

Euchanhead Renewable Energy Development

Additional Environmental Information
Chapter 13: Noise

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Abbreviations

Additional Environmental Information	AEI
Decibels	dB
Environmental Impact Assessment	EIA
Metres per second	m/s
Section 36 (of the Electricity Act 1989)	S36

13. Noise

13.1. Introduction

Hoare Lea has been commissioned by the Applicant to undertake an update of the noise assessment contained within the 2020 Euchanhead Renewable Energy Development Environmental Impact Assessment (EIA) Report. The updated noise assessment addresses the following changes since the Euchanhead Renewable Energy Development Section 36 (S36) application was made in 2020:

- The removal of Turbines No.20 and No.21;
- The reduction in turbine blade tip height of Turbines No.9, No.10, No.11, No.18 and No.19, from 230m to 200m;
- The updated cumulative situation in the surrounding area (primarily Sanquhar II Community windfarm being granted consent in August 2023, submission of a revised Lorg Windfarm application in November 2022 and submission of Appin Windfarm in June 2025); and
- Confirmation of the status of the nearby Polskeoch residential property and Lorg residential property and assessment at the Dalgonar residential property.

This Additional Environmental Information (AEI) Chapter supplements **Chapter 13: Noise** of the 2020 Euchanhead Renewable Energy Development EIA Report (from herein referred to as the 'EIA Report') and presents a summary of the full noise assessment contained within **AEI Technical Appendix 13.2: Noise Assessment**. The methodology employed in this AEI remains the same as that set out in **EIA Report Chapter 13: Noise**.

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

- EIA Report Volume 2 – **Chapter 13: Noise** (2020); and
- EIA Report Volume 4b – **Chapter 13: Technical Appendix 13.1** (2020).

13.2. Consultee Responses to the 2020 S36 Application

All consultation, regarding Noise, with statutory consultees that was received prior to the 2020 S36 application being submitted, is outlined in the EIA Report. **Table 13:1** sets out the relevant consultee responses to the 2020 S36 application.

Table 13:1 - 2020 S36 Application Consultee Responses

Consultee	Summary of Key Issues	Response to Comments
East Ayrshire Council Response Date: 21 May 2021	Construction noise would be suitably managed, with no unacceptable impacts. Operational wind turbine noise does not exceed ETSU-R-97 noise limits at any East Ayrshire properties and	Appropriate operational wind turbine noise limits are provided.



	that noise be controlled through appropriate limits.	
Dumfries & Galloway Council (D&GC) Response Date: 22 Dec 2020	Suggested a set of conditions to control noise and working times during construction and control of operational wind turbine noise through use of cumulative noise limits.	Suitable control of construction noise would be achieved through use of a Construction Environmental Management Plan (CEMP) and Construction Traffic Management Plan (CTMP) as set out in the EIA Report. Operational noise would be more appropriately controlled through use of site specific noise limits applied to the proposed Development.
Community Windpower (developer of the adjacent Sanquhar II Windfarm) Response Date: 12 Jan 2024	Formal objection on operational wind turbine noise, suggesting the EIA Report assessment was deficient, including some concerns on the noise assessment approach arising from the inquiry report and consent for the Sanquhar II Windfarm.	The relevance and consequences of the inquiry report and consent for Sanquhar II Windfarm has been considered and the assessment updated where necessary and appropriate (see AEI Technical Appendix 13.2 section 3.2).

13.3. 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 with regards the noise assessment are:

- The removal of Turbines No.20 and No.21; 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 any feedback from consultees regarding the assessment presented in EIA Report **Chapter 13: Noise**.

13.3.1. Data Sources

Relevant data sources are set out in detail in **AEI Technical Appendix 13.2** and include in particular the Lorg Windfarm application documents and Sanquhar II Windfarm consent.

13.4. Changes to Baseline Conditions

The baseline situation was defined through a review of background noise levels completed for adjacent developments and described in the EIA Report. The background noise environment is unlikely to have changed substantially and therefore the previous review of these baseline data remain valid for the purposes of this noise assessment.

13.5. Assessment of Design Amendment Effects

13.5.1. Construction Noise

The EIA Report set out the assessment of noise during construction of the proposed Development from construction activities on Site as well as construction related traffic, resulting in minor impacts, the effects of which were considered not significant. The previous noise assessment was based on the closest distance to each construction activity which would not change. Consequently, the impact of construction of the proposed Development is considered to be similar to the assessment shown in EIA Report, accordingly, construction related impacts are not discussed further.

13.5.2. Operational Noise

Operational noise effects from the substation and related energy storage were assessed in the EIA Report, concluding that the large separation distance from receptor locations would result in operational noise being negligible and not significant. The distance to receptors will be the same, consequently operational noise from the substation and related energy storage is considered to be the same as the assessment shown in EIA Report, accordingly, operational effects of the substation and related energy storage are not discussed further.

The exact model of wind turbine to be used for the proposed Development will be the result of a future tendering process and therefore a representative turbine model has been assumed for the noise assessment. This operational noise assessment remains based upon the noise specification of the Vestas V150-5.6 MW wind turbine with a 155 m hub height, consistent with the specifications provided in **Chapter 13** of the EIA Report. As discussed in **AEI Technical Appendix 13.2**, those turbines on the proposed Development which have been amended to have a lower hub height (125 m) have been modelled assuming source data for the taller hub height on a precautionary basis. Noise emission levels would be marginally reduced for turbines with a shorter hub height at lower wind speeds but reach the same values for wind speeds of 8 m/s and above.

