BEACON FEN ENERGY PARK

Planning Inspectorate Reference: EN010151

Appendix 2.1: Grid Connection Construction Method Statement
Document Reference: 6.3 ES Volume 2, 6.3.4 Appendix 2.1
January 2026

The Planning Act 2008
The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)
The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (SI 2017/572) – Regulation 14

Quality information

Prepared by	Checked by	Verified by	Approved by
RS	GS	GS	SR

Revision history

Version No	Date	Comment	Approved by
1	April 2025	Original submission	SR
2	January 2026	Inclusion of Change Request details	SR

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1. Grid Connection Construction Method Statement

1.1 Introduction

1.1.1 This Grid Connection Construction Method Statement (CMS) has been prepared by SLR Consulting Ltd (SLR) on behalf of Beacon Fen Energy Park Ltd[1] (the 'Applicant') in support of an application for a Development Consent Order (DCO) for Beacon Fen Energy Park (the 'Proposed Development').

1.1.2 The Proposed Development comprises the construction, operation (and maintenance) and decommissioning of a solar photovoltaic (PV) electricity generating facility and battery energy storage system (BESS) with associated export and connection infrastructure to (with above and below ground works at) the National Grid Bicker Fen 400 kV Substation ('Bicker Fen Substation').

1.1.3 The Proposed Development will be located within the Order Limits as shown on **Document Ref: 6.4 ES Vol.3, 6.4.2 Figure 1.2 Site Boundary Plan** and comprises the Solar Array Area, the Bespoke Access Corridor and the Cable Route Corridor, which are defined as follows:

- **Solar Array Area** - The land within the Order Limits within which the solar PV and BESS (and ancillary infrastructure) will be located.
- **Cable Route Corridor** - The land within the Order Limits within which the Cable Route will be located.
- **Cable Route** - The physical development (i.e. the cable itself) to be located within the Cable Route Corridor.
- **Bespoke Access Corridor** - The land within the Order Limits within which the Bespoke Access Road will be located.
- **Bespoke Access Road** - The physical development (i.e. the road itself) to be located within the Bespoke Access Corridor.

1.1.4 This Grid Connection CMS should be read in conjunction with **Appendix 2.4 Outline Construction Environment Management Plan (OCEMP) (Document Ref: 6.3 ES Vol.2, 6.3.7)**.

1.1.5 Prior to the commencement of the construction phase, a detailed CEMP (or multiple CEMPs, if the Proposed Development is brought forward in different parts) will be produced by the Principal Contractor for the Proposed Development.

1.1.6 In accordance with a requirement in Schedule 2 to the Development Consent Order (DCO), no part of the Proposed Development may commence until a CEMP (which must be substantially in accordance with **Appendix 2.4 Outline Construction Environment Management Plan (Document Ref: 6.3 ES Vol.2, 6.3.7)** has been submitted to and approved by the relevant local planning authority.

[1] Beacon Fen Energy Park Ltd is the Applicant and Developer of the project which is owned by Low Carbon Limited.

1.1.7 All construction works associated with the authorised development must be carried out in accordance with the approved CEMP (or CEMPs). **Appendix 2.4 Outline Construction Environment Management Plan (Document Ref: 6.3 ES Vol.2, 6.3.7)** commits[2] to the production of detailed CMS(s) as part of the detailed CEMP(s).

1.2 Purpose

1.2.1 This Grid Connection CMS provides an indicative outline of how the Cable Route Corridor of the Proposed Development is to be constructed to inform the assessment for the **Environmental Statement (ES) (Document Ref: 6.2, ES Vol.1)**, and describes:

- The Cable Route Corridor and connection to the Bicker Fen Substation.
- How the cable connection works are considered within the ES.
- The proposed technology and equipment to be used to install the cable.
- The proposed construction methodology.

1.3 Connection Description

1.3.1 The electricity generated by the Proposed Development will be exported via underground cables running from the On-site Substation located within the Solar Array Area of the Proposed Development to the Bicker Fen National Grid Substation.

