



Sporad na Mara Offshore Wind Farm

Offshore Project

Environmental Impact Assessment Report

Appendix 19.8: Existing Wind Turbine Contribution Check, Volume 2c

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1 INTRODUCTION

1.1 OVERVIEW

1.1.1.1 This appendix of the Environmental Impact Assessment Report (EIAR) presents the existing wind turbine generator (WTG) contribution check analysis relevant to the assessment of offshore airborne noise of the proposed Sporad na Mara Offshore Wind Farm (hereafter referred to as 'the Offshore Project'). This appendix accompanies **Chapter 19: Offshore Airborne Noise, Volume 2a** of the EIAR.

1.1.1.2 This appendix should be read in conjunction with the project description provided in **Chapter 3: Project Description, Volume 1a** and the relevant parts of the following chapters and appendices:

- **Chapter 5: Approach to EIA, Volume 1a;**
- **Appendix 5.3: Cumulative Effects Assessment Shortlisted Developments, Volume 1c;**
- **Chapter 19, Volume 2a;**
- **Appendix 19.1: Policy, Guidance and Legislative Context, Volume 2c;**
- **Appendix 19.2: Noise Modelling and Prediction, Volume 2c;**
- **Appendix 19.3: Baseline Noise Survey, Volume 2c;**
- **Appendix 19.4: Wind Shear Correction, Volume 2c;**
- **Appendix 19.5: Baseline Noise Conditions - All Wind Directions, Volume 2c;**
- **Appendix 19.6: Baseline Noise Analysis Comparison - Design Option 1 vs Design Option 2, Volume 2c;**
- **Appendix 19.7: Baseline Noise Conditions - Directional Split, Volume 2c;**
- **Appendix 19.9: Modelled Receptor Noise Levels, Volume 2c;**
- **Appendix 19.10: Noise Limits, Volume 2c;**
- **Appendix 19.11: Cumulative Wind Turbine Noise Assessment, Volume 2c.**

1.1.2 PROJECT BACKGROUND

1.1.2.1 Sporad na Mara Limited (hereafter referred to as 'the Applicant') is proposing to develop the Project. The Project is an offshore wind farm (OWF) that will consist of up to 60 fixed-bottom WTGs.

1.1.2.2 The Project will include both offshore and onshore infrastructure. This EIAR supports the application for the offshore components of the Project as outlined in **Chapter 1: Introduction, Volume 1a**. The offshore components of the Project (the Offshore Project) include all infrastructure and activities located seaward of Mean High Water Springs (MHWS) within the Array Area and Offshore Cable Area of Search (OCAS) (**Figure 1.2: Offshore Project Location, Volume 1b**). Further detailed information is provided in **Chapter 3, Volume 1a**.

1.1.2.3 The Offshore Project is situated off the northwest coast of Isle of Lewis/*Eilean Leòdhais* and the Array Area is located approximately 5-13 km offshore and is approximately 161 km² in size. It will comprise WTGs, foundations, Offshore Cables, Offshore Substation Platform (OSP) (if required), and Landfall. The Array Area combined with the OCAS is defined as the Offshore Project Boundary. The water depths across the Turbine Area range from 37 m-67 m with the southwest corner of the Array Area reaching 72 m. The proposed WTGs and fixed foundations will be located within a Turbine Area of approximately 140 km², within the Array Area.

1.2 PURPOSE OF THIS APPENDIX

1.2.1.1 This appendix describes the existing WTG contribution check analysis relevant to the assessment of offshore airborne noise of the Offshore Project.

