

CHAPTER 17: Other Issues

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Technical Appendix

Technical Appendix 17.1: Ofcom Spectrum Information

17.1 Executive Summary

- 17.1.1 This Chapter considers the likely significant effects of any 'Other Issues' that required consideration in an EIA Report under Regulations 4(3) and 4(4), and Schedule 4 of the 2017 EIA Regulations¹, namely Telecommunications, Television and Radio, Shadow Flicker, Ice Throw, Air Quality, Climate Change, Population and Human Health and Risk of Major Accidents and Disasters.
- 17.1.2 No likely significant effects for any of these issues is predicted.
- 17.1.3 With respect to telecommunications, television and radio, based on previous information provided by Joint Radio Company (JRC), British Telecom (BT) and Ofcom, as well relevant scoping responses and review of the Ofcom Spectrum Information Portal data, no potential effects on television, radio and microwave links are anticipated.
- 17.1.4 No potential effects on shadow flicker are likely given the nearest occupied property is located more than 11 rotor diameters² from the nearest wind turbine generator (WTG), the distance within which shadow flicker effects may occur.
- 17.1.5 Given the remote location of the Proposed Development, the potential for ice throw to affect members of the public is likely to be extremely low, and with the implementation of appropriate mitigation measures, not significant.
- 17.1.6 No significant effects on air quality are anticipated. Relevant mitigation measures for air quality and pollution control during the construction phase are captured within the Construction Environmental Management Plan (CEMP), as outlined in Technical Appendix 3.1.
- 17.1.7 Gaseous emissions with global warming potential (GWP) associated with the Proposed Development would include exhaust gases and the release of carbon dioxide from dewatering and exposing peat during construction. Neither source is considered likely to be significant in terms of GWP. In terms of climate adaptation, consideration would be given to the potential implications of climate change on design of turbines; however, no potential for significant effects have been identified.
- 17.1.8 Potential effects on population and human health as a result of the Proposed Development could relate to noise, air quality or shadow flicker. No significant effects are predicted.
- 17.1.9 Relevant types of accident and / or disasters to the Proposed Development include severe weather events, fire, traffic related accidents, and mass movement associated with ground instability. With the implementation of appropriate mitigation measures, no significant effects associated are anticipated.

¹ Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. Available at: <http://www.legislation.gov.uk/ssi/2017/101/contents/made> (Accessed 19 May 2020).

² Of the candidate turbine

17.2 Introduction

17.2.1 This Chapter considers the likely significant effects of any 'Other Issues' that require consideration in an EIA Report, as listed under Regulations 4(3) and 4(4), and Schedule 4 of the 2017 EIA Regulations³, and have not been scoped out of assessment (see Chapter 5: Scoping and Consultation, Section 5.8) or assessed elsewhere in the EIA Report. This Chapter considers the following issues of relevance to the Proposed Development:

- Telecommunications, Television / Radio;
- Shadow Flicker;
- Ice Throw;
- Air Quality;
- Climate Change;
- Population and Human Health; and
- Risk of Major Accidents and Disasters.

17.2.2 This Chapter has been prepared by ASH, with inputs from SSE.

17.3 Telecommunications, TV and Radio Links

17.3.1 Wind farms can cause television, radio and microwave interference by blocking and / or causing part of the signal to be delayed.

17.3.2 A previous assessment was undertaken for the 2012 application to determine the potential effect on telecommunications, TV and radio interference. The assessment identified transmitter masts, microwave links and TV signal strength in communities within the wider area. The assessment concluded that the wind farm was not anticipated to have any potentially significant effects on television, radio and microwave links in the area.

17.3.3 A further desktop analysis was carried out in 2021 and concluded the findings were consistent with the 2012 assessment due to the site topology and position of the TV mast.

17.3.4 BT provided a scoping response to both the 2019 Scoping Report and the 2020 Scoping Refresh Letter, as detailed in Technical Appendix 5.2: 2019 Scoping Matrix and in Technical Appendix 5.3: 2020 Scoping Matrix respectively. JRC did not provide a scoping response in 2019 or 2020. However, following some additional consultation by the Applicant, JRC did provide a late response to the 2020 Scoping Refresh Letter in April 2021, which is detailed in Technical Appendix 5.3. Neither consultee raised any concerns about the Proposed Development in relation to television, radio and microwave links in the area.

17.3.5 In addition, a desk-based review of the data available on the Ofcom Spectrum Information Portal⁴ by the Applicant found that there are no known fixed links running through the site, as detailed in Technical Appendix 17.1. Two Broadcast Radio Transmitters / Receivers were identified in the wider area, both of which are located to

³ Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. Available at: <http://www.legislation.gov.uk/ssi/2017/101/contents/made> (Accessed 19 May 2020).