Bicker Fen Substation Extension

1.3.2 To accommodate the proposed connection, works to the existing Bicker Fen National Grid Substation are required (Work Nos. 5 A-E). The substation extension (Work Nos. 5 A-E) will be delivered by National Grid Electricity Transmission (NGET). For further details, reference should be made to the **Change Request – 2.4 Works Plan (CR-004)** and the **Draft DCO (Document Ref: 3.1)**.

1.3.3 The extension will be to the south-west of the existing Bicker Fen National Grid Substation site, as determined by NGET and National Energy System Operator (NESO), to take into account the needs of other customers connecting into the National Electricity Transmission System (NETS).

1.3.4 NGET has requested that there be optionality within the design of the extension to Bicker Fen National Grid Substation. The two design options that are under consideration are Air Insulated Switchgear (AIS) and Gas Insulated Switchgear (GIS), with the extent of both design options illustrated on the **Bicker Fen Substation Layout (Document Ref: 2.27)**. These works, which are necessary as a consequence of the Proposed Development, include:

- An extension to the existing NGET infrastructure at the substation, comprising a busbar extension including a section breaker, a bus

[2] See Section 2.5 of **Appendix 2.4 Outline Construction Environment Management Plan (Document Ref: 6.3 ES Vol.2, 6.3.7)** for further details.

coupler and a feeder circuit on land to the south of the Bicker Fen National Grid Substation, which is owned by NGET; and

- A new cable sealing end (CSE) compound on land to the west of Bicker Fen National Grid Substation, which is also owned by NGET.

1.3.5 These works will have minimal impact to the transmission network outside of Bicker Fen National Grid Substation. The works within the substation will, however, require the delivery of new equipment, groundworks to extend the site (including possible concrete pours for the base) and electrical works.

1.3.6 It is understood that NGET proposes to carry out the substation extension works for both the Heckington Fen Solar Park (Planning Inspectorate (PINS) ref. no. EN010123) development and the Proposed Development simultaneously, as one single construction programme. Accordingly, and in view of this desired single construction programme, this application includes the extent of the land required, along with the powers necessary, to enable the construction of generator bays for both the Heckington Fen Solar Park and the Proposed Development.

1.3.7 The Heckington Fen Solar Park Order 2025 provides NGET with the necessary powers to carry out the extension works specifically for the additional generator bay to enable that project's grid connection. Notwithstanding this, incorporating the aggregate powers and land required for the construction of both generator bays within this project's DCO is considered prudent to ensure that the delivery of the Proposed Development is not dependent on a third-party project coming forward.

1.3.8 This approach was discussed and agreed with NGET in pre-application consultation. The full extent of the works has been considered in the ES **(Document Ref: 6.2 ES Vol. 1)**. Further details regarding the assessment of the extension works are available in **Chapter 4 Scope and Methodology (Document Ref: 6.2 ES Vol. 1, 6.2.4)** of the ES.

Bicker Fen Substation Extension Change Request

1.3.9 A Change Request was accepted by the Examining Authority into examination in a procedural decision dated 19 December 2025 (PD-015). This relates to a change to the proposed extension to the Bicker Fen Substation following from continued engagement between the Applicant and National Grid Electricity Transmission plc. The new design of the proposed extension includes the construction of a new overhead line (OHL) tower of up to 56.2 metres (m) in height with 4 legs, each supported on a square excavation of up to 7m by 7m wide and up to 5m deep. In addition, it also includes new 400kV cabling and associated works. This henceforth forms part of the Application.