2 IDENTIFICATION OF OTHER PROJECTS CONTRIBUTING TO NOISE ENVIRONMENT

- 2.1.1.1 The Energy Technology Support Units R-97: The Assessment and Rating of Noise from Windfarms (ETSU-R-97) states “...*absolute noise limits and margins above background should relate to the cumulative effect of all wind turbines in the area which contribute to the noise received at the properties in question...*”.
- 2.1.1.2 Institute of Acoustics: A Good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise (IOA GPG) states “*If the proposed wind farm produces noise levels within 10 dB of any existing wind farm/s at the same receptor location, then a cumulative noise impact assessment is necessary*”.
- 2.1.1.3 The following onshore wind farm developments have been identified on the northwest side of the island (see **Appendix 5.3, Volume 1c** for further information):
- Baile an Truiseil Wind Energy Project (BaT Wind Farm) – Operational (Cumulative Effects Assessment (CEA) other project reference: ONWF-013);
 - Horshader wind farm – Operational (CEA other project reference: ONWF-015);
 - West Coast Community Energy Project (WCCE Wind Farm) – Pre-Planning Stage (CEA other project reference: ONWF-009).
- 2.1.1.4 Noise level predictions have been undertaken for the existing Horshader Wind Farm and BaT Wind Farm by applying the WTG location and sound power level data for its installed WTG type. The noise level predictions have been undertaken in accordance with the IOA GPG for worse case downwind propagation conditions, following the method detailed in **Appendix 19.2, Volume 2c** for onshore WTGs.
- 2.1.1.5 The WCCE is a proposed community-owned wind farm, as this development is only at pre-planning stage it has not been assessed.
- 2.1.1.6 The Horshader Wind Farm noise levels are presented against the background sound level data and the associated polynomial lines of best fit for Measurement Location LT3, for upwind conditions (for which the lowest background levels were measured); for both the quiet daytime and night-time periods.
- 2.1.1.7 The BaT Wind Farm noise levels are presented against the background sound level data and the associated polynomial lines of best fit for Measurement Location LT6, for upwind conditions (for which the lowest background levels were measured); for both the quiet daytime and night-time periods.
- 2.1.1.8 Residual (sometimes termed ‘Residual’, ‘Remaining Available’, or ‘Noise Budget’) noise level limits, taking account of predicted noise levels from cumulative development are presented in **Appendix**

3 UPWIND DATA ANALYSIS

3.1 MEASUREMENT LOCATION LT3

Plate 3-1: LT3 – Quiet Daytime Background Noise vs. Horshader Wind Farm predicted noise levels (L_{A90,T}, dB(A)) for Existing Wind Turbine Contribution Check

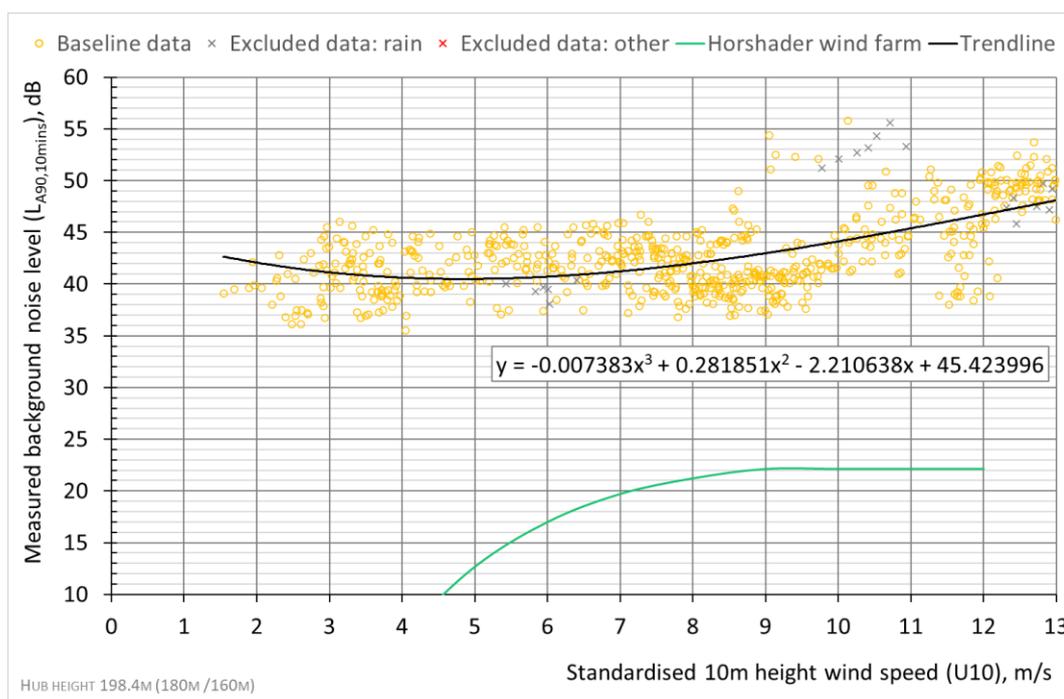
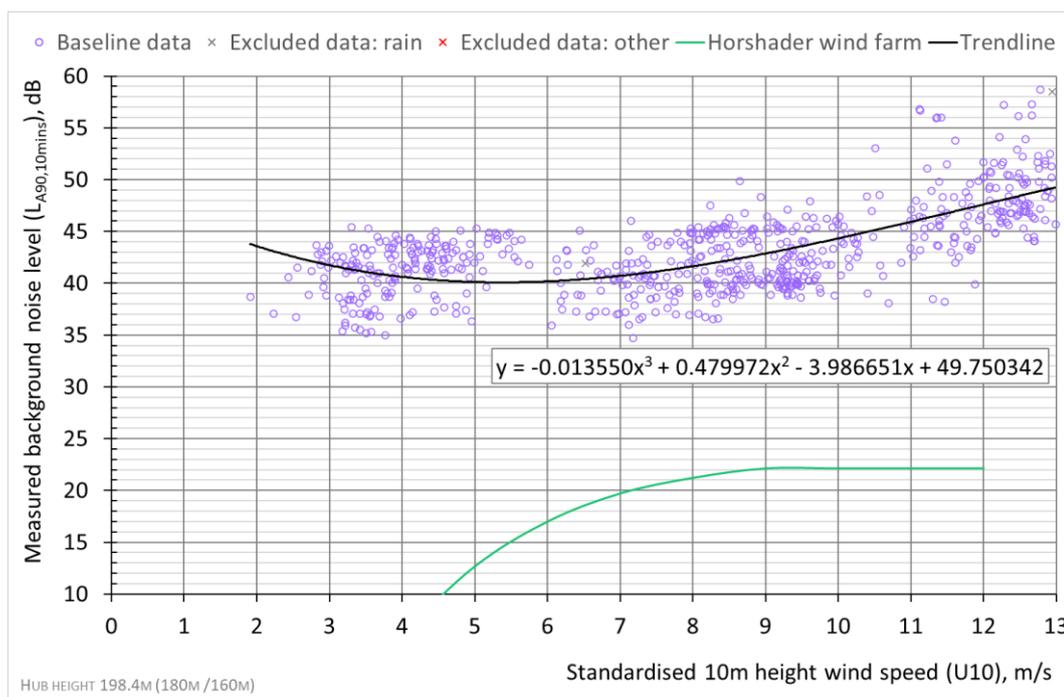


