Mynydd Llanhilleth Wind Farm

Environmental Statement

Appendix 14C JRC Assessment

August 2024

Joint Radio Company:
Making the spectrum and Technology work for your business

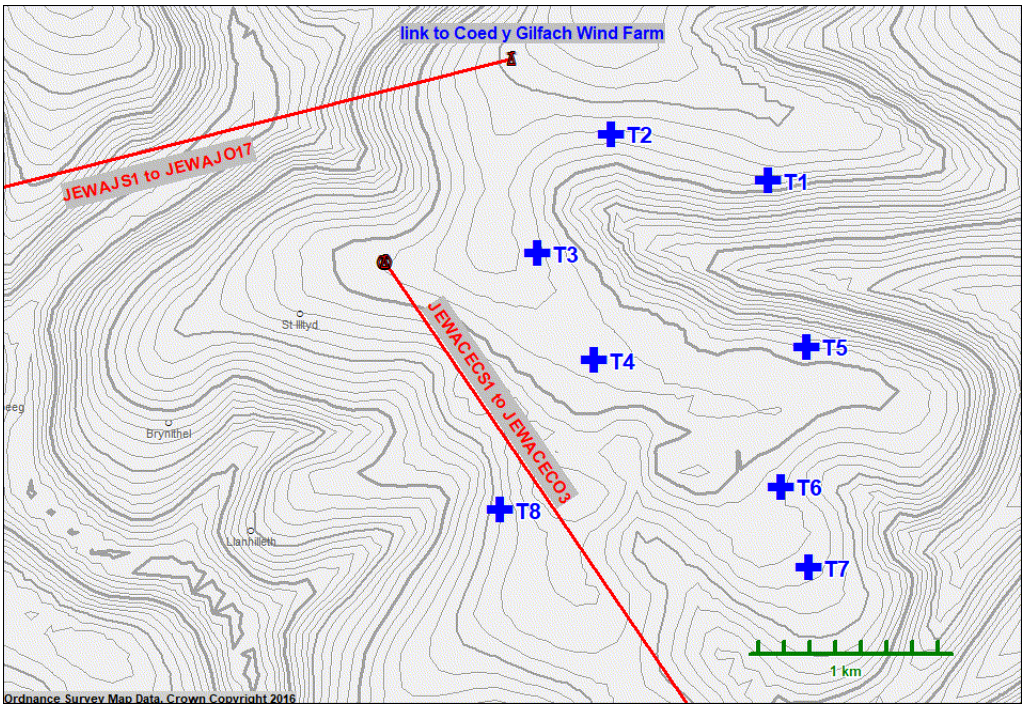
WF Coordination - Further Analysis Engineering Notes

WF / Turbine under consideration:	**Mynydd Llanhilleth Wind Farm**		
Turbine locations (September 2022):	**T1 324630, 202630** **T2 323855, 202860** **T3 323485, 202270** **T4 323770, 201740** **T5 324821, 201806** **T6 324695, 201115** **T7 324830, 200715** **T8 323300, 201000**	*Micro-siting value:*	**50m**
Turbine size (Hub Height / Blade Radius)	**Hub 105 m, Blade Length 75 m**		
Assigned Engineer:	**A J Barker**		
Brief description of proposal:			

This analysis is for the proposal as presented in September 2022. The proposal is to construct 8 wind turbines, adjacent to UHF scanning telemetry links, operated by National Grid Telecoms (previously Western Power Distribution).
Whilst it was initially thought that this proposal might impact upon the operation of two UHF links, following detailed analysis, particularly considering Turbine 8, this note concludes that the proposal can be considered as being just acceptable.

Comments from Original Analysis:

The turbine locations in relation to the UHF scanning telemetry links of concern, are shown below:

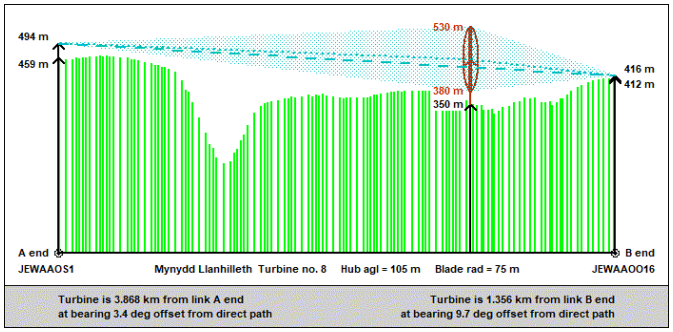


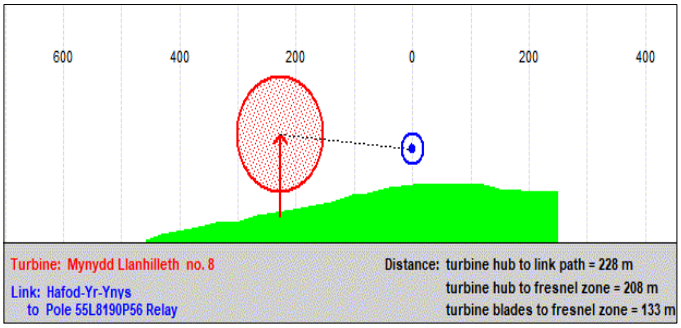
A 'buffer zone' is applied, to allow for location uncertainty of the link ends and ellipsoid conversion anomalies, initially 50 m. In addition, an allowance is also added for turbine micro-siting, initially also 50 m.

Diffraction clearance, initially in two dimensions, is calculated based on the sum of the 60 % Fresnel zone, buffer, micro-site allowance and blade length. With a sum of buffer and micro-site allowance of 100 m, Turbines 8, the nearest turbine to link JEWACECO3, would have a clearance distance of 33 m.

WF Coordination - Further Analysis Engineering Notes

The Signal Paths and Cross-Section diagrams for Turbine 3 and link in the nominal positions are shown:



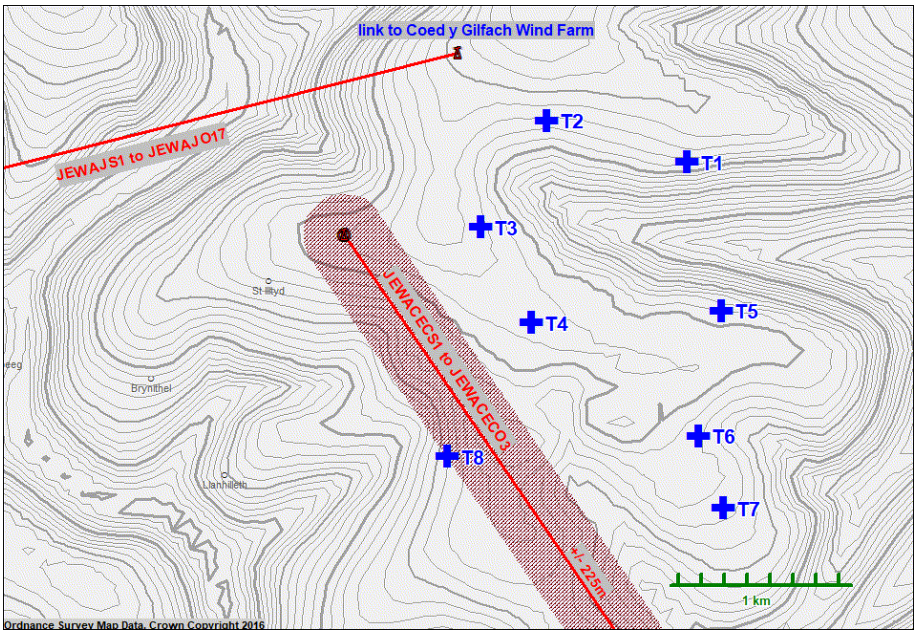


The signal path diagram shows the signal reflection criteria, where unacceptable interference could occur when the signal from the secondary path via the Wind Turbine is large compared with the direct signal path.

In this instance, when taking into account terrain and clutter, the direct signal path is not significantly more obstructed than the signal path via Turbine 8, and despite the proximity of the turbine to the link, the ratio of wanted to potentially reflected signal is just acceptable.

Details of Further engineering analysis:

Given that turbine T8 only just passes the reflection criteria, an exclusion region of +/- 225m has been defined around link JEWACECO3. The link path to the Coed y Gilfach Wind Farm is unaffected but shown for reference.



Engineer's Comments / Conclusion:

It is considered that, subject to turbines not entering the exclusion zone, the proposal could be accepted. The final decision on acceptance, would be with the link operators, National Grid Telecoms.

Notes and Caveats:

- ***This Analysis only applies to the turbine/s and link/s as detailed above.***
- ***This Analysis only applies at the date of the Analysis as shown in the Footer below.***
- **Any changes in Micro-siting except as detailed above will invalidate the conclusions of this analysis.**