1.3.10 The new design (following the acceptance of the Change Request) of the extension to the substation includes the following associated works:

- A new OHL tower up to 56.2m in height with four legs, each leg supported on a square excavation of up to 7m by 7m wide, and up to 5m deep. The new OHL tower will be located within Work No. 5C;

- A single span of new 400kV overhead cables between the new OHL tower and one of the existing towers. Alternatively, the design allows for

underground electrical cables should these be installed as an alternative (Work No. 5C);

- Modification of either or both existing towers located within the area for Work No. 5C, including (but not limited to) new / modified cross-arms, insulators, downleads, cable sealing ends, cable gantries, foundations, arrangements / orientations of overhead lines, communications links, and other electrical infrastructure (Work No. 5C);

- Construction of one new access in the form of a new bell mouth adjoining Vicarage Drove to the south-east or south of the Substation. The new access would be located within the area of Work No. 10 and would result in a maximum of 20 linear metres of vegetation removal (see **Appendix 7.1 Indicative Access Details (Document Ref: 10.9)**; and

- Vegetation removal and infilling of the existing drainage pond adjacent the Substation.

1.3.11 All works associated with the Change fall within the Order Limits and are illustrated on Sheet 18 of the **Change Request – 2.4 Works Plan (CR-004)**. A comparison of the changes to the Work Numbers is illustrated at Appendix 1.5 of the Change Request Consultation Report (Document Ref: 10.3).

1.3.12 Details of the Change are included within **Chapter 2 Proposed Development (Document Ref:)** and **Change Request - 10.5 Environmental Statement Addendum (CR-029)**, with changes to the Work Numbers shown on the **Change Request – 2.4 Works Plan (CR-004)** and described in Schedule 1 to the **Draft DCO (Document Ref: 3.1)**. Consideration of the likely significant impacts as a result of the Change is also detailed within **Change Request - 10.5 Environmental Statement Addendum (CR-029)**.

Cable Route Corridor

1.3.13 The underground cables will be located within the Cable Route Corridor of the Proposed Development. The Cable Route Corridor is approximately 183 ha in size and has a total length of approximately 13 km. The exact location of the Cable Route within the Cable Route Corridor has not yet been determined as this is to be subject to further refinement during the detailed design stage undertaken by the Applicant and NGET. For details on the corridor refinement that has taken place to date, see **Chapter 3 Alternatives & Design Evolution (Document Ref: 6.2 ES Vol.1, 6.2.3)** and the associated **Appendix 3.1 Grid Connection Corridor Appraisal (Document Ref: 6.3 ES Vol.2, 6.3.9).**

1.3.14 Whilst the final alignment of the Cable Route is to be confirmed, the Cable Route Corridor crosses a range of existing infrastructure, such as major roads (A17) and local highways, the railway linking Heckington west to Sleaford and east to Swineshead, as well as several Public Rights of Way (PRoW), including Heck/12/1, Heck/14/1, Heck/2/4, GreatHale/3/1 and Swineshead/13/1. The Cable Route Corridor will also cross several watercourses and drainage features, such as (but not limited to) Hodge Dyke, Heckington Eau and South Forty Foot Drain, among others.

1.3.15 Standard trenching will be primarily utilised for crossings, including both trenched and trenchless methods. Specifically, trenchless techniques, such as auger boring, Horizontal Directional Drilling (HDD) or micro-tunnelling will be undertaken where environmental assessment has determined that mitigation for an environmental impact is required or design constraints conclude the need for an alternative to open trenching. It is assumed that no trenchless techniques will be deeper than 25m.

1.3.16 To join sections of the cable together, joint bays will be required. The distance between joint bays is anticipated to be between 100m and 1,000m.

1.3.17 The working area will include mobile equipment, a temporary haul road and soil stores.

1.3.18 Further detail regarding the proposed technology and equipment to be used during the construction of the underground cables can be found in Section 1.5, below.

1.3.19 It is proposed that the underground cabling that makes up the Cable Route will not be removed as part of the decommissioning phase of the Proposed Development, but will remain *in situ* and made safe, instead.

