

Appendix 10.4 – Residual Noise Limits (RNLs)

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m/s WIND SPEED																									
NSR Name	Valtan NSR1	Dale NSR2	Belmont NSR3	Lochside Cottage NSR4	Stonemylders NSR5	Newhouse NSR6	Myres NSR7	Nithouse NSR8	Mucklehouse-H NSR9	Hundland NSR10	Skazuoy NSR11	Dale Costa NSR12	Luchview NSR13	Bakieha NSR14	Kelowna NSR15	Viewforth NSR16	Fnieles NSR17	Slighorn NSR18	Whitemire NSR19	Hewin NSR20	Castlehill NSR21	Mannobreck NSR22	Swannay House NSR23	Surtgate NSR24	Crerna Farm NSR25
Predicted level per development, dBL_{Aeq} (down-wind propagation)																									
Nisthill	34.9	33.9	32.7	29.5	29.8	29.0	31.3	34.0	36.1	35.1	27.1	27.1	29.6	26.4	26.1	25.5	25.7	25.0	23.5	17.3	13.0	20.8	21.0	23.2	23.1
Hundland turbines (x2)	8.2	7.1	6.5	3.5	4.5	4.3	6.5	22.3	27.8	26.1	10.9	-0.4	1.5	2.3	2.1	1.7	2.1	1.6	-2.8	-8.2	-12.3	-3.3	-3.1	-1.5	-2.9
Nithouse turbine	6.7	5.5	5.2	1.7	3.2	3.2	5.8	29.2	17.9	16.4	5.2	-3.6	-1.8	0.9	0.7	0.3	0.8	0.2	-6.3	-11.4	-15.6	-5.2	-5.0	-3.5	-5.5
Newhouse turbine	9.1	8.5	13.1	10.8	22.0	22.6	15.2	2.8	0.5	-0.1	-5.0	-3.3	-3.6	21.4	19.6	17.0	15.8	13.4	-8.2	-11.8	-16.5	5.3	5.7	7.3	-1.2
Ludenhill turbine	31.0	29.6	27.7	25.0	24.6	23.3	24.2	29.3	32.6	31.8	24.3	22.2	23.8	21.6	21.3	20.8	20.9	20.2	19.0	13.5	8.7	16.9	17.1	19.4	19.4
Burgar Hill wind farm	17.0	17.0	16.4	16.7	15.6	14.8	14.8	15.8	16.9	17.0	17.5	21.7	22.6	14.1	14.0	13.3	13.1	12.9	26.0	29.0	34.7	12.8	12.9	15.2	18.0
Costa Head wind farm	16.6	17.4	17.9	20.6	19.3	18.3	16.1	11.5	10.7	10.4	7.3	14.4	13.1	19.7	19.6	19.6	18.5	18.4	9.1	7.4	1.6	27.5	27.3	28.1	22.3
Dale Fm turbines (x2)	25.3	22.0	23.5	33.1	14.9	11.6	11.8	8.6	7.0	6.3	-0.2	0.7	0.9	8.5	8.0	7.0	7.0	5.9	-4.4	-9.6	-14.9	0.9	1.2	-4.2	0.6
Comparison with Nisthill (predicted level per development minus predicted level due to Nisthill), dB. Where predicted levels are within 10 dB of Nisthill cumulative effects between the two require further consideration (in bold and grey fill where cumulative effects occur)																									
Hundland turbines (x2)	26.7	26.8	26.2	26.0	25.3	24.7	24.8	11.6	8.2	9.0	16.2	27.5	28.1	24.2	24.0	23.9	23.6	23.4	26.3	25.5	25.3	24.0	24.0	24.8	26.0
Nithouse turbine	28.2	28.4	27.5	27.8	26.6	25.8	25.5	4.8	18.2	18.7	21.9	30.7	31.4	25.5	25.4	25.2	24.0	24.8	28.8	28.7	28.6	26.0	26.7	28.6	28.6
Newhouse turbine	25.8	24.4	19.6	18.6	7.8	1.4	16.1	31.2	35.6	35.2	32.1	30.4	33.2	5.0	6.5	8.5	9.9	11.6	31.7	29.1	29.5	15.5	15.3	15.9	24.3
Ludenhill turbine	3.9	4.9	5.0	4.8	3.2	5.7	7.1	4.7	8.8	8.8	2.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
