voltalia

CRUACH CLENAMACRIE WIND FARM

CHAPTER 16:
TELECOMMUNICATIONS AND INFRASTRUCTURE

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RESPONSIBILITIES

	DATE	NAME	FUNCTION
Elaboration	20/06/2024	Malcolm Spaven	Author
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ABBREVIATIONS

ABBREVIATION	DESCRIPTION
BT	British Telecommunications
EIA	Environmental Impact Assessment
JRC	Joint Radio Company
km	Kilometres
m	metres
RBL	Re-Broadcast Link
UHF	Ultra High Frequency

16 TELECOMMUNICATIONS AND INFRASTRUCTURE

16.1 Introduction

This chapter considers the likely significant effects on telecommunications associated with the construction, operation, and decommissioning of the Proposed Development. The specific objectives of the chapter are to:

- Describe the current baseline;
- Describe the assessment methodology and significance criteria used in completing the effect assessment;
- Describe the potential effects, including direct, indirect and cumulative effects;
- Describe the mitigation measures proposed to address the likely significant effects; and
- Assess the residual effects remaining following the implementation of mitigation measures.

The assessment has been carried out by Malcolm Spaven of Gladhouse Planning Ltd (trading as Aviatica). Aviatica is a specialist consultancy with over 20 years of experience assessing the effects of wind energy developments on telecommunications. This has included the preparation of more than one hundred Environmental Impact Assessment (EIA) chapters for projects across the UK.

16.2 Legislation, Policy and Guidance

The following legislation, policy and guidance has informed the telecommunications assessment in this chapter.

- Wireless Telegraphy Act (UK Government, 2006);
- Planning Advice Note 62: Radio Telecommunications (Scottish Government, 2001);
- DF Bacon, 'A proposed method for establishing an exclusion zone around a terrestrial fixed radio link outside of which a wind turbine will cause negligible degradation of the radio link performance' (Radiocommunications Agency 2002); and
- Tall structures and their effect on broadcast and other wireless services (Ofcom, 2009).

16.3 Consultation

Consultations have been carried out with telecommunications stakeholders as follows:

TABLE 16.1 - SUMMARY OF CONSULTATION RESPONSES

CONSULTEE	RESPONSE	ACTION
Atkins	The above application has now been examined in relation to UHF Radio Scanning Telemetry communications used by our Client in that region and we are happy to inform you that we have NO OBJECTION to your proposal.	Noted. No further action required.

CONSULTEE	RESPONSE	ACTION
BT	We have studied the proposed windfarm development with respect to EMC and related problems to BT point-to-point microwave radio links. The conclusion is that the Project indicated should not cause interference to BT's current and presently planned radio network.	Noted. No further action required.
Vodafone	Vodafone require 100m clearance from tip of any turbine blade to fixed link radio path. Turbine 7 infringes that clearance. In the event of any conflict, we advise performing Fresnel Zone calculations, adhering to the recommended Ofcom methodology. This may indicate that reduced clearance margins at location point are possible.	Following reduction of the Proposed Development to six turbines and revision of turbine locations, Vodafone has confirmed that the blade tip to link separations are now acceptable. The Vodafone link has subsequently been withdrawn.
Arqiva	As currently planned, there is a risk to one of our UHF RBL links that are used to provide Public Service Broadcasting television services from BBC, STV, C4 and Five for a remote community in the Highlands. We require at least 100m of clear separation between the tip of the blades and the direct path of the link. Turbine 2 just infringes on this zone, whilst Turbine 8 is very close. As UHF signals can be susceptible to reflections, the positioning of T2 and T8 at either side of the link is of a concern, unless it is possible to increase the clearance of the path.	Following the reduction of the Proposed Development to six turbines and the revision of turbine locations, Arqiva has confirmed that the blade tip to link separations are now acceptable.