1.4 Consideration of the Grid Connection within the ES

Parameters / Worst Case Scenario

1.4.1 The Cable Route comprises a principal operational component of the Proposed Development. As the final alignment of the Cable Route is to be determined as part of the detailed design stage, the approach to the EIA has been to commit to 'Avoidance Areas' where the method adopted will be 'trenchless'. The aim of Avoidance Areas is to ensure the safety of any assets to be crossed via a trenchless method. The extent of the Avoidance Areas either side of an asset will be determined through detailed design and further investigation (where necessary) to account for engineering requirements, ground conditions and any potential angle and distance constraints.

1.4.2 Trenchless techniques have been committed to for the following crossings and trenched techniques will not be used in the avoidance areas associated with:

- Hodge Dike (Main River).
- Heckington Eau (Main River).
- South Forty Foot Drain (Main River / Local Wildlife Site (LWS)).

1.4.3 The associated launch and reception pits will be located outside of Avoidance Areas in order to minimise potential impacts in these locations.

1.4.4 For the remaining crossings, the approach to assessment was to use the 'worst-case' scenario that considers both trenched and trenchless methods.

1.4.5 For each of the Proposed Development components, parameters have been set that reflect the maximum parameters (e.g. dimensions) of the specified equipment / plant and relevant components. The design parameters for the Cable Route Corridor, as set out within Table 2.1 of **Chapter 2 Proposed Development** (**Document Ref: 6.2 ES Vol.1, 6.2.2**), are as follows:

- Underground cabling is the adopted standard and proposed option.
- Standard trenching will be primarily utilised for crossings, including such methods as open-cut and cofferdam.
- Trenchless techniques, such as auger boring, HDD or micro-tunnelling, will be undertaken where environmental assessment has determined that mitigation for an environmental impact is required or design constraints conclude the need for an alternative to open trenching.
- Length: Approximately 13km (from the Solar Array Area to the Bicker Fen National Grid Substation).
- Temporary working width during construction: 30m.
- Open trench excavation dimensions: Approximately 2m wide x 2.5m depth excavated for each cable (subject to design and ground conditions)[3].
- There will be between 1m to 1.25m cover to the top of the cable duct.
- Trenchless techniques maximum depth: Up to 25m (depth subject to design and ground conditions).

1.4.6 The 400kv circuit will not be removed as part of the decommissioning phase of the Proposed Development, but are to remain *in situ* and made safe, instead.

1.4.7 The worst-case scenario assessed in the **ES (Document Ref: 6.2, ES Vol.1)** varies depending on the discipline. Each discipline has defined the worst-case scenario for their respective topic and assessed it. The worst-case scenario includes consideration of the maximum potential effects associated with both trenched techniques and trenchless techniques.

1.5 Proposed Techniques and Equipment

1.5.1 As set out above, the underground cables will be installed through trenched techniques (e.g. cofferdam) and, where required (i.e. for crossings of existing features), trenchless methods (e.g. HDD, micro-tunnelling or auger boring).

Trenched Techniques

1.5.2 For open cut trenching, the typical process for each section would be as follows:

- Construction of the haul road for that section of cable;
- Trench excavation (or trenches where there are multiple electrical circuits): approximately 2m wide x 2.5m depth excavated for each circuit subject to design and ground conditions[3];
- Excavation of joint bays, with topsoil and subsoil being stored separately;
- Installation of earthing cable at the base of the trench (subject to detailed design);
- Installation of fibre optic duct into the trench;
- Installation of auxiliary cable;

[3] As set out within Table 2.1 of **Chapter 2 Proposed Development (Document Ref: 6.2 ES Vol.1, 6.2.2)**, these trench dimension differ from those required for the buried cabling within the Solar Array Area, which will be 'up to 1.2m in width and between 0.8m and 1.6m in depth (in limited locations, the depths can be increased to 2.5m or over to account for local anomalies' (see Chapter 2 for details).

- Sand base layer;
- Cable installation;
- Jointing of the cable sections;
- The distance between joint bays is anticipated to be between 100m and 1,000m;
- Backfill of subsoil and topsoil; and
- Compaction in layers to original surface level.