Burgar Hill wind farm	17.4	16.9	16.4	12.8	14.2	14.1	16.2	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1
Costa Head wind farm	18.2	16.5	14.8	8.8	10.5	10.7	15.2	22.5	25.3	24.7	19.8	12.7	16.6	6.7	6.5	6.6	7.4	6.6	14.4	9.9	11.5	-6.7	-4.4	-4.8	0.9
Dale Fm turbines (x2)	9.8	11.9	9.2	16.4	14.9	17.4	19.5	25.4	29.0	28.8	27.3	26.4	28.8	18.0	18.2	18.5	18.8	19.1	27.9	26.9	28.0	19.9	19.8	19.1	22.5
Determination of significant presented headroom; compares predicted level from turbines excluding Nisthill with the applicable Overall Noise Limit (ONL). Where significant presented headroom is NOT present values in bold and grey fill. Where >10 dB difference between Nisthill and cumulative developments predicted cumulative level = 0 dB																									
Applicable ONL, dBL _{Aeq,10min}	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	35.0	36.1	36.1	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	37.4	35.0
Predicted cumulative noise level (incl. Nisthill), dBL _{Aeq,10min}	32.0	29.6	29.1	26.3	26.5	29.0	34.2	32.3	33.8	32.8	25.1	25.0	26.3	25.8	25.0	24.2	23.7	22.4	26.8	14.5	8.7	28.0	27.9	28.8	25.0
Headroom between limit and prediction, dB	13.0	15.4	15.9	18.7	18.5	16.0	20.8	12.7	11.2	12.2	9.9	11.1	9.8	9.2	10.0	10.8	11.3	12.6	8.2	20.5	26.3	7.0	7.1	8.6	10.0
Derivation of residual noise limits (RNL); where headroom is present RNL = ONL log minus cautious prediction (predicted cumulative level +2dB). Where no headroom available RNL = ONL minus 10 dB. Where no cumulative wind farm predictions are within 10 dB, predicted cumulative level = 0 dB																									
Cautious cumulative prediction (predicted level +2dB)	34.0	31.6	31.1	28.3	28.5	31.0	36.2	34.3	35.8	34.8	27.1	27.0	28.3	27.8	27.0	26.2	25.7	24.4	28.8	16.5	10.7	30.0	29.9	30.8	27.0
RNL = ONL minus cautious prediction, dBL _{Aeq,10min}	44.6	44.8	44.8	44.9	44.9	44.9	44.6	44.4	44.6	44.6	34.2	35.5	35.3	34.1	34.2	34.4	34.5	34.6	33.8	34.9	35.0	33.4	33.4	36.3	34.2
RNL = ONL minus 10 dB, dBL _{Aeq,10min}	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	25.0	26.1	26.1	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	27.4	25.0

S/m/3 WIND SPEED																									
NSR Name	Neltan NSR1	Dale NSR2	Belmont NSR3	Lochside Cottage NSR4	Stonemylders NSR5	Newhouse NSR6	Myres NSR7	Nithouse NSR8	Mucklehouse- NSR9	Hundland NSR10	Skazuoy NSR11	Dale Costa NSR12	Luchview NSR13	Bakiha NSR14	Kelowna NSR15	Viewforth NSR16	Fnieles NSR17	Slighorn NSR18	Whitemire NSR19	Hewin NSR20	Castlehill NSR21	Mannobreck NSR22	Swannay House NSR23	Surtgate NSR24	Crerna Farm NSR25
