

Euchanhead Renewable Energy Development

Additional Environmental Information
Chapter 15: Other Issues

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Abbreviations

Additional Environmental Information	AEI
Dumfries and Galloway Council	DGC
Environmental Impact Assessment	EIA
Section 36 (of The Electricity Act 1989)	S36

15. Other Issues

15.1. Introduction

Chapter 15: Other Issues, of the Environmental Impact Assessment (EIA) Report assess the potential impacts of the proposed development in relation to:

- Infrastructure;
- Telecommunications;
- Television Reception;
- Shadow Flicker;
- Climate and Carbon Balance;
- Air Quality;
- Aviation and Radar;
- Population and Human Health;
- Risk of Accidents and Other Disasters; and
- Waste and Environmental Management

This Additional Environmental Information (AEI) Chapter supplements **Chapter 15** of the EIA Report. The methodology employed in this AEI Chapter remains as set out in **Chapter 15** of the EIA Report.

The following key documents should be read in conjunction with AEI:

- EIA Report Volume 2 – **Chapter 15: Other Issues** (2020);
- EIA Report Volume 3d – **Figure 15.1** (2020); and
- EIA Report Volume 4b – **Technical Appendices 15.1 to 15.3** (2020).

15.1.1. Superseded EIA Report documents

The following documents from the EIA Report:

- **Figure 15.1: Shadow Flicker Study Area**; and
- **Technical Appendix 15.1: Carbon Calculator**.

Have been superseded by the following:

- **AEI Figure 15.1: Shadow Flicker Study Area**; and
- **AEI Technical Appendix 15.1: Carbon Calculator**.

Technical Appendix 15.3: Indicative Aviation Lighting Landscape and Visual Impact Mitigation Plan from the EIA Report is not superseded but is updated by **AEI Technical Appendix 15.4: Reduced Aviation Lighting Scheme**.

15.2. Consultee Responses to 2020 Application

All consultation, regarding the LVIA, with statutory consultees that was received prior to the 2020 S36 application being submitted, is outlined in the EIA Report **Chapter 15: Other Issues**.

Table 15:1 sets out the relevant consultee responses to the 2020 S36 application.

Table 15:1 - 2020 S36 Application Consultee Responses

Consultee	Summary of Key Issues	Response to Comments
Civil Aviation Authority Response Date: 23 December 2020	<p>The key potential impacts on aviation have been identified. Specifically, we would note that the Air Navigation Order, Article 222, requires all obstacles that may pose a hazard to aircraft, including wind turbines, above 150 metres must be lit. The report notes that a range of mitigation options has been considered as set out in the Aviation Lighting Landscape and Visual Impact Mitigation Plan, such as the use of an aircraft detection lighting system to limit illumination of the aviation lighting to times when low flying aircraft are within range. Any such variation to full compliance with the Air Navigation Order must be agreed with the CAA and a variation to the lighting requirements specified in the ANO Article issued by the CAA, under Article 222 section 6.</p>	<p>Noted.</p> <p>The Aviation Lighting proposed has been amended from what was submitted with the 2020 EIA Report. It is proposed that 12 wind turbines would be fitted with a Medium Intensity Obstruction Light (see AEI Technical Appendix 15.4: Reduced Aviation Lighting Scheme).</p>
Glasgow Prestwick Response Date: 09 December 2020	<p>GPA must object to this development until such times as a radar mitigation scheme is identified and can be maintained for the full life of the windfarm, and appropriate quantitative confirmation that this development would have no adverse impact on our published Instrument Flight Procedures (IFP's).</p>	<p>The Applicant will engage with Glasgow Prestwick Airport and to confirm that there would be no impact on Instrument Flight Procedures.</p> <p>The Applicant will work with Glasgow Prestwick Airport to establish the extent of any detrimental impact on their radar systems as a result of the proposed Development, and appropriate mitigation. Cumbernauld Primary Surveillance Radar infill is expected to be a suitable radar solution. The Cumbernauld Primary Surveillance Radar infill mitigation has been successfully deployed for nearby windfarms, including ScottishPower Renewable's Hare Hill Windfarm Extension.</p>

