



Rigged Hill Windfarm Repowering

Technical Appendix A10.1: Noise Survey
Record Sheet

Volume 3 – Technical Appendix
July 2019



Noise Survey Record Sheet – Page 1: Location and Equipment Details

Project No.	2607	Project Name:	Rigged Hill
Location (x of y)	1	Installed By:	Matthew Cassidy
Lat/Long	55.02066, -6.84818	Location Name	90 Terrydoo Rd
Start Date	12/01/2018	Start Time	09:50

Equipment Details	Make/Model	Serial No.
Sound Level Meter:	Rion NL-31	1062688
Calibrator:	Rion NC-74	34104515
Source of Equipment:	Arcus	
Meter Timestamp (Start/End, GMT/BST):	Start GMT	

Description of Sound Source:	Area at side of house
Distance from façade::	6m
Noise sources observed:	Wind in trees
Weather conditions	Windy, overcast
Additional notes:	Other locations exposed, or fields so not suitable



Noise Survey Record Sheet – Page 2: Visit Record

Project No.	2607	Location (x of y)	1
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Installation (Visit 1)

Date:	12/01/2018	Time:	09:50
Filename:	Au2_0101	Calibration level:	94
Range setting:	20-100	Meas. period:	10min
Freq weighting:	A	Weather station?	Rain Gauge
Lp Logging	0	Audio/ 8ve bands?	0
Notes:	Other locations exposed, or fields so not suitable		

Visit 2

Date:	22/01/2018	Time:	12:20
Visited by:	Matthew Cassidy	Calibration level:	94
Level pre-calibration	93.9	Batts replaced?	Yes
Equipment Removed?	No		
Notes:	Occ. sheep noise in barn		

Visit 3

Date:	06/02/2018	Time:	13:40
Visited by:	Matthew Cassidy	Calibration level:	94
Level pre-calibration	93.8	Batts replaced?	N/A
Equipment Removed?	Yes		
Notes:	0		



Noise Survey Record Sheet – Page 3: Photographs

Project No.	2607	Location (x of y)	1
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Noise Survey Record Sheet – Page 1: Location and Equipment Details

Project No.	2607	Project Name:	Rigged Hill
Location (x of y)	2	Installed By:	Matthew Cassidy
Lat/Long	55.01583, -6.85068	Location Name	29 Temain Rd
Start Date	12/01/2018	Start Time	10:30

Equipment Details	Make/Model	Serial No.
Sound Level Meter:	Rion NL-31	1062690
Calibrator:	Rion NC-74	34104515
Source of Equipment:	Arcus	
Meter Timestamp (Start/End, GMT/BST):	Start GMT	

Description of Sound Source:	Side of house next to road
Distance from façade::	5m
Noise sources observed:	Wind in foliage
Weather conditions	Windy, overcast
Additional notes:	Rear garden not suitable location due to noise from stream. Front garden not secure and more exposed. Resident not present.

Noise Survey Record Sheet – Page 2: Visit Record

Project No.	2607	Location (x of y)	2
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Installation (Visit 1)

Date:	12/01/2018	Time:	10:30
Filename:	Au2_0201	Calibration level:	94
Range setting:	20-100	Meas. period:	10min
Freq weighting:	A	Weather station?	No
Lp Logging	0	Audio/ 8ve bands?	0
Notes:	Rear garden not suitable location due to noise from stream. Front garden not secure and more exposed. Resident not present.		

Visit 2

Date:	22/01/2018	Time:	12:00
Visited by:	Matthew Cassidy	Calibration level:	94
Level pre-calibration	94	Batts replaced?	Yes
Equipment Removed?	No		
Notes:	Distant dog barking, sheep in nearby field		

Visit 3

Date:	06/02/2018	Time:	14:10
Visited by:	Matthew Cassidy	Calibration level:	94
Level pre-calibration	93.8	Batts replaced?	N/A
Equipment Removed?	Yes		
Notes:	0		

Noise Survey Record Sheet – Page 3: Photographs

Project No.	2607	Location (x of y)	2
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Rigged Hill Windfarm Repowering

Technical Appendix A10.2: Cumulative
Noise Emission Data

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Technical Appendix A10.2: Cumulative Noise Emission Data

Appendix A10.2: Cumulative Noise Emission Data

1.

10.2.1 Noise Emission Data used in Background Noise Corrections

2. The following section presents the noise emission data for the Operational Rigged Hill Windfarm, used in the correction of measured background noise levels (Section 10.4 of the ES).

