4 DESCRIPTION OF THE PROJECT

4.1 INTRODUCTION

4.1.1. Paragraph 1 of Schedule 4 of the EIA Regulations states that the scheme description should include:

a) "A description of the location of the development;
b) A description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases;
c) A description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used;
d) An estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation, and quantities and types of waste produced during the construction and operation phases)."

4.1.2. These requirements are addressed in the sub-sections below.

4.2 DEVELOPMENT DESCRIPTION

SITE LOCATION

4.2.1. The Project is situated in south Wales, to the southwest of Llangnwyd, and centred at Grid Reference (E) 284175, (N) 187428. The application Site boundary covers an area of 23.5 hectares (ha). The proposed grid connection is approximately 9.5km in length, split into the following sections:

- 1.5km northern OHL;
- 5.1km UGC; and
- 2.9km southern OHL.

4.2.2. The Project falls into two local authorities - Bridgend County Borough Council (BCBC) which the Project mostly resides, and Neath Port Talbot County Borough Council (NPTCBC), where the start and end sections of the connection are located.

EXISTING SITE AND SURROUNDINGS

4.2.3. The Project is located within South Wales near the town of Maesteg, as described in **Section 1.2** and shown in **Figure 4-1.**

4.2.4. To the west of the Project, the surrounding area consists mainly of fields and woodland. To the east of the route there are residential properties and commercial facilities including Maesteg Fire Station, Nantyffyllon RFC, Tesco Superstore, Aldi, various schools and farms. Due to the majority of these being within the area of UGC section of the route, the visibility of the OHL will be limited for most of these receptors. Maesteg Golf Club is within close proximity to the UGC section of the route at the B4282. There are also a number of main roads within the surrounding area of the Project including the A4063 and the B4282.

4.2.5. The Project comprises of the infrastructure listed in **Table 4.1,** and shown in **Appendix 4C** (OHL poles, cable trenches and joint bays)**,** and **Figure 4.1** (temporary construction compound).

Table 4-1 - Key Features of the Project

Component	Description
Cable	Length: 27.5km Dimensions: 630mm diameter Description: Cu Cable (not oil filled)
Overhead Line Poles	Quantity: 72 wooden poles (at 36 locations) Height: • 10 poles at 11m • 42 poles at 12m • 10 poles at 13m • 4 poles at 14m • 6 poles at 15m
Cable Trenches	Length: 5.1km Dimensions: ~1.5m depth, and between 600mm to 1.5m wide.
Joint Bay Boxes	Quantity: 22 Dimensions: ~2m depth, and 5m x 3m
Temporary Construction Compound	Approximately centred on (E) 283826 (N) 193954 Dimensions: ~20m by 20m Maximum Compound Footprint: ~0.04ha
Watercourse Crossings	Number: One temporary dam

Overhead Line Poles

4.2.6. An OHL would be carried on wooden H-poles, consisting of two single wooden poles (most likely Scots Pine) joined by a crossarm with bracing. At the termination points only, two sets of H-poles will be located side-by-side. Terminal ends may be located at the start and end of the underground section of the connection.

4.2.7. Whilst the intention is for the route to be as straight as possible, there will be some deviation to avoid environmental features, such as trees. At points of deviation, angle poles will be used; these are likely to be H-pole structures. In all locations where the line deviates, there will be the requirement to provide cable stays to the poles. The poles are not typically stayed, and do not require concrete foundations. However, pre-cast kicking blocks will be installed below ground, to provide the poles with adequate structural support.

4.2.8. The height of the wooden poles will mostly be 12m above ground level, with a maximum height not exceeding 15m above ground (see **Table 4-1**). An assumed minimum clearance to trees from the conductors is 4m from the nearest part of the tree.

4.2.9. The poles are designed to carry the conductor wires. It is currently proposed to install a single circuit made up of one conductor per phase. Telemetry and monitoring capabilities, such as fault detection, will be provided by a microwave link. The poles will carry the cross arms onto which the insulators are attached. Poplar conductor wire will be used for all the OHL sections. Span length between poles will be between 90m to 130m. The actual span between poles will be influenced by topography and the surrounding environment.

