



RWE Renewables UK Swindon Ltd.

Pen March Wind Farm: High Level Grid Connection Assessment

Technical Appendix 3.2

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RSK GENERAL NOTES

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Author	Victoria Robinson	Technical reviewer	Daniel Patterson
Signature	-	Signature	-
Date:	July 2023	Date:	July 2023
Project manager	Victoria Robinson		
Signature	-		-
Date:	July 2023		

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RWE Renewables UK Swindon Ltd.

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1 GRID CONNECTION ASSESSMENT

1.1 Introduction

Background

- 1.1.1 The Applicant has received a grid connection offer for the Proposed Scheme from the district network operator, Western Power Distribution (now part of National Grid), including an indicative grid connection method. The point of connection is located at the Dowlais Bulk Supply Point (BSP) Substation, located approximately 500 m south-west of the Site. Please refer to **Figure 3.1 (Volume 3)**.
- 1.1.2 This report provides a high-level environmental assessment of the proposed grid connection required for the Proposed Scheme.

Proposed Grid Connection

- 1.1.3 The grid connection will be constructed by National Grid (formerly Western Power Distribution) and will be subject to a separate planning application and common land application, if appropriate. In line with the grid offer received, it has been assumed that the grid connection will require a 33 kilo-Volt (kV) cable, approximately 1.5 km in length, running underground from the point of connection to the Electrical Substation shown on **Figure 3.1 (Volume 3)**.
- 1.1.4 It is anticipated that open-cut trenching methods would be used for a majority of the cable routing. A narrow trench will be prepared before bedding material is placed along the base of the trench with the cable laid above. The cables are then protected by a layer of protective plastic covers and backfilled with subsoil and topsoil.
- 1.1.5 Any additional electrical infrastructure would be contained within the electrical compound or the substation located at the connection point.
- 1.1.6 The area above the cable route would be restored as far as possible to its original condition.

1.2 Potential Impacts

Introduction

- 1.2.1 A high-level assessment of the likely environmental impacts of the proposed grid connection route has been undertaken for the following topics:
 - Landscape and Visual;
 - Hydrology, Geology, Hydrogeology and Peat;
 - Ecology;
 - Ornithology;
 - Noise and Vibration;
 - Access Traffic and Transport; and
 - Cultural Heritage.

Landscape & Visual

- 1.2.2 The proposed grid connection is expected to be underground therefore no operational landscape and visual impacts are anticipated.
- 1.2.3 During construction, ground disturbance on-site would be restricted as far as practicable and any soil materials excavated would be re-used on site.

Hydrology, Geology, Hydrogeology and Peat

- 1.2.4 Available peat depth information indicates that the majority of the route is through areas without peat deposits of any depth. A short section immediately south-west of the Proposed Scheme electrical compound is indicated to have peat, although this appears likely to be a relatively confined pocket.
- 1.2.5 Careful design of the grid connection route would enable avoidance of all, or most, areas of peat.
- 1.2.6 Ground conditions are likely to be challenging in some areas, with bedrock at or very near ground surface. Trenching through this material is likely to require rock removal. The cable is anticipated to require a protective sand bedding layer and, as a result, it may provide a preferential pathway for shallow groundwater flow in this part of the Site. This could be mitigated by use of clay bunds across the trench for every 0.5 m change in elevation along the trench, as discussed for the cables within the Proposed Scheme.
- 1.2.7 Required crossings of watercourses and drainage channels are anticipated to be achieved by use of isolated open-cut trenching, with cut-off dams to control water flow. Overpumping would be used as necessary to manage water within the channels.
- 1.2.8 Other operations, including management of excavated soil and other material, water management, and pollutant handling are anticipated to be subject to the same controls as for these operations as part of the Proposed Scheme construction works.
- 1.2.9 Impacts associated with hydrology, geology, hydrogeology and peat can be reduced to acceptable levels with the use of appropriate design, best practice construction methods and implementation of the mitigation to manage loose sediment, surface water, groundwater and potentially polluting materials set out above.

