Yorkshire GREEN Project

Environmental Impact Assessment

Preliminary Environmental Information Report
Volume two, Chapter 3 Description of the Project

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3. Description of the Project

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3. Description of the Project

3.1 Introduction

3.1.1 The description of the Project provided in this chapter explains its likely construction, operation and decommissioning activities, to enable an assessment of those elements of the Project which could potentially have significant environmental effects.

3.1.2 It has been prepared in compliance with the requirements in the EIA Regulations, including Schedule 4 of the EIA Regulations, and Advice Notes provided by The Planning Inspectorate, in particular the requirements of Planning Inspectorate Advice Note 9[1], which provides guidance on the use of the Rochdale Envelope approach in the case of an application for a Nationally Significant Infrastructure Project (NSIP).

3.1.3 This description is based on the design and construction information developed to date. Where further information about the Project is still be developed then this is described and the environmental assessment in the subsequent chapters is based on a likely worst case scenario.

3.1.4 Consideration has also been given to the decommissioning phase at the request of the Planning Inspectorate (paragraph 2.3.9 in the Scoping Opinion[2]).

3.2 Project location and surroundings

1.1.1 The Project is sited within Yorkshire, with the most northerly components of the Project located approximately 1.5km north-east of the village of Shipton and approximately 10km north-west of York city centre, and the most southerly components at Monk Fryston Substation, located to the east of the A1 and immediately south of the A63.

1.1.2 The Project falls within six local authority boundaries:

- Hambleton District Council;
- City of York Council;
- Harrogate Borough Council;
- Selby District Council;
- Leeds City Council; and
- North Yorkshire County Council.

3.2.1 **Figure 1.2** shows the extent of the Project and the draft Order Limits (see **Section 3.3**) within which all works would take place. The new components of infrastructure would be located in three separate and distinct areas and therefore the Project location has been described for each of these areas which are indicated on **Figure 1.2** and comprise:

[1] Planning Inspectorate (2018) Advice Note 9: Using the Rochdale Envelope (Online)Available from: https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2013/05/Advice-note-9.-Rochdale-envelope-web.pdf [Accessed 13 May 2021].
[2] Planning Inspectorate (2021) Scoping Opinion: Proposed Yorkshire Green Energy Enablement (GREEN) Project (Online). Available from: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN020024/EN020024-000048-YGRN%20-%20Scoping%20Opinion.pdf (Accessed 15 October 2021).

- North West of York;
- Tadcaster; and
- Monk Fryston.

3.2.2 A description is also provided for the location and surroundings of the existing infrastructure which would require works as part of the Project.

North West of York

3.2.3 The North West of York Area largely comprises agricultural land and is between 2km and 10km to the north-west of York. The settlements of Shipton-by-Beningbrough, Skelton and Overton are located 800m north-west, 400m south-east and 100m south respectively from the draft Order Limits.

3.2.4 The East Coast Mainline (ECML) railway (traveling from London to Edinburgh) runs through the area within the draft Order Limits in a south-east to north-west direction. There are no trunk roads but there are two A roads connecting with the City of York (A19 and A59). The Way of the Roses National Cycle Network (NCN Route 65) crosses through the draft Order Limits linking the City of York with Beningbrough Hall (a Grade I listed building owned by the National Trust) via the villages of Overton and Shipton by Beningbrough.

3.2.5 The River Ouse passes through the draft Order Limits in a north-west to south-east direction, with Flood Zone 2 and Flood Zone 3 land either side. Other notable watercourses include Moor Gutter, Hurns Gutter and Hurns Drain. There is one area of ancient woodland, Overton Wood adjacent to the draft Order Limits, located north of the existing 275kV Poppleton to Monk Fryston (XC/XCP) overhead line.

3.2.6 This North West of York Area lies within the administrative areas of Hambleton District Council, York City Council, Harrogate District Council and North Yorkshire County Council.

Tadcaster

3.2.7 The Tadcaster Area is approximately 3km south-west of Tadcaster comprising agricultural land to the north-east of the A64/A659 junction. There are a limited number of scattered residential properties in the locality with Toulston Polo Ground approximately 800m to the north.

3.2.8 This Area lies within the administrative areas of Selby District Council, Leeds City Council and North Yorkshire County Council.

Monk Fryston Substation

3.2.9 The Monk Fryston Substation Area is adjacent to the existing Monk Fryston substation in a predominantly agricultural setting approximately 2km south-west of the village of Monk Fryston. Rawfield Lane runs north-south through the area within the draft Order Limits and there are two residential properties adjacent; Pollums House Farm (and associated farm buildings) located approximately 500m west and the Grade II listed Monk Fryston Lodge (and associated buildings) approximately 200m to the east of the existing substation.

3.2.10 The A1(M) is adjacent to the draft Order Limits and Rawfield Lane connects to the A63 to the north and the A1246 to the south.

3.2.11 This Area lies within the administrative areas of Selby District Council and North Yorkshire County Council.

Existing infrastructure site and surroundings

3.2.12 The following describes the existing infrastructure which falls within the draft Order Limits as well as the features within and close to that infrastructure within the draft Order Limits.

400kV Norton to Osbaldwick (2TW/YR) overhead line route

3.2.13 This overhead line is located in the north of the North West of York Area, 1.6km north-west of Haxby at its closest point. It connects Norton Substation, approximately 64km north of the Project, with Osbaldwick Substation to the east of York. A 2.9km section (12 pylons) of the overhead line falls within the draft Order Limits and this section of overhead line crosses the B1363 Sutton Road and Bull Lane. Land uses beneath the overhead line and in the surrounding area largely comprise agricultural land and individual scattered residential and farm buildings.

275kV Poppleton to Monk Fryston (XC/XCP) overhead line route

3.2.14 This overhead line connects Poppleton Substation on the north-western outskirts of York with the existing Monk Fryston Substation, approximately 26km to the south-west of York. For the majority of its alignment the overhead line passes through predominantly rural areas comprising agricultural land and individual scattered residential and farm buildings. The section falling within the draft Order Limits is approximately 35km in length and in the north starts adjacent to and north of the River Ouse approximately 700m north-east of Nether Poppleton. From the River Ouse the overhead line is aligned north-south for approximately 700m before being aligned east-west from 500m west of Skelton for approximately 5km. The overhead line re-crosses the River Ouse 800m north-west of Overton. Approximately 600m south-east of Moor Monkton the overhead line changes direction and is aligned north-south for 28km, crossing the A59, the York – Harrogate Railway Line, the Battle of Marston Moor Registered Battlefield, B1224 Wetherby Road, the River Wharfe and the A659 and A64 south-west of Tadcaster. South of Tadcaster the overhead line runs adjacent to the Battle of Towton Registered Battlefield and Huddleston Wood Ancient Woodland before crossing railway lines connecting York and Leeds and Selby and Leeds Railway lines. The southern end of this overhead line is aligned parallel to the east of the A1(M). Approximately 700m south of junction 42 of the A1(M) the overhead line is aligned south-east for approximately 700m before connecting into the existing Monk Fryston Substation.

275kV Tadcaster Tee to Knaresborough (XD/PHG) overhead line route

3.2.15 This overhead line connects the 275kV Poppleton to Monk Fryston (XC) overhead line approximately 2.5km south-west of Tadcaster with Knaresborough Substation approximately 20km north-west of the Project. A short section of the overhead line of approximately 2.5km (eight pylons) falls within the draft Order Limits to the west of the Tadcaster Area. The overhead line within the draft Order Limits crosses the A659 and Warren Lane and oversails agricultural land with individual scattered residential and farm buildings in the surrounding area.

400kV Monk Fryston to Eggborough (4YS) overhead line route

3.2.16 This overhead line connects the existing Monk Fryston Substation with Eggborough Substation approximately 10km south-east of the Project and falls within the Monk Fryston Substation Area. Only a short section (700m) of this overhead line (two pylons) falls within the draft Order Limits to the east of the substation. This section oversails fields and an area of priority habitat woodland with Monk Fryston Lodge, a Grade II Listed Building, approximately 350m to the north.