Predicted level per development, dB_{L_{eq}} (down-wind propagation)																									
Nisthill	39.8	38.8	37.6	34.4	34.7	33.9	36.2	38.9	41.0	40.0	32.0	32.0	34.5	31.3	31.0	30.4	30.6	29.9	28.4	22.2	17.9	25.7	25.9	28.1	28.0
Hundland turbines (x2)	10.3	9.2	8.6	5.6	6.6	6.4	8.6	24.4	29.9	28.2	13.0	1.7	3.6	4.4	4.2	3.8	4.2	3.7	-0.7	-6.1	-10.1	-1.2	-1.0	0.6	-0.8
Nithouse turbine	8.8	7.6	7.3	3.8	5.3	5.3	7.9	31.3	20.0	18.5	7.3	-1.5	0.3	3.0	2.8	2.4	2.9	2.3	-4.2	-9.3	-13.5	-3.1	-2.9	-1.4	-3.4
Newhouse turbine	11.3	11.6	15.2	13.0	24.1	29.7	17.3	4.9	2.6	2.0	2.9	-1.2	-1.5	23.1	21.7	19.1	17.9	15.5	-6.1	-8.7	-14.4	7.4	7.8	9.4	0.9
Ludenhill turbine	31.0	29.6	27.7	25.0	24.6	23.3	24.2	29.3	32.6	31.8	24.3	22.3	23.8	21.6	21.3	20.8	20.9	20.2	19.0	13.5	8.7	16.9	17.1	19.4	19.4
Burgar Hill wind farm	17.3	17.3	16.7	17.0	15.9	15.1	16.1	17.2	17.3	17.8	22.0	22.9	14.4	14.3	13.6	13.4	13.2	26.3	29.3	35.0	13.1	13.1	31.7	31.5	18.3
Costa Head wind farm	20.8	21.6	22.1	24.8	23.5	22.5	20.3	15.7	14.9	14.6	11.5	18.6	17.3	23.9	23.8	22.7	22.6	13.3	11.6	11.6	5.8	31.7	31.5	32.3	26.5
Dale Fm turbines (x2)	26.8	23.7	25.2	14.8	16.6	13.3	13.5	10.3	8.7	8.0	1.5	2.4	2.4	10.2	9.7	8.7	8.7	7.6	-2.7	-7.9	-13.2	2.6	2.9	5.9	2.3
Comparison with Nisthill (predicted level per development minus predicted level due to Nisthill), dB. Where predicted levels are within 10 dB of Nisthill cumulative effects between the two require further consideration (in bold and grey fill where cumulative effects occur)																									
Hundland turbines (x2)	29.5	29.6	29.0	28.8	28.1	27.5	27.6	14.4	11.0	11.8	19.0	30.3	30.9	27.0	26.8	26.7	26.4	26.2	29.1	28.3	28.1	26.8	26.8	27.6	28.8
Nithouse turbine	31.0	31.2	30.3	30.6	29.4	28.6	28.3	7.6	21.0	21.5	24.7	33.5	34.2	28.3	28.2	28.0	27.7	27.6	32.6	31.5	31.4	28.8	28.8	29.5	31.4
Newhouse turbine	28.6	27.2	22.4	21.4	10.6	4.2	18.9	34.0	38.4	38.0	34.9	33.2	36.0	7.8	9.3	11.3	12.7	14.4	34.5	31.9	32.3	18.3	18.1	18.7	27.1
Ludenhill turbine	8.8	9.2	8.9	9.4	10.1	10.6	12.0	9.8	8.4	8.2	7.7	9.8	10.7	8.2	8.7	8.6	8.7	8.4	8.7	9.8	8.8	8.8	8.8	8.7	8.6
Burgar Hill wind farm	22.5	21.5	21.0	17.4	18.8	18.7	21.1	22.7	23.7	22.7	14.2	30.0	11.6	16.8	16.8	16.8	17.2	16.7	8.4	7.4	17.4	12.5	15.7	17.7	8.9
Costa Head wind farm	18.9	17.2	15.5	9.6	11.2	11.4	15.9	23.3	26.0	25.4	20.5	13.4	17.3	7.4	7.8	6.7	7.9	7.8	15.1	10.6	12.3	-6.0	-6.7	-4.1	1.6
Dale Fm turbines (x2)	13.0	15.1	12.4	19.6	18.1	20.6	22.7	28.6	32.2	32.0	30.5	29.6	32.0	21.2	21.4	21.7	22.0	22.3	31.1	30.1	31.2	23.1	23.0	22.3	25.7
