

Appendix 3.1: Potential Grid Connection

Introduction

The Consenting Context

- 10.1 Although a grid connection is an integral, requisite part of any wind farm project, it typically follows a completely separate consenting route. Depending upon its scale and significance, consent for the grid connection is sought by the Distribution Network Operator (DNO), who in this case is Western Power Distribution (WPD). WPD will submit a separate application for the grid connection under Section 38 of the Electricity Act 1989.
- 10.2 Paragraph 2.12 of Technical Advice Note 8: Planning for Renewable Energy confirms that *'Responsibility for the routing of electrical cabling onwards from the sub-station to the nearest suitable point of the electricity distribution network is the responsibility of the District Network Operator (DNO)'* and *'Whilst the routing of such lines by the DNO is usually dealt with separate to the planning application for the wind farm, developers are encouraged to provide details of likely routes'*. This is the purpose of this Appendix.

Potential Grid Connection

- 10.3 RES has accepted a grid connection offer from WPD for the proposed wind farm. The offer contains some outline information regarding the grid connection and provides a preliminary assessment of the grid connection route.
- 10.4 It is proposed that the wind farm be connected to WPD's Pyle BSP sub-station by approximately 19km of new 66kV wooden H-Pole overhead line and 2km of underground cable. WPD have indicated that the new 66kV overhead line would generally follow the route of the existing overhead line connection to Llynfi Afan Wind farm, this is shown in Figure 3.14 in Volume 3.
- 10.5 Where the grid connection cable needs to be installed underground it will originate at WPD's on-site terminal pole and terminate at their 66kV cable sealing end structure located within their compound at the wind farm's on-site sub-station.
- 10.6 To install the underground cable a trench is dug, bedding material, normally sand, is placed along the trench-base, the cable laid and then covered with more sand. The cables are then protected by a layer of protective plastic covers and then

backfilled with subsoil and original topsoil and turfs. The cable trench arrangement is shown on the Cable Trench Profile drawing in Figure 3.12 in Volume 3.

- 10.7 Directional drilling may be used where the cable needs to cross under any watercourses.
- 10.8 The construction activities would include the following:
- Clearance of land (including vegetation strip as appropriate)
 - Installation of wooden poles (Overhead Line)
 - Installation of overhead line conductor
 - Digging of trenches
 - Backfilling of trenches and remediation
 - Directional drilling
- 10.11 The land would be reinstated as near as reasonably practicable to its original condition.

Potential Impacts

- 10.9 An assessment of the likely significant environmental impacts of the proposed grid connection route has been undertaken under the following headings:
- Landscape and Visual
 - Ecology
 - Cultural Heritage

Landscape and Visual

- 10.10 The Proposed Development will be connected to the electricity network via a 66kV wood-pole overhead line to Pyle Substation near Kenfig Hill. The grid connection will be subject to detail design and a separate planning application. A preliminary route has been devised that would follow the existing 66kV wood pole connection for Llynfi Afan Wind Farm. This route runs through forest to the west of the Garw valley, then descends south to the Llynfi valley. It then runs to the west from the A4063 up to a ridge, and turns sharply to the south, descending to the substation.
- 10.11 The grid connection will be subject to a separate EIA, and effects are not assessed in detail here. However, it is likely that the new overhead line will give rise to some landscape and visual effects due to the introduction of new structures and linear features. The upland forested areas are more likely to be able to accommodate the overhead line without significant effects, than the smaller scale valleys. Cumulative effects may occur due to the two overhead lines being in parallel. Within the Upper Ogmore Wind Farm site, the grid connection will be buried, reducing the potential for cumulative effects with the wind farm.

Ecology

- 10.12 The grid connection cable will be installed within the same trenches as the internal Wind Farm cables (located alongside access tracks). The cable route will continue west from the track at turbine T1 to the north-western corner of the site. It will then continue south along the western boundary of the site as an overhead line supported by wooden poles spaced at approximately 35 m intervals (as shown in Figure 3.14).
- 10.13 Approximately 0.21 ha of acid and marshy grassland mosaic will be lost as a result of trenching works during installation of the grid connection cable from the track at turbine T1 to the western boundary of the site. This loss will be temporary in nature, and it is anticipated that the disturbed area will begin re-colonise within the first growing season.
- 10.14 The grid connection cable will be supported by wooden poles as an overhead line along the western boundary of the site (a length of approximately 0.4 km within the site).
- 10.15 Additional habitat loss resulting from installation of the overhead section will be limited to the footprint of the wooden poles (spaced at approximately 35 m intervals) and will be negligible in relation to the total extent of the acid and marshy grassland mosaic habitat within the site.
- 10.16 Given that a small proportion of this modified and grazed habitat will be affected, impacts are likely to be **adverse**, but significant at the level of the **Site** only.

Cultural Heritage

- 10.17 This assessment has considered, at a high level, the preliminary route which is subject to change by the DNO when they submit their application.
- 10.18 In line with the policies of the local planning authority and national government guidance as set out in Planning Policy Wales (PPW), an archaeological and heritage desk-based feasibility assessment has been undertaken to clarify the archaeological potential of the proposed route along with an assessment of off-site historic assets which may experience a loss of significance due to a change to their setting resulting from the proposed route.
- 10.19 This archaeological and heritage assessment concludes that the line of the proposed route does not contain any world heritage sites, scheduled monuments or registered parks and gardens where there would be a presumption in favour of their physical preservation *in situ* and against development.

- 10.20 Potential impacts upon the designated historic assets in the proposed route's wider zone of influence have been considered, and this assessment concludes that the implementation of the proposed route will result in no adverse impact to and therefore no loss of significance to any designated historic assets.
- 10.21 Based on the information within the HER the proposed route has been shown to have a low potential for archaeological remains of very high, high or medium value from all periods. It is also considered that with sensitive design those areas of known archaeological interest could be avoided.
- 10.22 On the basis of available evidence, it is concluded that the proposed grid connection accords with current legislation, the planning policies within PPW and associated documentation and the policies of the adopted Bridgend Local Development Plan.