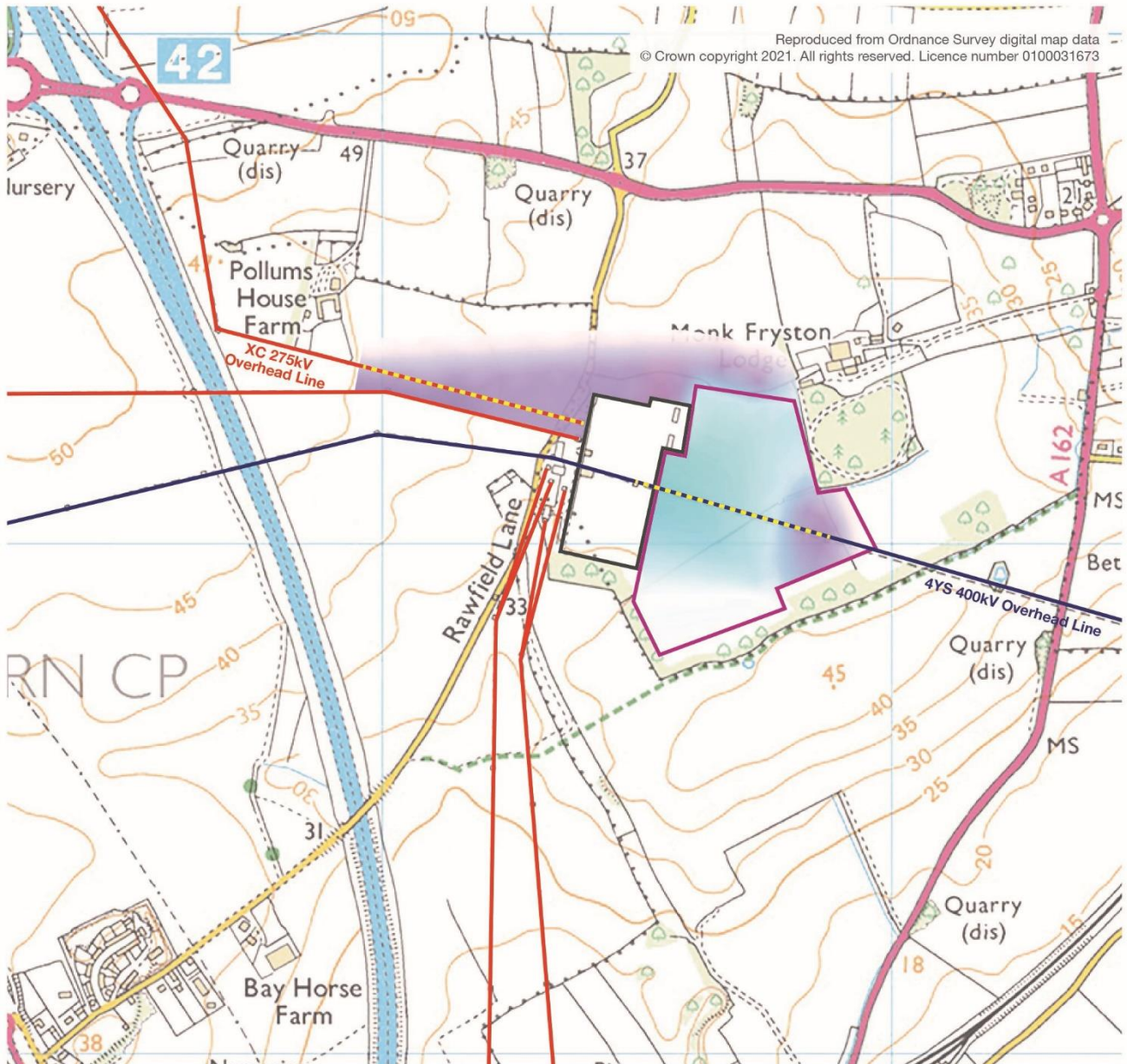
Monk Fryston Area

2.3.9 Three Siting Areas for a new substation at Monk Fryston were identified to the east and north of the existing substation and west (on the opposite side of Rawfield Lane to the existing substation).

2.3.10 A preferred Siting Area for the new substation at Monk Fryston was selected to the east of the existing Monk Fryston Substation (**Figure 2.6**). All three Siting Areas would be likely to have similar effects on biodiversity, the landscape and views and all had good access from Rawfield Lane. Although the selected location could have potential effects

on Monk Fryston Lodge, a Grade II listed building located to the east, it was anticipated that these effects could be managed through design, and where necessary further landscape mitigation. Building the proposed substation next to the existing substation would require less complex construction works and would also be more cost-effective.

Figure 2.6 - Preferred Siting Area for Monk Fryston Substation



Key	
	Proposed location of associated infrastructure connecting to proposed, new MF3 substation
	Proposed location of new substation
	Existing 275kV overhead line
	Existing 400kV overhead line
	Partial removal of the existing 275kV XC/XCP overhead line (Poppleton to Monk Fryston)
	Partial removal of the existing 400kV 4YS overhead line (Monk Fryston to Eggborough)
	Proposed MF3 substation location
	Existing Monk Fryston substation

2.3.11 Further information on the justification behind the selection of these preferred locations can be found in **Chapter 2** of the ES (**Volume 5, Document 5.2.2**) and the Corridor and Preliminary Routing and Siting Study (**Volume 7, Document 7.8**).

Consultation on potential route corridors and substation locations

2.3.12 The preferred Siting Areas and graduated swathes were consulted on during a public non-statutory consultation which National Grid held between March and April 2021. In brief, key issues raised during consultation comprised:

- agreement with the preferred Siting Area for Overton Substation but with concerns regarding landscape and visual effects;
- use of Overton Lane and Stripe Lane by heavy goods vehicles during construction;
- queries as to why the overhead lines could not be constructed underground and effects of the new overhead lines on the green belt;
- potential effects on Overton village (permanent noise effects and light pollution as well as water quality and pollution effects during construction);
- effects on Overton Wood and Moorland Nature Reserve and impacts from construction works being timed to avoid negative effects on wildlife; and
- concerns about the construction of Monk Fryston Substation relating to its location, traffic effects, effects on the green belt and local wildlife.

2.3.13 Feedback on the two graduated swathe options was requested during consultation. Comments received related to issues as follows with more support for Option 1 than Option 2:

- support for removal of the existing overhead line close to Overton but concerns about effects on Overton Wood (Option 1);
- effects on the landscape and on the green belt as well as farm operations (Option 1); and
- effects on views from Overton due to an increase in pylons and wires in the area running along the East Coast Mainline Railway (Option 2). There were also concerns that the additional pylons and wires could potentially increase the risks of birds colliding with overhead wires. However, some comments noted that concentrating the overhead wires along the railway corridor could limit effects on views from Overton village.

2.3.14 Further information about the feedback received during the consultation can be found in the Yorkshire GREEN Non-Statutory Consultation Feedback Report (**Appendix 6.2, Consultation Report, Volume 6, Document 6.1**).

2.4 Developing the preliminary Yorkshire GREEN design

2.4.1 Following consultation between March and April 2021, further work was undertaken to refine the design and select a preferred route heading south from the new Overton Substation between Option 1 (**Figure 2.3**) and 2 (**Figure 2.4**).

2.4.2 To determine a preferred alignment for the new overhead lines one route option north and two options south of Overton Substation were identified. All alignments were located within the areas shaded orange for Option 1 and 2 south of Overton Substation and blue for the option north of Overton Substation in **Figure 2.3** and **Figure 2.4** above.

2.4.3 North of Overton Substation, a preferred alignment was selected that minimised effects on the landscape and views and was more compliant than other options with the National Policy Statement for Electricity Networks Infrastructure (EN-5) and guidance

relating to the siting of overhead lines (The Holford Rules). The selected alignment was further from residential properties and was straighter and more direct.

- 2.4.4 South of Overton Substation, alignments were selected in line with the orange shaded areas shown for Option 1 as this would allow a longer section of existing overhead line to be removed north of Overton. This option was also considered to have fewer effects on the landscape and views compared with Option 2 where both overhead lines ran parallel to the East Coast Mainline.
- 2.4.5 The overhead line routes, individual pylon locations, substation and CSEC locations and access routes were then refined further using stakeholder feedback, on-going discussions with landowners and reviews by the engineering and environmental team as additional information about the Yorkshire GREEN location was obtained.
- 2.4.6 In some locations more detailed consideration was given to alternative options in the design and these included the following:
- Consideration of three different options for the proposed 400kV overhead line where it would connect to the existing overhead line to the north of Overton Substation. The selected option would have a straighter route and have the least impact on agricultural operations.
 - Consideration of two different options for the replacement of the existing overhead line south of Moor Monkton along a different alignment (and further away from the village) than the present overhead line route. The selected option would result in one less pylon and maximise the distance between the overhead line and the village.
 - Consideration of four different access routes to a pylon on the existing overhead line near Newton Kyme. Two options were rejected as they could impact the listed buildings and scheduled monument at Newton Kyme, impact flood defences and increase construction traffic on minor roads. The remaining two options remained part of the Project design at this stage.

Consultation on the preliminary Yorkshire GREEN design

- 2.4.7 These design refinements were incorporated into a preliminary design which was assessed, and the findings reported in the Preliminary Environmental Information Report. National Grid then consulted interested parties on the preliminary design through a process known as Statutory Consultation which was held between 28 October 2021 and 9 December 2021 (see **Section 1.6 above**).

2.5 Developing the preferred Yorkshire GREEN design

- 2.5.1 Following consultation in October to December 2021, further work was undertaken to refine the design and select the design which would form the basis of the application for development consent.
- 2.5.2 A number of potential design changes were considered or made in response to statutory consultation feedback as follows:
- movement of one of the CSECs on the existing Norton to Osbaldwick overhead line slightly southwards to minimise impacts on a landowner and operation of a farm holding as it was considered that the location of the CSEC would impact upon development by a land owner to expand farm operations in this area;

- movement of the proposed 400kV overhead line between Overton Substation and the existing Norton to Osbaldwick overhead line to avoid effects on veteran trees (a type of tree with ancient features);
- re-orientation of Overton Substation at its proposed location to avoid effects on farm operations as well as moving the substation to an alternative location north of the A19;
- providing an alternative cycle route for those using the Sustrans National Cycle Route (NCN 65) along Overton Road as construction traffic would also be using this route;
- consideration of the proposed permanent access into Overton Substation and whether this could be from the A19 instead of Overton Road;
- changes to the alignment of the new sections of overhead line connecting into Overton Substation from the south, as well as the pylon locations along these sections of overhead line to avoid effects on farm operations;
- amending the design of the scaffolding put in place to protect existing features, such as roads and railways to avoid the loss of woodland, including ancient woodland;
- movement of the pylon to be replaced in the Tadcaster Area to avoid effects on farm operations;
- consideration of the removal of the northern and southern construction compounds (separate requests) at the Tadcaster Area to minimise effects on farm operations; and
- changes to the boundary of the construction compound west of Rawfield Lane at the Monk Fryston Area to avoid effects on farm operations.

2.5.3 A detailed description of the changes made, including the requested changes that could not be put in place and why, is provided in **Section 2.8** of the ES (**Volume 5, Document 5.2.2**).

2.5.4 It is National Grid's approach to use design assumptions and parameters in earlier phases of the Project design to allow for flexibility and enable the Project design to be modified in response to consultation feedback. Therefore, in addition to the feedback from Statutory Consultation, a number of design refinements were made to the Project design to ensure optimal operation of the Project, meet design and safety standards and to mitigate environmental effects identified as part of ongoing survey and assessment work that had taken place since the start of the Project. This has included changes such as:

- development of the highways and road access design to meet the relevant standards and ensures access is safe for road users;
- reducing the area of land needed to construct and operate the Project; and
- making changes to avoid environmental effects, in particular the loss of trees and ecological effects.

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3. What is being proposed?

3.1 Permanent infrastructure

3.1.1 Figures showing the Project including temporary and permanent infrastructure are provided in **Figures 3.1 to 3.6, Volume 5, Document 5.4.3.**

Section A: Osbaldwick Substation

- 3.1.2 A new circuit breaker (device for stopping the flow of current in an electric circuit as a safety measure) and isolator (device used for isolating a circuit or equipment from a source of power) along with associated cabling would be installed at Osbaldwick Substation and minor works would be undertaken on one existing pylon (pylon YR001A).
- 3.1.3 A gantry (**Figure 3.1**) (an overhead bridge-like structure supporting equipment) would be removed and dismantled to free up space for new equipment. A new gantry (up to a maximum height of 15m and of similar height to the existing gantry) would be installed on existing operational land at the substation with a new underground cable connection to the existing substation. All new infrastructure and any construction compounds would be located within current operational land (land operated and used by National Grid) at Osbaldwick Substation.

Section B: North West of York Area

Works to the existing Norton to Osbaldwick overhead line

3.1.4 One pylon (pylon YR040T, approximately 44m in height) along this overhead line south-west of Newlands Farm would be removed and replaced approximately 30m to the east. The replacement pylon would be approximately 58m in height and would also have wires connecting downwards into one of the new CSECs.

New 400kV overhead line and Cable Sealing End Compounds

- 3.1.5 A new 400kV overhead line would be approximately 2.8km in length with eight pylons approximately 55m in height. It would be aligned north-south connecting the existing Norton to Osbaldwick overhead line with the new Overton Substation.
- 3.1.6 Two CSECs, known as Shipton North and South, would be built approximately 1.5km north-east of Shipton with a typical footprint of 45m by 85m and 40m by 45m respectively, and connected by underground cable. Both CSECs would be enclosed with security fencing and have permanent access routes from the existing access off Corban Lane. The CSECs would allow the existing overhead line between Norton and Osbaldwick to connect to the new 400kV overhead line via underground cables. The image below shows a typical CSEC with a gantry.

Figure 3.1 - Example Cable Sealing End Compound with gantry⁶



The Proposed Overton Substation

- 3.1.7 The proposed Overton Substation would be located approximately 1km south of Shipton between the A19 and the East Coast Mainline railway. The substation would convert the voltages from the higher voltage 400kV overhead line to the north to the lower voltage 275kV overhead lines to the south.
- 3.1.8 The substation would include electrical components and equipment such as transformers, switch room, control building and welfare facilities. Some equipment would be placed outdoors, and other equipment would be housed in buildings or enclosures. The substation would have a footprint of approximately 60,000m² and a maximum height of 15m above finished ground level. The area around the substation would include security fencing, a permanent access road from Overton Road as well as planting and earthbunds to help screen the substation in views. It would also include drainage with an outfall to the Hurns Gutter. Images of a typical substation and layout are provided below. The substation would not be manned on a permanent basis but regular maintenance visits would take place.

⁶ This image shows an example of similar infrastructure for illustrative purposes and is not an accurate representation of how it will look

Figure 3.2 – Image of typical substation (existing Monk Fryston Substation)



Figure 3.3 – Typical substation layout (existing substation at Monk Fryston)



Two new sections of 275kV overhead line

3.1.9 Two new sections of 275kV overhead lines would connect to Overton Substation from the south.

- The 'XC' overhead line would connect to the substation from the south-west. This would be 1.95km in length with seven new pylons running from south of the River Ouse, east of Overton Wood and crossing the East Coast Mainline railway with pylons approximately 60m in height. This would connect to the existing Monk Fryston to Poppleton overhead line.
- The 'SP' overhead line would connect to the substation from the south-east. This would be 1.5km in length with four new pylons running from 500m west of Skelton and parallel to the east of the East Coast Mainline railway with pylons up to a height of 52m. This would also connect to the existing Monk Fryston to Poppleton overhead line.

Works to the existing Monk Fryston to Poppleton overhead line

- 3.1.10 The installations of the new sections of overhead line south of Overton Substation would require the existing Monk Fryston to Poppleton overhead line to be modified to form two separate overhead lines.
- 3.1.11 Works would also be undertaken to a 5km section of this overhead line between Moor Monkton in the west and Skelton in the east.
- A 2.35km section (and six pylons) of the existing overhead line between the East Coast Mainline railway in the east and Woodhouse Farm, north of Overton to the west would be permanently removed.
 - Four pylons along a 1.2km section of the existing overhead line south of the River Ouse and north of Thickpenny Farm would be removed and replaced. The pylons would be replaced along the same overhead line alignment, but in new locations and would be taller in height than the existing pylons. The new pylons would be between 48m and 54m above ground level compared to 40m to 50m in height at present.
 - A 1.6km section of overhead line south of Moor Monkton and Redhouse Wood would be removed with the replaced section moved further south away from Moor Monkton. The closest pylon to Moor Monkton would be removed so that there would be one less pylon along this overhead line. The new pylons would be between 50m and 53m above ground level compared to 35m to 45m in height at present.

Section C, D and E: Works to the existing Poppleton to Monk Fryston overhead line

- 3.1.12 Within Sections C, D and E, works, known as reconductoring, would be undertaken to this existing overhead line to change the wires (conductors) which are strung between pylons connected to insulators on pylon crossarms on this section. Other works that would be undertaken to some of the pylons include replacing or strengthening the steelwork on the pylons, replacing or modifying the cross arms and repairs to or strengthening of the pylon foundations. **Figure 3.4** shows the key components on a typical pylon.