4.2.10. The construction and maintenance of OHL will be in accordance with NGED (2024) Policy Document: OH6/4[3].

Electric and Magnetic Fields (EMFs)

4.2.11. Electric and Magnetic Fields (EMFs) arise from generation, transmission, distribution and use of electricity and will occur around power lines. All overhead power lines produce EMFs. These tend to be highest directly under a line and decrease to the sides at increasing distance. Although putting cables underground eliminates the electric field, they still produce magnetic fields, which are highest directly above the cable.

4.2.12. The Project has a relatively low voltage of 66kV, and has been designed and phased so that there will be no significant effects related to EMFs.

Cable Trenches

4.2.13. Underground cabling work will involve placing cables within ducts; the ducts themselves will be within a trench. An open cut method will be used, where the duct is laid directly into a trench of up to 1.5m depth (see **Appendix 4C**). The ducts are placed at the bottom of the trench, and the excavation around the cables is then filled with sand before the remaining excavation is backfilled with the excavated material. Cables are jointed at approximately 250m intervals. The joint boxes are generally 1-2m deep and 5m x 3m. Once the cable ducts are laid, the cable will then be pulled through.

4.2.14. The creation of trenches, laying of cable ducts and pulling of cable will be in accordance with NGED (2021) Standard Technique: CA6A/7[4].

Temporary Construction Compound

4.2.15. One temporary construction compound to be located within the northern section of the Site and will comprise an area measuring 20m x 20m. It will be enclosed by appropriate security fencing and contain a single storey welfare unit powered by an on-site generator. The ground surface will mostly

[3] NGED (2024) Policy Document: OH6/4, Construction, Maintenance and Replacement of Low Voltage Overhead Services. Available at: https://www.nationalgrid.co.uk/documents/tech-info/overhead-construction
[4] NGED (2021) Standard Technique: CA6A/7, Relating to the Installation of Underground Cables. Available at: https://www.nationalgrid.co.uk/documents/tech-info/underground-cable-construction/66000-volt

be covered by geogrid matting (or similar). The location of the temporary construction compound is shown on **Figure 4-1**.

4.2.16. Poles and cables will be stored at the temporary construction compound. Poles will be transported to the works area, and laydown within the Site boundary on the day of installation.

4.2.17. A portable welfare facility will temporarily be located along the route as appropriate (i.e. where works are being completed, and when the temporary construction compound is not within a practical distance).

Watercourse crossings

4.2.18. The Nant Sychbant crossing will be undertaken through installing a temporary dam and laying the cable through an open cut method. Standard best-practice measures will be proposed in the CEMP to manage spillages and the generation of additional sediment being generated along the riverbed.

Micro-siting

4.2.19. Micro-siting refers to the precise locating of infrastructure, in this instance OHL poles. The Project has a micro siting allowance of 10m.

4.2.20. Any such repositioning will be limited so as not to involve encroachment into any environmentally or technically constrained areas. In addition, micro-siting provides scope to mitigate potential geo-environmental and geotechnical constraints. The following can potentially be achieved through carefully designed micro-siting:

- Micro-siting of pole locations and underground cable route and use of alternative access routes and lay down areas to avoid/minimise direct disturbance to archaeological sensitive locations and adverse changes to setting of historic assets;
- Temporary fencing off historic assets within the vicinity of the Project to avoid impacts during construction activities; and
- Minimising vegetation loss where this would adversely affect the setting of historic assets.

4.2.21. Where environmental and technical constraints may fall within a micro-siting area, further encroachment on such areas can be restricted in any condition attached to the grant of consent (e.g., micro-siting may be restricted in a particular direction if this encroaches upon a buffer around a water course).

Site access

4.2.22. Access to the Site will be primarily provided via the existing access track for the consented Foel Trawsnant Wind Farm, travelling northwards from the B4282 road through the forestry and connecting to the proposed construction compound for the Project.

4.2.23. No new access tracks will be constructed. Access will be from the existing highway network, as well as the forestry track which is part of the consented Foel Trawsnant Wind Farm. The minimal number of vehicles required for erection of the poles will travel within the Site boundary, and use geo-grid matting or similar where appropriate.