Determination of significant presented headroom; compares predicted level from turbines excluding Nisthill with the applicable Overall Noise Limit (ONL). Where significant presented headroom is NOT present values in bold and grey fill. Where >10 dB difference between Nisthill and cumulative developments predicted cumulative level = 0 dB																									
Applicable ONL, dB _{L_{eq}} 10min	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	35.0	36.6	36.6	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.6	35.6	39.9	35.7
Predicted cumulative noise level (incl. Nisthill), dB _{L_{eq}} 10min	31.0	29.6	27.7	27.9	0.0	29.7	0.0	33.4	31.8	26.3	25.1	0.0	27.9	27.2	25.5	24.9	24.6	27.1	29.4	8.7	31.8	31.7	31.5	27.8	27.8
Headroom between limit and prediction, dB	14.0	15.4	17.3	17.1	45.0	15.3	45.0	11.6	12.4	18.7	10.7	11.5	36.6	7.1	7.8	9.5	10.1	10.4	5.6	26.3	3.3	3.1	3.1	7.4	7.9
Derivation of residual noise limits (RNL); where headroom is present RNL = ONL log minus cautious prediction (predicted cumulative level +2dB). Where no headroom available RNL = ONL minus 10 dB. Where no cumulative wind farm predictions are within 10 dB, predicted cumulative level = 0 dB																									
Cautious cumulative prediction (predicted level +2dB)	33.0	31.6	29.7	29.9	2.0	31.7	2.0	35.4	34.6	33.8	26.3	27.1	2.0	29.8	29.2	27.5	26.9	26.6	29.1	31.4	10.7	33.8	33.7	34.5	29.8
RNL = ONL minus cautious prediction, dB _{L_{eq}} 10min	44.7	44.8	44.9	44.9	45.0	44.8	45.0	44.5	44.6	44.7	34.4	36.1	36.6	33.4	33.7	34.1	34.3	34.3	33.7	32.5	35.0	30.8	31.1	38.4	34.4
RNL = ONL minus 10 dB, dB _{L_{eq}} 10min	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	25.0	26.6	26.6	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.6	25.6	29.9	25.7

km/h WIND SPEED																										
NSR Name	Valtan NSR1	Dale NSR2	Belmont NSR3	Lachside Cottage NSR4	Stonemylders NSR5	Newhouse NSR6	Myres NSR7	Nisithouse NSR8	Mucklehouse-H NSR9	Hundland NSR10	Skazouy NSR11	Dale Costa NSR12	Luchview NSR13	Bakieha NSR14	Kelowna NSR15	Viewforth NSR16	Fenies NSR17	Slinghorn NSR18	Whitemire NSR19	Hewin NSR20	Castlehill NSR21	Mannobreck NSR22	Swannay House NSR23	Surtcliffe NSR24	Crerna Farm NSR25	
Predicted level per development, dB_{L,eq} (down-wind propagation)																										
Nisithill	42.1	41.1	39.9	36.7	37.0	36.2	38.5	41.2	43.3	42.3	34.3	34.3	36.8	33.6	33.3	32.7	32.9	32.2	30.7	24.5	20.2	28.0	28.2	30.4	30.3	
Hundland turbines (x2)	12.4	11.3	10.7	7.7	8.7	8.5	10.7	26.5	32.0	30.3	15.1	3.8	5.7	6.5	6.3	5.9	6.3	5.8	1.4	-4.0	-8.0	0.9	1.1	2.7	1.3	