Section D: Tadcaster Area

Cable sealing end compounds

- 3.1.13 Two CSECs, known as Tadcaster East and West, each with a typical footprint of 40m by 50m and 31m x 37m respectively, would be constructed and connected by underground cables. For both CSECs, security fencing would be installed as well as the construction of a permanent access from the A659. The CSECs would be needed to manage the increase in power flows as a result of works (increase to the rating) to the existing overhead lines in this area. New planting would also be put in place to help screen the CSECs in nearby views.

Works to the existing overhead line between Tadcaster Tee and Knaresborough

- 3.1.14 One pylon on this existing overhead line in the land between the A64 and A659 would be removed and replaced approximately 30m to the south-east along the same section of overhead line. The replacement pylon (54m above ground level) would be approximately 16m taller than the existing pylon and would have wires connecting downwards into the Tadcaster Tee West CSEC.

Section F: Monk Fryston Area

The proposed Monk Fryston Substation

- 3.1.15 The proposed Monk Fryston Substation would be installed next to (and connect to) the existing substation at Monk Fryston off Rawfield Lane. The substation would include electrical components and equipment such as transformers, switch room, control building, car parking and welfare facilities. The substation would have an overall footprint of approximately 90,000m². It is likely to be similar in height to the buildings and infrastructure at the existing substation (assumed to be up to a maximum height of 15m above finished ground level). The substation would be unmanned on a permanent basis with regular maintenance visits to the substation.
- 3.1.16 The area around the substation would include security fencing, access roads as well as planting and earthbunds to help screen the substation in views from the surrounding area. These would comprise mounds of earth up to 3.5m in height which would be planted and located close to the boundaries of the substation.

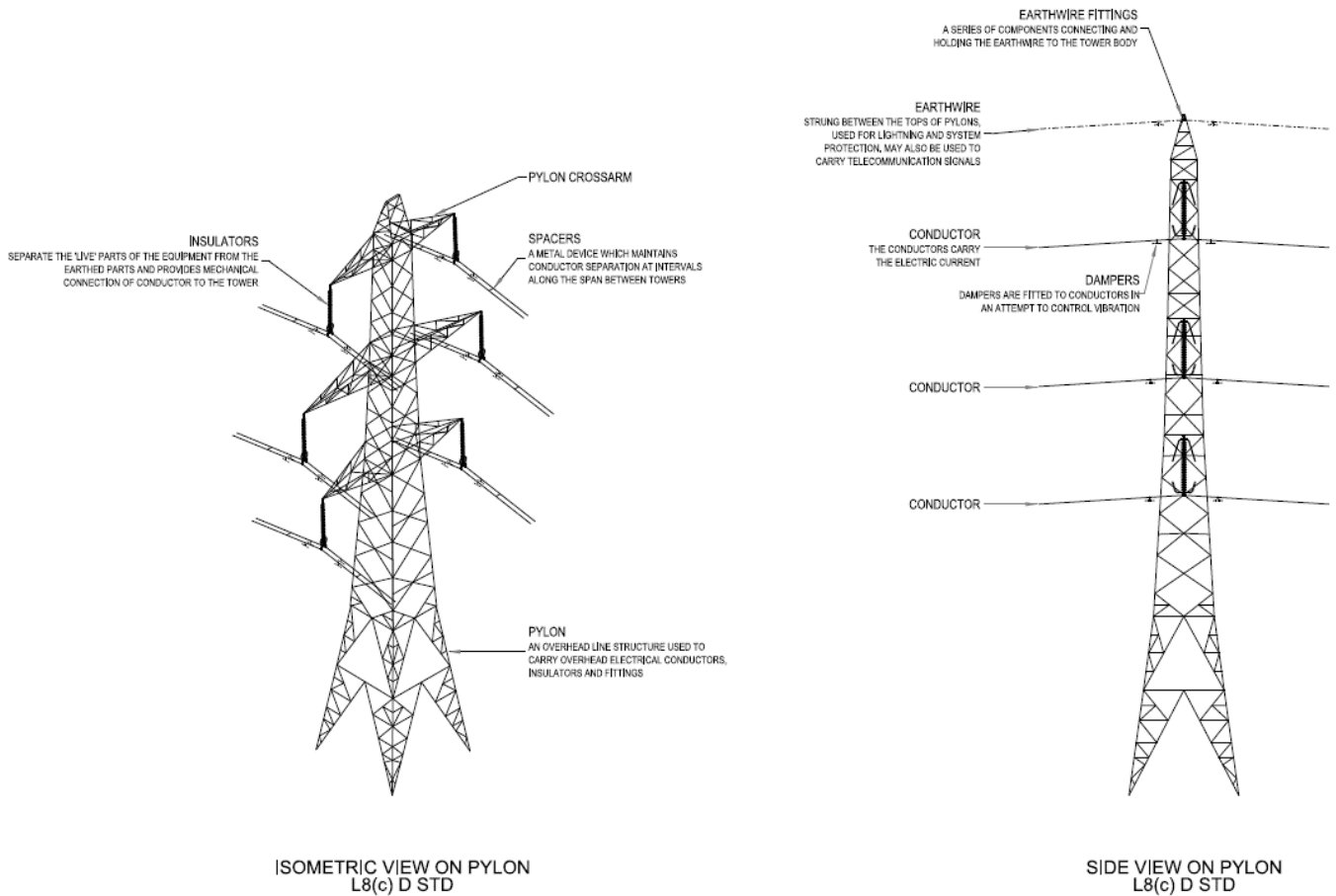
Works to the existing Monk Fryston to Poppleton overhead line

- 3.1.17 A 1.45km section of the existing overhead line west of the existing Monk Fryston Substation would be realigned so that it would connect into the new Monk Fryston Substation. The four existing pylons along this section of overhead line would be removed and replaced. As a result of needing to connect this overhead line into the new substation, there would be one more pylon compared to the existing situation. The replacement pylons would be up to 60m above ground level in height compared with the pylons to be dismantled which range in height from approximately 35m to 42m above ground level.

Works to the existing overhead line between Monk Fryston and Eggborough

- 3.1.18 A short section of this existing overhead line to the east of Monk Fryston Substation would be removed and replaced with a new section of overhead line, slightly to the north but along a similar alignment, to connect into the new Monk Fryston Substation. As a result, a section approximately 370m long would be permanently dismantled.

Figure 3.4 – Pylon components



3.2 Construction works

3.2.1 The construction works for Yorkshire GREEN would comprise the following key activities:

- **Access routes:** Access routes to construction working areas would be constructed to provide suitable access for construction plant and traffic. All access routes would be temporary apart from those providing access to the CSECs and Overton Substation which would be needed for permanent access. Where required, vegetation removal and management would be undertaken to access the public highway and ensure the design meets visibility safety requirements. The access surfaces would comprise stone or interlocking panels (that form a suitable surface to drive vehicles and plant along). Existing access routes would also be used in some places. The access routes would be fenced and would also include the installation of drainage, and where required watercourse crossings.
- **Construction compounds:** A total of seven construction compounds would be installed for Yorkshire GREEN each of which would have a footprint of approximately 1.4 hectares (130m by 110m), except for the compound at Tadcaster which would be approximately 2.5Ha. Each compound is likely to contain storage areas including laydown areas and soils storage and areas for equipment and fuel, drainage, generators, car parking and offices and welfare areas (portacabins, two storeys in height). The compounds would be located as follows (in each of the

locations listed there would be two compounds, except for Tadcaster where one compound is proposed):

- north of Corban Lane and east of the access road to Newlands Farm close to where the proposed 400kV overhead line would connect to the existing overhead line;
 - north-west of the proposed Overton Substation; one to the west of Overton Road and north of the East Coast Mainline railway and the second to the east of Overton Road and south of the A19;
 - on land between the A64 and A659 at Tadcaster; and
 - east and west of Rawfield Lane at Monk Fryston.
- Construction working areas: These are set up to provide a secure area within which works could take place. Around the pylons a typical working area of 50m by 50m would be set up and include a crane pad (surfacing for a crane).
 - Scaffolding: This would be installed where overhead lines need to cross features such as roads, railways and rivers to ensure such features are protected and prevent overhead lines coming into contact with these features.
 - Watercourse crossings: Temporary culverts would be installed where access routes need to cross a watercourse. Temporary short span bridges would be implemented where culverts would not be suitable.
 - Third party utility diversions: In order to construct the Project in some locations third party utilities such as gas pipelines or low voltage overhead lines may need to be diverted and / or placed underground (in the case of the overhead lines).

Construction working hours

3.2.2 The core construction working hours would be as follows:

- Monday to Friday: 07.00 – 19.00; and
- Saturday, Sunday and Public Holidays: 08.00 - 17.00.

3.2.3 No piling works would take place on Sundays or Public Holidays and would be restricted to 09.00 - 14.00 on Saturdays.

3.2.4 The core working hours would exclude start up and close down activities which would take up to one hour before or after the core working hours.

3.2.5 A number of activities would take place outside of the core working hours (i.e. over a 24-hour period if required). These would comprise:

- the jointing of underground cables, with the exception of cable cutting which would take place only during core working hours;
- the installation and removal of conductors, pilot wires and associated protective netting and structures across highways, railway lines or watercourses;
- the completion of operations commenced during the core working hours which cannot safely be stopped;
- any highway works requested by the relevant highway authority to be undertaken on a Saturday or a Sunday or outside the core working hours;

- oil processing of transformers or reactors in substation sites;
- the testing or commissioning of any electrical plant installed as part of the authorised development;
- the completion of works delayed or held up by severe weather conditions which disrupted or interrupted normal construction activities; and
- security monitoring.

Pylon construction, repair and dismantling works

- 3.2.6 New pylons would be constructed by installing the foundations and then assembling the pylon steelwork, bolting elements together prior to lifting them into place using a crane. The final stage is to install the wires (known as conductors) onto the pylons. This is completed using special equipment which pull the wires up onto and along the pylons in sections. The wires are then installed to the correct tension.
- 3.2.7 The works to the existing overhead lines would include repairs or strengthening to the pylon foundations, if surveys show these are needed, replacement of steelwork and changes to the wires would be undertaken using similar methodologies to those described for new overhead lines.
- 3.2.8 Pylons are dismantled by removing the fittings and overhead lines, then taking apart the steelwork in sections using a crane or ‘felling’ the whole structure. Foundations would be removed to a specified depth, any excavated land filled in and the ground conditions reinstated.

Temporary overhead line diversions

- 3.2.9 During construction National Grid has to ensure that electricity flows are maintained at all times along the existing overhead lines and therefore in some places temporary diversions would be needed. These typically comprise a short section of overhead line with temporary structures or pylons which electricity flows are diverted along. Such diversions would be implemented at the following locations and would be in place for up to three years.
- Section B: Along the existing Norton to Osbaldwick overhead line a temporary diversion of approximately 1.1km would be installed approximately 120m south of the current overhead line with two temporary structures or pylons approximately 320m south-west and 315m south-east of Newlands Farm.
 - Section B: Along the existing Poppleton to Monk Fryston overhead line a 1.9km temporary diversion approximately 50m north of the existing overhead line along the realigned overhead line into Overton Substation with four temporary structures.
 - Section C: Along the existing Poppleton to Monk Fryston overhead line a 565m long temporary diversion south-east of Moor Monkton approximately 40m west of the existing overhead line would be installed.
 - Section D: Along the existing Tadcaster Tee to Knaresborough overhead line, a temporary diversion of approximately 1km long and up to 60m north of the existing overhead line with two temporary structures approximately 110m east and 150m west of the A659.
 - Section F: Along the existing Poppleton to Monk Fryston overhead line there would be a 1.1km temporary diversion west of Monk Fryston Substation up to

approximately 40m north and east of the existing overhead line with two temporary structures or pylons installed approximately 170m south-west and 160m south-east of Pollums House Farm.

Construction of CSECs and underground cables

3.2.10 To construct the CSEC the site area would be cleared and earthworks would take place to create a level platform upon which the CSEC would be constructed. Drainage would be installed and any surplus material from constructing the CSEC foundations would be removed from site. Stone surfacing and a concrete pad would be installed which would form the foundations for the CSEC equipment and a 2.4m security fence would also be placed around the CSEC. The equipment supporting structures within the compound would be installed and constructed on the prepared concrete foundations. The high voltage (HV) cables would then be pulled into place and terminated into the new cable sealing equipment. The overhead line conductors would be dropped onto the new gantries/anchor blocks and commissioned with all other high voltage plant. The final elements of the works would be to undertake works to test the new HV plant, cables and amended overhead lines.

3.2.11 Underground cables would be installed to connect the CSECs and overhead lines. Typically these would be installed in trenches, assumed at this stage to be approximately 1.0m deep, although at Tadcaster it is assumed that horizontal directional drilling would be used to install the cable due to the presence of gas pipelines with appropriate health and safety measures implemented. The cabling route would be fenced off and within this area drainage, stockpiles for topsoil and sub-soil, access or haulage road and trenches would be installed. Cable drums would be delivered to site and cables winched into position along the trench and the trench filled back in.

Construction of substations

3.2.12 The areas where Overton Substation and Monk Fryston Substation are proposed to be built would be cleared and levelled to create a level platform upon which the substations would be constructed. Any cleared material or soils would be used to create landscape bunds around the substations. These bunds would then be planted to help screen the substations. Concrete would be installed to form the foundations of the substations, drainage installed, and underground cabling. The structures and equipment within the substation would be installed and constructed on the prepared concrete foundations. A control building would be built and connected to electricity and water supplies as well as the drainage system. Finally, equipment to protect and control the electricity network would be installed or modified and the new and modified overhead lines tested before being commissioned.

Reinstatement works

3.2.13 Once construction works were complete the temporary access routes and working areas at the associated pylon, scaffold sites and around the CSECs and substations would be removed and the ground reinstated and soils restored to their previous condition. Where temporary access routes are removed, a permanent gate or post and rail fence within field boundaries and at bellmouths on the highway would be left in place to allow for access in the future for maintenance. Tree and hedgerow replanting would take place. Land drainage will also be reinstated or installed where needed.

3.3 What is the timeline for construction and operation of Yorkshire GREEN?

Construction

- 3.3.1 Construction works are expected to start in 2024 and continue for a period of up to four years and six months (2028) with Yorkshire GREEN becoming operational from September 2027 (see **Figure 3.5**).

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Figure 3.5 – Indicative construction programme

Year	2024				2025				2026				2027				2028								
Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4					
New substations (Overton and Monk Fryston) Including all pre-commencement groundworks and construction works			[Red bar spanning from Q3 2024 to Q3 2027]																						
Overhead lines (275kV and 400kV) reconductoring and works to existing overhead cables (including sealing and compounds)			[Red bar spanning from Q3 2024 to Q2 2027]																						
Osbaldwick substation Including installation and commissioning of circuit breaker							[Red bar spanning Q3 2025]																		
Reinstatement works and landscaping								[Red bar spanning from Q4 2025 to Q4 2028]																	

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Operation

- 3.3.2 The operational lifetime of Yorkshire GREEN is expected to be around 80 years. Periodic inspection and maintenance of Yorkshire GREEN would be required during its operational lifetime. Maintenance activities are likely to include visual expectations, repairs to pylon foundations, steelwork and fittings and servicing of equipment at substations. Infrequent refurbishment work is likely to also take place. The overhead line equipment has a lifespan of between 20 and 50 years. During such works the overhead lines on one side of the pylons would be kept 'live' so electricity could continue to flow. Such works would comprise the replacement of the overhead line equipment such as the wires (conductors) and supporting insulators and steel fittings.

Decommissioning

- 3.3.3 Even though the expected life span of Yorkshire GREEN is around 80 years, the lifespan of components such as the overhead lines may be longer, depending on their condition and any future refurbishments. Decommissioning is only likely to occur once the infrastructure is no longer required. Whilst it is assumed that aspects of the connection would be removed at the end of life, it is too early to determine this. Similarly, equipment within the substations would be removed, structures such as the gantries dismantled and broken up, concrete and buildings demolished, underground cables and other materials removed, and the site restored. Upon removal, most of the material would be re-used if feasible or taken for recycling. Similar access would be required as outlined for construction.
- 3.3.4 It is expected that any dismantling of the infrastructure would be completed in a similar manner to the construction phase. It is assumed that effects during the decommissioning phase would be of a similar nature to activities conducted during the construction phase.