		The Applicant will work with the appropriate consultees to draft a suitably worded planning condition and the underlying commercial arrangements to allow the mitigation to be implemented so as to assure certainty of generation and reasonable cost.
Defence Infrastructure Organisation / Ministry of Defence Response Date: 20 November 2020	<p>The proposed development will occupy Tactical Training Area 20T (TTA 20T) in which military fixed wing aircraft can engage in operational low flying training down to 45.7m above terrain features. Therefore, in the interests of air safety, the MOD would request that the development be fitted with MOD accredited aviation safety lighting in accordance with the Civil Aviation Authority, Air Navigation Order 2016.</p> <p>The principal safeguarding concern of the MOD with respect to the development of wind turbines relates to their potential to create a physical obstruction to air traffic movements and cause interference to Air Traffic Control and Air Defence radar installations.</p> <p>If planning permission is granted, we would like to be advised of the following prior to commencement of construction;</p> <ul style="list-style-type: none"> the date construction starts and ends; the maximum height of construction equipment; the latitude and longitude of every turbine. 	<p>All wind turbines (now 19 turbines rather than 21) would be fitted with a Medium Intensity Obstruction Light in accordance with CAA standards.</p> <p>Noted.</p>
NATS Safeguarding Response Date: 20 November 2020	<p>Predicted impact on Lowther RADAR - it has been determined that the terrain screening available will not adequately attenuate the signal, and therefore this development is likely to cause false primary plots to be generated. A reduction in the RADAR's probability of detection, for real aircraft, is also anticipated.</p> <p>Predicted impact on Great Dun Fell RADAR - it has been determined that the terrain screening available will not adequately attenuate the signal, and therefore this development is likely to</p>	<p>The Applicant will engage with NATS Safeguarding to establish the extent of any detrimental impact on their radar systems as a result of the proposed Development, and appropriate mitigation. Cumbernauld Primary Surveillance Radar infill is expected to be a suitable radar solution which would address the concerns raised in the objections from these consultees. The Cumbernauld Primary Surveillance Radar</p>



	<p>cause false primary plots to be generated. A reduction in the RADAR's probability of detection, for real aircraft, is also anticipated.</p> <p>The proposed development has been examined by our technical Safeguarding teams and conflicts with our safeguarding criteria. Accordingly, NATS (En Route) plc objects to the proposal.</p>	<p>infill mitigation has been successfully deployed for nearby windfarms, including ScottishPower Renewable's Hare Hill Windfarm Extension.</p> <p>The Applicant will work with the appropriate consultees to draft a suitably worded planning condition and the underlying commercial arrangements to allow the mitigation to be implemented so as to assure certainty of generation and reasonable cost.</p>
<p>British Telecommunications (BT)</p> <p>Response Date: 13 November 2020</p>	<p>The Project indicated should not cause interference to BT's current and presently planned radio network.</p>	<p>Noted. No response required.</p>
<p>Joint Radion Company</p> <p>Response Date: 11 November 2020</p>	<p>This proposal *cleared* with respect to radio link infrastructure operated by: Scottish Power and Scotia Gas Networks</p>	<p>Noted. No response required.</p>

15.3. Design Amendments

The amendments to the 2020 S36 application Site Layout are detailed in **AEI Chapter 2: Site Description and Design Evolution**. The key amendments are:

- The removal of Turbines No.20 and No.21, as well as the access track associated with these turbines; and
- The reduction in turbine blade tip height of Turbines No.9, No.10, No.11. No.18 and No.19, from 230m to 200m.

These amendments have not been made as a result of feedback from consultees regarding the assessment presented in EIA Report **Chapter 15: Other Issues**.

15.4. Assessment of Design Amendment Effects

15.4.1. Infrastructure

The proposed Development is not anticipated to have any effects on the existing ScottishPower Energy Networks (SPEN) power lines that run through the Site, or any other infrastructure at or around the Site.

15.4.2. Telecommunications

Following submission of the S36 application in 2020, no telecommunications related consultees objected to the proposed Development (see **Table 15:1**). As the design amendments to the proposed Development reduce the number of proposed wind turbines and the height of five of the proposed wind turbines, it is considered that any potential effect



on telecommunications is likely to be the same or reduced from that presented in the 2020 EIA Report. Therefore, it is considered that the proposed Development would not interfere with telecommunications links.

15.4.3. Television Reception

No change to what was presented in the EIA Report. Television reception is considered unlikely to be affected by the proposed Development, as digital signals are rarely affected by wind turbines. In the unlikely event that television signals are affected by the proposed Development, reasonable mitigation measures would be considered by the Applicant.

15.4.4. Shadow Flicker

As presented in **Chapter 15** of the EIA Report no residential properties fall within the shadow flicker study area (1,550m from proposed wind turbine locations and within '130 degrees of north' from proposed wind turbines). Therefore, shadow flicker effects are unlikely to occur as a result of the proposed Development and are not considered further.

AEI Figure 15.1 shows the residential properties surrounding the proposed Development and the shadow flicker study area.

15.4.5. Climate and Carbon Balance

As a result of the design amendments to the proposed Development, the carbon payback period of the proposed development has been revised. The Carbon Calculator (offline version) has been updated and is provided as **AEI Technical Appendix 15.1: Carbon Calculator**.

A summary of the revised anticipated carbon emissions and carbon payback of the proposed Development are provided in **Table 15:2**.