Cofferdam

1.5.3 Construction of dam and culvert or pump installation (subject to statutory body[4] approval):

- The flow of the existing watercourse will be cut off using one of a range of options, which (subject to detailed design approval) include a clay bund, sand bags, stop planks, cofferdams, caissons or specialist dams.
- The cofferdam will be installed for the duration of the trenching works in that section. This will ensure that, where flow is present in the watercourse, it is pumped around the working area and returned to the watercourse/ditch downstream of the works.
- Once the cofferdam (or equivalent) is in place, the water will be pumped around and bypass the cofferdam. Subject to the depth of the watercourse, pumping may be required before the dam is competed.
- Containment will be provided around the pump to minimise the risk of fuel leaks.
- The diversion will be started at a suitable point upstream to minimise any potential adverse effects.
- In accordance with Construction Industry Research and Information Association (CIRIA) guidance, the discharge pipe will be placed downstream a sufficient distance of the works and with protection in place to avoid the scouring of the bed or banks at the outfall. The discharge hose will be directed through a filtering medium before the pumped water is returned to the watercourse.

1.5.4 Trench excavation:

- The cable trenches will then be excavated according to engineering specifications. The excavation of trenches will be supervised by a banksman.
- Turf, topsoil and subsoil from the excavation will be segregated and stored in separate stockpiles. The stockpiles will be located away from the watercourse crossings with measures in place to ensure any runoff from the stockpiles does not enter watercourses or drainage ditches.
- In the event that the trenches need dewatering, water from the dewatering activities will be released under agreement with the Environment Agency / Black Sluice Internal Drainage Board (IDB) to a local drainage ditch, watercourse and / or spread over ground.

[4] The Environment Agency, Black Sluice Internal Drainage Board or Local Authority, as appropriate for the water feature and location of the crossing point (see **Appendix 11.3 Summary of Watercourse Crossings and Photographs (Document Ref: 6.3, ES Vol.2, 6.3.83)** of **Chapter 11 Water Resources and Flood Risk (Document Ref: 6.2, ES Vol.1, 6.2.11)** for details).

- If required, water from dewatering activities will pass through a silt interceptor (or equivalent) prior to discharging to drainage ditches or watercourses.
- Depending on soil properties, a layer of Cement Bound Sand (CBS) or subsoil will be used to line the bottom of the trench.

1.5.5 Cable installation:

- The cabling will be installed in ducts within the trench across the watercourses from adjacent joint bay positions.
- Once the cables are in place, the trench will be backfilled with CBS or subsoil (subject to soil properties). Once the backfill is levelled, protective cable tiles and warning marker tape will be put in place. Excavated subsoil and topsoil will be used to further backfill and reinstate the cable trench.

1.5.6 Reinstatement:

- Once the cable is laid and the trench reinstated, the base of the watercourse bed will be consolidated. The cofferdam (or equivalent method) will be removed in a reverse procedure to that used for construction.
- Any works required to ensure the integrity of the banks on either side of the watercourse will be undertaken. This may include geotextiles, reseeding / reinstatement of vegetation and placing of locally sourced stones.
- The water flow will be reinstated and the pumps removed.

Trenchless Techniques

1.5.7 For HDD (subject to detailed design), the typical process for each drill section would be as follows:

- Construction of the haul road to each launch and reception pit (launch being the location that the drill rig is located and reception pit being the other end);
- Excavating the launch and reception pits, with topsoil and subsoil to be stored separately;
- Manoeuvre the drill rig and associated machinery to position adjacent to the launch pits;
- Manoeuvre the duct to the reception pit;
- Directional drill from launch pit to reception pit;
- Withdraw the drill, pulling the duct back into the pit;
- Repeat for each duct required;
- Modify the launch and reception pits into joint pits;
- Pull the cable from the launch pit (side) to the reception pit (side); and
- Jointing of the cable sections.