Osbaldwick Substation

3.2.17 Osbaldwick Substation is located 4km east from the centre of York, 50m north of the A1079 and 600m west of the A64/A1079 junction. Surrounding land uses comprise wooded areas, some of which is priority habitat, agricultural fields to the north and east, a business park to the north-west and the residential area of Osbaldwick 200m to the west. A short section (two pylons) of the southern end of the existing 400kV Norton to Osbaldwick (2TW/YR) overhead line falls within the draft Order Limits where this overhead line connects into Osbaldwick Substation.

3.3 Design parameters

3.3.1 The Project will be constructed within the draft Order Limits and such Limits of Deviation (LoD), or other parameters as may be specified for the individual works. All parameters will be confirmed in the Environmental Statement (ES) and Development Consent Order (DCO). At this stage of the Project, it is assumed that all substations and gantries will be up to maximum height of 15m.

Draft Order Limits

3.3.2 **Figure 1.2** illustrates the proposed draft Order Limits, which is the presently anticipated maximum extent of land in which the Project may take place. The draft Order Limits cover the entire area within which development could take place including temporary access roads, Public Rights of Way (PRoW) diversions, construction compounds and laydown areas as well as the new overhead lines, substations and Cable Sealing End Compounds (CSECs) and the works to the existing infrastructure. If approved, the DCO provides consent for the Project to take place within the Order Limits. The land within the draft Order Limits is referred to as 'the Site' in some of the chapters in this PEIR. The extent of the draft Order Limits may be altered prior to the submission of the DCO application, based on detailed design matters and representations received during consultation.

Limits of deviation

3.3.3 As recognised in guidance provided by the Planning Inspectorate[1], a necessary and proportionate degree of flexibility often needs to be incorporated into the design of proposed development so that unforeseen issues, that are encountered after a development has been consented, can be dealt with. For example, previously unidentified poor ground conditions may require a pylon to be re-sited slightly for geotechnical reasons. Therefore to allow for this, new sections of overhead line and works to the existing overhead lines will be constructed within specified LoD which identify a maximum distance or measurement of variation within which the permanent works must be constructed.

3.3.4 The final LoD will be confirmed in the ES.

Embedded environmental measures

3.3.5 The Project also includes embedded environment measures; these are measures that are incorporated or 'embedded' into the Project design. These measures relate to both the construction and operational stages and dismantling/decommissioning. **Chapter 4: Approach to Preparing the PEIR** explains the approach to environmental measures that has been applied in the PEIR. The environmental assessments presented in **Chapters 6** to **16** provide details of how the embedded environmental measures are proposed to avoid or reduce environmental effects.

3.3.6 The embedded environmental measures will evolve over the design development process as the EIA progresses and in response to consultation and further environmental data collection. They will be fed iteratively into the assessment process. As there will be a commitment to implementing these embedded environmental measures, and also to various standard sectoral practices and procedures, they are considered inherently part of the design of the Project and are set out in this PEIR. A Mitigation Strategy setting out all of the embedded environmental measures and how these would be secured in the DCO will be provided as part of the ES.

Landscape strategy

3.3.7 Landscape planting will be incorporated into the Project as part of the embedded environmental measures. At this stage of the Project an outline zonal strategy has been developed for the landscape planting proposals intended to mitigation landscape and visual effects associated with the proposed substations at Overton and Monk Fryston. Proposed locations for landscape planting are indicative but within the draft Order Limits. The zone of planting will be developed in further detail in response to consultation feedback, ongoing survey work and the developing design with more detailed information provided in the ES. The landscape strategy proposals are summarised in **Section 3.4** as part of the description of the proposed substations.

3.4 Project proposals

Generic pylon description

3.4.1 The new overhead lines which form part of the Project will carry electrical conductors[3] supported by lattice pylons. Conductors are made of material such as aluminium or aluminium alloy through which electricity can easily flow. The conductors are connected to the pylon by a set of insulators (components made from a material with a high resistance to the flow of electric current such as glass or porcelain) and steel fittings.

3.4.2 There are three types of pylon:

- suspension pylons: these are used when the route travels in a straight line;
- tension pylons: these are used to turn corners or maintain tension on the conductors when there are long straight runs; and
- terminal pylons: these terminate the overhead line when the line is connected into substations or CSECs.

3.4.3 The key components found on pylons are shown in **Figure 3.1a. Figure 3.1b** shows two examples of pylons with single conductors and twin conductors.

[3] Electricity flows along the conductor (the wires which are strung from pylons). This means that there are 12 conductors (2x6) on each pylon, plus one central earth wire.

Figure 3.1a Example of a 400kV double circuit lattice pylon

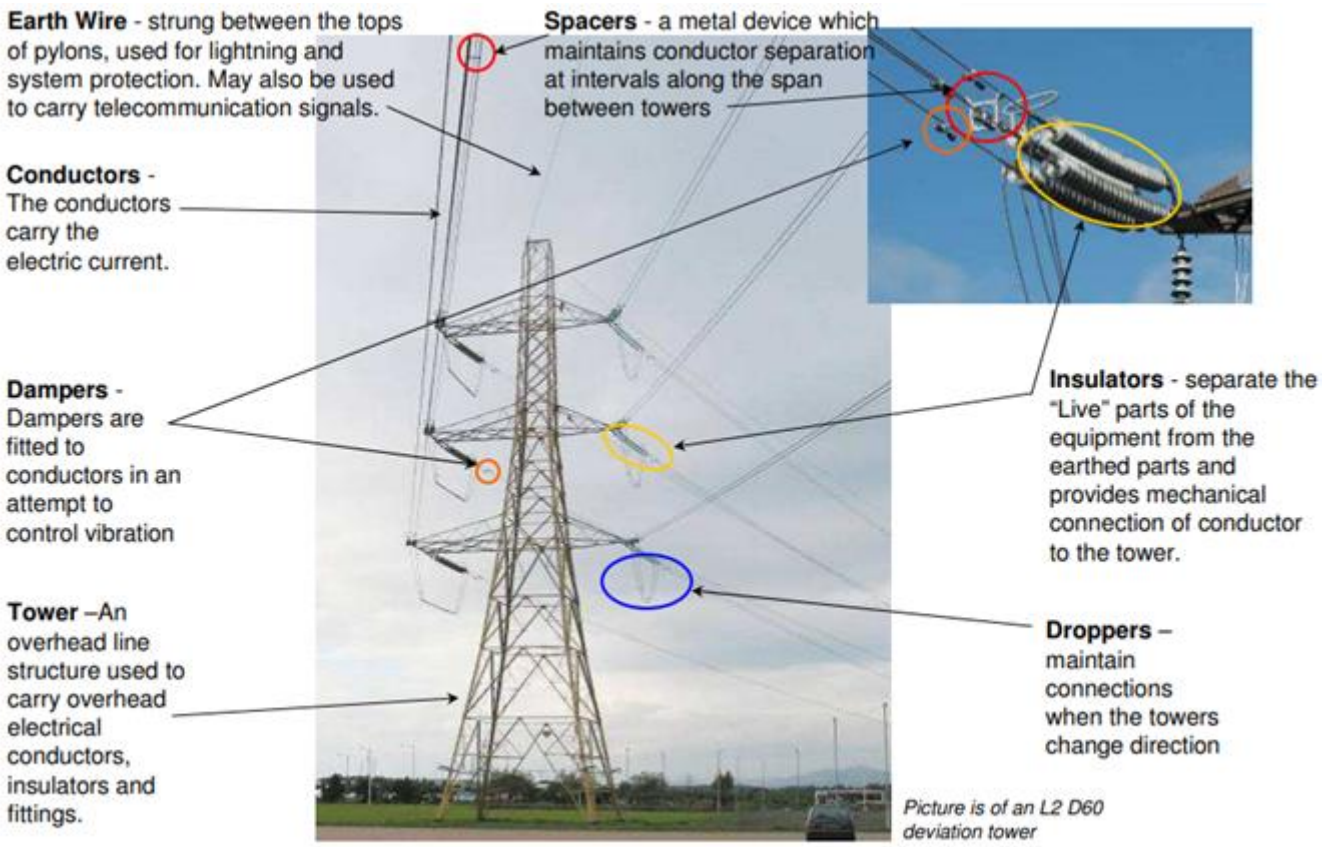


Figure 3.1b – Example of single conductors (left image) and twin conductors (right image)

3.4.4 Pylon heights can vary according to environmental conditions such as topography, or technical requirements, for example, they may need to be taller when crossing roads, railways or navigable rivers or to maintain appropriate clearances. Minimum statutory clearances must be maintained between conductors and the ground, trees, buildings and any other structures such as street lighting columns. The clearance required depends on factors such as the operating voltage of the line, topography and the obstacle being crossed, and the pylons need to be sufficiently tall to ensure that statutory clearances from the bottom conductors are achieved. The span (i.e. the distance) between lattice pylons on the existing and proposed overhead lines varies.