CONSULTEE	RESPONSE	ACTION
Joint Radio Company (JRC)	JRC analyses proposals for wind energy developments on behalf of the UK Energy Industry. We assess the potential of such developments to interfere with radio systems operated by UK and Irish Energy Industry companies in support of their regulatory operational requirements. The Energy Industry considers that any wind energy development within: * 1000m of a link operating below 1GHz; or * 500m of a link operating above 1GHz, requires detailed coordination. Unfortunately, part (or all) of the Proposed Development breaches one or more of these limits. The affected links are: >1GHz Microwave Point to Point: SCHY 0929167/1 Therefore JRC OBJECTS TO THE PROPOSED DEVELOPMENT. Turbines 5 and 7 fail our parameters	Following the reduction of the Proposed Development to six turbines, revision of turbine locations, and further technical analysis commissioned by the Applicant, JRC has confirmed that the blade tip to link separations are now acceptable.

16.4 Methodology

The description of baseline conditions for telecommunications has been completed using the following methods:

- Review of the Ofcom Spectrum Information Portal to identify all fixed microwave telecommunications links passing over or within 2km of the Site; and
- Consultation with operators of scanning telemetry and television re-broadcast links in the vicinity of the Site.

The potential effects of the Proposed Development on telecommunications have been assessed by calculating the separation distances between turbine blade tips and link paths and comparing these to industry and Ofcom recommended minimum separation distances.

The Study Area for the telecommunications assessment was a 5km radius around the Site. This was selected in order to capture all fixed telecommunications links with the potential to be affected by turbines in the Proposed Development.

The significance of an effect on fixed telecommunications links has been determined by assessing the proximity of turbines to the link, measured against Ofcom and industry standards.

16.5 Baseline

Interrogation of the Ofcom Spectrum Information Portal and Wireless Telegraphy Register found no fixed telecommunications links passing over or within 1.5km of the Application Boundary.

Consultations with the Joint Radio Company (JRC), Arqiva, Atkins, British Telecommunications (BT), and Vodafone identified three fixed links with the potential to be affected by the Proposed Development:

- An Arqiva UHF television re-broadcast link from Torosay to Dychliemore;
- A Vodafone microwave link from Torosay to Cruachan; and

- A JRC-managed microwave link from Torosay to Cruachan.

16.6 Likely Significant Effects

16.6.1 Construction

Adverse effects on fixed telecommunications links have the potential to occur in the construction phase as tall structures are erected.

Following a reduction in the number of proposed turbines from eight to six and changes in the layout, Arqiva confirmed that all turbines would meet their requirement for a minimum 100m separation distance between blade tips and the link path. The effects of the Proposed Development on the Arqiva link are therefore assessed as **Negligible** and not significant.

Following a reduction in the number of proposed turbines from eight to six and changes in the layout, Vodafone confirmed that all turbines would meet their requirement for a minimum 100m separation distance between blade tips and the link path. Vodafone subsequently advised that the potentially affected link had been withdrawn from service. The effects of the Proposed Development on the Vodafone link are therefore assessed as **None**.

Following a reduction in the number of proposed turbines from eight to six; changes in the layout; and further engineering analysis commissioned by the Applicant, JRC confirmed that all turbines would meet their requirement for a minimum 100m separation distance between blade tips and the link path. The effects of the Proposed Development on the JRC link are therefore assessed as **Negligible** and not significant.

16.6.2 Operation

The effects of the Proposed Development on fixed telecommunications links in the operational phase will be the same as those during the construction phase.

16.6.3 Decommissioning

The effects of the Proposed Development on fixed telecommunications links in the decommissioning phase will be the same as those during the construction phase.

16.7 Mitigation

No mitigation is required.

16.8 Residual Effects

The residual effects of the Proposed Development on fixed telecommunications links will be **Negligible**.

16.9 Cumulative Assessment

There will be no significant stand-alone effects of the Proposed Development on fixed telecommunications links. Therefore, there will be no cumulative effects.

16.10 Summary

Consultations have been carried out with the operators of all fixed telecommunications links in the vicinity of the Proposed Development. These have confirmed that there will be **no significant effects** on fixed telecommunications links.