1.5.8 As detailed above, directional drilling will require a launch pit and a reception pit to be installed either side of an asset (e.g. watercourse), with a drill depth up to 25m below ground level (subject to design and ground conditions). The maximum depth of drilling is anticipated to be under the South Forty Foot Drain and will be determined at the detailed design stage.

1.5.9 The crossing underneath the railway will also use trenchless methods, with pits on the northern and southern sides of the railway line. Precise locations of all launch and reception pits will be determined as part of the detailed design stage.

1.6 Equipment

1.6.1 The equipment to install the Cable Route is anticipated to include the following:

Open Cut Trenching:

- Three vans (4m x 2m);
- Three 44ft articulated lorry for delivery of the cable per 250m section;
- Up to five three-axle rigid 30ft flatbed for delivering the temporary trackway per 250m section;
- One telehandler anticipated to be delivered on a 44ft articulated lorry;
- One excavator (anticipated to be delivered and picked up with the telehandler);
- One 44ft articulated lorry to deliver sand; and
- Two 6m^3 lorries for delivering the concrete to create the joint bays.

Directional Drilling:

1.6.2 Launch Pits:

- One van (4m x 2m);
- One lorry with tanks for drill 13m x 2.5m;
- One drill rig 8m x 2.6m;
- One tractor and tanker 13m x 2.5m;
- One mud mixing unit 8m x 2.5m;
- One lorry with mixing tanks 1,000 gallons (2 9m x 2.5m);
- 44ft articulated lorry for delivery / pickup of the directional drill rig;
- Three 44ft articulated lorry for delivery of the cable;
- Up to five three-axle rigid 30ft flatbed for delivering the temporary trackway;
- One telehandler anticipated to be delivered on a 44ft articulated lorry;
- One excavator (anticipated to be delivered and picked up with the telehandler); and
- Two 6m^3 lorries for delivering the concrete to create the joint bays.

1.6.3 Reception Pits:

- One van (4m x 2m);
- One excavator;
- Two 6m^3 lorries for delivering the concrete to create the joint bays; and
- Equipment for cable pulling.

Cable Pulling Equipment

- Cable trailers;
- Cable winches;
- Cable rollers;
- Conduit rods;

- Cable duct equipment;
- Cable drum jacks and spindles; and
- Equipment for cable pulling.

1.7 Construction Activities

1.7.1 Construction activities are anticipated to include the following:

- The establishment of construction compounds and haul roads;
- Stripping of topsoil in sections;
- Trenching in sections;
- Appropriate storage and capping of soil;
- Appropriate construction drainage, with pumping where necessary;
- Construction new bell mouth access adjoining Vicarage Drove;
- Construction of new OHL tower;
- Modification of exiting OHL tower(s);
- Vegetation removal and infilling of existing drainage pond (located adjacent to the substation);
- Sectionalised approach of duct installation;
- Excavation and installation of jointing pits;
- Cable pulling;
- Cable joint installation;
- Implementation of crossing methodologies for watercourses, infrastructure (including roads and rail) and sensitive habitats (e.g. cofferdam or trenchless methods, such as HDD);
- Testing and commissioning; and
- Site reinstatement, habitat creation and landscaping.

1.7.2 During the construction of the Cable Route, spoil will be temporarily stored within designated areas within to the Cable Route Corridor. The spoil will be utilised to backfill the launch and reception pits, reinstate the temporary construction compounds and any temporary access roads.

1.8 Access Points and Haul Route

1.8.1 During the construction phase, temporary roadways will facilitate access / egress to all land associated with the Cable Route Corridor. It is currently anticipated that there will be four access points, which include the following:

- A17 via the Bespoke Access Road to access construction Compound 1 (approx. grid ref: TF 11204 45168).
- A17 to access construction Compound 2 (approx. grid ref: TF 16640 44049).
- Carterplot Road (south bound of the A17) to access construction Compound 3 and Compound 4 (approx. grid ref: TF 17170 44102).
- Triton Knoll Substation Access road west of A17 to access construction Compound 5 and Compound 6 (approx. grid ref: TF 22143 42296).