North West of York Area

3.4.5 At this stage of the Project all design information related to dimensions, distances and heights of proposed infrastructure are indicative and subject to change as the Project design progresses in response to consultation feedback.

Permanent new infrastructure

3.4.6 The new permanent infrastructure that would be implemented as part of the Project in this area comprises the following.

400kV YN overhead line and cable sealing end compounds

3.4.7 The new 400kV YN overhead line would be approximately 2.8km in length and comprise eight lattice pylons (YN001 to YN008). It would be aligned north-south connecting the existing 400kV Norton to Osbaldwick (2TW/YR) overhead line with the new 400/275kV Overton Substation. At the northern end of the overhead line, two CSECs (Shipton North 400kV CSEC and Shipton South 400kV CSEC) would connect the new and existing overhead lines. A CSEC would be required to transition the overhead lines from overhead conductors to underground cables via overhead 'downlead' conductor connections from the adjacent terminal pylon. Approximately 200m of underground cabling would connect the two CSECs.

3.4.8 Pylons YN001 to YN008 would vary between 46m and 55m in height with the taller pylons located at the southern end of the overhead line, reflecting the need to cross the A19 as well as changes in ground levels. The overhead line would connect onto two gantries within Overton Substation, which for the purposes of the assessment, are assumed to be up to a maximum of 15m in height.

3.4.9 Both Shipton North and South CSECs would have typical footprints of 40m by 50m (2,000m^2). Each CSEC would have a permanent access track with a security fence with a gate around it. The CSECs would be connected by 200m of underground cable. An image of a typical CSEC and connection onto a gantry is shown in **Figures 3.2** and the location of the CSECs as well as the 400kV YN overhead line is shown on **Figure 3.3**.

Figure 3.2 Cable Sealing End Compound with gantry

Overton 400/275kV Substation

3.4.10 As the existing 400kV Norton to Osbaldwick (2TW/YR) overhead line route to the north and the existing 275kV Poppleton to Monk Fryston (XC/XCP) overhead line route to the south are at different voltages, a new substation (Overton Substation) would be needed to convert the voltage. The substation would have a footprint of approximately 82,000m^2 and contain four Super Grid Transformers (SGTs) which would convert the voltage levels. The substation would also contain six gantries (two per overhead line) where each overhead line connects into the substation, as well as a control building. The heights of equipment and buildings within the substation are yet to be confirmed. For

the purposes of the assessment, it is assumed that both the Substation and gantries would be up to a maximum height of 15m above ground level. Underground cabling within the substation would connect the circuit from the overhead lines into the substation. The Substation would be enclosed by an electric fence in line with National Grid standards. At this stage of the assessment it is assumed the Substation would be unmanned. This will be confirmed in the ES. **Figure 3.4** and **Figure 3.5** show an image and typical layout for a substation and **Figure 3.3** and **Figure 3.6** show the location of the Substation.

Figure 3.4 Typical Substation (existing Monk Fryston Substation)

Figure 3.5 Typical substation layout (existing substation at Monk Fryston)

Proposed landscape strategy at Overton Substation

3.4.11 At this stage of the Project, areas of planting and screening are indicative and will be developed in further detail. At Overton Substation, areas of planting are summarised as follows and shown on **Figure 3.6**.

- New woodland planting/scrub on earth mounding adjacent to and along the north-eastern and north-western boundaries of the proposed substation. The northern edge of the planting would follow a historic field boundary and at this stage it is anticipated that this area could include more open planting with grassland to accommodate ponds lost under the substation footprint.
- Restoration of an historic field boundary located parallel and approximately 70m east of Overton Road comprising hedgerow with tree planting.
- Planting along the eastern side of Overton Road between the A19 and the ECML railway. South of the A19 this would comprise reinforcement of the existing

hedgerow with new hedgerow tree planting. North of the ECML railway a new belt of native tree planting along the field edge is proposed.

- Planting along the south side of the A19 between Overton Road and Hurns Gutter reinforce the existing hedgerow with new hedgerow and hedgerow tree planting.
- Planting along the north side of the ECML railway south of the Overton Road bridge to reinforce existing planting along the railway with additional tree planting.

3.4.12 As the landscape strategy is developed, further consideration will be given to any easements required for utilities as well as safety clearances for the proposed overhead lines and visibility splays for highways safety. Further consideration will be given as to whether planting could be implemented as advance planting to reduce the impacts from the temporary construction compound and works area. Further information regarding the assessment of landscape and visual effects is provided in **Chapter 6: Landscape and Visual Amenity**.

New sections of 275kV overhead line

3.4.13 Two new sections of overhead lines would connect into Overton Substation from the south (see **Figure 3.3** and **Figure 3.6**).

3.4.14 The western section of new 275kV overhead line, which would be approximately 2.1km in length, would comprise six new standard lattice pylons running from approximately 300m south of the River Ouse, east of Overton Wood before crossing the ECML railway to connect to Overton Substation. The heights of the new pylons would be between 46m and 59m in height.

3.4.15 The eastern section of new 275kV overhead line, which is approximately 1.5km in length, would comprise four new standard lattice pylons. This new section of overhead line would run from approximately 500m west of Skelton, running parallel to the east of the ECM railway and then connect into Overton Substation. The height of the new pylons would be up to 60m.

3.4.16 The installations of these new sections of overhead line would require modifications to the existing 275kV Poppleton to Monk Fryston (XC/XCP) overhead line including the replacement and dismantling of pylons. The existing XC/XCP overhead line would be modified to form two separate overhead lines: the XC overhead line connecting between Monk Fryston and Overton Substations and the SP overhead line connecting between Poppleton and Overton Substations. These works area described in further detail below (paragraphs 3.4.34 to 3.4.37).

Changes to existing infrastructure

400kV Norton to Osbaldwick (2TW/YR) overhead line route

3.4.17 A 2.9km section of this overhead line falls within the draft Order Limits (between pylon YR031 to the east and pylon 2TW168 to the west) (see **Figure 3.3**). At this stage of the Project design, no works are proposed to most of the pylons along this section of overhead line, but are included in the draft Order Limits should further design development indicate works, for example re-tensioning of the overhead lines, be required. Pylon YR040T, which is a suspension pylon (approximately 44m in height), would be dismantled and replaced with a new tension pylon (YR040) approximately 30m to the east of its existing location, to allow the connection with the new 400kV YN

overhead line. This pylon would be approximately 55m in height and also have downleads (wires) to connect to Shipton North 400kV CSEC.

Temporary construction infrastructure

3.4.18 Whilst pylon YR040T is being replaced and the CSECs being installed, a temporary diversion of approximately 1.1km would be installed along the existing 400kV Norton to Osbaldwick (2TW/YR) overhead line, between pylons 2TW169 and YR038, up to 130m north of the current overhead line (see **Figure 3.3**). The temporary diversion would require the installation of two temporary structures or pylons 185m south-west and 280m south-east of Newlands Farm. At this stage of the design, these structures are likely to be approximately 47m and 52m in height respectively.