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4. Environmental Impact Assessment

4.1 What is Environmental Impact Assessment?

- 4.1.1 Environmental impact assessment is the process of identifying and assessing the likely significant effects, both positive and negative, of a proposed development. This involves identifying how people and the environment (identified in the assessment as specific receptors) could be affected and incorporating environmental measures to avoid or minimise adverse effects, or compensation to offset any significant negative effects (these are referred to as ‘embedded environmental measures’). Nearly all development has some effect, but this process identifies whether these effects are likely to be significant or not and this information is used in the decision making process by the Examining Authority and the Secretary of State.
- 4.1.2 One of the early phases in the EIA was to undertake the process of scoping. This helped to identify those effects that had the potential to be significant (as identified at that time) that needed to be assessed in more detail (i.e. scoped-in), as well as those that were unlikely to be significant and could therefore be scoped-out of the assessment.
- 4.1.3 A Scoping Report was submitted to the Planning Inspectorate in March 2021. The Scoping Report identified the potentially significant effects requiring assessment, determined the subject matter of the assessment and the methodologies for undertaking the assessment. The Planning Inspectorate subsequently provided a Scoping Opinion, which included comments from a range of stakeholders, on behalf of the Secretary of State for Business, Energy and Industrial Strategy, in May 2021. This document provides an opinion on what information should be included within the ES. The Scoping Opinion and the statutory consultee responses have subsequently informed the assessment work and further design evolution undertaken.
- 4.1.4 A Preliminary Environmental Information Report (PEIR) was prepared by National Grid and published in October 2021 as part of the statutory consultation required under the Act² which ran between 28 October 2021 and 9 December 2021 (see **Section 1.6**). The Preliminary Environmental Information Report provided information for consultees and other interested parties, including members of the public, to develop an informed view of the potential environmental effects of the Project and to enable them to make comments on the proposals. The feedback received was reviewed and the Project design developed in response to this feedback (see **Chapter 2: Project need and alternatives, Volume 5, Document 5.2.2** for further information).
- 4.1.5 The ES presents the EIA detailed findings for each topic (known as aspects) that has been assessed. A detailed description of the existing baseline environment has been produced for the Order Limits, and where appropriate the surrounding area, through a combination of desk-based studies, consultation and site-specific surveys.
- 4.1.6 All potential effects arising from the construction, operation and decommissioning of Yorkshire GREEN are identified as part of the EIA methodology, for example loss of habitat or change in noise levels. The assessment considers the level of significance of each effect on each ‘receptor’ (the receiving environment such as water, air, land, or specific species). The assessment is undertaken by EIA specialists such as ecologists and archaeologists. The general approach to determining ‘significance’ of an effect is to

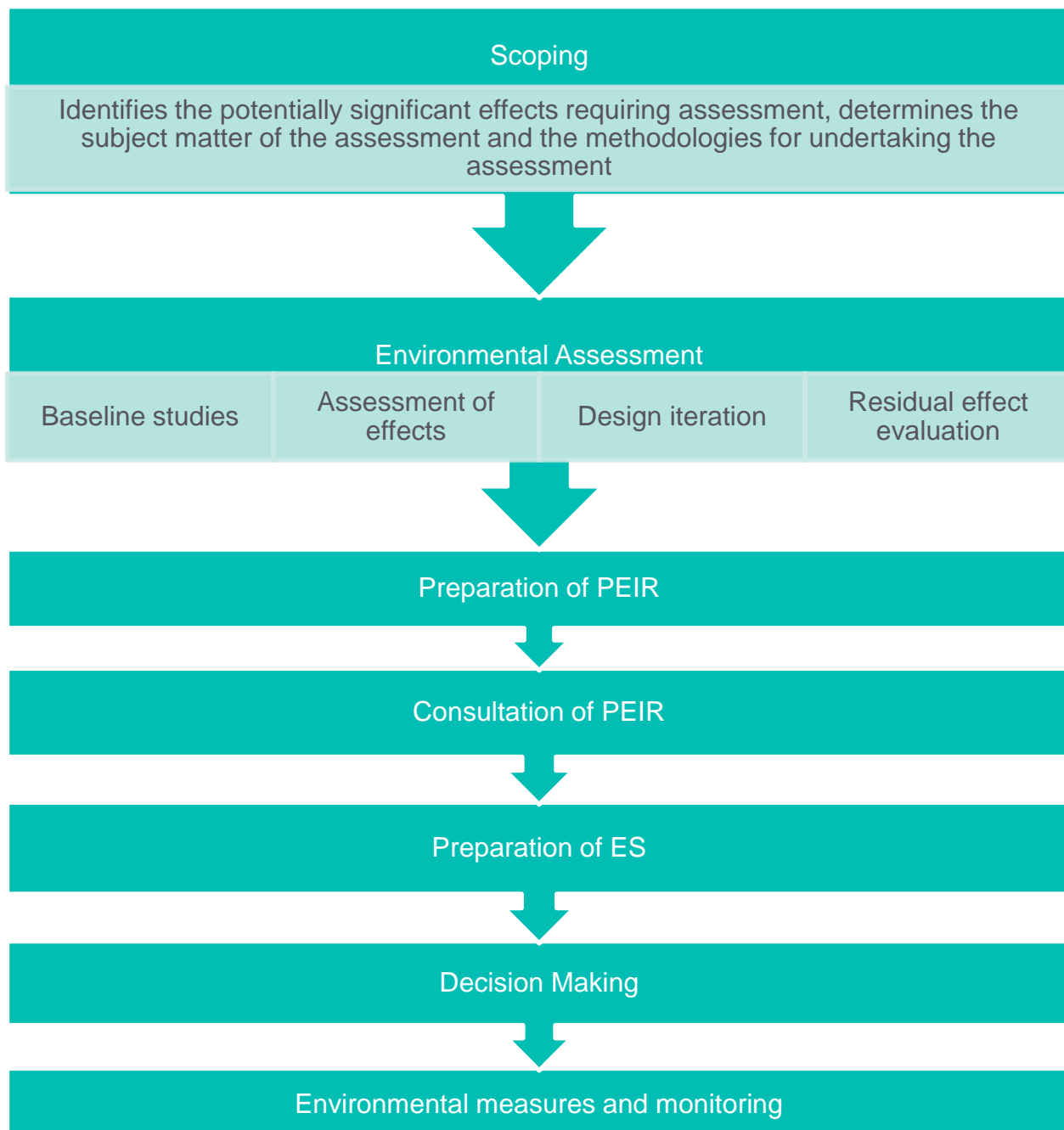
consider the sensitivity of a receptor alongside the nature, duration and severity of the change. A detailed explanation of how different effects are deemed significant for each aspect is provided in each aspect chapter of the ES.

4.1.7 EIA also requires the consideration of potential cumulative and inter-related effects:

- cumulative effects are where the combined effect of Yorkshire GREEN in combination with the effects from a number of different projects, on the same single environmental receptor/resource are considered; and
- inter-related effects are those that arise from multiple impacts and activities from the construction, operation and decommissioning of Yorkshire GREEN on the same receptor, or group of receptors.

4.1.8 The EIA process is summarised in **Figure 4.1**.

Figure 4.1 - The EIA process



4.2 Aspects scoped out of the ES

4.2.1 There are some aspects for which a detailed assessment has not been undertaken because the potential for significant effects from these aspects is unlikely. Where appropriate, this has been agreed with the Planning Inspectorate.

- Electric and Magnetic Fields (EMF): Yorkshire GREEN will be designed in accordance with Government adopted technical guidelines on EMF. As all infrastructure proposed as part of the Project would be compliant with these guidelines no significant effects would occur (refer to the **Electric and Magnetic Fields Report, Volume 6, Document 6.3** for more information)
- Major accidents and disasters: Measures will be incorporated into the design and risk assessments implemented during construction to ensure the likelihood of major accidents and disasters is very low. The main accident risk relates to underground high pressure gas pipelines near to the Project. Measures, which will be agreed with the pipeline operators, will be implemented to ensure accidents are avoided and works are carried out safely during construction.

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5. Landscape and visual

5.1 How landscape and visual effects have been assessed

- 5.1.1 Landscape receptors are distinct areas that could be influenced by the Project where both natural and human factors combine to define landscape character. Visual receptors are people in different situations that may experience views of the Project, including residents, people using transport routes, users of Public Rights of Way and other recreational areas or receptors such as parks. The assessment methodology is based on current guidance produced by the Landscape Institute and Institute of Environmental Management and Assessment (IEMA). Further information can be found in **Chapter 6: Landscape and Visual (Volume 5, Document 5.2.6)**.
- 5.1.2 The EIA has considered the likely significant effects of the Project on landscape and visual receptors in the Study Area, including direct and indirect effects on landscape character and a local landscape designation scoped into the assessment. The Study Area extends 3km from the edge of where the Project comprises new infrastructure at Section B: North-West of York, Section D: Tadcaster Area and Section F: Monk Fryston Substation Area. The new infrastructure works assessed are new overhead lines, the new substations at Overton and Monk Fryston, new CSECs at Shipton and Tadcaster and temporary works associated with the construction phase including compounds and overhead lines. Effects have been considered for when the Project is being constructed and once it is operational. An assessment has been undertaken at Year 0 Operation, after all construction and reinstatement works have been completed, and also at Year 15 Operation (15 years from completion of building the Project), to consider the potential effects following the growth of new tree and shrub planting.
- 5.1.3 As agreed with the Planning Inspectorate the proposed changes at Osbaldwick Substation have not been assessed as this would comprise very minor changes to the equipment at the existing substation, and it would look the same as it currently does once the works were complete. The works to the existing overhead lines in Sections C (Moor Monkton to Tadcaster) and E (Tadcaster to Monk Fryston) have also not been assessed as this comprises replacing the existing overhead wires (conductors and fittings) with some repairs and reinforcement to the existing pylons. Once works are complete, the overhead lines would look very similar to the existing situation.
- 5.1.4 Baseline information has been obtained from a desk-based study including review of published landscape character assessments. Computer modelling has generated a Zone of Theoretical Visibility (ZTV) which provides mapping of the areas from where the Project elements could be visible. This has been used as part of the process to select potential viewpoints which were then checked and refined with a field survey. Photographs from a number of publicly accessible viewpoints were taken in March 2021 and March 2022 before leaves on trees and shrubs emerged.
- 5.1.5 Feedback on the Scoping Report and the statutory consultation from the Planning Inspectorate, other consultees and members of the public has been taken into account in development of the Project design and the landscape and visual assessment. In addition, in order to understand the existing landscape and visual environment and associated potential issues, meetings have taken place with officers at local planning authorities to discuss viewpoints, the approach to mitigating effects and the

assessment. Engagement has also taken place with the National Trust at Beningbrough Hall to provide more information on the effects from the Project at this location.

5.2 Baseline environment

- 5.2.1 Established electricity transmission infrastructure comprising high voltage overhead lines and the Monk Fryston Substation are located within the Study Area. The existing infrastructure is part of the baseline environment against which changes including the dismantling of sections of overhead line and the introduction of proposed new infrastructure is assessed.
- 5.2.2 The landscape in the Study Area for Section B: North-west of York Study Area is dominated by medium to large scale arable fields on low lying land, crossed by several transport routes including the A19 and the East Coast Mainline Railway. The proposed infrastructure in the Study Area for Section D: Tadcaster Area is located approximately 1.4km to the south-west of Tadcaster on gently undulating arable farmland between the A659 and A64 dual carriageway. Blocks of plantation woodland lie between the Project and Red Brick Farm and Brick House Farm on Garnet Lane which provides a buffer between the dwellings and the existing infrastructure in this Study Area. In the Section F Monk Fryston Study Area, the proposed substation lies adjacent to the eastern and north-eastern edge of the existing substation on relatively flat land. Mature woodland belts are located to the south and east, set within a wider undulating arable landscape, influenced by major transport corridors including the A1(M).
- 5.2.3 There is a Locally Important Landscape Area, a non-statutory local landscape designation, within which the Tadcaster Area and Monk Fryston Substation Study Areas (illustrated in **Figure 6.11: National Landscape Character Areas and Landscape Designations, Volume 5, Document 5.4.6**).
- 5.2.4 The published national and regional landscape character assessments were reviewed to provide context and Statements of Environmental Opportunity, which set out opportunities to enhance landscape character, have informed the outline landscape strategy. The published local landscape character assessments were used as the primary source of baseline information to describe the key characteristics of the landscape within the study area and included the following assessments:
- The Hambleton Landscape Character Assessment and Sensitivity Study;
 - Harrogate District Landscape Character Assessment;
 - Selby District Council Landscape Character Assessment; and
- 5.2.5 Leeds Landscape Character Assessment. These landscape character assessments define a number of Landscape Character Areas or Landscape Character Types across each local authority area based on the features present in the landscape such as topography, vegetation and rivers present and presence of manmade development.
- 5.2.6 Visual receptors within the Study Area have been identified as residents within settlements and residents of scattered dwellings and farmsteads. Recreational receptors include cyclists on national cycle routes, walkers on long distance paths, users of Public Rights of Way and people in boats on the river corridors, most notably the River Ouse to the northwest of York. Other recreational receptors include parks, recreation grounds and golf courses. Transport network receptors include people travelling in vehicles along roads and passengers on trains.

Embedded environmental measures

- 5.2.7 A range of environmental measures which relate to landscape and visual matters are embedded as part of the Project design to avoid or reduce significant environmental effects. These measures include the following:
- Guidance prepared by National Grid on factors to consider in deciding the route of new overhead lines and identifying locations for new substations (known as The Holford and Horlock Rules) have been followed in the earlier stages of Project when potential overhead line and substation options were being identified so that adverse landscape and visual effects were minimised as much as possible within the technical parameters required to deliver the Project.
 - Potential adverse impacts from constructing the Project were taken into account when deciding where to locate construction compounds. The construction works will also include the use of temporary earth bunding or solid timber fencing, where required, to the edge of construction compounds and sensitive temporary lighting design to minimize effects from lights if occasionally needed during hours of darkness.
 - Project infrastructure such as pylons and substations, has been located to avoid loss of hedgerows and trees where possible.
 - In line with good practice, tree management plans will be prepared by the contractors building the Project to detail how trees and hedgerows will be protected during construction in line with the Arboricultural Impact Assessment (**Appendix 3I, Volume 5, Document 5.3.3I**).
 - An outline landscape strategy has been developed (see **Figures 3.10 to 3.12 in Chapter 3: Description of the Project, Volume 5, Document 5.4.3**) and forms part of the Project at both proposed substations and the Tadcaster CSECs. This comprises locations of earth mounding and new planting, comprising hedgerow reinforcement with new planting as well as new hedgerow, tree and woodland planting. The earth mounding and new planting will help screen the proposed infrastructure in these areas.

5.3 Likely significant effects

Landscape Effects during the Construction Phase

- 5.3.1 There would be likely significant effects on landscape character during construction as a result of changes in the landscape from tree and hedgerow loss, the presence of construction compounds and works and the presence of equipment such as mobile cranes need to construct the Project, temporary access roads and scaffolding needed to protect features such a roads and railways during the construction of the overhead lines. Effects would be localised (i.e. the changes would not affect the entire landscape character area or type due to its size and location). The landscape character types or areas which would experience locally significant adverse effects during construction would be:
- Vale Farmland with Plantation Woodland and Heathland Regional Landscape Character Type;
 - River Floodplain Regional Landscape Character Type;

- Huby and Shipton Vale Local Landscape Character Area: Sub-Types 5b and 5c;
- Ouse Floodplain Local Landscape Character Area;
- Scagglethorpe Moor Mixed Farmland Local Landscape Character Area;
- Lower Nidd Grassland Local Landscape Character Area; and
- West Selby Limestone Ridge Local Landscape Character Area.

5.3.2 The construction works at Tadcaster and Monk Fryston Areas would also have a localised significant adverse effect on the Locally Important Landscape Area as a result of the presence of construction compounds, temporary overhead line diversions, construction works and scaffolding.

Landscape Effects during the Operational Phase

5.3.3 During operation the Vale Farmland with Plantation Woodland and Heathland Regional Landscape Character Type would experience permanent significant adverse effects once construction was complete (Year 0) and 15 years after construction had finished (Year 15)⁷ and beyond as a result of the presence of new sections of overhead line in the landscape.

5.3.4 The Huby and Shipton Vale Local Landscape Character Area: Sub-Types 5b and 5c would also experience permanent significant adverse effects once construction was complete (year 0) and 15 years after construction was complete and beyond as a result of the presence of new sections of overhead line, Overton Substation and the Shipton CSECs in the landscape.

Visual Effects during the Construction Phase

5.3.5 There would also be localised significant visual effects during construction and operation. During construction significant effects would occur as a result of the removal of vegetation such as trees and hedgerow which at some locations would open up views of the construction works as well as from the temporary presence of construction works, compounds, temporary overhead line diversions and access roads and scaffolding.

5.3.6 In the Section B: North West of York Area residents of Moor Monkton, Overton, Hall Moor Farm Cottages, Hall Moor Farm (South), Overton Grange and Nos. 1 and 2 Glenroyd Cottages, New Farm Cottages, dwellings on Scagglethorpe Moor and Stripe Lane, and guests at Woodstock Lodge Wedding Venue are likely to experience significant effects. Users of Public Rights of Way and cycle routes in the area comprising localised parts of National Cycle Route 65 and the Way of the Roses long distance footpath that follow the same route, the Public Rights of Way along the River Ouse corridor (including the long distance footpaths of the Yorkshire Ouse Walk, Jorvic Way, Ainsty Bounds Way and Historical Walk: Lancashire and Yorkshire), users of the Other Route of Public Access near Newlands Farm, users of Public Rights of Way east of Shipton including the Jorvic Way, and users of routes near Moor Monkton and on Scagglethorpe Moor would also all experience significant adverse visual effects during the construction phase. Significant adverse effects would also occur for users of the

⁷ To assess long-term effects and, take into account the fact that trees and vegetation planted to mitigate the effects of the Project can take several years to grow and mature, the landscape and visual assessment assesses effects upon completion of construction work (referred to as Year 0) and 15 years later (year 15).

A19, East Coast Mainline Railway, Corban Lane, Stripe Lane and Overton Road/Station Lane.

- 5.3.7 In Section D: Tadcaster Area residents of Red Brick Farm would experience significant adverse effects. Users of the Paulinus Way long distance footpath and those travelling along the A659 and Garnet Lane would also experience localised significant effects.
- 5.3.8 At Section F: Monk Fryston residents of the farmhouse east of Monk Fryston Lodge and Pollums House Farm would experience significant effects. Those travelling along Rawfield Lane and the A63 would also experience localised significant effects.