Newhouse turbine	10.9	9.7	9.4	5.9	7.4	7.4	10.0	33.4	22.1	20.6	9.4	0.6	2.4	5.1	4.9	4.5	5.0	4.4	-2.1	-7.2	-11.4	-1.0	-0.8	0.7	-1.3	
Newhouse turbine	13.3	13.7	17.3	15.1	26.2	31.8	19.4	7.0	4.7	4.1	0.8	0.5	0.6	29.6	23.8	21.2	20.0	17.6	-4.0	-7.6	-12.3	8.1	9.9	11.5	3.0	
Ludenhill turbine	31.1	29.7	27.8	25.1	24.7	23.4	24.3	29.4	32.7	31.9	24.4	22.3	23.9	21.7	21.4	20.9	21.0	20.3	19.1	13.6	8.8	17.0	17.2	19.5	19.5	
Burgar Hill wind farm	20.3	20.3	19.7	20.0	18.9	18.1	19.1	20.2	20.3	20.8	25.0	25.9	18.4	17.2	16.5	16.3	16.1	29.3	32.3	38.0	16.0	16.0	16.0	18.5	21.3	
Costa Head wind farm	24.7	25.5	26.0	28.7	27.4	26.4	24.2	19.6	18.8	18.5	15.4	22.5	21.2	27.8	27.7	26.6	26.5	17.2	15.5	9.7	35.6	35.4	36.2	36.2	30.4	
Dale Fm turbines (x2)	29.4	25.1	26.8	16.4	18.7	14.9	15.1	11.9	10.3	9.6	3.1	4.0	4.2	11.8	11.3	10.3	10.3	9.2	-1.1	-6.3	-11.6	4.2	4.5	7.5	3.9	
Comparison with Nisithill (predicted level per development minus predicted level due to Nisithill), dB. Where predicted levels are within 10 dB of Nisithill cumulative effects between the two require further consideration (in bold and grey fill where cumulative effects occur)																										
Hundland turbines (x2)	29.7	29.8	29.2	29.0	28.3	27.7	27.8	14.6	11.2	12.0	19.2	30.5	31.1	27.2	27.0	26.9	26.6	26.4	29.3	28.5	28.3	27.0	27.0	27.8	29.0	
Newhouse turbine	31.2	31.4	30.5	30.8	29.6	28.8	28.5	7.8	21.2	21.7	24.9	33.7	34.4	28.5	28.4	28.2	27.9	27.8	31.7	31.6	29.0	29.0	29.7	31.6	31.6	
Newhouse turbine	28.8	27.4	22.6	21.6	10.8	4.4	19.1	34.2	38.6	38.2	35.1	33.4	36.2	8.0	9.5	11.5	12.9	14.6	34.7	32.1	32.5	18.5	18.3	18.9	27.3	
Ludenhill turbine	31.0	31.4	32.1	31.6	32.3	31.8	34.2	13.8	10.6	10.4	9.9	12.0	12.9	11.9	11.9	11.8	11.9	11.6	10.9	11.4	11.0	11.0	10.9	10.9	10.8	
Burgar Hill wind farm	23.8	20.8	20.3	16.7	18.1	18.0	20.4	22.0	23.0	22.0	13.5	8.8	10.8	15.3	16.1	16.3	16.6	16.1	3.4	7.8	17.8	12.0	12.1	12.0	8.6	
Costa Head wind farm	17.3	15.6	13.9	8.0	9.6	9.8	14.3	21.6	24.4	23.8	18.9	11.8	15.7	5.8	5.6	5.4	6.3	5.7	13.5	9.0	10.6	-7.4	-7.3	-8.7	6.0	
Dale Fm turbines (x2)	13.7	15.8	13.1	20.3	18.8	21.3	23.4	29.3	32.9	32.7	31.2	30.3	32.7	21.9	22.1	22.4	22.7	23.0	31.8	30.8	23.8	23.7	23.0	26.4	26.4	
Determination of significant presented headroom; compares predicted level from turbines excluding Nisithill with the applicable Overall Noise Limit (ONL). Where significant presented headroom is NOT present values in bold and grey fill. Where >10 dB difference between Nisithill and cumulative developments predicted cumulative level = 0 dB																										