3.4.19 There would be two construction compounds in the northernmost part of the draft Order Limits each assumed to be 1.4ha (130m by 110m) at this stage of the design (see **Figure 3.3**). The construction of the new 400kV YN overhead line and the CSECs and works to the existing 400kV Norton to Osbaldwick (2TW/YR) overhead line would be managed from these compounds. The compounds would 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) and be located to the north of Corban Lane and east of the access road to Newlands Farm.

3.4.20 Two construction compounds would be located to the north-west of Overton Substation; one to the west of Overton Road and north of the ECML railway and the second to the east of Overton Road and south of the A19. Works to construct the new overhead lines and substation would be managed from these compounds which would 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). Both compounds are at this stage assumed to be 1.4ha in area.

3.4.21 Other temporary construction infrastructure that would be installed across the Project (access roads, scaffolding, working areas) are described in **Section 3.5**.

Tadcaster Area

3.4.22 At this stage of the Project all design information related to dimensions, distances and heights of proposed infrastructure are indicative and subject to change as the Project design progresses in response to consultation feedback.

Permanent new infrastructure

3.4.23 The new permanent infrastructure that would be implemented as part of the Project in this area comprises the following.

New 275kV cable sealing end compounds

3.4.24 Two new CSECs would be installed in the Tadcaster Area: Tadcaster Tee East 275kV CSEC and Tadcaster Tee West 275kV CSEC (see **Figure 3.7**). Each would have an approximate footprint of 40m by 50m (2,000m^2) and would be needed to manage the power flows on the proposed 275kV Knaresborough – Monk Fryston – Overton overhead line circuits where the existing Poppleton to Monk Fryston (XC/XCP) overhead line connects to the 275kV Knaresborough (XD/PHG) overhead line. A short section (approximately 350m) of underground cable would connect to the two CSECs (see **Figure 3.7**). Gantries of up to a maximum height of 15m would also be installed.

Changes to existing infrastructure

275kV Tadcaster Tee to Knaresborough (XD/PHG) overhead line route

3.4.25 Changes to the existing infrastructure in the Tadcaster Area would comprise the removal of pylon XD001T (38m in height above ground level) which would be replaced with a new pylon on the same alignment (XD001) (approximately 46m in height) approximately 40m to the south-east to allow a connection using downleads to the Tadcaster Tee West CSEC (see **Figure 3.7**). At this stage of the Project design, no works are proposed to the XD/PHG overhead line between pylons XD002 and XD007 but this section of overhead line is included in the draft Order Limits should further design development indicate works, for example re-tensioning of the overhead lines, be required. Pylon XC481, which is in this area but on the existing 275kV Poppleton to Monk Fryston (XC/XCP) overhead line, would possibly require steelwork and foundation strengthening works, replacement of the overhead conductors (the wires which form the overhead lines), new fittings, new conductors and new steelwork to replace the existing pylon steelwork (see **Figure 3.7**).

Temporary construction infrastructure

3.4.26 There would be two construction compounds located north and south of pylon XD001T in land between the A64 and A659 which would be approximately 1.7ha and 1.4ha in footprint respectively (see **Figure 3.7**). Works to construct the new CSECs and to the existing overhead lines substation would be managed from these compounds which would contain storage including laydown areas and soils storage and areas for equipment and fuel, drainage, generators, car parking and offices and welfare areas (portacabins).

3.4.27 During the construction phase a temporary diversion of the existing 275kV Tadcaster Tee to Knaresborough (XD/PHG) overhead line would be needed to maintain electricity flows along this line whilst pylon XD001T is removed and replaced with pylon XD001. The temporary diversion would be approximately 1km long from XD003 to XC481 and up to 60m north of the existing overhead line (see **Figure 3.7**). The temporary diversion would require the installation of two temporary structures or pylons approximately 110m east and 150m west of the A659, both of which would be approximately 32m in height.

3.4.28 Other temporary construction infrastructure that would be installed across the Project (access roads, scaffolding, working areas) are described in **Section 3.5**.

Monk Fryston Substation Area

3.4.29 At this stage of the Project all design information related to dimensions, distances and heights of proposed infrastructure are indicative and subject to change as the Project design progresses in response to consultation feedback.

Permanent new infrastructure

3.4.30 The new permanent infrastructure that would be implemented as part of the Project in this area comprises the following.

400kV Monk Fryston substation

3.4.31 A new 400kV substation would be installed adjacent to (and connecting into) the existing Monk Fryston 275kV/400kV Substation to enable the uprated XC overhead line

to connect into the Electricity Transmission System (see **Figure 3.8**). The new substation is required as the existing substation equipment is not rated high enough to accommodate the new increased rating of the XC overhead line. The substation would have a footprint of approximately 8ha and is likely to be similar in height to the buildings and infrastructure at the existing substation (assumed for the purposes of assessment to be 15m). The new substation would contain four SGTs to step up the 275kV voltage of the XC overhead line to 400kV to connect into the new substation. Underground cables (approximately 600m in length) would be installed within the substation to connect one circuit of the XC overhead line to the substation. The new substation would also contain other switchgear and equipment, a control building housing equipment and car parking. The substation would be enclosed by an electric fence in line with National Grid standards.

Proposed landscape strategy at the proposed 400kV Monk Fryston Substation

3.4.32 At this stage of the Project, areas of planting and screening are indicative and will be developed in further detail. At the proposed Monk Fryston Substation, areas of planting are summarised as follows and shown on **Figure 3.8**:

- Reinforcement planting and mounding with woodland planting for screening around the southern boundary of the proposed substation.
- Mounding with woodland planting for screening along the northern boundary of the proposed substation.
- Tree planting along the existing the hedgerow along the southern side of the A63 east and west of the junction with Rawfields Lane.
- Restoration of the existing remnant hedgerow either side of Rawfields Lane between the junction with the A63 and the existing substation by planting hedgerow trees both sides of Rawfield Lane. A new section of hedgerow would also be planted on the eastern edge of Rawfield Lane.

3.4.33 As the landscape strategy is developed, further consideration will be given to any easements required for utilities as well as safety clearances for the proposed overhead lines and visibility splays for highways safety. Consideration will also be given to the planning applications which have been submitted for proposals to the south of the existing substation which comprise energy storage projects and a gas peaking plant (see **Table 4.5**, **Chapter 4: Approach to Preparing the PEIR**). Further consideration will also be given as to whether planting could be undertaken to identify which planting should be implemented as advance planting to reduce the impacts from the temporary construction compound and works area. Further information regarding the assessment of landscape and visual effects is provided in **Chapter 6: Landscape and Visual Amenity**.

Changes to existing infrastructure

275kV Poppleton to Monk Fryston (XC/XCP) overhead line route

3.4.34 The existing 275kV Poppleton to Monk Fryston (XC/XCP) overhead line west of the Monk Fryston Substation would be reconfigured between pylons XC521 and XC525T so that this overhead line could be moved from the existing Monk Fryston Substation to connect into the proposed Monk Fryston Substation.

3.4.35 Approximately 1.45km of the overhead line would be reconfigured and new spans of overhead line included to connect into the proposed substation and the reconfigured overhead line would be slightly increased in length (approximately 1.52km). Pylon XC521 would remain in place but parts of the steelwork would be replaced or strengthened and the overhead line and conductors replaced. The reconfigured overhead line would, from this pylon, run along a similar alignment and up to 40m west of the existing overhead line east of the A1(M). Pylon XC522T and XC523T would be dismantled and removed with new pylons (XC522 and XC523) installed approximately 40m west and 40m south-east of the existing pylons respectively. From pylon XC523 the overhead line would be reconfigured slightly south of the existing alignment, then from XC524T would run north-east to connect into the new substation. Pylon XC524T would be dismantled and removed with a new pylon (XC524) installed 40m west of the existing pylon. Pylon XC525T within the existing substation would be removed. A replacement pylon for XC525T (XC525) would be located in the field west and on the opposite side of Rawfield Lane to the existing substation (180m north-west). A new pylon (XC526) and two new gantries would be installed on the eastern side of Rawfields Lane adjacent to the new substation to allow the overhead line to connect to the new substation. Therefore the realigned XC overhead line would have one additional pylon in this area when compared against the current overhead line.