Visual Effects during the Operational Phase

- 5.3.9 In Section B: North West of York Area the following receptors would experience significant permanent effects both when construction was first completed (year 0) and 15 years later (year 15 and beyond).
- Guests at Woodstock Lodge Wedding Venue, Hall Moor Farm Cottages and Hall Moor Farm (South): Effects from the presence of new pylons and the proposed 400kV overhead line.
 - Overton Grange and Nos. 1 and 2 Glenroyd Cottages: Effects from the presence of new sections of overhead line, a realigned section of overhead line and the upper parts of infrastructure at Overton Substation.
 - New Farm Cottages: Effects from the presence new sections of overhead line and partially restricted views of the upper parts of the Overton Substation.
 - Stripe Lane: Effects from the presence of the upper parts of new sections of overhead line.
 - Some residents at the south-eastern edge of Moor Monkton would experience significant beneficial effects from the realignment of the existing 275kV overhead line further to the south and removal of the closest existing pylon to this settlement; however other residents more centrally located within the settlement would experience significant adverse effects from the increase in height of a replacement pylon.
 - Residents in Overton would experience significant beneficial effects from the permanent dismantling of a section of existing overhead line.
 - Users of National Cycle Route 65, Way of the Roses and Jorvic Way long distance footpaths, Public Rights of Way east of Shipton and the Other Route of Public Access near Newlands Farm would experience significant adverse effects from the presence of new sections of overhead line, CSECs and/or the Overton Substation.
 - Public Rights of Way near Moor Monkton would experience significant locally beneficial effects as a result of the existing overhead line being moved further south and the closest pylon to this village being removed.
 - Those travelling along the A19, Corban Lane and Overton Road/Station Lane would experience significant adverse effects from the presence of new sections of overhead line and pylons and Overton Substation.
- 5.3.10 In Section D: Tadcaster Area the only likely significant adverse effect would be on those using the Paulinus Way long distance footpath for a short section of the route with views of a replacement pylon on the existing overhead line which would be taller than the current pylon.

- 5.3.11 In Section F: Monk Fryston Area residents at Pollums House Farm would experience significant permanent adverse effects both at completion of construction and 15 years later and beyond as a result of the realigned existing overhead line west of Monk Fryston Substation and an increase in the height of pylons. The closest pylon would move 30m closer to these dwellings and would be approximately 17m taller than an existing pylon that would be removed.
- 5.3.12 Those travelling along the A63 and Rawfields Lane would also experience localised significant adverse effects once the Project first becomes operational (Year 0) as a result of the taller pylons, along the realignment of the existing overhead line west of the Substation, and from views of the upper parts of the substation infrastructure. These effects would reduce and would not be significant 15 years after completion as the proposed planting around the Substation becomes established.

6. Historic environment

6.1 How effects on the Historic Environment have been assessed

- 6.1.1 The EIA has considered the likely significant effects of Yorkshire GREEN on the Historic Environment, which includes archaeological remains, historic buildings and historic landscapes. Further information can be found in **Chapter 7: Historic Environment (Volume 5, Document 5.2.7)**. Potential effects which have been assessed include effects arising through damage or disturbance (for example, the loss of archaeological remains through construction) and effects arising through change in the setting of a heritage feature on designated heritage assets (including Scheduled Monuments, Listed Buildings, Registered Parks and Gardens, Conservation Areas, and Battlefields), non-designated heritage assets (including locally important buildings and structures), and effects arising through change to historic landscape character. The assessment has considered the area within the Order Limits where there could be impacts from new infrastructure including new substations, CSECs, and new overhead lines and pylons.
- 6.1.2 In addition, heritage assets within an Extended Study Area around Yorkshire GREEN were assessed for effects arising through change to setting caused by the construction and operation of Yorkshire GREEN. The Extended Study Area comprised a 3km area around the original Project boundary used at the scoping stage of the Project.
- 6.1.3 Information on the existing Historic Environment was based on the results of a site walkover and a desk study, which involved the collation of data from a range of sources including the National Heritage List for England (NHLE), City of York Historic Environment Record (HER), North Yorkshire HER, West Yorkshire HER, historic mapping, and remote sensing data and imagery such as LiDAR (a method in which a 3D representation of the earth's surface is generated using an airborne laser) and the Vale of York National Mapping Programme (NMP). Geophysical surveys were undertaken at the sites of the proposed Overton and Monk Fryston Substations and this was followed up with archaeological trial trenching. Further geophysical surveys have also been undertaken at Shipton and at Tadcaster CSEC. The requirements of national and local planning policy and professional guidance were also considered in the assessment.
- 6.1.4 In addition, to understand the existing Historic Environment and associated potential issues, engagement has taken place with Historic England, the National Trust, and the local authorities for City of York, North Yorkshire, Harrogate, Leeds, and Selby. These consultations helped define the key considerations for assessing potential significant effects on heritage assets.

6.2 Baseline environment

- 6.2.1 The ES Study Area comprising a 500m buffer around the Project as defined at scoping within the Vale of York, with the exception of the North West of York Area where this was extended to 2km to allow for the location of the Overton substation not having been fixed at that point, comprises low-lying land consisting mainly of arable agricultural fields, through which the River Ouse and its tributaries flow. Market towns, villages and hamlets punctuate the rural landscape, many of which lie on the outskirts of the City of York. The Vale of York has been intensively settled and farmed since the prehistoric

period. Settlement patterns in place by the medieval period comprise planned nucleated villages surrounded by open field agriculture. Many of these settlements have survived into the present day, surrounded now by agricultural land developed in the post-medieval and modern periods, and 18th and 19th century farmsteads.

- 6.2.2 The south of the ES Study Area lies along the eastern edge of the southern magnesian limestone ridge, roughly between Tadcaster and the River Wharfe in the north, to Monk Fryston in the south with terrain comprising low rolling hills cut through by shallow valleys. Land use remains largely arable agriculture, with isolated farms present within the Study Area itself. Much of the south section was intensively settled and farmed from the prehistoric period onwards, although there is less evidence for medieval settlement and agriculture in this area compared with the Vale of York.
- 6.2.3 The ES Study Area contains three Scheduled Monuments, two of which are medieval moated sites, at Nether Poppleton and Red House, with the third being a medieval manorial complex at Lead. The ES Study Area includes five Conservation Areas, at Osbaldwick, Murton, Skelton, Nether Poppleton and Upper Poppleton. There are a total of 76 Listed Buildings within the ES Study Area, including the Grade I listed Church of St Giles, Skelton, and Grade II* listed St Mary's Chapel, Lead. Two Registered Battlefields are located within the ES Study Area, at Marston Moor and Towton. There are no World Heritage Sites within the ES Study Area.
- 6.2.4 Within the Extended Study Area are a further 15 Scheduled Monuments; 261 Listed Buildings; seven Conservation Areas; and two Registered Parks And Gardens (Grade II listed Beningbrough Hall and Grade II* listed Ledston Hall).
- 6.2.5 There are also numerous non-designated heritage assets in the ES Study Area which represent the long history of settlement and land use ranging from the Mesolithic period to the present day. These include small find locations, elements of prehistoric and historic landscapes such as farmsteads and field systems, historic buildings, and industrial sites such as quarries.

6.3 Embedded environmental measures

- 6.3.1 A range of environmental measures which relate to the Historic Environment are embedded as part of the Yorkshire GREEN design to avoid or reduce significant environmental effects as far as possible. Examples of these measures include the following:
- Avoiding sensitive sites such as scheduled monuments and listed buildings through the selection of potential route corridors and substation locations which avoided these designations (see **Section 2.3**).
 - Locating Project infrastructure such as pylons and substations, to avoid, maximise separation from or exploit existing screening in views from sensitive heritage assets such as listed buildings and scheduled monuments.
 - Minimising the Order Limits and construction areas as far as is practicable.
 - Including screening within the design of the Project including bunding with planting around the new substations to minimise the effect on the setting of heritage assets.
 - Mitigation plans have been developed and submitted with the Application, to detail how sensitive heritage assets will be protected during construction and operation, which will be implemented as part of the Project.

6.4 Likely significant effects

- 6.4.1 There is a potential for significant effects on certain heritage assets when Yorkshire GREEN is being constructed and from its permanent presence once operational. During the construction phase these include the potential impact, in certain locations, on archaeological remains, changes to the setting of heritage assets and change to historic landscape character.
- 6.4.2 There is a potential for significant negative effects through the potential disturbance of buried archaeological remains during the construction of the Monk Fryston Substation where probable late-prehistoric features were observed in trial trenching. Similarly, there is a potential that archaeological remains associated with Roman Roads at Shipton and Tadcaster as well as a possible Roman Road and Romano-British Settlement north of the proposed Overton Substation and A19 may be disturbed during construction. It is assessed that mitigation, which would comprise a scheme of investigation (known as a written scheme of archaeological investigation), including the need to record any archaeological features found at these sites will reduce the effect to non-significant.
- 6.4.3 Intrusive groundworks have the potential, in a worst case, to give rise to significant negative effects on archaeological remains in the absence of mitigation. This is particularly where works are required in sensitive locations including the Marston Moor Registered Battlefield and near Towton Registered Battlefield, or where non-intrusive alternative working methods cannot be employed, such as at the CSEC sites or at new overhead line pylons. This potential is recognised, and where possible the scope of intrusive works has been minimised by the use of techniques such as using existing access tracks and trackway (interlocking panels which avoid the need to disturb the ground) for working areas, minimising the potential for these effects. Any disturbance in archaeologically sensitive areas would be subject to a written scheme of archaeological investigation and it is assessed that this mitigation will reduce the effect from significant to non-significant.
- 6.4.4 There is also potential for a significant negative effect during the construction and operational phases on the setting of the Grade I listed Beningbrough Hall in views of and towards Overton Substation and the new overhead line. The site visit to Beningbrough Hall found there to be very little visibility towards Yorkshire GREEN at ground level which was not anticipated to give rise to a significant effect. Further detailed assessment was carried out including an assessment of visibility from the upper floors of the Hall, in consultation with the prescribed consultees and National Trust to confirm this assessment. It is assessed that there would be a very low negative effect during construction, falling to no effect during operation.
- 6.4.5 The Historic Environment ES chapter (**Chapter 7, Volume 5, Document 5.2.7**) also contains assessment of the potential cumulative effect of Yorkshire GREEN with 'other developments' as well as an assessment of inter-related effects. It is assessed that no significant cumulative or inter-related effects would arise on the historic environment.

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7. Biodiversity

7.1 How effects on Biodiversity have been assessed

- 7.1.1 The EIA has considered the likely significant effects of Yorkshire GREEN on ecological features (designated wildlife sites, habitats and species) within the area that Yorkshire GREEN could affect. This area, known as the Zone of Influence (Zoi), differs depending on the type of ecological feature considered and the nature of the potential environmental change that may arise from the Project. Further information can be found in **Chapter 8: Biodiversity (Volume 5, Document 5.2.8)**.
- 7.1.2 The assessment methodology used for Biodiversity has been aligned with the standard industry guidance provided by the Chartered Institute of Ecology and Environmental Management.
- 7.1.3 Information on the existing Biodiversity features has come from a variety of sources including historical records of flora and fauna, descriptions of wildlife sites gained through desk study, and field surveys.
- 7.1.4 Feedback on the Scoping Report and the statutory consultation has been taken into account in development of the Project design and the biodiversity assessment. Technical engagement with consultees has also taken place in relation to Biodiversity. Discussions have been held with Natural England regarding the general bird survey approach, the use of District Level Licensing to address potential effects on great crested newts and whether special licences would be needed in relation to some protected species such as bats and otters. Natural England has also been sent regular updates on the approach to the survey work, in particular the approach to be taken when access was not available for survey work. Meetings have also taken place with local planning authorities, Yorkshire Wildlife Trust and the Royal Society for the Protection of Birds to discuss the approach on survey work and provide updates on the results from the surveys.

7.2 Baseline environment

- 7.2.1 Surveys to establish habitat type and potential importance for nature conservation, known as 'Phase 1 habitat surveys' have been undertaken, with approximately 89% of land within the Order Limits (the Project boundary) and 50m buffer around these having been surveyed. The dominant habitat type throughout the Order Limits and 50m buffer is arable. Additional habitats recorded include woodland, grassland, hedgerows, standing water (ponds/wet ditches), running water (rivers, streams and ditches), dry ditches, scrub, and ephemeral/short perennial vegetation.
- 7.2.2 Within the relevant Zois the following international/national designated sites are present: one Ramsar Site, one Special Protection Area (SPA) and eight Sites of Special Scientific Interest (SSSIs). None of these are located within the Order Limits. There are also 44 non-statutory biodiversity sites of importance at the county level within 2km of the Order Limits. Of these, two sites are located fully or partially within the Order Limits, with a further five sites within approximately 100m. A further 27 deleted sites have also been identified, of which two are located fully or partially within the Order Limits. At deleted sites the quality of the habitat has degraded to the point that it no longer meets

the requirements of the designation. However, as these are still likely to be of higher ecological quality than the surrounding land they are considered in the assessment. Three Yorkshire Wildlife Trust (YWT) reserves and one RSPB reserve have also been identified within the area of search, but outside the Order Limits.

- 7.2.3 Great crested newt surveys have not been undertaken as District Level Licensing will be used to mitigate effects on this species. Under this scheme, developers such as National Grid comply with the legal duty to protect great crested newts by paying Natural England for off-site compensation ponds instead of carrying out detailed surveys and applying for a mitigation licence. However, desk study information and on-site observations have been collated and issued to Natural England to provide supporting information on whether the land within the Order Limits is suitable to support this species.
- 7.2.4 Surveys for otters have shown that although much of the land within the Order Limits is arable and therefore unsuitable for otter, widespread evidence from survey work indicates that otters are likely to use suitable watercourses throughout land within the Order Limits as part of a network of habitat within individual home ranges.
- 7.2.5 No conclusive evidence that water voles are present in the suitable habitat in the Order Limits was recorded during surveys. There is also a lack of desk study records for this species and mink, a predatory species, are also known to be present in this area. Although water vole are unlikely to be present, as not all watercourses could be accessed for surveys, and water vole is a mobile species and uses different watercourses and waterbodies at different times of year, there is still some potential that this species is present.
- 7.2.6 No reptiles or evidence of reptiles was recorded during the survey work and only one reptile record was noted in the desk study records. Much of the habitat within the Order Limits is of limited suitability for reptiles and therefore it is assumed that reptiles are present in low numbers and in limited areas within the Order Limits.
- 7.2.7 Badger surveys have been undertaken in conjunction with baseline habitat surveys and have recorded the presence of active setts (and other evidence) within the Order Limits.
- 7.2.8 Winter bird surveys have been undertaken in February and March 2021 and from October 2021 to March 2022. The key findings from these surveys were that golden plover was the only qualifying species of the Lower Derwent Valley Special Protection Area that was recorded. The surveys also noted that typical wintering farmland species were present (grey partridge, lapwing, curlew, skylark, tree sparrow, linnet and yellowhammer). Breeding bird surveys focussing on recording Schedule 1 listed species also took place between April and August 2022 and recorded barn owl, hobby, kingfisher, peregrine falcon and red kite within and around the Order Limits.
- 7.2.9 Desk study records record eight species of bats within 2km of the Order Limits and seventeen roosts between 2 and 5km from the Order Limits. The habitat within the Order Limits plus a 50m buffer have been assessed for their suitability to support bats in relation to foraging for food and commuting routes. Overall the majority of habitat within the Order Limits and 50m buffer is considered to have moderate suitability to support bats foraging and commuting. No confirmed bat roosts were identified during all survey work, however some bat species were recorded within 30 minutes of sunset/sunrise during activity surveys suggesting roosts for these species may be present within close proximity to the Order Limits. In total, at least eight species of bat were confirmed within the survey area during all surveys. No bat roosts have been recorded within the Order Limits and survey results suggest the bat assemblage recorded is typical of the county.

The dominant habitat type throughout the Order Limits is arable land which is of low value in terms of the foraging and commuting opportunities. Results indicate treelines, hedgerows and ditches provide foraging and commuting opportunities for bats within this arable landscape although only a low number of these features recorded higher levels of activity indicating a greater level of importance to local bat populations.

7.3 Embedded environmental measures

7.3.1 A range of environmental measures which relate to Biodiversity are embedded as part of the Yorkshire GREEN design to avoid or reduce significant environmental effects. Standard best practice environmental measures would be employed such as timing the removal of vegetation to avoid the bird breeding season where practicable, the adoption of pollution prevention and dust control techniques, and measures to avoid the spread of invasive species such as Japanese knotweed. Good practice measures are detailed in a Code of Construction Plan (**Appendix 3B, Volume 5, Document 5.3.3B**).

7.3.2 In summary the embedded environmental measures include the following:

- When the detail of the construction layout and working areas is known measure would be taken to ensure that the layout takes into account the baseline ecology, for example by avoiding the more important habitat and species features, and sensitive sites where possible. This would take place within the Limits of Deviation for the Project.
- Vegetation would be kept and not removed where possible during construction. Where vegetation needs to be removed this would be done at appropriate times of year and in ways in which to ensure the legislation protecting certain species is complied with.
- Habitat connectivity (the links between different areas of habitat) would be retained wherever possible by maintaining links within and to green corridors such as hedgerows and watercourses.
- Ancient trees, including veteran trees, have been avoided as part of the Project design. Measures would also be put in place during construction to protect these trees where they are near to the Order Limits, as well as any other trees, so that the roots of the trees are protected. Those habitats which are within the Order Limits, but do not need to be removed to construct the Project would also be protected during the construction works.
- Where tree loss is required to achieve electrical safety clearances, pollarding or coppicing (where regrowth would occur within a season) would be used to avoid total loss of habitat where possible.
- Measures would be put in place to prevent the spread of invasive species.
- Areas of temporary habitat loss would be reinstated and replanted, wherever practicable, following the completion of construction in each area.
- Where access routes need to cross watercourses, existing crossings have been used wherever possible. Where new crossings are proposed these would be temporary and removed once construction was complete and the habitat along the watercourse would be reinstated. Where culverts are proposed (on smaller watercourses) these have been designed to minimise the length of watercourse affected and the design will allow the bed of the watercourse to re-establish whilst

the culvert is in place. On larger watercourses where bridges are proposed these are designed so no works to the watercourse channel would be needed.

