

ENGINEERING / CABLE ROUTE

**THE NATIONAL GRID ELECTRICITY TRANSMISSION PLC (SCOTLAND TO
ENGLAND GREEN LINK 1) COMPULSORY PURCHASE ORDER 2023**

SUMMARY OF EVIDENCE

**Faisal Karim CEng MIET
EPC Project Manager
National Grid Electricity Transmission plc**

1. QUALIFICATIONS AND EXPERIENCE

1.1 My name is Faisal Karim and I am an EPC Project Manager with National Grid Electricity Transmission Plc (NGET). I have a BEng (Hons) in Mechanical Engineering with Management from The University of Manchester. I am also a chartered engineer and member of Institute of Engineering and Technology.

1.2 I set out my roles and qualifications in section 1 of my evidence.

2. INTRODUCTION AND SCOPE OF EVIDENCE

2.1 The purpose of my evidence is to explain the engineering design and construction methodology of the Scotland to England Green Link 1 (the **Project**), specifically the cable corridor from landfall to the connection at the converter station (including access and construction compounds for the cable installation).

3. OVERVIEW OF THE PROJECT

3.1 For a full description of the Project and the English Onshore Scheme I refer to the evidence of Mr Graham Law and the Statement of Case. I set out the works required for the English Onshore Scheme at section 3 of my evidence.

4. PHYSICAL COMPONENTS AND WORKS REQUIRED TO CONSTRUCT THE CABLE INFRASTRUCTURE

4.1 This section of my evidence provides further detail on the cable components (from landfall to the converter station), including:

4.1.1 The infrastructure that will be constructed and installed;

4.1.2 The construction works and methodologies that are required for this infrastructure; and

4.1.3 The spatial extent of the land and new rights that are needed to facilitate the construction, operation and maintenance of the infrastructure comprised in the Project by reference to the Order Maps (**CD D.2**).

4.2 The cable infrastructure is permitted development.

4.3 The cable and civil contractors will be responsible for further developing the detailed design, including matters such as route alignment, micro siting and identifying joint bay locations. The procurement process which will lead to the appointment of the cable contractor is ongoing. It is currently anticipated that contracts will be awarded in January 2024.

4.4 As a consequence, the final alignment and width of the corridor within which the HVDC Cables will be installed is not yet known. This will be influenced by a number of factors.

4.5 After contract award, and prior to mobilisation, the cable contractor will initiate the detailed design and conduct pre-construction activities and surveys including but not limited construction environmental management plan, soil management plan, drainage management plan and landscape mitigation plan. The outputs of the surveys will aid in finalising the

detailed design, whilst meeting technical and physical constraints, within the route corridor. The drawing below shows an illustration of a typical construction swathe:

- 4.6 I set out at section 4 of my evidence the main components of cable infrastructure to be installed as part of the Project.

Construction Phase

Transition Joint Pit which will connect the marine HVDC cables to the onshore HDVC cables at land located to the north of Seaham Hall Beach, County Durham Plot 1-05

Physical Components

- 4.7 At the landfall, the offshore HVDC cables will connect to the onshore HVDC Cables at a buried transition joint pit, which is located to the north of Seaham Hall Beach, County Durham. The transition joint pit will be set back from the coastline, beyond the coastal erosion risk area to avoid future cable exposure, approximately 230 m inland from the mean low water mark. The offshore cables will make landfall via horizontal directional drill (HDD) under the intertidal zone and Seaham Hall beach. Like the onshore cables, the offshore cables will be installed in pre-installed ducts. The HDD entry will be from onshore.
- 4.8 My evidence details at section 4 the infrastructure comprised in the Transition Joint Pit.

Works required / construction methodology

Landfall Works

- 4.9 I set out the works and construction methodology for the Landfall Works in my evidence.

Cable Installation

- 4.10 I set out the works and construction methodology for cable installation in my evidence.

Joint Bays

- 4.11 I set out the works and construction methodology for the joint bays in my evidence.

Horizontal Directional Drilling (HDD)

- 4.12 I set out the works construction methodology required for any HDD in my evidence.