3.4.36 The pylons which would be dismantled as part of this work (XC522T to XC525T) currently range in height from approximately 35m to 42m above ground level. The replacement pylons (XC522 to XC525) would range in height from approximately 46m to 59m. The additional pylon (XC526) would be approximately 48m above ground level.

3.4.37 An area of woodland planting south of Pollums House Farm is likely to be felled or coppiced to implement a temporary overhead line diversion in this area and this would be replanted once construction was complete as part of the landscape strategy (see **Figure 3.8**).

400kV Monk Fryston to Eggborough (4YS) overhead line route

3.4.38 A short section of the existing 400kV Eggborough to Monk Fryston overhead line between pylons 4YS029 and 4YS030, east of the existing substation would be removed and reconfigured to connect into the proposed Monk Fryston Substation. A span approximately 350m long of existing overhead line between 4YS029 and 4ZZ01A would be dismantled.

Temporary construction infrastructure

3.4.39 During construction a temporary diversion would be installed on the existing 275kV Poppleton to Monk Fryston (XC/XCP) overhead line whilst the reconfigured overhead line between XC522 and XC526 was being constructed in order to maintain electricity flows. The temporary diversion would be up to 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. These structures would be between 49m and 59m in height.

3.4.40 Two construction compounds would be set up to facilitate the construction works in this area, to the east and west of Rawfields Lane. Each compound is assumed to be 1.4ha (130m by 110m) at this stage of the design. Works to construct the proposed substation and works to the existing overhead lines would be managed from these compounds which would 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).

3.4.41 Other temporary construction infrastructure that would be installed across the Project (access roads, scaffolding, working areas) are described in **Section 3.5**.

Changes to other infrastructure within the draft Order Limits

3.4.42 As well as the work discussed in the preceding sections the following works would take place within the draft Order Limits and form part of the DCO.

Existing 275kV Poppleton to Monk Fryston (XC/XCP) overhead line route

Changes to existing infrastructure

3.4.43 Works would be undertaken on this existing overhead line where it falls within the draft Order Limits in order to implement two new sections of overhead line connecting into Overton Substation and to form two separate overhead lines: the XC overhead line connecting Monk Fryston and Overton Substations and the SP overhead line connecting Poppleton and Overton Substations.

3.4.44 Pylon XCP014T to the east of the ECML railway and west of Skelton would remain in place and form part of the SP overhead line connecting Overton and Poppleton Substations. Pylon XCP014T would be renamed as pylon SP007. North from SP007 the new overhead line and pylons would connect into Overton Substation (pylons SP001 to SP006) as shown on **Figure 3.3**.

3.4.45 Between Moor Monkton in the west and Skelton in the east the existing XC/XCP overhead line (approximately 5km in length) would be replaced with some pylons permanently removed. The overhead line would be realigned from south-east of Moor Monkton to connect into the proposed Overton Substation forming the realigned XC Overton to Monk Fryston overhead line. This would require:

- the permanent removal of 2.35km of the existing XC/XCP overhead line and six pylons between the ECML railway and Woodhouse Farm to the north of Overton (existing pylons XCP008 to XCP013);
- the replacement of four pylons south of the River Ouse and north of Thickpenny Farm along the same overhead line alignment, but in new locations (approximately 25 to 70m east of the existing pylon locations). The replacement pylons would be taller in height than the existing pylons with the new pylons being between 48m and 54m above ground level compared to 40m to 50m in height at present (pylons XC425 to XC422);
- the replacement of three pylons to the south-east of Moor Monkton and south of Redhouse Wood along a new alignment up to 230m south from the existing overhead line alignment. The existing pylons are currently between 40 and 45m in height above ground level whereas the replacement pylons would all be approximately 50m in height (XC426 to XC428);
- the permanent removal of the existing pylon closest to Moor Monkton as the realigned overhead line would lie further to the south; and
- the replacement of pylon XC429 at a location approximately 30m north of the existing pylon. The replacement pylon would be taller (approximately 53m) than the existing pylon (approximately 35m in height).

3.4.46 South from pylon XC429 to pylon XC521 to the west of Monk Fryston Substation the existing overhead line would be re-conductored, which would include switching the existing single conductor system to a twin conductor system. At every pylon there would be works to change the insulators and fittings (**Figure 3.9** and **Figure 3.10**).

3.4.47 There are currently 93 existing pylons between XC429 and XC521 (the works to the section of overhead line between pylon XC521 to Monk Fryston Substation are described under paragraphs 3.4.34 to 3.4.37). Of these 93 pylons:

- 60 would have steelwork replaced or strengthened;
- 3 would require replacement crossarms;
- 15 would require modifications to the existing crossarms, including changing the conductor attachment points; and
- 24 would not require any steelwork replacement, strengthening or works to the crossarms but would still require replacement insulators and fittings. Some pylons may require repairs to or strengthening of foundations and surveys are ongoing to determine this.

Temporary construction infrastructure

3.4.48 In order to undertake the proposed works to the existing 275kV Poppleton to Monk Fryston (XC/XCP) overhead line route, two temporary diversions would be required in order to maintain electricity flows, as follows:

- A 1.9km temporary diversion would be installed 50m north of the existing overhead line to install pylons XC425 to XC422 on the realigned overhead line into Overton Substation. Four temporary structures or pylons would be installed in close proximity to the existing pylons for the duration of the diversion and would be between 44m and 46m in height.
- A 820m temporary diversion would be installed up to 30m south of the existing overhead line and north of Woodhouse Farm. This would require two temporary structures or pylons up to 48m in height to be installed for the duration of the diversion.
- A 565m long temporary diversion would be installed between pylons XC428T and XC430 whilst the realigned overhead line was being installed south-east of Moor Monkton, which would be located up to 40m west of the existing overhead line. One temporary structure or pylon up to 55m in height would be installed for the duration of the diversion approximately 95m north-west of pylon XC429T.

3.4.49 There would be no construction compounds located along the 275kV Poppleton to Monk Fryston (XC/XCP) overhead line. Instead works would be managed from compounds in the North West of York, Tadcaster and Monk Fryston Substation Areas.

Osbaldwick Substation

3.4.50 A new circuit breaker and isolator along with associated cabling would be installed at Osbaldwick Substation, minor works would be implemented for pylon YR001A and an existing gantry on which one of the Norton to Osbaldwick circuits terminates would be removed and dismantled to free up space for new equipment. A new gantry (for the purposes of the assessment this is assumed to be up to a maximum of 15m in height) would be installed on the existing operational land at the substation, and CSECs would

be in place, allowing a cable connection (approximately 50m) to the existing substation bay.

3.4.51 All construction works, including the requirement for any construction compounds, would take place within operational land at Osbaldwick Substation. **Figure 3.11** shows the draft Order Limits at Osbaldwick and **Figure 3.12** shows the existing and proposed layouts for the substation.

3.5 Construction methodology

Installation of access routes

3.5.1 Construction works would be phased (see **Table 3.1**) and access routes implemented prior to each element or phase of the Project being commenced to provide suitable access for construction plant and traffic. This element of construction would also include vegetation removal and management, construction of bellmouths at access entrances off the public highway, wheel wash/'rumble strip' facilities, where required, to remove excess material before vehicles re-join the highway, fencing and gateways to keep livestock and the public away from construction activities, drainage, and where required culvert crossings and temporary bridges to cross watercourses. Various surfaces are used for the temporary access tracks depending on ground conditions. Access routes comprise the following:

- Minor Access: Use of existing access routes with minimal, if any, improvements required.
- Panel: These comprise temporary metal or plastic interlocking panels normally laid directly onto the ground which would be delivered to site by HGV which would off-load and layout the panels. This form of access would be typically 3m in width and all panels would be removed once construction works are complete.
- Stone: These surfaces are typically formed of imported stone (or crushed rock) on a geotextile membrane. Topsoil is removed and stockpiled and a geotextile membrane laid to separate the stone from the underlying soil. Stone is delivered via tipper trucks, spread on site and using a vibrating roller compacted to the desired finish. The final finish is generally gently cambered to aid with removal of water and sits just above the existing ground level either side. The stone road is dismantled in the reverse procedure, geotextile membrane recovered and ground reinstated. Such access routes would be 4.5m wide and up to 9m wide for passing places excluding any soil storage or fencing running along the access.