The assessment accounts for cumulative operational noise from the proposed Development when operating together with adjacent windfarms, through a review of baseline background noise levels and by deriving robust assessment criteria which can be used for assessment of the proposed Development alone. For each of the adjacent windfarms, robust assumptions were made in relation to their acoustic emissions in line with the good practice guidance as detailed in **AEI Technical Appendix 13.2** and in **Technical Appendix 13.1** (of the EIA Report). These assumptions have been updated to reflect the changed cumulative situation; based upon Sanquhar II Windfarm being consented, a revised application submitted for Lorg Windfarm in 2020 and an application submitted for Appin Windfarm in June 2025.

Table 2 (day-time) and Table 3 (night-time) of **AEI Technical Appendix 13.2** provide the assessment criteria at each of the ten assessment locations, which are derived to result in either negligible cumulative effects or compliance with the total applicable ETSU-R-97 noise limits when accounting for cumulative effects. The assessment locations referenced remain consistent with those previously selected for completing the assessment in **Chapter 13** of the EIA Report and **Technical Appendix 13.1**. The consultation feedback set out in **Table 13.1** was considered carefully in detail in **AEI Technical Appendix 13.2** to adjust the criteria previously



derived in **Technical Appendix 13.1** to account for the latest information in terms of cumulative wind farm sites and property status.

Predictions of operational wind turbine noise for the proposed Development in isolation at the ten assessment locations are detailed in Table 4 of **AEI Technical Appendix 13.2**. These vary between 11-24 dB(A) at low wind speeds and 26-36 dB(A) at high wind speeds. These predicted noise levels are marginally lower at some receptor locations due to removal of two of the wind turbines.

Table 5 (day-time) and **Table 6** (night-time) of **AEI Technical Appendix 13.2** confirm that predicted wind turbine noise levels from operation of the proposed Development are compliant with the assessment criteria at all assessment locations. Therefore, wind turbine noise from the proposed Development, when operated together with all adjacent wind farms can remain within the ETSU-R-97 noise limits, and the effect is therefore considered to be Not Significant in EIA terms.

As discussed above, D&GC in their consultation response proposed that operational noise be controlled through use of noise limits which apply to cumulative noise levels only. This is not recommended as cumulative levels would rely in part on operational noise from other projects which are outside the control of the Applicant. Satisfactory control of operational wind turbine noise should instead be achieved through the use of site specific noise limits, which are derived from the ETSU-R-97 noise limits and would apply to control noise from the proposed Development alone. Satisfactory control of cumulative wind turbine noise emission levels will be achieved through enforcement of the individual limits for each of the separate wind farms.

Specific noise limits for the proposed Development are set out in Table 2 (day-time) and Table 3 (night-time) of **AEI Technical Appendix 13.2**. These were determined such that compliance with these noise limits by the proposed Development would maintain the conclusion of the cumulative assessment, and result in cumulative levels of wind turbine noise which do not exceed the derived ETSU-R-97 noise criteria. These noise limits are replicated in **Table 13:2** (day-time) and **Table 13:3** (night-time) below.

Table 13:2 – Proposed day-time L_{A90} (dB) noise limits to be applied to the proposed Development.

Receptor (approx. easting, northing)	1	2	3	4	5	6	7	8	9	10	11	12
Cairnhead (270133, 597200)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Corlae (265835, 597727)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Craig (263442, 606454)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Dalgonar (270038, 603129)	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	34.1	33.4	37.1
Euchanbank Cottage (270530, 606420)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Hillend (268201, 608890)	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2
Lorg (266850, 600875)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Polgown (271866, 603844)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Shinnelhead (272926, 599169)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	32.0	34.0	35.3
Upper Holm of Dalquhairn (265565, 599279)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0

Table 13:3 – Proposed night-time L_{A90} (dB) noise limits to be applied to the proposed Development.

Receptor (approx. easting, northing)	1	2	3	4	5	6	7	8	9	10	11	12
Cairnhead (270133, 597200)	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0
Corlae (265835, 597727)	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0
Craig (263442, 606454)	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0
Dalgonar (270038, 603129)	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1
Euchanbank Cottage (270530, 606420)	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0
Hillend (268201, 608890)	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2
Lorg (266850, 600875)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0
Polgown (271866, 603844)	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0
Shinnelhead (272926, 599169)	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.8
Upper Holm of Dalquhairn (265565, 599279)	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0

13.6. Cumulative Assessment

As noted above, cumulative operational noise effects from the turbines when operating alongside the cumulative wind farms has been incorporated into the assessment of the proposed Development by taking into consideration the levels of noise and consent noise limits of these other wind farms. This analysis concluded that wind turbine noise from the proposed Development, when operated together with all adjacent wind farms can remain within the ETSU-R-97 noise limits, and the effect is therefore considered to be Not Significant in EIA terms



13.7. Summary of Changes to the Significance of Effects

There are no changes to the significance of the effects due to noise and vibration during construction and operation of the proposed Development.

13.8. Conclusions

There are no significant effects predicted to arise due to noise and vibration during construction and operation of the proposed Development.



References

ETSU-R-97 - The Assessment and Rating of Noise from Wind Farms, Final ETSU-R-97 Report for the Department of Trade & Industry. The Working Group on Noise from Wind Turbines, 1997.