Plate 3-2: LT3 – Night-time Background Noise vs. Horshader Wind Farm predicted noise levels (L_{A90,T}, dB(A)) for Existing Wind Turbine Contribution Check



3.2 MEASUREMENT LOCATION LT6

Plate 3-3: LT6 – Quiet Daytime Background Noise vs. BaT Wind Farm predicted noise levels ($L_{A90,T}$, dB(A)) for Existing Wind Turbine Contribution Check

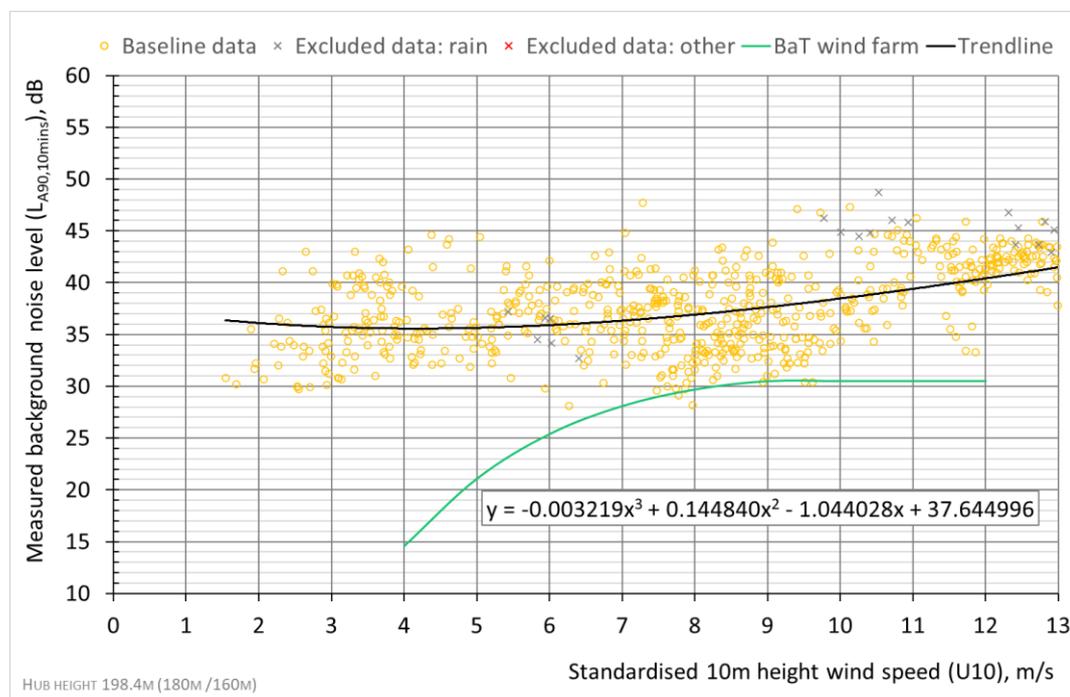
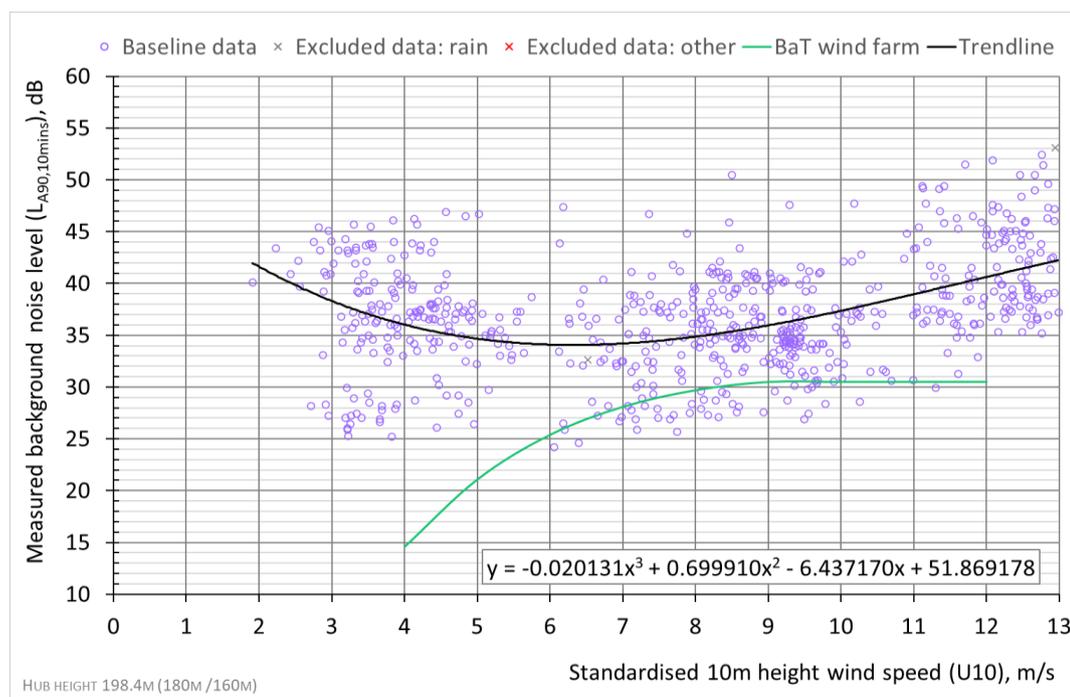