Compounds

3.5.2 Typically, construction compounds for the Project would be installed by stripping topsoil, which would be temporarily stored on site as bunding. The compound would then be constructed, in a fenced off area, with material put down to surface the compound, typically aggregate comprising crushed hardcore and concrete. Water and electricity supplies would be connected to the compound, including set up of diesel generators as required, along with temporary site drainage including installation of any filter drains or ditches and construction of any measures to attenuate run-off, if needed. Temporary structures may then also be installed such as welfare and office facilities for construction personnel and diesel generators installed. For the purposes of the assessment, at this stage of the design it is assumed that any temporary cabins or structures at the compounds would be double storey in height.

Working areas

3.5.3 Construction working areas would be established around each element of the Project to provide a secure working area within which works would take place.

3.5.4 The typical pylon working area for both new and existing pylons would be approximately 50m by 50m, depending on ground conditions and location. Measures to ensure ground protection for the loads that are to be imposed by construction plant such as piling rigs, mobile cranes and mobile elevating work platforms (MEWPs) and for the delivery of materials would be implemented as part of the working area. For the new pylons, construction of working areas would comprise stripping and stockpiling of the topsoil, laying of geotextile membrane which would then be covered with a stone layer, and drainage where required. On completion of the works, the stone and geotextile membrane would be recovered, waste removed from site, topsoil replaced and the area reinstated, including any planting which may be required. For existing pylons, it is assumed that stone working areas would be used to provide a stable area for material delivery, storage and handling. Working area would be fenced and welfare facilities provided.

3.5.5 Working areas would also be required at locations where works would be needed to lift equipment onto the pylons, including crane pads. This could include lifting insulator strings, smaller pieces of pylon steelwork or working platforms. For new suspension pylons an area of approximately 25m either side of the working area would be required for these activities. For a new build tension type lattice pylon an additional temporary 'holding out' area (an area used to install the conductors) of approximately 35m by 25m beyond the cross-arms each side of the working area would be used. For pylons being dismantled, working areas up to 60-80m from the pylon may be required to attach stays (wires) to facilitate the dismantling process.

3.5.6 Equipotential Zones (EPZs), a form of working area, would be created where all the stringing equipment and machinery would be positioned. The EPZs would comprise a matt of linked conducting metal panels, which the stringing machine sites would sit on, to provide protection to personnel from the effects of electrical voltage differences that may arise whilst lowering, raising or restringing overhead line conductors. The EPZs would be positioned within the larger stringing area at designated tension pylon sites.

Construction of new pylons

3.5.7 Once working areas are in place, new foundations would be installed for each new pylon. Prior to a DCO being granted, ground investigation works would be undertaken to determine the specific nature and design of the foundations, but they are likely to comprise one of the following installation methods.

- Pad and column foundations: Large excavations would be made for each pylon leg; the concrete is cast to create the pad and column for each pylon leg. Once the concrete has 'set' (hardened), the excavation can be back-filled with soil and then compacted in layers back to ground level. Remaining sub soil will be spread around the foundation legs. Tension pylons and terminal pylons generally require larger and deeper foundations than suspension pylons.
- Piled foundations: In areas where ground conditions are unsuitable for standard pad and column foundations, vertical/inclined tube pile foundations or bored mini pile foundations, both connected by a pile cap at or below ground level would be installed. The tube piles would be driven into the ground using a piling hammer

supported by a piling rig. The piling rig and hammer can have a combined weight of approximately 55 tonnes and would be transported to site on a low loader(s).

3.5.8 Once the foundations are in place and the concrete has gained sufficient strength, the pylon would be constructed. Crane pads, which would be needed for new or dismantled pylons, or pylons which need works to the cross arms, would be installed within the pylon working area to accommodate the weight of loads imposed by the crane and consist of steel plates, timber (sleepers) or a depth (approximately 600mm) of compacted stone with geotextile membrane, or a combination of both.

3.5.9 The steelwork making up the pylon would be delivered to the pylon working area in bundles from one of the construction compounds using seven tonne trucks equipped with small hydraulic cranes for offloading. If access conditions permit, the pylon steelwork would be delivered directly from the supplier using larger HGV transport with a small crane to off-load the steelwork at the pylon working area.

3.5.10 Pylon steelwork would be bolted together on site in sections to safely suit the pylon build for the selected mobile crane. A telehandler or tractor with a rear mounted crane is typically used to manoeuvre panels on site for assembly and can also be used to erect the lower pylon panel on the foundation stubs. A mobile telescopic crane would be brought onto site to lift the remaining assembled sections of lattice pylon into position. Once assembled, all waste material is removed from the working area.

3.5.11 The final stage is to install the overhead conductors (including the earthwire or optical ground wire (OPGW) – the wires which run along the top of the pylons). Scaffolding, typically 20m in depth, would be required at locations where the overhead conductors would cross over roads, railways and rivers, with protection measures put in place to prevent overhead conductors coming into contact with the feature they are crossing. The overhead conductors are typically installed in sections between two tension pylons. The new conductors and obstacles that they oversail must be protected from damage during the stringing procedure so the conductors are pulled with a winch at one end of the section, and a tensioner (effectively a hydraulic brake) at the other so they remain above ground under tension as they are pulled through.

3.5.12 Light pilot wires are run out at ground level (and over temporary scaffolding protecting obstacles, roads etc.) along the full length of the section, between the two ends of the stringing section. Light pilot wires may be pulled through by tractor or tracked vehicle. The light pilot wires are fed through running out blocks (large pulley wheels to enable the conductors to travel freely) suspended beneath the cross arms of all the pylons in the section and then fed round stringing machines at the winch and tensioning sites in preparation for pulling through the section. The light pilot wires are used to pull through heavier stronger pilot wires which in turn are used to pull the conductors through from their drums. When the new conductor is fully run out, it is raised to its finished tension and height above ground, clamped to tension insulator strings at the tension pylons and lifted from the running out blocks into suspension fittings at the end of insulator strings on suspension pylons. Finally, conductor fittings such as vibration dampers and conductor spacers are installed through each span.

3.5.13 The earthwire or OPGW which run along the top of the pylons will be installed using a similar method. The OPGW contains optical fibres to allow the transmission of data around the system to ensure safe operation. Fibre optic joint boxes are installed at pylon locations to provide a continuous end to end path of the transmission of data. At each substation the fibres are taken via underground cable into a control room for interface with the control and communication system and wider transmission to overall UK network control centre.

Refurbishment and reconductoring works at existing pylons

3.5.14 Works to existing pylons are likely to comprise repair or strengthening of foundations, repairs to steelwork and replacement of the overhead conductors and fittings. Some existing pylons within the draft Order Limits will require works to their foundations. The level of work required will vary and further investigation is ongoing and will be completed in advance of the DCO submission, to determine which pylons need foundation repairs. An overview of the foundation works potentially required comprise the following:

- Vegetation management: Removal of any vegetation around the concrete foundation so that the foundations can be inspected and repaired as required.
- Major repairs: Works comprising excavating down to a depth of approximately 0.5m and the removal and replacement of concrete foundations where the existing concrete has become cracked or damaged.
- Minor repairs: Localised repairs needed to reinstate the concrete finish on the foundations where the visible part of the concrete foundation has damage such as cracked or chipped concrete.
- Buried repairs: Where concrete foundations are not visible (or are only just visible) at ground level this involves excavation and removing the top surface of the concrete and adding new concrete to above ground level.
- Strengthening: Bespoke foundation works, the requirement for which will be identified through ongoing investigations. Strengthening works could range from do nothing to the installation of additional kentledge (weights) placed on the ground through to installation of mini-piles, concrete ring beams and tying all back to the existing foundations.
- Painting: All foundations will be painted with protective paint to ensure long term protections.