- A standoff distance has been included between construction working areas and watercourses, with the exception of where access routes need to cross watercourses. Plans will be put in place during construction to prevent and deal with accidental pollution spillages to ensure the water quality of watercourses is protected and the risk of contamination is reduced.
- The design of all temporary and permanent lighting would be informed by the joint guidance provided by the Bat Conservation Trust and Institution of Lighting Professionals.
- Pre-construction surveys would be undertaken where needed as many protected species are mobile. Although none are currently anticipated to be needed, where applicable, European Protected Species licences would be secured, which would include strict measures and procedures to ensure that effects on European protected species are minimised.
- Bat boxes would be installed where the loss of a feature suitable for bat roosting, for example a tree, is unavoidable, for example for safety reasons. This would be located at suitable locations on features such as trees or buildings.

7.4 Likely significant effects

- 7.4.1 A summary is provided as follows as to the likely significant effects on biodiversity as a result of the Project.
- 7.4.2 Local wildlife sites (Overton Borrowpits Site of Importance for Nature Conservation, Field near Healaugh Manor Farm deleted Site of Importance for Nature Conservation and Disused Quarry, Newthorpe deleted Site of Importance for Nature Conservation): Taking into account the embedded environmental measures within the Project including habitat reinstatement once construction works are complete and the quantity and quality of the habitats within these SINCs likely to be affected, effects would not be significant.
- 7.4.3 Local wildlife sites (River Ouse candidate Site of Importance for Nature Conservation). Construction works, which would comprise the footprint of scaffolds and pylon construction and dismantling, would fall outside the boundary of the site and there would be no direct loss of habitat within this site. There would be crossing protection (nets strung across the river between the scaffolding either side of the river) in place for a short duration and therefore no significant effects are likely on this site.
- 7.4.4 Habitats - Broadleaved semi-natural woodland: There is a small amount of this habitat type (1.5ha) comprising small parcels throughout the Order Limits. Just over half of this would be affected by temporary construction works comprising the dismantling of existing overhead lines and pylons, temporary overhead line diversions, scaffolding and temporary access roads. With the embedded measures in place, which would retain woodland wherever possible, coppice the woodland and replant any woodland removed after construction works were complete, no significant effects are likely.
- 7.4.5 Habitats - Ancient and semi-natural woodland/ancient replanted woodland/ancient/veteran trees: The design of the Project is such that it avoids all veteran trees and ancient woodland and a 15m buffer has been incorporated into the design between the proposed temporary access routes near Overton Wood and Redhouse Wood. However, to undertake works to the existing XC275kV overhead line

scaffolding will need to be temporarily installed to provide protection where the existing overhead line crosses the railway, and a temporary access route will be needed within 15m of Huddleston Old Wood to access the existing overhead line. The scaffolding would be put in place around the existing trees within the buffer zone where possible. Coppicing would be undertaken where needed within the buffer zone at this location. The tree species (short section of semi mature hawthorn hedgerow and a small group of young to semi-mature ash and hazel) would readily regenerate from coppicing which is similar to the type of vegetation management already used within the wood. With these measures in place, and given the temporary nature of the works, no significant effects are likely.

- 7.4.6 Habitats – hedgerows: Hedgerow loss has been minimised wherever possible through the Project design, for example, by putting access routes through existing field gates. Up to 17,036m of hedgerow would be temporarily impacted by the Project and would need to be pruned for safety clearances or coppiced to allow for construction works. However, in some locations, permanent removal would occur, for example where gates need to be kept in place for future access. Approximately 953m of hedgerow would be permanently lost out of a total length of hedgerow of 29,566m within the Order Limits (3.2%). New hedgerow planting (1027m) is proposed as part of the landscape planting at the proposed Overton and Monk Fryston Substations as well as at the Tadcaster CSECs and in addition to this hedgerow reinforcement (thickening, gapping up, and planting trees within existing hedgerows). Overall the net increase in hedgerow length of approximately 74m, with an additional approximate length of 849m reinforced. With embedded measures in place and the small gain in hedgerow planting effects would not be significant.
- 7.4.7 Habitats – standing water (ponds and wet ditches) and running water (rivers, streams and ditches): Only one pond, within the site of the proposed Overton Substation, would be permanently lost as a result of the Project. The landscape planting at the substation has incorporated two new ponds into the design to compensate for the loss of this pond. In addition, 20 ponds are located within the temporary working areas, however these would remain in place and be protected during the construction works to avoid the loss of the ponds. Temporary culverts would be installed along a limited number of wet ditches and watercourses to allow for access. All of the affected ditches are of low ecological value. Where temporary bridges have been included, the design is such that effects on vegetation along the watercourse or wet ditch is negligible as a clear span bridge would be used. The temporary culverts and bridges would be removed once construction works were complete and vegetation along the watercourses and wet ditches removed. One ditch and two watercourses would be affected by works to underground low voltage overhead electricity cables; however, vegetation would be reinstated once works were complete. Overall effects on this habitat type would not be significant.
- 7.4.8 Habitats (Coastal and floodplain grazing marsh, arable field margins): There is the potential for some small-scale temporary loss of these habitat types. However, given the temporary nature of the works, embedded environmental measures, including protection measures during construction and reinstatement of vegetation once construction was complete, effects would not be significant.
- 7.4.9 Habitat of particular value to bats (woodland, hedgerow, watercourses) has been kept as part of the Project design as far as possible and the vast majority of habitat that will be permanently lost is unfavourable for bats. Permanent loss of hedgerow, which bats follow when commuting and foraging would be relatively low comprising small gaps (4m or 8m) where permanent road access or field gates would be left in place. Larger

sections of hedgerow would be removed at the Shipton CSECs and at Monk Fryston Substation as well as the loss of some less suitable habitat to support bats at Overton and Monk Fryston Substations and Shipton and Tadcaster CSECs. Bat roosting habitat (trees) could also be permanently removed as part of the Project, although surveys completed to date have not identified any bat roosts within the Order Limits. Tree surveys for bat roosts are ongoing but based on survey information obtained to date the likelihood of any important roosts being identified in the outstanding tree surveys is low, with any roosts likely to be of relatively common species. Overall with the embedded measures in place, effects on bats are assessed as not significant.

- 7.4.10 Protected species – great crested newt: Only one pond would be permanently lost as part of the Project and DNA testing indicates this species is not likely to be present in that pond. A number of other ponds and ditches could support great crested newt although much of the habitat within the Order Limits is either unsuitable or of low suitability to support this species. With embedded environmental measures in place, including the Natural England District Level Licensing Scheme, significant effects would not occur, as by default this scheme does not allow for a significant negative effect on the favourable conservation status of the species.
- 7.4.11 Protected species – Otter: The design of the Project has incorporated measures to avoid effects on otters, including the incorporation of a suitable buffer between otter holts and the location of temporary works, such as scaffolding. However, there is the potential for the construction works to disturb this species along watercourse where otter could potentially be present. However, effects from landtake, fragmentation of habitat and increased noise, vibration, light and movement levels would be low with embedded environmental measures in place, in particular to minimise habitat loss, maintain and protect existing habitats and reinstate vegetation once construction was complete, and therefore effects would not be significant.
- 7.4.12 Protected species – water vole: Water vole is unlikely to be present, however there is one watercourse where a low voltage overhead line would need to be undergrounded, that has not been surveyed due to a lack of access and as a precaution it is assumed water vole could be potentially present along this watercourse and others, given that this species is highly mobile. Taking into account embedded environmental measures, in particular to minimise habitat loss, maintain and protect existing habitats and reinstate vegetation once construction was complete however, significant effects are considered unlikely.
- 7.4.13 Protected species – reptiles: During construction, there would be a small permanent loss of suitable habitat for reptiles at the proposed Overton and Monk Fryston Substations and the footings of new pylons, although the majority of habitat to be lost is generally unsuitable for reptiles. Proposed planting at the substations would mitigate for this loss. Where temporary loss of suitable habitat would occur, the habitat would be reinstated once construction works were complete. Therefore, effects would not be significant.
- 7.4.14 Badger: Of the 13 confirmed and ten potential badger setts identified within the Order Limits and 50m buffer, none are at risk of loss or damage as a result of the Project. However, in view of their location relative to the proposed construction works, there is potential for disturbance of badgers. Taking into account embedded environmental measures such as supervision of works in close proximity to setts by an ECoW who would oversee the implementation of best practice measures, implementation of construction traffic speed limits, minimising habitat loss, maintaining and protecting

existing habitats and reinstating vegetation once construction was complete, effects would not be significant. .

- 7.4.15 Protected species – fish: Existing access routes are used to cross rivers and streams wherever possible and the Project design avoids any permanent loss of river/stream/ditch habitat. The use of clear span bridges on larger watercourse and rivers would avoid effects such as the degradation of fish habitat. Smaller watercourses, where temporary culverts would be needed, are unlikely to support conservation-notable fish species, with the exception of European eel. With embedded environmental measures in place, including the reinstatement of watercourse habitat once construction was complete, and use of culverts design to allow the watercourse bed to re-establish as well as pollution management measures, effects would not be significant.
- 7.4.16 Protected species – Tansy beetle: The Order Limits include habitat adjacent to the River Ouse where there are records of tansy beetles from the last ten years, although no tansy plants or confirmed tansy beetles were recorded during ecology surveys. The existing section of 275kV XCP overhead line (to be removed) and a proposed new stretch of 275kV XC overhead line (to be constructed) both cross the river corridor. The proposed construction works (footprint of scaffolds, pylon construction/dismantling areas, temporary access routes and a cable undergrounding route associated with the diversion of third-party utilities) are mostly located within habitat which is of low suitability for this species (arable and improved grassland fields). Therefore, with embedded environmental measures in place, effects would not be significant.
- 7.4.17 Protected species – breeding birds: Due to the confidential nature of Schedule 1 bird species records, the exact locations of nest sites or territories are not provided within the ES. The construction works programme would incorporate and account for all Schedule 1 species nests and avoid, amend or reduce works during sensitive periods such as the breeding season. Where works are unavoidable during the bird nesting season, appropriate control measures would be followed including pre-works surveys for nests and appropriate measures implemented if nests were found. With embedded environmental measures in place effects would not be significant.

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8. Hydrology

8.1 How effects on hydrology and flood risk have been assessed

- 8.1.1 The EIA has considered the likely significant effects of Yorkshire GREEN on hydrology, including the aquatic environment, surface water resources and flood risk. Further information can be found in **Chapter 9: Hydrology (Volume 5, Document 5.2.9)**. The effects to water quality, river flows, physical changes to rivers, lakes and other water features have been considered. This approach has enabled a Water Framework Directive (WFD) assessment to be integrated into the ES. The assessment is accompanied by a **Flood Risk Assessment (FRA) (Appendix 9D, Volume 5, Document 5.3.9D)**.
- 8.1.2 The Hydrological Study Area (HSA) includes all the WFD waterbody catchments intersected by the Order Limits for Yorkshire GREEN. Within the HSA a hydrological Zone of Influence, 0.5km upstream and downstream of the Order Limits, has been used to identify potential receptors for effects arising from the Project including watercourses, abstractions and discharges and water-dependent conservation sites.
- 8.1.3 Information on the existing hydrology is based on a site walkover and a desk study, which involved the collation of data from a range of sources including the Environment Agency, Internal Drainage Boards (IDBs) Lead Local Flood Authorities (LLFA) and local district councils.
- 8.1.4 In addition, in order to understand the existing hydrology and flood risk environment, and associated potential issues, engagement has taken place with the Environment Agency, North Yorkshire County Council as a LLFA and the York Consortium Drainage Boards.

8.2 Baseline environment

- 8.2.1 Yorkshire GREEN could potentially affect the River Ouse, River Nidd, River Wharfe and Cock Beck, all of which fall within the Order Limits and are designated Environment Agency Main Rivers⁸. In addition, several tributaries and drainage ditches also interact with Yorkshire GREEN, which largely fall within the Main River catchments and are tributaries of the River Ouse. Specifically, Hurns Gutter, the Foss (drainage towards both the Ouse and Wharfe), White Sike, Stream Dyke and Mill Dyke and associated flood zones may interact with Yorkshire GREEN.
- 8.2.2 These rivers, streams and ditches could be affected by Yorkshire GREEN, particularly during the construction phase. Changes in flow or water level, water quality, the form of the channel and/or the volume of sediment in the water could in turn affect the aquatic environment dependent on these waterbodies, the water resources that are drawn from them, and the risk of flooding posed to people, property and infrastructure, on-site and elsewhere.

⁸ Main rivers are usually larger rivers and streams. They are designated as such and shown on the Main River Map. The Environment Agency carries out maintenance, improvement and construction work on main rivers to manage flood risk.

- 8.2.3 The Humber River Basin Management Plan sets out the ‘status’ of rivers, lakes and groundwater bodies, according to the requirements of the Water Framework Directive (WFD). ‘Status’ is based on the quality of the water body, which includes physical, chemical and biological characteristics, and ranges from Bad to High. There are 14 WFD water bodies in the Hydrological Study Area.
- 8.2.4 Within the vicinity of Yorkshire GREEN there are a variety of sources of flood risk, including from rivers and surface water.
- 8.2.5 Five water dependent conservation sites have been identified as being potentially hydrologically connected to Yorkshire GREEN and falling within the hydrological Zol. These are Clifton Ings and Rawcliffe Meadows Site of Scientific Interest (SSSI), Sherburn Willows SSSI and Yorkshire Wildlife Trust Site (YWT), Overton Borrow Pits Site of Importance for Nature Conservation (SINC), Healaugh Marsh SINC and the River Ouse Local Wildlife Site (LWS) and candidate SINC.
- 8.2.6 The Order Limits intersect the Ouse from the River Nidd to Stillingfleet Beck, Drinking Water Protected Area, and the Humber (SWSGZ6007) Acomb Landing and Moor Monkton Drinking Water Safeguard Zone. Both designations are associated with surface water abstractions.
- 8.2.7 The baseline conditions may be influenced in the future by changes to the climate and land use, and by improvements to land and water quality as a result of legislation, policy and other drivers.

8.3 Embedded environmental measures

- 8.3.1 A range of environmental measures which relate to hydrology and flood risk are embedded as part of the Yorkshire GREEN design to avoid or reduce significant environmental effects as far as possible. Measures which would be implemented during the construction phase include the following:
- adherence to Pollution Prevention Guidance Notes (PPGs) and Guidance for Pollution Prevention Notes (GPPs)⁹ to avoid pollution generation;
 - measures to control the rate and quality of runoff water, such as choice of hardstanding material (permeable to allow water to infiltrate into the ground below) and use of interceptor drains and soakaway ditches where necessary;
 - locating soil stockpiles well away from watercourses and where this is not possible, installing silt fences to capture sediment-laden water running-off the site;
 - for watercourse crossings (for construction traffic), designs (including construction methods) that minimise disturbance of channel bed and banks would be used;
 - the temporary crossings over the WFD ‘blue line’ watercourses would be clear span (span the entire watercourse from bank top to bank top); and
 - in the floodplain, measures would be incorporated to minimise obstruction or deviation of waters in the event of a flood, including leaving gaps in soil stockpiles, minimising the elevation of any raised structures (e.g. access routes and working

⁹ Both PPGs and GPPs are maintained by NetRegs and provide environmental good practice guidance for the whole UK, and environmental regulatory guidance directly to Northern Ireland, Scotland and Wales only. For businesses in England, regulatory guidance is available from GOV.UK instead.

areas), and, at specific locations, ensuring that access routes and working areas would be as close to the same level as the existing land surface as practicable and stockpiles would be located outside of the floodplain.

- 8.3.2 As part of the design of the substations, permanent drainage schemes would be included. Modelling has been undertaken to determine the design and capacity of the drainage systems, taking into account existing water run-off from the substation sites and the predicted rates once the substations are built including changes from climate change. The drainage designs incorporates sustainable drainage systems (SuDS) measures to ensure the drainage system would not cause flooding either at the substations or off-site.

8.4 Likely significant effects

- 8.4.1 Potential effects on the water environment could include the following:

- Changes in water quality from high volumes of sediment (sediment-laden runoff) from areas where the ground has been disturbed during construction works entering nearby watercourses, or the accidental release of pollutants, for example from spillages, as a result of construction works.
- Changes in surface water flow regime, or inputs of sediments-laden water arising from site drainage/excavation dewatering works (the pumping of groundwater out of excavations to ensure dry working is possible) and/or works in or near watercourses (e.g. installation of bridges or culverts).
- Changes to the flow in watercourses as a result of the watercourse crossings.
- Increases in run-off rates and volumes (the speed and volume of rainfall that 'runs off' as surface water) as a result of changes in land cover type (for example removing vegetation that covers the ground and exposing bare earth) and/or changes in ground elevations to create temporary access routes.
- Changes in the capacity of the floodplain to store and convey floodwater as a result of the creation of temporary raised structures in the floodplain, such as temporary embankments for the larger watercourse crossings, access routes and/or topsoil stockpiles as well as permanent changes from the proposed substations.