Construction Compounds

- 4.13 I set out the works and construction methodology for construction compounds in my evidence.

Rights needed

- 4.14 In this area, a bespoke Landfall Right is required to enable the construction, maintenance and operation of the landfall infrastructure.

Two underground HVDC cables approximately 10km in length (and two fibre optic cables) between the TJP and the converter station Plot 1-01 to the Converter Station at Plot 7-19

Physical Components

Works required / construction methodology

- 4.15 I set out the works and construction methodology for cable installation in my evidence.

Rights needed

- 4.16 Electricity Infrastructure Construction rights are required to enable the construction of the HVDC cables.

Temporary Compounds including temporary work areas and temporary vehicle access arrangements

Physical Components

- 4.17 I set out the approach to the temporary work areas and temporary vehicle access arrangements in my evidence.

Works required / construction methodology

- 4.18 Works will be required to create the compound and to remove it and reinstate the land following completion of construction.

Drainage Works

- 4.19 I set out the approach to drainage works that NGET will take during the construction of the Project.

Accesses

- 4.20 I set out the approach to accesses that will be required during the construction of the Project.

Rights needed

- 4.21 A package of Construction Compound Rights and Access Rights need to be acquired to enable the cable construction compounds to be created, used and removed following completion of construction. The land will then be reinstated.

Operational Phase

Landfall

- 4.22 There are no ongoing maintenance requirements for the landfall. However, non-intrusive routine visual surveys will be carried out on a yearly basis or as and when needed.

HVDC Cables

- 4.23 There are no ongoing maintenance requirements for the HVDC cables. However, non-intrusive routine visual surveys will be carried out on a yearly basis or as and when needed. HVDC Rights are needed for the operation of the HVDC cables.

5. OBJECTIONS MADE TO THE ORDER

- 5.1 NGET's Statement of Case and the evidence of Mr Chandler outlines the 17 relevant objections remaining at the time of writing, NGET's response to them and the status of negotiations.

Cable Depth

- 5.2 Several objectors have raised the proposed cable depth provided in the Heads of Terms (HoTs), and the lack of confirmation on final burial depth, as grounds for objection to the scheme. I set out in my evidence how NGET has addressed these objections and how this will be addressed through construction.

Drainage and Soils

- 5.3 As set out in more detail in sections 6 and 8 of Mr Chandler's evidence, and in section 12 of the Statement of Case (**CD F.6**), several objectors have also queried drainage arrangements and soil management as part of the construction arrangements for the cable infrastructure. I set out in my evidence how NGET has addressed these objections and how this will be addressed through construction.

Compound

- 5.4 One objector (Obj6) (**CD D.17**) has submitted a request for the construction compound to be re-sited (which relates to Plot 5-04). I set out in my evidence how NGET has considered and addressed this objection.

Landfall

- 5.5 Several objections (Obj14 to Obj17) (**CD D.25 to CD D.28**) have raised objections in relation to the siting of the Landfall and the associated temporary compound. The technical requirements for the Landfall are discussed at section 4 of this proof of evidence.
- 5.6 I set out in my evidence why it is not possible for the Landfall infrastructure and the Temporary Compound to be located anywhere other than in this plot as it is an essential compound and is intrinsically linked to the Landfall.

6. SUMMARY AND CONCLUSION

- 6.1 In my statement of evidence I have described the physical components of the Project, namely the Transition Joint Bay at landfall, the c. 10km of HVDC underground cable from landfall to the converter station and the associated temporary construction compounds, together with the works that are required to construct and/or install those physical components, with reference to the illustrative drawings and photographs embedded within it. I have also described the rights that are needed to enable those works to be undertaken safely.
- 6.2 I consider that the engineering design and construction methodology of the above elements of the Project is appropriate, feasible, and compliant with the relevant standards, codes, and guidance.
- 6.3 No more land than is necessary for the purposes of the safe construction, operation and maintenance of the Project has been included in the Order (**CD D.1 and CD D.2**).

7. DECLARATION

- 7.1 I confirm that the opinions expressed in this proof of evidence are my true and professional opinions.

Faisal Karim

5 September 2023