⁴ Ofcom (2021). *Spectrum Information Portal*. Available at: <https://www.ofcom.org.uk/spectrum/information/spectrum-information-system-sis/spectrum-information-portal> (Accessed 28 April 2021)

the south-east of the Proposed Development. One of these radio transmitters is under licence by JRC, who confirmed through correspondence in April 2021 that, based on the information on the Proposed Development provided, they did not foresee any potential problems for their infrastructure. The second transmitter is listed under an individual licence (licence no: 1236341/1) and is located approximately 4km south-east of the nearest proposed turbine location. No potential impacts on either of the Broadcast Radio Transmitters / Receivers identified in the surrounding area are therefore anticipated.

17.3.6 The only other nearby telecommunications activity identified through a review of the Ofcom portal is an Earth Satellite station under the licence of Airwave Solutions Limited (licence no: 1235533/1). This satellite station is located approximately 6km north-west from the nearest proposed turbine location and therefore no potential impacts are anticipated as a result of the construction, operation or decommissioning of the Proposed Development.

17.3.7 Based on information provided by JRC, BT and Ofcom in 2012, as well as the scoping responses received from BT and JRC in 2019 (BT only) and 2021 and the review of the Ofcom Spectrum Information Portal data, no potential effects on television, radio and microwave links are anticipated.

17.4 Shadow Flicker

17.4.1 Shadow flicker can arise from the moving shadow of the turbine rotor blade passing over a narrow opening such as the window of a nearby residence. The likelihood and duration of shadow flicker depends upon the positioning of the sun, turbine and window locations, turbine orientation, time of day, time of year and weather conditions.

17.4.2 Shadow flicker effects may occur within eleven rotor diameters and up to 130 degrees either side of north, relative to a turbine. As the rotor diameter of the candidate turbine to be used with the Proposed Development is 136m, any occupied properties within 1.5km of any turbine within the site would require a shadow flicker assessment to be undertaken.

17.4.3 The nearest occupied property to the Proposed Development is Glencassley Castle, which is located 1.7km from the nearest turbine. As the nearest occupied property is more than eleven rotor diameters from the nearest turbine within the Proposed Development, there is no potential for shadow flicker effects to occur and no further assessment is required.

17.5 Ice Throw

17.5.1 During icing conditions there are two types of risks associated with ice collecting on turbines:

- Fragments being thrown off from the operating turbine due to aerodynamic and centrifugal forces; or
- Ice falling from the turbine when the blades are stationary.

17.5.2 Given the remote location of the Proposed Development, the potential for ice throw to affect members of the public is likely to be extremely low.

17.5.3 The low risk of ice throw is reduced further as turbines are fitted with vibration sensors which detect any imbalance that might be caused by icing, leading to the affected turbines being shut down automatically. In addition, public notices would be placed at

access points alerting members of the public and staff accessing the site of the possible risk of ice throw under certain weather conditions.

- 17.5.4 With the implementation of these measures, the risk of ice throw affecting members of the public or operational staff would be very low and **not significant**.

17.6 Air Quality

- 17.6.1 The local air quality at this site is expected to be good due to the rural location, with few pollution sources. There are no Air Quality Management Areas (AQMA) in the area surrounding the Proposed Development, with the nearest AQMA being in Inverness city centre approximately 80km south-east of the Proposed Development⁵. The main pollution source is likely to be limited to construction works of the Proposed Development (including: dust from soil stripping and earthworks, from excavation, potentially including occasional blasting, and from vehicles running over unsurfaced ground) and exhaust emissions from fixed and mobile construction plant and construction vehicles.

- 17.6.2 Construction activities also have the potential to generate dust during dry spells (such as borrow pit quarrying), which may adversely affect local air quality. Given the scale and nature of construction activities, compared with the distances between the construction areas and the nearest residential properties, it is considered that dust from construction is unlikely to cause a nuisance. Given the short-term and intermittent nature of the construction period, effects on local air quality are likely to be negligible.

- 17.6.3 An operational wind farm produces no notable atmospheric emissions. The operation of the wind farm would therefore have no discernible adverse effects on local or national air quality.

- 17.6.4 Relevant mitigation measures for air quality and pollution control during the construction phase are captured within the site specific CEMP, as outlined in Technical Appendix 3.1.

- 17.6.5 With the implementation of mitigation measures, **no significant effects** on air quality are anticipated.

17.7 Climate Change

- 17.7.1 With regard to climate change, in the context of the EIA process, climate change is considered both in relation to the contribution of the Proposed Development to increasing or decreasing gaseous emissions with global warming potential (GWP), and in relation to climate change adaptation.

- 17.7.2 Emissions associated with the Proposed Development would include temporary and short-term emissions of exhaust gases from vehicles and construction plant, and the potential for the release of carbon dioxide as a result of dewatering and exposing peat and peat soils during construction. Neither source is considered likely to be significant in terms of GWP.