Plate 3-4: LT6 – Night-time Background Noise vs. BaT Wind Farm predicted noise levels ($L_{A90,T}$, dB(A)) for Existing Wind Turbine Contribution Check



4 GLOSSARY OF TERMS AND ABBREVIATIONS

4.1.1.1 A list of key terms and acronyms used in this appendix are provided in **Table 4-1** and **Table 4-2**.

Table 4-1 Acronyms and abbreviations

Term	Definition
BaT	Baile an Truiseil (an existing wind farm)
CEA	Cumulative Effects Assessment
dB	Decibel
dB(A)	A-weighted decibel
EIAR	Environmental Impact Assessment Report
ETSU R-97	Energy Technology Support Unit's R-97 document: The Assessment and Rating of Noise from Wind Farms (1996)
IOA GPG	The Institute of Acoustics' guidance document: <i>A Good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise</i>
m/s	metres per second
MHWS	Mean High Water Springs
OCAS	Offshore Cable Area of Search
OSP	Offshore Substation Platform
OWF	Offshore Wind Farm
WCCE	West Coast Community Energy Project
WTG	Wind turbine generator

Table 4-2 Glossary

Term	Meaning
A-weighting	Frequency weighted sound level, weighted according to the A-scale, which takes into account the increased sensitivity of the human ear at some frequencies.
$L_{A90,T}$	A statistical noise index defined as the level that is exceeded for 90% of the time over the measurement time period T. The 'A' denotes that the level is determined with 'A-weighting' applied.
U_{10}	Wind speed at standardised 10 m height

5 REFERENCES

Energy Technology Support Unit (1996). *The Assessment and Rating of Noise from Windfarms*. ETSU-R-97. Department of Trade and Industry, UK. Available at <https://www.gov.uk/government/publications/the-assessment-and-rating-of-noise-from-windfarms> [Accessed 17 February 2026].

Institute of Acoustics (IOA). (2013). *A Good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise*. St Albans, UK: Institute of Acoustics. Available at: <https://www.ioa.org.uk/sites/default/files/IOA%20Good%20Practice%20Guide%20on%20Wind%20Turbine%20Noise%20-%20May%202013.pdf> [Accessed 17 February 2026].

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