- 8.4.2 Based on the proposed location of substations, CSECs and pylons and routing of the new and modified overhead lines, plus the incorporation of appropriate embedded environmental measures, no significant effects have been identified on hydrology and flood risk from construction, operation and maintenance, and decommissioning.

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9. Geology and hydrogeology

9.1 How effects on geology and hydrogeology have been assessed

- 9.1.1 The EIA has considered the likely significant effects of Yorkshire GREEN with respect to Geology and Hydrogeology, including effects relating to land contamination, groundwater levels and groundwater quality. Further information about the assessment can be found in **Chapter 10: Geology and Hydrogeology, Volume 5, Document 5.2.10**. This assessment is based on risk assessments that consider whether the construction, operation or decommissioning of Yorkshire GREEN could disturb areas of old contaminated ground, introduce new soil contamination, cause contamination to enter groundwater, cause gas to move out of the ground that may build up in buildings, or destabilise the ground.
- 9.1.2 The assessment has considered the geographical area in which there could be impacts from new infrastructure or the removal / modification of existing infrastructure, with particular focus on areas where the construction work will involve notable disturbance of the ground (for example, new substations, new pylons and new underground cables). The assessment considers effects both within the Order Limits and in the surrounding area (for example, nearby drinking water abstraction boreholes).
- 9.1.3 Information on previous land uses has been obtained from historical mapping. Information on geological conditions and aquifer classifications has been obtained from maps and other data sets provided by the British Geological Survey (in electronic format). Hydrogeological records, including information on permitted groundwater abstractions, have been obtained from the Environment Agency, who have also provided records of previously recorded pollution incidents. Details of private groundwater abstractions have been provided by Local Planning Authorities if these are held. UK government 'open source' electronic databases (freely available online) have been used to identify the locations of historical landfills, authorised landfills, and groundwater Source Protection Zones (SPZ). Finally, an environmental data search has been undertaken, which gives information on a range of matters (such as fuel station locations, registered waste treatment sites and sites that are permitted under hazardous substances regulations). These extensive desk-based records have been supplemented by physical inspections and testing of the ground in parts of the Order Limits, where necessary to support the assessment.
- 9.1.4 In order to understand the existing geological and hydrogeological environment and associated potential issues, careful consideration has been given to comments provided by regulators and other consultees provided within the EIA Scoping Opinion and in response to National Grid's statutory consultation under Section 42 of the Act².

9.2 Baseline environment

- 9.2.1 The baseline environment has been considered for a Study Area of up to 250m from the Order Limits as standard, extended to 500m for hydrogeological data due to the mobile nature of groundwater. This information can be found in the figures provided in **Volume 5, Document 5.4.10**.

- 9.2.2 The solid geology can be split into two broad areas; to the north of a point around 2.3km north of Tadcaster town centre it consists of deposits of the Sherwood Sandstone Formation, whereas to the south of this point it consists mainly of limestone and dolostone (a magnesium rich limestone). In some places, such as to the west of Tadcaster, this solid geology occurs very near to the surface. However, in most parts of the Order Limits the solid rocks are beneath more recent ‘superficial’ deposits. These vary in their composition, but of particular note are deposits of clay and silt at and around the proposed Overton Substation site, and deposits of glacial till (mixed material deposited by a glacier, mostly consisting of clay) at the proposed Monk Fryston Substation site.
- 9.2.3 The sandstones, limestones and dolomites that underlie the Study Area contain large amounts of groundwater, so are classified by the Environment Agency as Principal Aquifers. This groundwater is generally deep below the ground surface, for example around Tadcaster it lies around 40m below the ground surface. Groundwater is pumped from these aquifers for a variety of purposes, and as a result parts of the Order Limits fall within SPZs defined by the Environment Agency. Work within SPZs must be planned and carried out carefully, so as not to cause pollution of groundwater.
- 9.2.4 The historical land use throughout the Study Area appears, overwhelmingly, to have been agricultural. There is a low risk that old soil contamination will be present on such land. In a small number of locations, non-agricultural land use is recorded, mostly associated with the quarrying of limestone or sand and gravel. There is a greater possibility of soil contamination in such locations (for example, from materials that were used in the past to fill in old quarries after they closed), although no particularly high risk previous uses (for example gas works, sewage works or recorded landfills) have been identified in locations where the construction or operation of Yorkshire GREEN may involve ground disturbance.
- 9.2.5 The general topography of the Study Area is relatively flat. As a result, the vast majority of the Study Area is classified by the British Geological Survey (BGS) as being in a situation in which slope stability problems are “not likely” (the lowest possible risk category that the BGS assigns).
- 9.2.6 There are no designated protected geological conservation sites within possible influencing distance of the Order Limits.
- 9.2.7 The south of the Order Limits falls within the Yorkshire Coalfield. However, the Coal Authority advises that the EIA does not need to consider coal mining legacy issues, due to the depth of the coal and the absence of any recorded old mine entries.

9.3 Embedded environmental measures

- 9.3.1 A range of environmental measures which relate to the geology and hydrogeology assessment are embedded as part of the Yorkshire GREEN design to avoid or reduce significant environmental effects as far as possible. Examples of these measures that relate to geology and hydrogeology include the following:
- Characterisation of ground that might contain soil contamination by testing in advance, with the results informing health & safety procedures and environmental controls (for example dust suppression) during construction.
 - Formalised ‘stop’ procedures for any unexpected potentially contaminated ground conditions found during construction, to prevent the unknowing release of contamination.

- Dust suppression during the disturbance of soils, and sheeting of stockpiled soils (if these contain contamination) to prevent airborne contaminants being blown into the surrounding area.
- Best practice in the storage, handling and use of fuels and other chemicals. Examples include storing fuels in correctly contained areas, running liquid wastes through oil-water separators to collect the oil for off-site disposal, and the use of drip trays and other measures to prevent construction plant leaking small amounts of fuel onto the ground.
- Restrictions on activities within the more sensitive parts of SPZs (referred to as Zones 1 and 2), such as prohibiting / minimising vehicle parking, de-icer storage, rock salt storage and the wash-out of ready-mix concrete vehicles.
- Use of rock salt to be limited to that necessary, and to be within the recommended maximums of industry guidance.
- Piled foundations (if required) to be designed to be installed by techniques that do not present a risk of causing contamination to enter aquifers. This can be achieved by following standard design guidance, informed by ground investigation data, as part of the detailed structural design of any new infrastructure that requires piled foundations.

9.4 Likely significant effects

- 9.4.1 Based on the proposed locations of substations, CSECs and pylons and routing of the new and modified overhead lines, plus the incorporation of appropriate embedded environmental measures, no significant effects have been identified in relation to geology and hydrogeology from construction, operation and maintenance, and decommissioning of Yorkshire GREEN.
- 9.4.2 This is because the groundwater in the sensitive aquifers (including the SPZ) is generally deep so would not be affected directly by near surface construction activities. Indirect effects, such as contamination moving down through the ground into these aquifers, would be prevented by the embedded measures (detailed in **Section 9.3**), and in many cases the natural ground conditions would also protect against this (where the superficial deposits provide a barrier between the surface and the aquifers). The drainage measures that would be implemented as part of the design for the proposed substation sites have been designed in a way that it would not cause significant effects on the amount or quality of groundwater entering the aquifers.
- 9.4.3 Human health risks from exposure to soil contamination are low because much of the land appears to have only ever been agricultural, and because where this is not the case the embedded measures will still prevent significant risks / adverse effects. In the small areas where there is some potential for land instability, standard engineering design (as necessary to prevent damage to the new structures) would ensure no significant environmental effects.

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10. Agriculture and soils

10.1 How effects on agriculture and soils have been assessed

- 10.1.1 The EIA has considered the likely significant effects of Yorkshire GREEN on agricultural land (in terms of land quality and loss of land for agricultural use); and soil resources (in terms of damage and loss) both when Yorkshire GREEN is being constructed and permanent effects once it is in the operational stage. Further information about the assessment can be found in **Chapter 11: Agriculture and Soils, Volume 5, Document 5.2.11**. When assessing loss of agricultural land, the assessment has made a distinction between temporary loss (during construction works) and permanent loss (either through the development of built infrastructure or a permanent change in land use).
- 10.1.2 The assessment has considered the geographical area within the Order Limits as this describes the full potential extent of Yorkshire GREEN. No buffer was applied to the Order Limits as impacts to soils and agricultural land only occur on land that would be directly impacted by Yorkshire GREEN.
- 10.1.3 Information on the agricultural and soils baseline is based primarily on a desk study, which involved the collation of data from a range of sources including soil association data and mapping from the Soil Survey of England and Wales; soil erodibility and agroclimatic data published by Cranfield University; and Agricultural Land Classification (ALC) data and mapping at various scales compiled by the Ministry of Agriculture, Fisheries and Food (now the Department for Environment, Food and Rural Affairs) and Natural England. Primary data has been collected through detailed soil survey in areas agreed with Natural England, which focus particularly on the areas where a permanent loss of agricultural land and soils would occur (including the substations and CSECs).
- 10.1.4 Best and Most Versatile (BMV) agricultural land is defined as ALC Grades 1, 2 and Subgrade 3a (excellent, very good and good quality); the identification of Best and Most Versatile land is important to the assessment of impacts to agricultural land. Limited areas within the Order Limits are covered by detailed survey data which provide a subdivision of Grade 3 land into Subgrade 3a (BMV) and Subgrade 3b (non-BMV); however, the ALC data covering the majority of the Order Limits, known as the Provisional ALC data, does not provide this distinction. Therefore, where detailed data are not available, the amount of BMV land has been determined using the areas of Grade 1 and 2 as described on the Provisional ALC mapping, with the subdivision of land mapped as Grade 3 calculated using Natural England's Likelihood of BMV Agricultural Land data.
- 10.1.5 In order to understand the existing soil and agricultural environment and potential effects from the Project, careful consideration has been given to comments provided by regulators and other consultees provided within the EIA Scoping Opinion.

10.2 Baseline environment

- 10.2.1 The land within the Order Limits comprises Grade 1, 2, 3 and 4 agricultural land, as well as non-agricultural and urban land classifications. A very small area of Grade 1 land was identified in a detailed survey conducted near Bramham. Grade 2 agricultural land

is located along the majority of the southern part of the Order Limits from Long Marston to Monk Fryston; whereas Grade 3 agricultural land is primarily identified to the north from Long Marston to Shipton, and to the east of York around Osbaldwick Substation. A corridor of Grade 3 agricultural land is also identified to the north of Tadcaster, broadly following the route of the River Wharfe. The division of Grade 3 land was calculated as 31% Subgrade 3a to 24% Subgrade 3b. Small distinct areas of Grade 4 and non-agricultural land are found throughout the Order Limits.

- 10.2.2 In total, 366ha (70%) of the agricultural land within the Order Limits is calculated to be of Best and Most Versatile quality; and 161ha (30%) is calculated to be of non-Best and Most Versatile quality. The remaining land is considered to be under non-agricultural land uses. Based on the locations of the Project infrastructure Yorkshire GREEN would impact Best and Most Versatile agricultural land.
- 10.2.3 The risk of erosion (the sensitivity of soils to development) varies by soil type. Eleven distinct soil associations are mapped within the Order Limits with the majority of variation in soil types identified between Tadcaster and Moor Monkton, where nine associations are mapped. However, the land within the Order Limits is dominated by two soil associations; the Foggathorpe 2 association (47%) which is situated in the northern parts of the Order Limits (Sections A, B and C) and the Aberford association (38%) which is situated in the southern parts of the Order Limits (Sections C, D, E and F); these soils are at very small and small risk of erosion, respectively. Overall, the majority of soils (five of the 11 mapped associations, approximately 90% of soil cover within the Order Limits) are at very small or small risk of erosion; and approximately 9% of soils (four of the mapped associations) are at moderate risk of erosion and are located between Long Marston and Tadcaster. One soil association is defined as being at very high risk of erosion, but accounts for only less than one percent of soils present. These are located in discrete areas near to Osbaldwick Substation and bordering an access road east of Shipton.
- 10.2.4 The soil characteristics (including texture) are a primary indication of the soil's ability to withstand damage during construction works. The majority of the soils within the Order Limits which are made up of the Foggathorpe 2 association and the Aberford association are of a medium texture in an area without excessive rainfall throughout the year, meaning the soils have a medium resilience to structural damage (leading to a loss of soil function). Within the Order Limits there are also smaller areas of soils that are at a high risk and a low risk of structural damage.
- 10.2.5 The majority of agricultural land has been identified to be in arable production; this finding corroborates the ALC data, as higher quality (BMV) agricultural land is more productive and better suited to arable use than land of lower quality. The arable land is interspersed with permanent pasture and some small to medium woodlands and plantations.

10.3 Embedded environmental measures

- 10.3.1 A range of environmental measures which relate to Agriculture and Soils are embedded as part of the Yorkshire GREEN design to remove or reduce significant environmental effects as far as possible.
- During earlier phases of the Project when potential route corridors and substation locations were being identified (see **Section 2.3**) consideration was given to the presence and grade of agricultural land as part of the process of identifying a preferred overhead line route and sites for the proposed substations. As the Project

design has developed feedback from landowners has been considered as part of the design development where practicable, taking into account technical and other environmental considerations.

- For areas of temporary development, the reinstatement of agricultural land to the same quality (same ALC grade) or better; and return to agricultural use. Facilitated by the correct management of the supporting soil resources (see below).
- Adoption of industry standard methods for the handling and storage of soils; based on Defra's current good practice guidelines¹⁰ which describe standard working methods and techniques to protect soil resources.
- Use of trackway panels (interlocking panels which avoid the need to disturb the ground) rather than stoned roads to access construction areas, where practicable, to minimise the stripping and handling of soil resources.
- An Outline Soil Management Plan has been produced to set out guidelines that all works involving soils should adhere to, to protect soil resources and promote sustainable soil management.

10.4 Likely significant effects

- 10.4.1 Based on the Project design, plus the incorporation of appropriate embedded environmental measures, the majority of effects (temporary loss of agricultural land and loss of and damage to soil resources) have been assessed as not significant in relation to agricultural land and soil resources from construction, operation and maintenance, and decommissioning. This is due to the measures taken to ensure that soils and agricultural land disturbed by the Project are reinstated to the same quality as prior to the construction of the Project.
- 10.4.2 A significant effect has been assessed for the loss of agricultural land for the construction of new substations and CSEC, due to the total permanent loss of agricultural land of Grade 2 (7.7ha) and Subgrade 3a quality (8.9Ha).

¹⁰ DEFRA (2009) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites. (online). Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69308/pb13298-code-of-practice-090910.pdf (Accessed 15 February 2021).

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11. Transport

11.1 How transport effects have been assessed

- 11.1.1 The EIA has considered the likely significant effects of Yorkshire GREEN during construction, operation and decommissioning on transport network users such as pedestrians, cyclists, navigation rights, public transport users and vehicle drivers and passengers. Further information about the assessment can be found in **Chapter 12: Traffic and Transport, Volume 5, Document 5.2.12.**
- 11.1.2 The information used in the ES is based on a desk study and site visit which included a review of the road network proposed for use by the Project, public transport and accident data from national and local government sources. Baseline traffic data has been updated since the Preliminary Environmental Information Report was produced and restrictions that were in place due to the COVID-19 pandemic restrictions at the time. New traffic surveys have been undertaken to compliment agreements with the local highways authorities to use historic DfT data. As part of the assessment, transport modelling has been undertaken to understand the effects of traffic generated by Yorkshire GREEN on the road network.
- 11.1.3 The following organisations have also been consulted: North Yorkshire County Council, National Highways and City of York Council.

11.2 Baseline environment

- 11.2.1 The public highway network comprises the strategic road network, which is managed and maintained by National Highways and the local road network, which is managed and maintained by the relevant local highway authorities.
- 11.2.2 Roads within the strategic road network that are proposed to be used to access Yorkshire GREEN include the A1(M), M1 and A64. For the local road network this includes key roads such as A162, A63, A1246, A168, A19, A1079, A59, A659, B1222, B1224 and B1363 and smaller connecting “C” and “U” class roads. Figures showing the local road network are provided in **Volume 5, Document 5.4.12.** Information obtained from the City of York Council and Crashmap website has identified a number of accidents that have occurred on the highway network surrounding the Order Limits, however there is not considered to be a significant accident record on the local highways network. Of the 32 road links considered, only five had an annual accident rate higher than the national average. Of those five, two had very slight differences in rates above the national average (0.06 or less) and the other three had very low existing traffic levels and the actual number of accidents was very low (2 to 3 accidents over five years). Bus services are in operation between major settlements in the area, in addition there are four principal railway lines, one line running between Leeds and York, one between Leeds and Selby, one between York and Harrogate and one between York and Darlington/Middleborough.
- 11.2.3 A number of Public Rights of Way cross the Order Limits, one of which is the Ebor Way; a National Trail. Two Sustrans National Cycle Network routes (NCN 65 and 66) also cross through the Order Limits.

11.2.4 Yorkshire GREEN has 32 crossings of the local and strategic highway network. There are also two crossings of the River Ouse, along which there are navigation rights and five crossings of the National Rail network.