4.2.24. General access along the Site for the OHL sections will be provided via existing farmers gates. The minimal number of vehicles required for erection of the poles will travel within the Site boundary, and use geo-grid matting or similar where appropriate (i.e. poor weather conditions creating soft ground). The underground section of the Project will be accessed via the existing road network.

General Construction Traffic

4.2.25. There will be no abnormal loads required for the construction of the Project. General construction traffic will include flatbed trucks and Heavy Goods Vehicles (HGVs) delivering plant and equipment (e.g. overhead line poles and cable) as well as vans and cars associated with construction staff movement. Most construction traffic will travel along the B4282 turning off onto the existing forestry track towards the proposed construction compound. The access routes for vehicles will vary depending on the origin of the contractors and materials.

Temporary and Permanent Land Take

4.2.26. The indicative temporary and permanent land take is shown in **Table 4-3** (where, “temporary” refers to the area required during construction works, whilst “permanent” refers only to the Project footprint post-construction).

Table 4-2 - Indicative Temporary and Permanent Land Take Areas

Feature	Indicative Temporary Land Take Areas (ha)	Indicative Permanent Land Take Areas (ha)
Abercerdin Wood	0.53	N/A
Caerau West	1.35	N/A
Cwm Cerdin	0.50	N/A
Gilfach Uchaf	1.33	N/A
Nant-y-Castell Grasslands	0.15	N/A
Hedgerows	0.10	N/A
Rivers	0.16	N/A
Tree Removal	N/A	0.01

Sustainable Resource Use and Waste Management

4.2.27. No stone or concrete is required for the Project, as no new access tracks are being built, and none is required for the construction of the OHL and UGC works.

4.2.28. Where soils would be excavated, they would be stored on site in accordance with the Construction Environmental Management Plan (CEMP) (see **Appendix 4A**) which will be updated prior to construction. Excavated materials will then be used to re-fill trenches. Any surplus excavated material, which is expected to be minimal, would be removed from site in HGVs and taken to an appropriate waste recycling or disposal facility.

4.2.29. The Project will only result in a very small permanent land take, which is unlikely to result in significant environmental effects in relation to land.

4.2.30. With regards water, the key environmental effects would be the use of water during the construction and operational phases, the potential increase in flood risk and the disturbance of surface and groundwater as a result of construction activities. With regards to construction works, the water resource would be managed in accordance with the CEMP. With regards to surface and groundwater, any effects are considered in **Chapter 10: Water Resources and Flood Risk** of this draft EIA Report.

4.2.31. The potential effects of the Project on biodiversity are considered in **Chapter 8: Ecology** of this draft EIA Report, within which appropriate environmental measures are set out in order to minimise the potential damage to habitats and species during the construction, operation and decommissioning.

Proposed Programme and Hours of Working

4.2.32. It is anticipated that that works will begin in January 2028 and take 9 months to complete. The works required and the order of their completion are listed as follows:

- Six months for trenching and laying the ducts;
- One month for cable pull through and jointing works; and
- Two months for erecting overhead line poles.

4.2.33. The works have will mainly take place between 07:00 to 19:00 hours on weekdays and 07:00 to 13:00 on Saturdays. In exceptions, there may be a requirement for a 7-day work week. This would be agreed with the local council as appropriate.

4.2.34. NGED as the developers, will agree either a road closure with the local highways' authority and/or implement appropriate traffic management measures for the works associated with the highways.

4.3 ENVIRONMENTAL MANAGEMENT

CONSTRUCTION

4.3.1. The contract between NGED and the civil engineers involved in construction of the Project will specify the measures to be taken to avoid or reduce the potential environmental effects arising from the construction process. These measures will consist of three main types:

- Firstly, conditions to be adhered to under development consent;
- Secondly, the requirements of Natural Resources Wales (NRW); and
- Thirdly, any other relevant environmental measures identified in this ES.