Ecology

- 1.2.10 The grid connection would require additional disturbance of SINC designated habitats and, whilst the exact working area is yet to be confirmed, it is assumed the most likely route would be from the electrical compound location in a broadly south-western direction. This would avoid any further effects upon Pen March and Traed y Milwyr, Llechryd SINC but would be likely to require disturbance and temporary loss of habitats within Merthyr Common North SINC.
- 1.2.11 Any habitat loss to enable grid connection is assumed to be temporary, reversible and guided by an Ecological Clerk of Works (ECoW) such that impacts, such as disturbance of more sensitive / higher value vegetation types, could be reduced to acceptable levels.

- 1.2.12 Effects on protected or notable species are possible during the construction of the grid connection, particularly if it takes place during the months in which species are most vulnerable, such as during the reptile active or hibernating season, and mammal breeding season. No protected mammal species were recorded in the vicinity of the likely grid connection route during the surveys undertaken in 2019 and 2020, although habitats are potentially suitable for common lizard and adder.
- 1.2.13 Provided that standard good practice mitigation measures, similar to those proposed for the Proposed Scheme (please refer to **Chapter 7 (Volume 2)** of the Environmental Statement (ES) for further information), are implemented to avoid killing and injuring protected species, no unacceptable impacts on protected or notable species are anticipated as part of the construction of the grid connection.
- 1.2.14 It is assumed that the grid connection will be underground and therefore no impacts are likely during the operational period.
- 1.2.15 It is assumed that cables would be left in the ground on decommissioning of the wind farm and no impacts on habitats or faunal species are therefore anticipated during decommissioning.

Ornithology

- 1.2.16 Impacts on birds are possible during the construction of the grid connection, particularly if it takes place during the breeding season. However, the ornithological survey area covered the likely grid connection route and no breeding waders and/or breeding raptors were recorded in the vicinity of the likely grid connection route during the surveys undertaken in 2019 and 2020.
- 1.2.17 Provided that standard good practice measures, similar to those proposed for the Proposed Scheme (please refer to **Chapter 8 (Volume 2)** of the ES for further information), are implemented to avoid damage to nests, no unacceptable impacts are likely during construction.
- 1.2.18 It is assumed that the grid connection will be underground and therefore no impacts on bird species are likely during the operational period.
- 1.2.19 It is assumed that cables would be left in the ground on decommissioning of the wind farm and therefore no impacts on bird species are therefore anticipated during decommissioning.

Noise and Vibration

- 1.2.20 The potential impacts from the proposed grid connection could include:
- Noise and vibration associated with on-site construction activities; and
 - Noise during operation of the grid connection.
- 1.2.21 The construction programme for the grid connection is not suitably developed to provide detailed phasing and equipment data. Therefore, associated noise impacts will be controlled through general best practice construction guidance, please refer to **Chapter 9 (Volume 2)** of the ES for further information.
- 1.2.22 With regards to operational noise, the grid connection will be underground, and therefore there will be no impact at receptor locations.

Traffic, Access and Transport

- 5.0.1. The access point for construction traffic for the proposed grid connection is unknown however construction traffic is anticipated to be much less than for the Proposed Scheme. In addition, no abnormal loads are expected as part of the grid connection construction phase.
- 5.0.2. If required, a Construction Traffic Management Plan (CTMP) could be agreed with Merthyr Tydfil County Borough Council in advance of any construction works.
- 1.2.23 During operation, only maintenance vehicles will be required with limited visits anticipated to the electrical compound and point of connection.

Heritage

- 1.2.24 The routing of the proposed grid connection will need to consider any potential archaeological remains associated with Pitwellt Pond and the prehistoric enclosure that is due to be scheduled (GM623). Avoidance of known and unknown archaeological assets through the routing design process, using effective survey methods, will ensure any construction impacts are limited.
- 1.2.25 The proposed grid connection is underground therefore no operational impacts on the setting of designated heritage assets would be expected.

1.3 Conclusion

- 1.3.1 A high-level assessment of the likely environmental impacts of the proposed grid connection route for the Proposed Scheme has been undertaken. Potential impacts could be reduced to acceptable levels with careful routing of the grid connection, the use of appropriate design, best practice construction methods and implementation of mitigation.