- 17.7.3 Carbon dioxide emissions during the life of a turbine include those emissions that occur during the manufacturing, transportation, erection, operation, dismantling and removal of those turbines. Estimates for such emissions are included in the carbon balance

⁵ Air Quality in Scotland (2021): *Air Quality Management Areas – Highland Council*. Available at <http://www.scottishairquality.scot/laqm/aqma?id=374> (Accessed 19 March 2021).

calculation undertaken for the Proposed Development (see Chapter 11: Geology and Carbon Balance). The carbon impact of the Proposed Development has been carried out using the SEPA Carbon Calculator Tool v1.6.01 (Reference UIRC-LUK8-7CN3). The results can be summarised as follows (see Chapter 11: Geology and Carbon Balance and Technical Appendix 11.4 for further details):

- The net emissions of carbon dioxide from the project are expected to be 168,549 tonnes of CO₂e;
- Because the project is expected to generate over 10.5 million MWh of electricity over its 50-year lifetime, this represents a savings of carbon dioxide for each unit of electricity generated by the project which otherwise would have been generated by other sources; and
- Once the wind farm is operational, it is expected to result in an annual savings of 53,490 tonnes of CO₂e versus grid-mix electricity generation. As such, the project has a payback time of 3.2 years compared to grid-mix electricity generation. These savings are even greater (and payback time faster) when compared to fossil fuel-mix electricity and coal-fired electricity.

17.7.4 As described in Section 1.5 (Chapter 1: Introduction) of this EIA Report, the Proposed Development could contribute to legislated climate change targets and government policy objectives by helping Scotland (and the wider UK) to reduce its greenhouse gas emissions to net-zero by 2045 at the latest. The Scottish Government's Energy Strategy (Scottish Government, 2017) recognises that onshore wind offers the lowest cost renewable technology and is a vital component of the renewables industry in Scotland. As such, it will be a key part of achieving these targets.

17.7.5 As a generator of renewable electricity from wind, the Proposed Development could contribute to legislated climate change targets and government policy objectives, including those related to the climate emergency declared in Scotland in April 2019, by adding a minimum of 80MW of installed renewable onshore wind capacity.

17.7.6 In terms of climate adaptation, consideration would be given to the potential implications of climate change on design of turbines (e.g. design for increased flood risk and adverse weather); however, no potential for significant effects have been identified. Relevant technical assessments of the EIA Report (i.e. Chapter 8: Ecology, Chapter 9: Ornithology and Chapter 10: Hydrology and Hydrogeology) have considered the potential for climate change to impact on future baseline conditions when considering the potential for likely significant effects.

17.8 Population and Human Health

17.8.1 Potential effects on population and human health as a result of the Proposed Development could relate to noise during construction, air quality or shadow flicker. Both Air Quality (see Section 17.5) and Shadow Flicker (see Section 17.3) are considered in this Chapter, and relevant mitigation measures for air quality and pollution control during the construction phase are captured within the site-specific CEMP, as outlined in Technical Appendix 3.1.

17.8.2 An assessment of potential noise impacts on noise sensitive receptors, including residential properties, has been carried out and is included in Chapter 15: Noise.

17.8.3 No significant effects are predicted.

17.9 Risk of Major Accidents and / or Disasters

- 17.9.1 Relevant types of accident and / or disasters, given the predominantly rural context of the Proposed Development include:
- Severe weather events, including high winds, high rainfall leading to flooding, or extreme cold leading to heavy snow and ice loading;
 - Fire;
 - Traffic related accidents; and
 - Mass movement associated with ground instability.
- 17.9.2 Resilience in the event of severe weather and fire is a core component to the wind farm and turbine design. The Applicant uses a remote operational control system (controller and SCADA systems), which allow both automated and remote user shutdown in order to protect assets in the event of extreme conditions including extreme high wind or ice loading. In the event of an extreme weather event, the Applicant operates to the highest standards for safety and health, with respect to protecting the safety of people. This includes implementing strict protocols for risk assessment which cover consideration of severe weather, and site based 'dynamic' risk assessment which requires staff to stop work in the event that weather conditions become unsafe.
- 17.9.3 In the event of fire, turbines are located a sufficient distance from settlements and scattered dwellings, such that there would be no significant risk to human health. Wild fire is not considered to have high consequence to human health given the rural nature of the site. The turbines are fitted with comprehensive fire detection and warning systems that are integrated to the control and SCADA systems to generate alarms, alert the operator and control the shutdown of the turbine.
- 17.9.4 All construction traffic would be managed in accordance with a detailed traffic management plan, to be agreed with The Highland Council and Transport Scotland. The Traffic Management Plan will aim to design out risk of accidents using mitigation measures outlined in Chapter 13: Traffic and Transport and Technical Appendix 13.1.
- 17.9.5 The risks associated with peat instability are addressed in Technical Appendix 11.2.
- 17.9.6 Further to the above, the Principal Designer would need to fully assess risks and mitigate as appropriate during the design stage as part of the requirements of the Construction (Design and Management) Regulations (2015).
- 17.9.7 With the implementation of mitigation measures discussed above, **no significant effects** associated with accidents and disasters are anticipated.

17.10 References

Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. Available at: <http://www.legislation.gov.uk/ssi/2017/101/contents/made> (Accessed 19 May 2020).

The Scottish Government, (2017). *Scottish Energy Strategy: The future of energy in Scotland*. Available at: <https://www.gov.scot/publications/scottish-energy-strategy-future-energy-scotland-9781788515276/> (Accessed 05 May 2020).