Table 15:2 – Anticipated Carbon Emissions and Payback

Result	Exp.	Min.	Max.
Net emissions of carbon dioxide (t CO ₂ eq.)	271,236	171,415	377,092
Annual CO ₂ emission saving over coal - fired electricity generation (t CO ₂ / yr)	321,562	321,562	321,562
Annual CO ₂ emission saving over grid mix electricity generation (t CO ₂ / yr)	88,625	88,625	88,625
Annual CO ₂ emission saving over fossil fuel mix electricity generation (t CO ₂ / yr)	157,286	157,286	157,286
Carbon Payback Time			
Coal-fired electricity generation (years)	0.8	0.5	1.2
Grid-mix of electricity generation (years)	3.1	1.9	4.3



Fossil fuel - mix of electricity generation (years)	1.7	1.1	2.4
Ratio of CO ₂ eq. emissions to power generation (g/kWh) (TARGET ratio by 2030 (electricity generation) <50 g/kWh)	19	19	20

The calculations of total carbon dioxide emission savings and payback time for the proposed development indicates the overall payback period would be approximately 1.7 years, when compared to the fossil fuel mix of electricity generation.

The proposed Development would offset 157,286 tonnes of CO₂ per year (6.29 million tonnes over the 40 year life of the proposed Development), when compared to fossil fuel grid mix electricity generation.

The overall anticipated carbon payback time for the amended proposed development (compared to a fossil fuel mix of electricity generation) is 1.7 years. This is a slightly longer payback period than the 1.5 years anticipated carbon payback time as assessed and presented in the 2020 EIA Report (reflective of the removal of two wind turbines and the reduction in height of five others). The potential CO₂ emissions savings are also similar for the amended proposed development, compared to what was presented in the EIA Report.

15.4.6. Air Quality

As per **Chapter 15** of the EIA Report, some impacts from dust / vehicle emissions, at nearby residential receptors (Bank Cottage and Glenglass) during construction of the proposed Development are considered likely.

Mitigation measures as part of the CEMP (**Technical Appendix 3.1: Outline CEMP – 2020 EIA Report**) would be implemented based on good construction practice to reduce the potential for dust and vehicle emissions.

15.4.7. Aviation and Radar

As detailed in **Table 15:1**, the following aviation related consultees responded to the 2020 s36 application:

- Civil Aviation Authority;
- Glasgow Prestwick Airport;
- Defence Infrastructure Organisation / Ministry of Defence; and
- NATS Safeguarding.

Technical Appendix 15.3: Indicative Aviation Lighting Landscape and Visual Impact Mitigation Plan (IALLVIMP) of the EIA Report is to be read in conjunction with **AEI Technical Appendix 15.4**. 12 of the proposed wind turbines are to be fitted with a Medium Intensity Obstruction Light. It is proposed that the implementation of mitigation measures to control the potential Aviation Lighting Landscape and Visual Impact would be controlled through the imposition of a planning condition.

The Applicant will engage with Glasgow Prestwick Airport and NATS Safeguarding (both of which objected to the 2020 s36 application) to establish the extent of any detrimental impact



on their radar systems as a result of the proposed Development. As detailed in **Technical Appendix 15.2: Aviation Impact Assessment** of the EIA Report, use of the Cumbernauld Primary Surveillance Radar infill is expected to be a suitable radar solution which would address the concerns raised in the objections from these consultees. The Cumbernauld Primary Surveillance Radar infill mitigation has been successfully deployed for nearby windfarms, including ScottishPower Renewable's Hare Hill Windfarm Extension.

The Applicant will work with the appropriate consultees to draft a suitably worded planning condition and the underlying commercial arrangements to allow the mitigation to be implemented so as to assure certainty of generation and reasonable cost born by the Applicant.

15.4.8. Population and Human Health

Further to the topics covered in **Chapters 7 to 15** of the EIA Report and this AEI, it is not expected that there would be any other effects from the proposed Development which would have significant effects on population and human health.

15.4.9. Risk of Accidents and Other Disasters

No change to what was presented in the EIA Report. The risk of accidents and other disasters (with regards the proposed Development) in relation to seismic activity, extreme weather, construction, traffic, or public safety and access is considered to be low.

15.4.10. Waste and Environment Management

No change to what was presented in the EIA Report.

The outline CEMP (**Technical Appendix 3.1**), submitted as part of the EIA Report, provides a general overview on how waste and other environmental issues would be managed during the construction phase. The Peat Management Plan (**Technical Appendix 10.2: Peat Management Plan**), submitted as part of the EIA Report, also details how excavated peat is controlled, stored, re-used and disposed of during the construction phase of the proposed Development.

The Forest Design Plan (**Technical Appendix 3.2: Forestry**), submitted as part of the EIA Report, also provides information relating to the reuse and disposal of forestry wastes associated with felling required for the proposed Development.

It is expected that a site-specific waste management plan for the control and disposal of waste generated onsite would be required by condition, should the proposed Development receive consent.

15.5. Summary of Changes to the Significance of Effects

Taking into account the design amendments to the proposed development, effects relating to Shadow Flicker, Climate and Carbon Balance, Accidents and Other Disasters, Population and Human Health, Air Quality, Telecommunications and Other Infrastructure, and Waste and Environmental Management, are assessed as being unchanged from those presented in **Chapter 15** of the EIA Report.



15.6. Conclusions

The design amendments do not result in any change to the assessed risk or to the significance of effects as presented in **Chapter 15** of the EIA Report.