10.2.1.1 Operational Rigged Hill Windfarm

Table A10.2.1: Noise Emission Data – Nordtank 500/37, 39 m hub height

10 m AGL, Standardised Wind Speed, (ms ⁻¹)	3	4	5	6	7	8	9	10	11	12
Sound Power Level, dB, L _{WA}	98.7	98.9	99.1	99.3	99.5	99.7	99.9	100.1	100.3	100.5
Sound Power Level, L _{WA} , dB including 2 dB uncertainty allowance	100.7	100.9	101.1	101.3	101.5	101.7	101.9	102.1	102.3	102.5

Table A10.2.2: Nordtank 500/37 Octave-Band Spectrum

Octave Band Centre Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Octave-Band Sound Power Level, Scaled to 102.5 dB, L _{WA}	83.4	89.9	93.4	97.8	96.1	95.3	88.3	84.7

10.2.1.2 Noise Emission Data used in Cumulative Assessment

3. The following section presents the noise emission data for each assessed cumulative development, including any adjustments required in accordance with Section 10.6.2 of the ES.

10.2.1.3 Craigmore Windfarm

Table A10.2.3: Noise Emission Data – Vestas V90 1.8 MW, 80 m hub height

10 m AGL, Standardised Wind Speed, (ms ⁻¹)	3	4	5	6	7	8	9	10	11	12
Sound Power Level, dB, L _{WA}	92.6	95.6	99.8	102.8	103.7	104.0	104.0	104.0	104.0	104.0
Sound Power Level, L _{WA} , dB including 2 dB uncertainty allowance	94.6	97.6	101.8	104.8	105.7	106.0	106.0	106.0	106.0	106.0
Additional Adjustment for Cumulative Assessment, dB	2.0	2.0	2.0	1.7	2.0	2.0	2.0	2.0	2.0	2.0
Adjusted Sound Power Level, dB, L _{WA} for Cumulative Assessment	96.6	99.6	103.8	106.8	107.4	108.0	108.0	108.0	108.0	108.0

Table A10.2.4: Vestas V90 1.8 MW Octave-Band Spectrum

Octave Band Centre Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Octave-Band Sound Power Level, Scaled to 108.0 dB, L _{WA}	89.8	94.5	96.8	99.2	102.3	101.5	100.5	95.8

10.2.1.4 Tremain Road (37)

Table A10.2.5: Noise Emission Data – Nordtank 500/37, 40 m hub height

10 m AGL, Standardised Wind Speed, (ms ⁻¹)	3	4	5	6	7	8	9	10	11	12
Sound Power Level, dB, L _{WA}	92.0	94.0	96.0	97.0	97.0	97.0	97.0	97.0	97.0	97.0
Sound Power Level, L _{WA} , dB including 2 dB uncertainty allowance	94.0	96.0	98.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0
Additional Adjustment for Cumulative Assessment, dB	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Adjusted Sound Power Level, dB, L _{WA} for Cumulative Assessment	94.6	96.6	98.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6

Table A10.2.6: Nordtank 500/37 Octave-Band Spectrum

Octave Band Centre Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Octave-Band Sound Power Level, Scaled to 99.6 dB, L _{WA}	78.8	87.4	92.2	95.4	91.4	90.1	88.9	80.8

10.2.1.5 Terrydoo Road (34)/1 and Terrydoo Road (34)/2

Table A10.2.7: Noise Emission Data – WTN 250, 30 m hub height

10 m AGL, Standardised Wind Speed, (ms ⁻¹)	3	4	5	6	7	8	9	10	11	12
Sound Power Level, dB, L _{WA}	88.2	90.5	92.8	95.1	97.4	99.8	99.9	100.1	100.3	100.5
Sound Power Level, L _{WA} , dB including 2 dB uncertainty allowance	90.1	92.5	94.8	97.1	99.4	101.8	101.9	102.1	102.3	102.5
Additional Adjustment for Cumulative Assessment, dB	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Adjusted Sound Power Level, dB, L _{WA} for Cumulative Assessment	92.2	94.5	96.8	99.1	101.4	103.8	103.9	104.1	104.3	104.5

Table 10.2.8: WTN 250 Octave-Band Spectrum

Octave Band Centre Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Octave-Band Sound Power Level, Scaled to 104.5 dB, L _{WA}	96.0	97.3	98.1	98.7	94.0	92.2	89.8	77.6