3.5.15 Some existing pylons would require repairs or the replacement of pieces of steelwork and fittings, although the pylon itself would remain in place. The cross arms would also need to be upgraded on some of the pylons prior to the installation of the new conductor system. New crossarm steelwork would be delivered to site, assembled, the existing crossarms and conductors removed and new crossarms installed using a mobile telescopic crane. Furthermore, the conductor system on the existing pylons on the 275kV XC overhead line between Overton and Monk Fryston would need changing from a single conductor system to a twin conduction system and upgraded so that two individual conductors can be attached to the crossarm ends via the insulator string and fittings. Therefore some pylons would also require additional steelwork to be attached to the crossarms.

3.5.16 To replace the overhead conductors along the existing overhead lines it is likely that the existing conductors would be used to 'pull through' the new conductors.

Removal of existing pylons

3.5.17 Dismantling of pylons would involve firstly removing the conductors and then lowering the insulators and fittings to the ground. Where the pylon is located in a clear area and it is safe to do so, the pylon would be removed by ‘felling’ the whole structure. Alternatively, a mobile crane would dismantle the structure in sections which would then be lowered to the ground. Once dismantled, the pylon steelwork is typically broken up

on site then removed. The reinforced concrete foundation would then be removed (for the purposes of the assessment this is assumed to be to a depth of approximately 1.5m below ground level), the remaining section of the pylon leg (stub) cut off, the excavation backfilled, ground reinstated and any waste removed from site to a suitable licensed waste management facility.

Installation of temporary diversions of overhead lines

3.5.18 Each temporary diversion would be designed specific to the ground conditions present and would use either temporary structures or pylons or a combination. The overhead line diversion would be constructed using the methodologies outlined in this section. Once construction works are complete the temporary diversion would be removed, including any foundations (to an assumed depth of 1.5m), and the ground conditions reinstated.

Construction of CSECs

3.5.19 The terminal pylon at each CSEC would be constructed in line with the description outlined for new pylons (paragraphs 3.5.7 to 3.5.13).

3.5.20 Underground cables would be installed in trenches assumed at this stage to be approximately 1.2m deep to connect the CSECs. 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. In the Tadcaster Area, it is assumed that horizontal directional drilling (HDD) would be used to install the cable due to the presence of gas pipelines with appropriate health and safety measures implemented. The depth of the HDD is subject to further ground investigation work.

3.5.21 Cable drums would be delivered to site using an abnormal indivisible load (AIL) and a crane used to offload and position the cables. Cables would typically be winched into position along the trench, and where applicable through each duct as part of the finished HDD work, before being laid onto a specially prepared layer of supporting material. Each cable trench is likely to be part filled with a specially selected backfill material to improve thermal properties and cable and circuit performance. Once works are complete the construction works area would be reinstated and any waste material removed from site.

Construction of substations

3.5.22 Once construction compounds and access roads are installed, the topsoil at the substation site would be stripped and stored for permanent landscaping and cut and fill undertaken to establish a level platform upon which the substation could be constructed. For the purposes of the assessment, at this stage it is assumed that any surplus material would be retained on site as permanent bunding. However, if space is not available this would need to be removed and disposed of appropriately. Working areas would be established within the substation footprint for equipment foundations.

3.5.23 The main works would comprise the installation of site perimeter security fencing and a reinforced concrete pad (it is assumed no piles are required at this stage of the assessment but this will be confirmed through ground investigation) to form the foundations of the substations. Ducting and trenches would be installed for high and low voltage cables and the permanent site drainage constructed, which is likely to comprise filter drainage and an attenuation pond for surface water and piped drainage

for the oily water drainage system. Bunds for the super grid transformers would be constructed and connected to the drainage system.

3.5.24 The structures within the substation would be installed and constructed on the prepared concrete foundations, including a diesel generator, gantries and the super grid transformers as well as high voltage plant (such as earth switches, circuit breakers and busbars) installed on steel or aluminium structures. Other low voltage equipment would also be installed. A control building would be constructed and connected to electricity and water supplies as well as the drainage system and control and protection equipment installed within the building. The final elements of the works would be to install and/or modify existing protection and control equipment including associated cabling and undertake works to test the new and amended overhead lines.

Decommissioning

3.5.25 The lifespan of the Project is likely to be longer than the anticipated 80 years design life, depending on its condition, refurbishments and future transmission network requirements, as over time all parts are likely to be refurbished or replaced through maintenance.

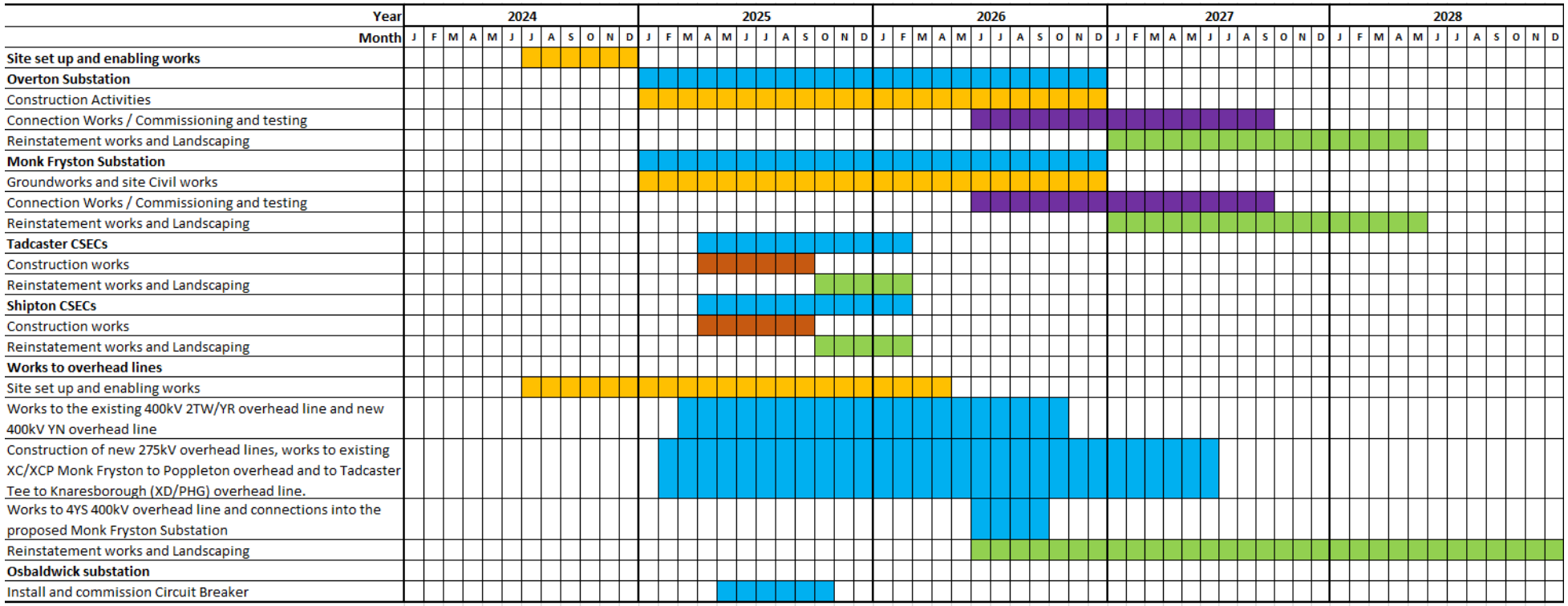
3.5.26 At the end of its lifetime, if the overhead line connection is no longer required, overhead lines may be removed using the same process as described in paragraph 3.5.17 for the dismantling of pylons. Similarly, equipment within the substations would be removed, structures such as the gantries dismantled and broken up, concrete and buildings demolished, materials removed, and the site restored. Upon removal, most of the material would be taken for recycling. Similar access would be required as outlined for construction. These works are estimated to take approximately two years to complete.

