ENGINEERING

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

SUMMARY OF EVIDENCE

David Omer BEng CEng MICE
Lead EPC Project Manager
National Grid Electricity Transmission plc

1. QUALIFICATIONS AND EXPERIENCE

1.1 My name is David Omer and I am a Lead EPC Project Manager with National Grid Electricity Transmission Plc (NGET). I am a Chartered Engineer, Member of the Institution of Civil Engineers with a degree in Civil Engineering with Management from the University of Sunderland.

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

2. INTRODUCTION AND SCOPE OF EVIDENCE

2.1 This is a summary of my evidence. 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 Substation and overhead lines near the existing electricity substation at Hawthorn Pit.

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 SUBSTATION, HVAC CABLES AND OHL INFRASTRUCTURE

4.1 This section of my statement of evidence provides further detail on the Substation, HVAC Cables, the New Overhead Line Works and the Overhead Line Removal Works, including:

4.1 The infrastructure that will be constructed and installed;

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

4.1 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)**.

Construction Phase

New 400kV Substation to the south of the existing Hawthorn Pit substation (Plot 6-25 on Order Maps)

Physical Components

4.2 A new 400 kV Substation is required in proximity to the existing substation at Hawthorn Pit to allow connection into the electricity transmission system. The Substation is likely to have a footprint of up to 2 ha and will be no greater in height than the existing infrastructure at the existing substation at Hawthorn Pit, the tallest of which are approximately 18 m high. The Substation is consented pursuant to the Outline Planning Permission.

4.3 The Substation site is located approximately 50m south-east of the existing substation at Hawthorn Pit.

4.4 The Substation will provide termination for the HVAC Cables connecting the Converter Station.

4.5 My evidence details at section 4 the infrastructure that will be located at the Substation.

Works required / construction methodology

4.6 I set out the expected sequence of works and construction methodology for the Substation in my evidence.

Land and rights needed

4.7 As the Substation comprises integral above ground infrastructure, freehold acquisition is sought over Plot 6-25. I explain additional rights required in section 4 of my evidence.

Substation Compound

4.8 The temporary construction compound required for the construction of the Substation will be situated on Plot 6-36 with access required from Plot 6-48 and 7-20.

Works required / construction methodology

4.9 I set out the expected sequence of works and construction methodology for the Substation compound in my evidence. My evidence details the requirements of the Substation compound.

4.10 Land and rights needed

4.11 24hr access required to plot 6-36 whilst Substation Compound is in place. Construction Compound Rights will be acquired over Plot 6-36, and Temporary Access Rights over Plots 6-48 and 7-20.

Nine underground HVAC cables approximately 600m in length between the Substation and the existing electricity substation at Hawthorn Pit (Plots 6-21 and 6-26)

4.12 HVAC cables will be installed between the Substation and the existing electricity Substation at Hawthorn Pit are Plots 6-21 and 6-26.

Physical Components

4.13 There will be one 400kV circuit consisting of one cable per phase, with a total 3 of cables. This circuit will leave the Substation and connect to the existing substation.

4.14 There will be one 275kV circuit consisting of two cables per phase, with a total 6 cables. This circuit will leave the Substation and connect to the existing substation.

4.15 There will also be the installation of control, fibre optic and earthing cables between the Substation and the existing Hawthorn Pit substation.

Works required / construction methodology

4.16 I set out the expected works and construction methodology for the HVAC cables in my evidence. My evidence details the requirements of the HVAC cables.

4.17 Land and rights needed

4.18 The Order includes the acquisition of Electricity Infrastructure Construction Rights for the construction period and HVAC Rights for ongoing operation and maintenance.

Installation of new overhead electricity lines and one new pylon (Plots 6-27, 6-40, 6-47, 7-05 and 7-06)

Physical Components

4.19 One new traditional steel lattice framed Pylon is to be built to the southwest of the Substation. Each corner of the tower will have concrete foundations.

4.20 The Project also requires the installation of approximately 304m of new OHL. The OHL will operate at 400kV.

Works required / construction methodology

4.21 I set out the expected works and construction methodology for the new OHL in my evidence. My evidence details the requirements of the new OHL.

Rights needed

4.22 The Order includes the acquisition of Overhead Line Rights for the construction and maintenance of the OHL and Construction Compound Rights for construction and ongoing operation and maintenance.

Removal of existing overhead lines (including three pylons) (Plots 6-14, 6-15, 6-16, 6-17, 6-31, 6-32, 6-33, 6-37, 6-38 and 6-39)

Physical Components

4.23 There is an existing OHL route between Hawthorn Pit to Norton which is designated as 4TF.

4.24 Three pylons which form part of the existing OHL route (4TF078, 4TF079 & 4TF080) are to be removed as part of the Project.

4.25 This will include the removal of approximately 717m of OHL between pylon 4TF077 to the existing Hawthorn Pit substation.

Works required / construction methodology

4.26 I set out the expected works and construction methodology for the removal of the existing OHL in my evidence. My evidence details the requirements of the removal of the OHL.

Rights needed

4.27 The Order includes the acquisition of Overhead Line Removal Rights for the removal of the existing OHL.

4.28 NGET has been liaising with Harmony Energy (who are developing a new scheme in the vicinity of the Project) to establish the location of their assets and access of the Battery Energy Storage System (BESS) and its interface with the removal of the OHL. I am aware that contact was made with Harmony Energy in June 2022 in order to discuss their emerging proposals.

4.29 NGET and its Principal Contractor will liaise with various Stakeholders, internally and externally about maintaining access or operation of assets when the OHL cables are removed.

4.30 NGET may request that operational assets at Harmony Energy be turned off and made safe to allow removal of OHL cables and any temporary works needed to be put in place to ensure safe removal.

4.31 An operational safety zone will be needed around the pylons which are being removed.

4.32 On completion of the removal of OHL and pylons the constraints on the electricity substation and BESS will have been removed.

Operational Phase

Substation buildings and outdoor electrical equipment (together with formation of internal roads and erection of security fencing and provision of landscaping)

4.33 From 2026 the Substation will become operational. 24hr access will be required.

4.34 Access up to 5m around the perimeter of the substation will be required to inspect and maintain the repair the fence line.

Overhead Lines

4.35 Access will be required to undertake maintenance to the pylon, including painting, replacement of fittings and equipment on the tower to support the OHL.

4.36 Access to the OHL will be required to undertake maintenance and replacement at the end of the asset life.

5. OBJECTIONS MADE TO THE ORDER

5.1 An objection has been received in relation to the OHL removal works and this is addressed in my evidence.

6. SUMMARY AND CONCLUSION

6.1 In my evidence I have described the physical components of the Project, namely the substation and the overhead line works, 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/appended to 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 summary are my true and professional opinions.

David Omer

5 September 2023