4.3.2. A copy of any conditions associated with the planning consent will be incorporated into the contract with the company constructing proposed grid connection, and the company will be required to adhere to these. The developer should retain the services of specialist advisers on e.g. Ecological Clerk of Works (ECoW) for Ecology, to be called on as required to advise on specific issues. More detailed information on the role of such specialist advisors during construction is provided in the relevant technical sections, where appropriate.

Construction Environmental Management Plan

4.3.3. A CEMP provides an overview of the standard construction management measures that would be implemented as part of the Project (**Appendix 4A**). 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.

4.3.4. The CEMP will be produced, and subsequently updated, prior to the commencement of works, and its objectives will be to:

- Provide a mechanism for delivering many of the embedded environmental measures described in the ES;
- Ensure compliance with legislation through setting out the need for consultation with 'consultation bodies', and by obtaining necessary consents and licences from relevant bodies;
- Provide a framework for monitoring and compliance auditing and inspection to ensure the environmental measures included in the scheme are being implemented;
- Ensure environmental best practices are adopted throughout the construction stage;
- Provide a framework for dealing with adverse effects as they occur; and
- Ensure a prompt response should unacceptable adverse effects be identified during the works.

4.3.5. A Noise and Vibration Management Plan and Land Quality Phase 1 Desk Study will be appended as part of the CEMP (**Annex A** and **Annex B** respectively), presenting results of survey efforts and best practice measures to avoid any significant effects.

Coal Mining Risk Assessment

4.3.6. Given the surrounding environment and historical land use of south Wales, a Coal Mining Risk Assessment (CMRA) has been produced (**Appendix 4B**). This outlines any nearby historic coal mining shafts and/ or entries. Measures to reduce risk during construction and operation are considered within the CMRA.

Dust and Air Quality

4.3.7. Given the adoption of the environmental measures which are outlined below, it is not expected that the change in air quality will be significant. Air quality affects arising from exhaust emissions from construction plant would be so low as to be not significant. Neither dust nuisance or air quality be assessed as part of the EIA. This was confirmed in the scoping process.

4.3.8. The main standard measures for managing dust during construction are:

- Adequate dust suppression facilities will be used on-site. If required, this will include the provision of on-site water bowsers with sufficient capacity and range to dampen down all areas that may lead to dust escape;
- Any on-site storage of aggregate or fine materials prone to dust generation will be managed using enclosures and screening, if required, so that dust escape from the Development Site is avoided. Sheeting can also be provided for the finer materials that are prone to 'wind whipping';
- Where required, HGVs entering and exiting the Site will be fitted with adequate sheeting to totally cover any load carried that has the potential to be 'wind whipped' from the vehicle;

- Vehicles used on-site will be regularly inspected and maintained, to minimise vehicle emissions and the risk of leaking diesel or hydraulic fluids;
- Good housekeeping or ‘clean up’ arrangements will be employed so that the Site is kept as clean as possible. There will be regular inspections of the working areas and immediate surrounding areas to ensure that any dust accumulation, litter or spillages are removed/cleaned up as soon as possible; and
- A site liaison person will investigate and take appropriate action where complaints or queries about construction arise.

OPERATION

4.3.9. The Project will integrate the consented Foel Trawsnant Wind Farm with the current DNO via a 66kV connection. It will remain active for the duration of the wind farm’s operation, assumed to be up to 30 years. However, it is noted the duration of the proposed overhead line and underground cable could extend beyond 30 years, dependant on potential future uses.

4.3.10. In the normal course of operation there is no requirement to inspect UGCs, although they are regularly tested at the joint bays.

4.3.11. During the operation phase for OHL, duties are limited to resilience tree cutting to retain clearance distances and regular inspection. Pole inspections will be carried out in line with company policies and procedures.

4.3.12. Conductors and insulators have a design life of approximately 40 years. Faults on an OHL are infrequent. When they do occur, the vehicles used are likely to be similar to those needed for the construction of the line. Fault repair is quick and relatively straightforward.

DECOMMISSIONING

4.3.13. Following the operational phase, the connection (underground and overground) will be left in situ as it has the potential to become integrated into the DNOs wider distribution network. This would also avoid further disruption to the surrounding environment.