11.3 Embedded environmental measures

11.3.1 A range of environmental measures relating to transport network users are embedded as part of Yorkshire GREEN.

- Routing of heavy goods vehicles (HGV) during the construction period to avoid Sherburn in Elmet, South Milford, Micklefield, Saxton, Bramham, Clifford, Boston Spa, Center, Healaugh, Tockwith, Long Marston, Rufforth, Askham, Angram, Nether Poppleton, Central York and Haxby and other smaller settlements, where possible.
- All arrangements of scaffolding at road crossings will be agreed with the relevant highway authority. Road closures will be avoided where possible.
- Implementation of a Construction Traffic Management Plan (CTMP) that will include construction traffic management measures and controls on construction vehicle types, hours of site operation and delivery routes for goods vehicles. This will also set out the requirement for surveys of existing road surface conditions prior to construction work and repairs after construction works if needed and appropriate safety and highways design.
- Implementation of a Public Rights of Way Management Plan that includes measures to manage and mitigate effects on the Public Rights of Way network. This will include measures to manage access along Public Rights of Way affected by the Project, for example, escorting users around the construction works or diverting access via other Public Rights of Way not affected by the Project. Condition surveys would be taken before, during and after construction works and any damage rectified where needed and signs will be set up to let people know which Public Rights of Way are affected.
- An alternative cycle route will be provided to National Cycle Network Route 65 along Overton Road to allow users to avoid Overton Road which will be used by construction traffic. However, Overton Road will remain open throughout the construction period.

11.4 Likely significant effects

11.4.1 Based on the proposed location and layout of Yorkshire GREEN, plus the incorporation of appropriate embedded environmental measures, no significant effects have been identified.

11.4.2 With regards to cumulative effects, the preferred option for projecting existing or historical traffic data for future year assessments is the use of appropriate local traffic forecasts known as TEMPro (see **Chapter 12, Volume 5, Document 5.2.12** for further details). TEMPro is a program developed by the DfT providing traffic growth projections used to project long-term forecasts in traffic growth. The forecasts take into account national projections of population, employment, housing, car ownership, and trip rates. This is an accepted approach to assess future baseline traffic. This approach to forecasting traffic growth takes into account the traffic associated with all cumulative and anticipated development with the relevant local plans.

11.4.3 Therefore, as discussed with NYCC and CYC, the potential developments identified in **Chapter 18, Volume 5, Document 5.2.18**, have already been taken into consideration within the TEMPro forecasts used in the assessment. No other committed developments have been identified at this stage that are anticipated to overlap with the Project, and therefore no cumulative transport effects are anticipated.

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12. Air quality

12.1 How air quality effects have been assessed

- 12.1.1 The EIA has considered the likely significant effects of Yorkshire GREEN with respect to air quality on human and ecological receptors during the construction phase. There are no likely significant effects with respect to air quality during the operation phase as due to its nature the Project would not emit substantial amounts of pollutants once operational. This approach as to which effects do not need to be assessed in detail was agreed with the Planning Inspectorate during the scoping stage of the EIA. There would also be very low numbers of vehicle movements during this phase. The assessment has considered the geographical area in which significant earthwork and construction activities are anticipated, associated primarily with the new infrastructure (new substations, overhead lines, CSECs etc).
- 12.1.2 Information on the air quality baseline (current) environment is based on a desktop study, which involved the collation of data from a range of sources including Defra and air quality reports published by Hambleton District Council, Selby District Council, City of York Council, Harrogate Borough Council, Wakefield Metropolitan District Council and Leeds City Council.
- 12.1.3 An assessment of dust effects has been completed in accordance with guidance produced by the Institute of Air Quality Management. The assessment considers the potential for dust effects on people during construction. Residential properties within 350m of construction works (Order Limits) and within 50m of roads used for construction access up to 500m from the access point to Yorkshire GREEN are identified. The assessment also considered potential dust effects on designated wildlife sites within 50m of the Order Limits and access routes (up to 500m from where the access route meetings the public highway).
- 12.1.4 In order to understand existing air quality and associated potential issues, careful consideration has been given to comments provided by regulators and other consultees provided within the EIA Scoping Opinion.

12.2 Baseline environment

- 12.2.1 Existing concentrations of particulate matter (known as PM₁₀), the pollutant of concern in this assessment, are comfortably below the relevant Air Quality Objectives, set out by the Government for the protection of human health. Ambient dust deposition rates are not monitored extensively in the UK and therefore no baseline data with regards to dust are available.

12.3 Embedded environmental measures

- 12.3.1 A range of environmental measures which relate to air quality are embedded as part of the Yorkshire GREEN design to avoid or reduce significant environmental effects as far as possible. Examples of these measures include standard dust management measures, such as covering stockpiles to minimise dust, switching off vehicles when not

in use and keeping equipment and vehicles clean. These are included in the Code of Construction Practice (CoCP).

12.4 Likely significant effects

- 12.4.1 Based on the proposed locations of substations, CSECs and pylons and routeing of the new and proposed works to the existing overhead lines, plus the incorporation of appropriate embedded environmental measures, no significant effects have been identified in relation to air quality and dust effects from construction works on people or designated wildlife sites.

13. Noise and vibration

13.1 How noise and vibration effects have been assessed

- 13.1.1 The EIA has considered likely significant noise and vibration effects during the construction and operation of Yorkshire GREEN on receptors such as people, from the following sources: construction and operation of the construction compounds, the construction works for and the operation of the new and reconfigured overhead lines, the construction works for and the operation of new substations, the construction works for and the operation of CSECs and the associated construction road traffic.
- 13.1.2 The assessment has considered the geographical area in which there could be impacts from new infrastructure (new substations, overhead lines, CSECs) and changes to existing infrastructure (the reconductoring and realignment of existing overhead lines). The Study Area for each of these noise sources is based on relevant technical guidance (including British Standards) and the area within which noise exposure from Yorkshire GREEN would exceed the level above which adverse effects on health and quality of life can be detected, in line with Government noise policy. The assessment considers receptors that may be sensitive to noise which includes:
- people in their homes including their gardens and shared community open spaces such as parks; and
 - people in non-residential buildings such as schools, hospitals, places of worship, commercial buildings and leisure areas.
- 13.1.3 Site surveys were undertaken during March and April 2022 to record background and ambient noise levels in and around the Order Limits using noise monitoring equipment. The survey locations were agreed with the local planning authority environmental health officers. At locations where baseline levels were not recorded, information on the current noise baseline is based on a desk study, involving the collation of data from a range of sources including British Standards relating to noise assessment (BS 5228-1:2009 + A1:2014, BS 5228-2:2009 + A1:2014) and openly available online mapping and data (Google Earth Pro Version 7.3.2.5776, National Grid network route map data, DEFRA magic maps and Extriium England Noise and Air Quality Viewer).
- 13.1.4 Consultation was undertaken with the local authorities (Selby District Council, Leeds City Council, City of York, Harrogate Borough Council and Hambleton District Council) to discuss monitoring locations for the collation of baseline noise data, and has been followed up with engagement with respect to the outcomes of the monitoring. Careful consideration has also been given to comments provided by regulators and other consultees provided within the EIA Scoping Opinion.

13.2 Baseline environment

- 13.2.1 Land use within and around the Order Limits is predominantly rural and baseline ambient noise levels are generally low except where close to major roads, the East Coast Mainline Railway or near to industrial sites.
- 13.2.2 In Section B (North West of York Area), the baseline ambient noise conditions on the outskirts of York (around the proposed Overton Substation) are influenced by road

traffic noise from the A19 and A1237, train movements on the East Coast Mainline Railway, with contributions from traffic on local roads and trains on the York – Leeds railway line. Given the area’s predominantly agricultural land uses, few other sources of ambient noise are present.

- 13.2.3 In the area south of the proposed Overton Substation and the southern end of the proposed SP overhead line ambient noise conditions are influenced by a combination of road traffic sources including the A59, the A1237 and the A19 and rail noise from the East Coast Mainline Railway with contributions from the local road network.
- 13.2.4 In Section C, between Moor Monkton and Tadcaster, road traffic noise from the A1(M) is the main contributor to the baseline ambient noise conditions with additional contributions from the A64 and the A59 for the receptors closer to them.
- 13.2.5 In the Tadcaster Area (Section D), south-west of Tadcaster where two CSECs are proposed, baseline ambient conditions are mostly influenced by road traffic noise from the A1(M) and the A64.
- 13.2.6 In Section E, between Tadcaster and the Monk Fryston Substation area, road traffic noise from the A1(M) and M1 motorways is dominant. For the receptors further east, road traffic noise contributions from the A162 dominate baseline ambient conditions.
- 13.2.7 In Section F, the current baseline noise environment in the vicinity of the new Monk Fryston Substation is influenced by road traffic noise from the A1(M), A63 and A162 and operational noise from the existing Monk Fryston Substation.
- 13.2.8 Operational noise from the existing overhead lines within and around the Order Limits contributes to the baseline ambient noise conditions for receptors located in close proximity to them especially during wet or humid conditions.

13.3 Embedded environmental measures

- 13.3.1 A range of environmental measures which relate to noise and vibration are embedded as part of the Yorkshire GREEN design to avoid or reduce significant environmental effects as far as possible.
- 13.3.2 As part of the development of the Project design Project infrastructure such as substations, associated infrastructure, CSECs and new and realigned sections of overhead line has been located as far away from noise sensitive receptors where possible to increase the distance between the receptor and source noise. The proposed Monk Fryston Substation has been located adjacent to the existing substation, minimising the potential for new receptors being exposed to operational noise from transformers and other static plant.
- 13.3.3 During construction the contractor(s) building the Project would be required to implement a number of measures to ensure noise and vibration levels are reduced depending on the type of construction works taking place and the distance to the nearest noise sensitive receptors from the construction works. Where required examples of such measures would include:
 - modern construction machinery fitted with efficient silencers designed to minimise noise levels that are generated during operations;
 - all compressors (machinery used to compress air as an energy source to power pneumatic tools) would be ‘sound reduced’ models fitted with properly lined and

sealed acoustic covers which are to be kept closed whenever the machines are in use;

- ancillary pneumatic percussive tools would be fitted with mufflers or suppressers and plant to be properly maintained in accordance with the manufacturers' instructions to ensure that the occurrence of malfunctions, which can give rise to elevated noise levels, is reduced and any malfunctions that do occur are swiftly repaired;
- machines with intermittent use would be shut down when not in use between work or throttled down to a minimum;
- plant which produces noise in a specific direction would be positioned to minimise noise at nearby properties (i.e. angled away from those properties if practicable) and static equipment and machinery would be sited as far as is practicable from inhabited buildings;
- in some specified locations the use of screening would be installed around the construction working area to provide screening to the closest noise sensitive receptors. The need to install such fencing will also take into account the time of day the works take place and the duration of works as well as the noise levels the construction activities would produce. For example if works take place for less than ten days and during daytime hours such fencing may not be required; and
- if piling works are needed to install the new pylon south of the River Ouse monitoring of the works would take place to ensure that the vibration from these works is not impacting the riverbank stability.

13.3.4 In addition, equipment and components have been selected and designed to ensure noise levels from the long-term operation of the Project are reduced where possible:

- the proposed substations will include noise enclosures around some of the equipment (known as Super Grid Transformers) and the equipment will be selected to achieve National Grid technical specifications regarding the levels of noise emitted from substations. In addition, the specifications also require that testing is undertaken to ensure these noise levels are being met; and
- the equipment and apparatus within the substations would be mounted onto anti-vibration mountings, meaning the vibration from plant and apparatus within the substation will be very low level.

13.4 Likely significant effects

13.4.1 An assessment of noise effects from construction road traffic has been undertaken, which shows a negligible magnitude of impact along the construction traffic routes, with the exception of Common Croft Lane and Overton Road (between Stripe Lane and A19) which are predicted to have minor negative effects. As no noise sensitive receptors lie within the vicinity of Common Croft Lane and receptors within 50m of the kerb side of Overton Road will only experience minor changes in noise levels due to construction traffic, it is determined that the effects experienced by dwellings in the vicinity of the construction routes are not significant.

13.4.2 An assessment of effects from construction vibration has also been undertaken, considering impacts for piles that would be needed to install the foundations for new pylons and gantries based on a worst-case scenario in relation to the methodology that would be used for these works. The assessment shows no significant effects would occur.

- 13.4.3 An assessment of effects from construction noise has taken place, considering the busiest times for the following construction areas:
- Overton Substation area;
 - Monk Fryston Substation area;
 - Tadcaster CSEC area; and
 - Shipton-Tee CSEC area.
- 13.4.4 This has also taken into account other construction activities that would be taking place along the overhead lines and at the pylons at the same time as the above, and that where required, and depending on the duration of the works and time of day, a 2m screen would be installed around these areas, to reduce noise levels at relevant receptors.
- 13.4.5 The assessment has shown that with embedded measures in place there would be no significant effects. For the majority of noise sensitive receptors this is because the predicted noise levels would fall below the thresholds which noise levels should not exceed. For other receptors this is because the noisier activities would not all take place at the same time and therefore not combine to result in greater noise levels which may exceed the thresholds. Some receptors would experience greater noise levels, which would exceed the thresholds, however this would be over a very short duration (less than 10 consecutive days) and effects are therefore assessed as not significant.
- 13.4.6 An assessment of effects from operational noise from new overhead lines has taken place. No significant effects are likely as none of the noise sensitive receptors closer to these sections of proposed overhead line are close enough to the overhead lines to experience significant effects.
- 13.4.7 Finally, an assessment of effects from the operation of the proposed Overton and Monk Fryston Substations has been undertaken. For both proposed substations, the assessment has shown that with embedded environmental measures to reduce noise levels, the noise sensitive receptors in the area around both substations would not experience an increase in current ambient noise levels and therefore no significant effects would occur.

14. Health and Wellbeing

14.1 How effects on health and wellbeing have been assessed

- 14.1.1 The EIA has considered effects during construction and operation of Yorkshire GREEN with respect to health and wellbeing, including access to healthcare facilities, access to open space and neighbourhood amenity.
- 14.1.2 The health and wellbeing baseline establishes a community health profile. Relevant publicly available data is collected at different scales of administrative geography, depending on its availability. The baseline compares data on the population of the local districts (Harrogate, Hambleton, Leeds, York and Selby) and County (North Yorkshire) with the region (Yorkshire and Humber) and with England and Wales. In addition, the health and wellbeing baseline includes, where data is available and relevant, profile information from the local wards closest to Yorkshire GREEN.
- 14.1.3 The Study Area for the health and wellbeing assessment is influenced by the geographic extent of the other technical aspects which are drawn upon (for example air quality, noise and transport). For example, potential effects on health and wellbeing related to noise are likely to be experienced close to the source, whereas health and wellbeing effects related to socio-economic factors such as employment opportunities would be expected to be experienced over a larger area. The impact of the Project on existing health services is assessed in line with the scale at which services are planned. The relevant Study Area is stated for each assessment.
- 14.1.4 The assessment considers:
- access to work and training during construction;
 - access to accommodation, healthcare services, and other social infrastructure during construction;
 - changes in severance and accessibility to healthcare services and other social infrastructure during construction;
 - accessibility and active travel during construction;
 - access to open space during construction;
 - air quality, noise and neighbourhood amenity during construction; and
 - air quality, noise and neighbourhood amenity during operation.

14.2 Baseline environment

- 14.2.1 Yorkshire GREEN is located in the Yorkshire and Humber region, which has an estimated population of 5,526,350. The Study Area and its immediate surroundings are predominantly farmland, with nearby villages including Tadcaster, Monk Fryston, South Milford, Nether Poppleton, Skelton, Shipton and Wigginton. In addition, Yorkshire GREEN includes works in the east of the city of York, at Osbaldwick Substation.
- 14.2.2 The population within the human health baseline Study Area is shown to have a similar proportion of people aged 16-64 years old to England and Wales. The population within

the Study Area is shown to be mostly White, and generally less ethnically diverse than England and Wales. In terms of deprivation, areas within the Study Area perform considerably better than the regional average both on deprivation as well as the health deprivation and disability deprivation domain. Leeds however is performing slightly worse than the regional average on all indicators considered. This trend is also seen with life expectancy, and other health and mental health indicators, with Leeds being observed to be the only area within the Study Area to perform worse than the regional and national averages.

- 14.2.3 There are formal and informal recreational and public open spaces within the Study Area and in proximity of Yorkshire GREEN, and these will provide a health and wellbeing benefit to surrounding communities. Residents in the Study Area have a high propensity to walk for leisure and use local Public Rights of Way.
- 14.2.4 Within the Study Area, 32 facilities have been identified as healthcare facilities and social infrastructure. The assets comprise of five health facilities, six education facilities (including a campus of York University), six religious facilities, five care homes and ten further community facilities.

14.3 Embedded environmental measures

- 14.3.1 A range of environmental measures which relate to health and wellbeing are embedded as part of the Yorkshire GREEN design to avoid or reduce significant environmental effects as far as possible. These measures include best practice such as the development and implementation of a stakeholder communications plan and construction management measures which are included in the Code of Construction Practice.