Project programme

3.5.27 Should consent be granted in early 2024, it is anticipated that access and construction of the project would commence later in 2024, starting with the installation of construction compounds and access. The main construction works would continue through to 2028 when reinstatement is to be completed, with the project becoming operational in 2027.

3.5.28 An indicative construction programme is set out in **Table 3.1**.

Table 3.1 – Indicative construction programme



Working hours and employment proposals

3.5.29 Twenty-four hour working would be implemented during the construction works and commissioning for Overton and Monk Fryston Substations and overnight (24 hour) working used to install the overhead lines crossing the ECML railway, highways and other infrastructure to minimise daytime closures of these transport links. For the remainder of the Project, at this stage it is assumed that construction work would be limited to daytime hours but would take place seven days per week.

3.6 Construction management plans

Introduction

3.6.1 The ES will be accompanied by a suite of outline management plans, schemes and strategies, which describe how the embedded environmental measures and additional mitigation measures would be delivered. These documents would be finalised prior to the commencement of site works with the agreement of the relevant host local authorities in consultation with other relevant statutory bodies.

3.6.2 The final list of outline management plans submitted as part of the DCO application and secured in the DCO will be informed by comments received during the statutory consultation and other engagement, but at this stage it is anticipated that the following plans will be required:

- Outline Construction Environmental Management Plan (CEMP); which may also incorporate sub-management plans to address site waste, noise and vibration, etc;
- Construction Traffic Management Plan (CTMP);
- Public Rights of Way (PRoW) Management Plan;
- Landscape and biodiversity strategies; and
- Archaeological Written Scheme of Investigation.

3.6.3 A Preliminary CTMP (see **Appendix 12A**) and PRoW Management Plan (see **Appendix 12B**) accompany **Chapter 12: Traffic and Transport Assessment.**

Construction Environmental Management Plan (CEMP)

3.6.4 The CEMP provides an overview of the standard construction management measures that would be implemented as part of the Project. As such it aims to ensure that construction activities for the Project are carried out in accordance with legislation and best practice for minimising the effects of construction on the environment and local communities.

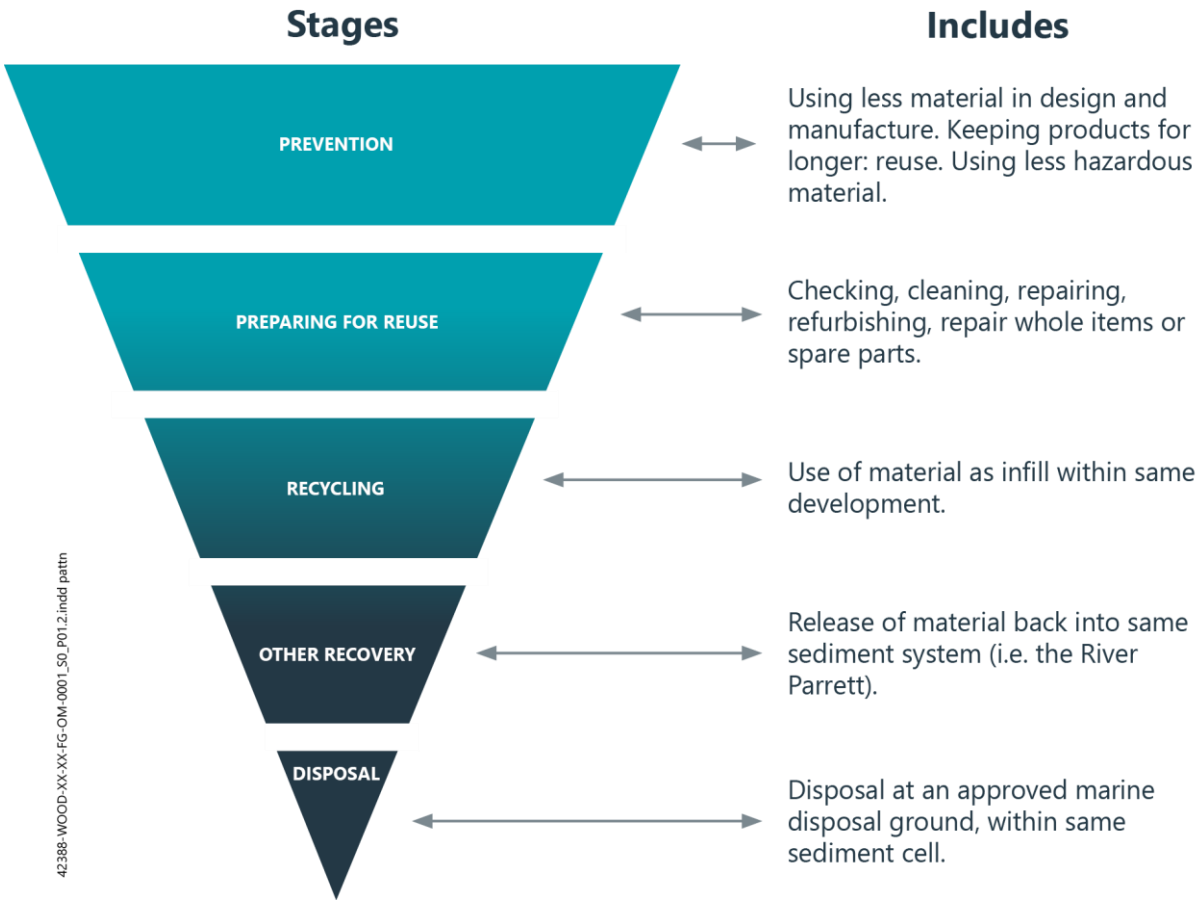
3.6.5 An Outline CEMP will be included as part of the DCO submission. This will provide an overview of the standard construction management measures that would be implemented as part of the Project. The Outline CEMP will also cover standard working hours and traffic management measures.

Materials and waste management

3.6.6 The principal objective of sustainable waste and material resource management is to use material resources more efficiently. Management of waste according to a clearly defined hierarchy forms a fundamental cornerstone of waste planning and management

policy (see **Figure 3.13**). Application of the principles laid down in the waste hierarchy model seek to minimise the quantity of waste that requires final disposal and reduce impact on receptors.

Figure 3.13 Waste hierarchy



3.6.7 National Grid adopt good construction and management practices and will apply the waste hierarchy to ensure that waste arising during the construction, operation and maintenance, and decommissioning of the Project, if approved, is minimised as far as possible and that the storage, transport and eventual disposal of waste have no significant environmental effects. The application of the waste hierarchy will be supported by the implementation of the proximity principle, whereby waste will be managed as close as reasonably practicable to the point of origin.

3.6.8 National Grid sets out a number of objectives relating to waste in its 2021 – 2026 Environmental Action Plan. In relation to waste these include achieving zero waste to landfill by 2026 and adopting the principles of the circular economy using internationally recognised standards such as the BS8001 – Circular Economy Standard and ISO20400 Sustainable Sourcing Guidance.[4]

3.6.9 Detailed quantification and classification of waste types, disposal options and other information relating to waste has not been provided in the PEIR, as at this stage of the assessment the information is not yet available. However, the volume of waste produced in all phases of the Project is anticipated to be low and is expected to be accommodated by local facilities. Further information and waste management measures

[4] National Grid,(2021) Our 2021–2026 Environmental Action Plan (Online). Available from: https://www.nationalgrid.com/uk/electricity-transmission/document/136551/download (Accessed 15 October 2021).

will be included as part of an Outline CEMP which be submitted in support of the DCO application. The Outline CEMP will contain the following:

- predicted waste arisings from construction activities by sources, type, quantity (weight or volume) and recommended actions for effective waste management aligned to waste types and sources;
- description of best practice waste management options including application of the waste hierarchy;
- roles and responsibilities with respect to waste management;
- exemptions and licensing including Duty of Care, paperwork, storage requirements and other specific legal requirements; and
- the site waste monitoring and reporting arrangement.

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