

Technical Appendix 13.2: Turbine Sound Power Data

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1.0 Introduction

This Appendix contains the details of the sound power data used in the operational noise assessment of the Proposed Development. Table 1 provides a summary of the wind turbine modelled for the corresponding wind farm and the reference to the sound power data.

Table 1 – Wind Turbines Used

Wind Farm	Turbine	Reference Document
Oliver Forest Wind Farm	Vestas V162 7.2 MW	Vestas documents 0114-3777 V04 and 0116-1715_V03
Clyde Wind Farm	Siemens 93 2.3 MW	Clyde Extension Wind Farm EIAR Technical Appendix A13.3
Clyde Wind Farm Extension	Siemens 101 3.2 MW	Clyde Extension Wind Farm EIAR Technical Appendix A13.3
Glenkerie Wind Farm	Vestas V80 2.0 MW	Glenkerie Wind Farm Extension EIAR Chapter 7 Tables 7.6 and 7.7
Glenkerie Wind Farm Extension	Vestas V80 2.0 MW	Glenkerie Wind Farm Extension EIAR Chapter 7 Tables 7.6 and 7.7
Grayside Wind Farm	Vestas V150 5.6 MW	Grayside Wind Farm EIAR Chapter 10 Tables 10.3 and 10.4
Whitelaw Brae Wind Farm	Vestas V117 4.2 MW	Vestas documents 0067-7063 V03 and 008957-8823_V01

2.0 Sound Power Data

Table 2 summarises the overall sound power data values referenced to standardised 10 m wind speeds included in the model. Table 3 summarises the octave band data used in the model. All values shown include +2 dB for uncertainty in accordance with the IOA GPG and as detailed in Chapter 13 of the EIA Report. The values shown in the tables below do not include the additional uplift for cumulative considerations, which was applied to the predicted levels.

Table 2 – Overall Sound Power Data including Uncertainty

Turbine	Sound Power Level, dB(A) at Standardised Wind Speed, m/s									
	3	4	5	6	7	8	9	10	11	12
Vestas V162	96.0	96.9	101.4	105.6	106.6	106.8	107.1	107.4	107.5	107.5
Siemens 93	100.0	100.0	103.0	105.0	106.5	106.5	106.5	106.5	106.5	106.5
Siemens 101	95.4	95.4	100.2	105.3	107.2	108.0	108.0	108.0	108.0	108.0
Vestas V80	103.3	104.2	105.1	106.0	106.9	107.3	107.3	107.3	107.3	107.3
Vestas V150	94.8	98.6	103.0	105.8	106.4	106.9	106.9	106.9	106.9	106.9
Vestas V117	95.0	97.7	101.8	105.6	107.7	108.0	108.0	108.0	108.0	108.0

Table 3 – Octave Band Sound Power Data including Uncertainty

Turbine	Sound Power Level, dB(A) at Octave Band Centre Frequency, Hz								
	63	125	250	500	1000	2000	4000	8000	(A)
Vestas V162	91.1	98.7	101.9	102.1	100.4	95.8	88.2	77.4	107.5
Siemens 93	85.9	94.1	100.6	102.2	99.7	95.1	89.5	84.9	106.5
Siemens 101	82.8	94.7	101.4	104.7	101.4	93.5	82.6	79.3	108.0
Vestas V80	85.4	93.3	100.0	102.3	100.9	99.6	94.5	77.5	107.3
Vestas V150	87.8	95.5	100.0	102.0	100.9	96.8	89.7	79.6	106.9
Vestas V117	89.0	96.6	99.5	101.5	102.6	100.7	96.6	84.7	108.0