14.4 Assessment of effects

- 14.4.1 The assessment of Yorkshire GREEN has identified the following likely effects during the construction phase:
- The impact of the Project on access to work and training as a determinant of health and wellbeing has been assessed as neutral as the beneficial effect of the Project is considered negligible in the context of the size of the local economies;
 - The impact of the Project on access to accommodation as a determinant of health and wellbeing is assessed to be neutral as there is capacity available to accommodate the construction workforce associated with the Project from outside of the local area without displacing bedspace required for tourists;
 - The impact of the Project on access to healthcare facilities as a determinant of health and wellbeing is assessed to be neutral as there is capacity available in the practices within the Study Area to accommodate the additional demand that may be generated as a result of the Project;
 - The impact of the Project on access to other social infrastructure as a determinant of health and wellbeing is assessed to be neutral given the availability of facilities in the Study Area;
 - The impact of the Project on access to healthcare services and other social infrastructure arising from community severance effects as a determinant of health and wellbeing is assessed to be neutral as the impact of additional construction traffic is assessed to be negligible;

- The impact of the Project on accessibility and active travel as a determinant of health and wellbeing is assessed to be neutral as environmental measures, such as temporary diversions, will minimise disruption;
- The impact of the Project on access to open space as a determinant of health and wellbeing is assessed to be neutral as there will be no temporary land take from open spaces; and
- The impact of the Project on air quality, noise and neighbourhood amenity as a determinant of health and wellbeing is assessed to be neutral as environmental measures, such as use of noise management measures and new hedgerow, tree and woodland planting, will minimise impacts.

14.4.2 The assessment of Yorkshire GREEN has identified the following likely effects during the operational phase:

- The impact of the Project on air quality, noise and neighbourhood amenity as a determinant of health and wellbeing is assessed to be neutral as environmental measures, such as landscape planting, landscape earthbunds, and use of noise management measures will minimise impacts.

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15. Socio-economics

15.1 How socio-economic effects have been assessed

- 15.1.1 The EIA has considered the likely significant effects of Yorkshire GREEN on tourism and recreational and economic receptors at the construction stage, and on tourism and recreational receptors at the operational stages of Yorkshire GREEN. A Local Study Area containing all land within the Order Limits (the Project boundary), plus land within 3km of the North West of York, Tadcaster and Monk Fryston Areas, has been used to assess the effect of amenity impacts (visual, noise, vibration and air quality) on receptors. A Wider Study Area containing the five host Local Authority areas has been used to assess the economic effects of Yorkshire GREEN.
- 15.1.2 Information on the existing socio-economic baseline is based on a desk study and on the result of baseline survey work on Public Rights of Way undertaken as part of the assessment of traffic and transport effects. The desk study work has involved the collation of data from a range of online data and mapping sources (including Ordnance Survey mapping, Google Earth Pro, magic.defra.gov.uk, the six host local authority websites, nomisweb.co.uk, ons.gov.uk) and for baseline information on the various receptors in the study areas (their own websites, where available).
- 15.1.3 Responses from the EIA Scoping exercise were received on socio-economics from the Planning Inspectorate, and responses from the British Horse Society, one member of the public, the Canal and Rivers Trust and Sustrans were received from the statutory consultation exercise. Responses to these comments are detailed within **Chapter 16, Volume 5, Document 5.2.16** of the ES. No further specific consultations have been undertaken on socio-economics matters.

15.2 Baseline environment

- 15.2.1 The Local Study Area comprises mainly rural land, with some settlements and transport corridors running through it. There are a range of socio-economic receptors within the Local Study Area including a National Trust property at Beningbrough Hall, a number of caravan parks, fishing lakes, golf courses, hotels and wedding venues, country parks, nature reserves and Public Rights of Way and other recreational routes. All of these receptors can be considered as sensitive to change as direct or amenity effects could impact on the experience of users.
- 15.2.2 The Wider Study Area covers the five host Local Authority areas, and there are some key differences between the different authorities; Leeds and the City of York being focused on the built up areas of the two respective cities, and the other authorities being more rural in nature. The economies of the five authorities do show differences, but they all have employment rates at or above the regional and national average, unemployment rates at or below the regional and national averages and four of the five authorities have gross weekly pay figures above the regional average.

15.3 Embedded environmental measures

15.3.1 A range of environmental measures which are relevant to socio-economics are embedded as part of the Yorkshire GREEN design and routeing work to remove or reduce significant environmental effects as far as possible. Embedded measures relating to landscape and visual, historic environment, biodiversity, agriculture and soils, traffic and transport, air quality and noise and vibration effects would also provide mitigation relevant for the socio-economic assessment.

15.4 Likely significant effects

15.4.1 Due to the embedded mitigation measures introduced through the design and routeing work, and which have been identified through relevant environmental chapters of the ES, the socio-economic assessment finds most effects would not be significant in nature. Significant effects have been identified on:

- Woodstock Lodge wedding venue from visual impacts during construction and early years of operations; and
- Squires Café and Caravan Park from land take required during construction works.

16. Climate Change

16.1.1 The assessment of climate changes considers two types of effect:

- Greenhouse gas (GHG) emissions – the effects on the climate of the GHG emissions arising from the operation and construction of the Project, including how the Project would affect the ability of the UK Government to meet its carbon reduction targets.
- Climate change resilience (CCR) – the effects of a changing climate on the vulnerability of the Project, including how the design will mitigate the anticipated impacts of climate change.

16.1.2 The in-combination climate change impact (ICCI) assessment which considers the extent to which climate change exacerbates effects on receptors identified in the other aspect chapters is described in each relevant chapter.

16.2 Greenhouse Gases

How GHG effects have been assessed

16.2.1 The assessment has considered the likely significant effects of GHG emissions associated with Yorkshire GREEN on the Global Climate.

16.2.2 GHG emissions have been calculated using the following equation:

$$\text{Activity data} \times \text{GHG emissions factor} = \text{GHG emissions value}$$

16.2.3 Assumptions informed by National Grid have been made to characterise the likely activities associated with the Project and therefore enable GHG emissions to be determined.

16.2.4 Consideration of the significance of the GHG emissions from the Project is determined based on the criteria developed from guidance produced by The Institute of Environmental Management and Assessment (IEMA).

Baseline environment

16.2.5 The Government's third carbon budget (2018 to 2022) and the Climate Change Committee's (CCC's) recommended carbon budget sector allocations are considered as the current baseline for the GHG emissions assessment.

16.2.6 The UK Government has set a net zero target which requires the UK to reduce GHG emissions by 100% below 1990 levels by 2050¹¹¹². Policy has been implemented at national, regional and local scales in order to achieve targets for decarbonisation. GHG emissions are therefore expected and required to reduce in the future. The future

¹¹ UK Government (2008). Climate Change Act 2008. (Online) Available at: <https://www.legislation.gov.uk/ukpga/2008/27/contents> (Accessed October 2022).

¹² UK Government (2019). Climate Change Act 2008 (2050 Target Amendment Order) 2019. (online). Available at: <https://www.legislation.gov.uk/ukdsi/2019/9780111187654> (Accessed October 2022).

baseline considers relevant policy and a number of the UK carbon budgets (including sectoral allocations) over the lifetime of the Project.

Embedded environmental measures

- 16.2.7 A Code of Construction Practice (CoCP) has been produced which sets out measures to be implemented, such as goals to reduce embodied carbon in construction materials and therefore reduce GHG emissions, and encouragement of circular economy principles during construction. The CoCP will also include measures such as consolidating deliveries where possible and policies such as 'no idling'. These measures will seek to minimise the GHG emissions associated with construction traffic.
- 16.2.8 Leakage of SF₆ used within switchgear equipment is a potential source of GHG emissions during the operational lifetime of the Project. National Grid has a Network Asset Risk Metric (NARM) framework in place. The NARM framework determines whether equipment intervention is required to reduce leakages.

Likely significant effects

- 16.2.9 The significance of GHG emissions associated with the Project is evaluated based on the extent to which the Project materially affects the ability to achieve national targets for decarbonisation. The primary basis of contextualisation is the UK carbon budgets, including the relevant CCC sectoral allocations and the UK carbon target of 'net zero' in 2050.
- 16.2.10 The contributions of GHG emissions from the Project has been established and equates to <0.01% of each of the UK's carbon budgets. The contributions of GHG emissions from the Project equate to <0.06% of the CCC sector budgets. In this context the Project would not materially impact on achieving carbon reduction targets as set out by the UK Government. The Project is assessed as having a minor (adverse) effect and is therefore assessed as being not significant.

16.3 Climate Change Resilience

How CCR effects have been assessed

- 16.3.1 Climate trends are used to describe the direction of the change in climate variables (e.g. temperature and precipitation). The trends considered in the CCR assessment reflect future climate data gathered from UK Climate Projections 2018 (UKCP18).
- 16.3.2 The climate impact is an assessment of the impact of the climate trends on the Project receptors. The receptors that are considered as part of the CCR and ICCI assessment can be grouped into the following categories:
- Building and infrastructure receptors i.e. the Project assets, both temporary and permanent, throughout the lifecycle of the Project.
 - Human health receptors i.e. construction workers, maintenance staff.
 - Environmental receptors i.e. habitats and species, waterbodies.
- 16.3.3 The likelihood of the climate change impacts occurring is considered throughout the construction, operation and decommissioning phases of the Project. The likelihood takes into account the climate change trends and the anticipated exposure of the receptor to the trend.

- 16.3.4 The consequence if the climate change impact were to occur is the magnitude of change felt by the receptor. The vulnerability of the receptor to the climate change impact is considered when assessing the consequence level.
- 16.3.5 The level of the risk of the climate change impacts on the Project is concluded in the risk assessment as a function of the likelihood and consequence. This allows identification of any significant potential risks requiring further mitigation.

Baseline environment

- 16.3.6 The Project is located within the Yorkshire and Humber region in the north-east of England. The high altitude of the Pennines, which forms the western boundary of the region, is responsible for the frequently cool and wet climate. The North Sea, forming the eastern boundary, cools the coastal districts, especially in Summer. The coldest waters around the UK are found off the north-east of England.
- 16.3.7 The climate trends considered in the CCR assessment include:
- Increased annual mean temperatures, especially in the summer months, and an increase in the frequency and intensity of hot spells;
 - Increased annual mean temperatures and frequency and intensity of hot spells,;
 - Decrease in summer precipitation, leading to drought conditions;
 - Increase in precipitation resulting in fluvial or pluvial flooding;
 - Increased in frequency and intensity of storm events;
 - Fluctuations in mean rainfall across the year, coupled with an increase in mean temperatures, resulting in changes to soil moisture; and
 - Cold winters can still occur.

Embedded environmental measures

- 16.3.8 The CCR assessment considers environmental measures that have been embedded into the Project. During construction and decommissioning, climate change and extreme weather effects on the Project assets will be managed through mitigation measures within the CoCP and health and safety procedures that are implemented. The Project has also been designed considering the worst-case climate change impacts throughout its operation, ensuring appropriate measures are embedded within the design.

Likely significant effects

- 16.3.9 The CCR assessment has concluded that there are likely to be no significant effects remaining following the assessment of climate change impacts on the construction, operational and decommissioning phases of the Project. This is because all relevant and implementable environmental measures have been embedded into the Project and are likely to be effective and deliverable to address the likely significant effects.

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17. Cumulative effects

17.1 How cumulative effects have been assessed

- 17.1.1 The approach to the cumulative effects assessment followed the advice and guidance provided by the Planning Inspectorate and has been discussed with the relevant local planning authorities. The assessment divides into two different types of assessment.
- The first is where a single receptor is potentially affected by more than one environmental impact, for example, noise and visual impacts on the same residential property.
 - The second is where different projects combine to create an effect on a receptor, for example, the combination of the Project and another nearby proposed development, which together might affect the same residential property.
- 17.1.2 Full details of the Cumulative Effects assessment can be found in ES **Chapter 18 Cumulative Effects Assessment (Volume 5, Document 5.2.18)**.

17.2 Baseline assessment

- 17.2.1 For the first type of cumulative effects, the baseline is that which has been identified within the individual environmental topic chapters. For the second type, a review of planning applications including those in relation to Nationally Significant Infrastructure Projects, planning permissions, other relevant information and local authority site allocations was undertaken across a defined geographical area, these were then collated into a list. This list was then issued to the host local authorities and any additional projects suggested by them, included.

17.3 Embedded environmental measures

- 17.3.1 Embedded environmental measures are those identified within the individual environmental topic chapters.

17.4 Likely significant effects

Receptors impacted by more than one environmental impact

- 17.4.1 This assessment considered whether different types of effect such as noise and visual effects could combine to produce significant effects on a particular receptor. This assessment concluded that the following receptors are likely to experience significant cumulative effects from different types of effects.
- Woodstock Lodge Wedding Venue during construction and operation from both visual and socio-economic effects.
 - Travellers encampment at Monk Fryston during construction due to its proximity to potential noise and vibration effects which, although individually would not have a significant effect, could combine to result in significant effects during construction.

Combined effects from other proposed developments in combination with the Project

- 17.4.2 Consideration was also given to the effects which could be created as a result of the Project cumulatively with other projects up to 6km from the Order Limits. A number of proposed developments were identified where potential cumulative effects could occur. Each proposed development was considered and where it was considered that the Project together with the proposed development had the potential to create a significant cumulative effect, an assessment was undertaken.
- 17.4.3 The assessment concluded that there is the potential for temporary significant biodiversity effects during construction in combination with effects from the operation of Lumby Quarry north of the A63 in the Monk Fryston Area. Once planting proposed as part of the proposed development was established effects would reduce and not be significant. Significant effects are also likely to arise from the total cumulative loss of best and most versatile agricultural land and loss of the soil resource. Finally, one of the battery storage proposed developments to the south of the Monk Fryston Substation in combination with the Project is likely to have significant effects on views from a short section of public footpath during construction. Following the growth of mitigation planting along the southern boundary of the battery storage scheme the views of the Project and the majority of the closer battery storage scheme would be screened from the public footpath.

18. Conclusion

18.1 What happens next?

- 18.1.1 This Non-Technical Summary forms part of the ES which itself forms part of the DCO application submitted to the Planning Inspectorate. Following acceptance of the DCO application, Stakeholders, local communities, and members of the public can comment on the assessments undertaken, and the conclusions reached as part of their responses to the DCO application itself. Once the DCO application has been accepted by the Planning Inspectorate timescales will be set out for commenting.
- 18.1.2 An independent examiner or panel of examiners (known as the Examining Authority) will be appointed and a public examination process will be conducted to consider the application, which will include, amongst other matters, the environmental effects arising from its construction and/or operation. The scale and nature of these effects will be considered against the project's benefits. The Examining Authority will make a recommendation to the Secretary of State, who will then decide whether to approve or refuse it.
- 18.1.3 The Environmental Statement has been prepared in consultation with the Planning Inspectorate and key consultees such that the scope of the baseline surveys and assessments have been informed by them. Significant effects have been identified, although the number of significant adverse effects has been reduced through the identification of additional mitigation. In summary, the Project would create the following significant effects with the additional mitigation in place:
- Negative significant effects on four landscape character areas and the Locally Important Landscape Area during construction.
 - Negative significant effects on two landscape character areas once construction works were complete.
 - Negative significant visual effects during construction on residents of Moor Monkton, Overton, Hall Moor Farm Cottages, Hall Moor Farm (South), Overton Grange and Nos. 1 and 2 Glenroyd Cottages, New Farm Cottages, dwellings on Scagglethorpe Moor and Stripe Lane, guests at Woodstock Lodge Wedding Venue, Red Brick Farm, the farmhouse east of Monk Fryston Lodge and Pollums House Farm, users of Public Rights of Way and cycle routes (National Cycle Route 65, the Public Rights of Way along the River Ouse corridor, near Newlands Farm, east of Shipton, near Moor Monkton, on Scagglethorpe Moor and Paulinus Way long distance footpath) and users of local transport routes (the A19, East Coast Mainline Railway, Corban Lane, Stripe Lane and Overton Road/Station Lane, Rawfield Lane and the A63).
 - Negative significant visual effects once construction works were complete on guests at Woodstock Lodge Wedding Venue, Hall Moor Farm Cottages and Hall Moor Farm (South), Overton Grange and Nos. 1 and 2 Glenroyd Cottages, New Farm Cottages and Stripe Lane and Pollums House Farm, users of Public Rights of Way (National Cycle Network Route 65 and Jorvic Way long distance footpath (River Ouse to Shipton) and Public Rights of Way east of Shipton and near Newlands Farm and Paulinus Way long distance footpath (300m section of the route) and users of local

transport routes (A19, Corban Lane, Overton Road/Station Lane, A63 and Rawfields Lane).

- Negative significant effects as a result of the total permanent loss of agricultural land of Grade 2 and Subgrade 3a quality.
- Negative significant cumulative effects from the combination of different individual noise and vibration effects on the occupants of the travellers' encampment near Monk Fryston during construction works.
- Negative significant socio-economic effects on users of National Cycle Route 65 during construction.
- Negative significant socio-economic effects on Woodstock Lodge Wedding Venue during construction and operation (and significant cumulative effects from a combination of socio-economic and visual effects).
- Negative significant socio-economic effects on Squires Café and Caravan Park during construction.
- Positive permanent significant visual effects once construction works were complete for residents at Moor Monkton and residents in Overton and those using Public Rights of Way near Moor Monkton due to the permanent removal or realignment of existing overhead lines.
- Significant cumulative adverse visual effects during construction from a combination of the Project and the Battery Storage Project south of the existing Monk Fryston Substation on users of a local public footpath.
- Short term significant adverse cumulative effects on biodiversity from a combination of the construction of the Project and Lumby Quarry until the planting proposed as part of the quarry development is re-established.
- Significant cumulative effect in respect of the loss of Best and Most Versatile Land and loss of soil resources.

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