1.8.2 Appendix I Proposed Construction Traffic Routes within **Appendix 9.1 Transport Assessment (Document Ref: 6.3, ES Vol.2, 6.3.76)** illustrates the access points.

1.8.3 To facilitate these access points, a temporary haul road will be constructed throughout the Cable Route Corridor to enable vehicles to access the launch / reception pits and open cut trenches.

1.8.4 The majority of the haul road throughout the Cable Route Corridor is anticipated to be constructed using a hard core MOT type 1 base and other crushed stone. Where possible, aluminium trackway will be used as an alternative to minimise ground disturbance. The haul road alignment will be subject to detailed design post-consent. Its location within the Cable Route Corridor will depend on the location of the launch and reception pits and open cut trench sections.

1.8.5 The haul road throughout the Cable Route Corridor will be designed to avoid drainage ditches and watercourses based on the surface water flood map for the region. Where watercourses cannot be avoided, both a temporary culvert and an open span bridge crossing will be considered, with the type of crossing selected being determined based on site-specific factors and in consultation with the relevant local authority. For the purposes of assessment, culverted crossings have been assumed so that the worst-case scenario is assessed.

Construction Compounds

1.8.6 During construction, temporary construction compounds will be required (approximately) every 1-3km. It is anticipated that there will be six main compounds that are distributed along the cable route to facilitate construction management. Smaller temporary compounds may also be located anywhere within the final working area.

1.8.7 Access to the compounds is proposed as follows:

- Compound 1: Access from the Solar Array Area.
- Compound 2: Access from A17.
- Compound 3: Access from Carterplot Road.
- Compound 4: Access from Great Hale Drove (East).
- Compound 5: Access from A17/Triton Knoll Substation Access.
- Compound 6: Access from A17/Triton Knoll Substation Access.

1.8.8 The Triton Knoll access route to the Bicker Fen National Grid Substation is via the Triton Knoll Substation Access road, which is a private road, and a very lightly trafficked public highway (Vicarage Drove and Bicker Drove) in the immediate vicinity of the Bicker Fen National Grid Substation. Only left-in / left-out movements between the Triton Knoll access and the A17 will be permitted during the construction phase.

1.8.9 The drawings listed below support the application **Transport Assessment (Document Ref: 6.3 ES Vol.2, 6.3.76)** and show the proposed access arrangements to the cable route compounds. The compounds will facilitate access for Heavy Goods Vehicles (HGV) and the Abnormal Indivisible Loads (AIL) associated with delivery of cable drums to the compounds.

- Drawings ST19595-353 & 354 show Compound 1;
- Drawings ST19595-351 & 352 show Compound 2;
- Drawings ST19595-355 & 356 show Compound 3;
- Drawings ST19595-357 & 358 show Compound 4; and

- Drawings ST19595-359 & 360 show Compounds 5 and 6.

1.8.10 Any temporary compound will be subject to contractor design and will take into consideration topography, drainage and heritage and environmental constraints.

1.8.11 Activities at the compounds will include receipt of deliveries, unloading, provision of welfare and storage of plant and construction materials. The areas will include portacabins, welfare and power generators and will be secured using heras fencing and security cameras. Upon completion of construction, the compounds will be removed and the land reinstated.

Bicker Fen National Grid Substation Extension

1.8.12 As set out above, the extension works at the Bicker Fen National Grid Substation will be delivered by NGET. Further details on the proposed methodology for such works will be determined by NGET and the approved contractors during the detailed design stage of the works. Access to the Bicker Fen National Grid Substation from the A17 will be via the Triton Knoll Substation Access Road, Bicker Drove and Vicarage Drove.

1.8.13 As per paragraph 1.3.10, above, the accepted Change will entail the construction of a new access in the form of a bell mouth adjoining Vicarage Drove to the south-east or south of the Substation. This would be located within the area of Work No. 10 and would result in a maximum of 20 linear metres of vegetation removal (see **Appendix 7.1 Indicative Access Details (Document Ref: 10.9)**.

Construction Programme

1.8.14 All construction associated with Work No. 2, Work No. 3, and Work Nos. 4 A-B (see **Change Request – 2.4 Works Plan (CR-004)**) will be undertaken by the Applicant and appointed contractors. Engineering, Procurement and Construction (EPC) contracts will be issued to ensure the appointed contractors are experienced, proficient and can carry out the required works in compliance with the requirements of the Proposed Development and the Applicant's grid connection agreement.

1.8.15 The construction of the 400kV underground cable circuit within Work No. 4 will be undertaken within the construction phase of the Proposed Development and will be completed over an anticipated 12 to 24 month period (see **Chapter 2 Proposed Development (Document Ref: 6.2 ES Vol.1, 6.2.2)** of the ES).. The Cable Route Corridor will run from the Bicker Fen National Grid Substation to the On-site Substation (Work No. 3).

1.8.16 The Applicant intends to use a mix of trenched and trenchless techniques to construct the Cable Route. Where trenchless techniques are required, these will be scheduled individually within the overall programme envelope to ensure that the works are completed in the most efficient manner possible. This will be determined at the detailed design stage and prior to the construction phase.

1.8.17 Cable installation will follow behind excavation in the same sequence. There will be an estimated overlap of up to two weeks between sections as individual joint bays become available and completed bays are backfilled and reinstated.

1.8.18 Construction of the On-site Substation (Work No. 3) will be carried out in phases. The civil works phase will commence with the excavation and laying of the compound foundation. Concrete bases will be laid for transformers, the switch room and overhead busbar sections, as well as bunded areas and cable trenches. The civil works will be completed with the construction of the switch room and any additional structures required for the compound. Following this, the electrical cables will be laid and individual transformers will be placed and secured in their final positions. Additional electrical infrastructure will then be installed, including switching and boards within the switchroom, overhead busbars bars and earthing. Fencing, gates and security measures will then be fitted. Finally, electrical connections will be carried out and a complete testing and commissioning programme will be undertaken prior to energisation.

1.8.19 Construction of the On-site Substation (Work No. 3) will be carried out during the construction of the Solar Array Area (Work No. 1 and Work No. 2). Construction of the Solar Array Area is anticipated to last between 24 to 36 months (see **Chapter 2 Proposed Development (Document Ref: 6.2 ES Vol.1, 6.2.2)** of the ES).

1.8.20 The works to the existing Bicker Fen National Grid Substation (Work Nos. 5 A-E) are anticipated to be undertaken by NGET over an anticipated period of 60 weeks. It is currently assumed that the construction programme for the Cable Route (Work Nos. 4 A-B) and the works to the existing Bicker Fen National Grid Substation (Work Nos. 5 A-E) will be undertaken concurrently.

2. Glossary

GLOSSARY	Definition
Cable Route Corridor	The land within the Order Limits within which the Cable Route will be located.
Cable Route	The physical development, i.e. the cable itself, to be located within the Cable Route Corridor.
Jointing Pits	Underground enclosures used to house cable joints and provide access for maintenance and repairs. They are typically installed at intervals along cable routes to facilitate the connection and branching of cables.
Cofferdam	A watertight enclosure built within a body of water to allow the enclosed area to be pumped out or drained. This creates a dry working environment so that construction or repair work can be carried out safely below the waterline.
Horizontal Directional Drilling	A trenchless construction method used to install underground utilities like pipes, conduits, or cables without disturbing the ground surface.
Micro-tunnelling	A trenchless construction technique used to create small-diameter tunnels, typically ranging from 0.5 to 4 m in diameter