Applicable ONL, dB _{L,eq,10min}	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	35.0	37.2	37.2	36.1	36.1	36.1	36.1	36.1	38.0	38.0	38.0	38.0	37.8	37.8	42.4	37.4
Predicted cumulative noise level (excl. Nisithill), dB _{L,eq,10min}	0.0	0.0	0.0	28.7	27.4	31.9	0.0	33.4	0.0	0.0	25.0	0.0	29.9	29.2	27.7	26.6	26.5	29.3	32.4	0.0	35.6	35.4	36.2	30.5	30.5	
Headroom between limit and prediction, dB	45.0	45.0	45.0	16.3	17.6	13.1	45.0	11.6	45.0	45.0	10.0	37.2	37.2	6.2	6.8	8.4	9.4	9.6	6.7	5.6	38.0	2.2	2.4	6.3	6.3	
Derivation of residual noise limits (RNL); where headroom is present RNL = ONL log minus cautious prediction (predicted cumulative level +2dB). Where no headroom is available RNL = ONL minus 10 dB. Where no cumulative wind farm predictions are within 10 dB, predicted cumulative level = 0 dB																										
Cautious cumulative prediction (predicted level +2dB)	2.0	2.0	2.0	30.7	29.4	34.9	2.0	35.4	2.0	2.0	36.4	27.0	2.0	31.9	31.2	29.7	28.6	28.5	31.3	34.4	2.0	37.6	37.4	38.2	32.9	
RNL = ONL minus cautious prediction, dB _{L,eq,10min}	45.0	45.0	45.0	44.8	44.9	44.6	45.0	44.5	45.0	45.0	34.4	36.7	37.2	34.0	34.3	34.9	35.2	35.2	36.9	35.5	38.0	24.4	27.0	40.3	35.5	
RNL = ONL minus 10 dB, dB _{L,eq,10min}	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	25.0	27.2	27.2	26.1	26.1	26.1	26.1	26.1	28.0	28.0	28.0	27.8	27.8	32.4	27.4	

m/s WIND SPEED																										
NSR Name	Valtan	Dale	Belmont	Lachside Cottage	Stonemylders	Newhouse	Myres	Nithhouse	Mucklehouse-H	Hundland	Skazuoy	Dale Costa	Luchview	Bakiha	Kelowna	Viewforth	Fenies	Slighorn	Whitemire	Hewin	Castlehill	Mannobreck	Swannay House	Surtgate	Crerna Farm	
NSR ID	NSR1	NSR2	NSR3	NSR4	NSR5	NSR6	NSR7	NSR8	NSR9	NSR10	NSR11	NSR12	NSR13	NSR14	NSR15	NSR16	NSR17	NSR18	NSR19	NSR20	NSR21	NSR22	NSR23	NSR24	NSR25	
Predicted level per development, dB_{L,eq} (down-wind propagation)																										
Nisthill	42.1	41.1	39.9	36.7	37.0	36.2	38.5	41.2	43.3	42.3	34.3	34.3	36.8	33.6	33.3	32.7	32.9	32.2	30.7	24.5	20.2	28.0	28.2	30.4	30.3	
Hundland turbines (x2)	14.5	13.4	12.8	9.8	10.8	10.6	12.8	28.6	34.1	32.4	17.2	5.9	7.8	8.6	8.4	8.0	8.4	7.9	3.5	-1.9	-5.9	3.0	3.2	4.8	3.4	
Newhouse turbine	13.0	11.8	11.5	8.0	9.5	9.5	12.1	35.5	24.2	22.7	11.5	2.7	4.5	7.2	7.0	6.6	7.1	6.5	0.0	-5.1	-9.3	1.1	1.3	2.8	0.8	
Newhouse turbine	15.4	15.8	19.4	17.2	28.3	33.9	23.5	9.1	6.8	6.2	3.3	3.0	2.7	22.7	25.4	23.5	22.1	19.7	-1.9	-5.5	-10.2	11.6	13.0	13.6	5.1	
Ludenhill turbine	31.0	29.5	27.4	24.6	24.2	22.8	23.8	29.2	32.6	31.8	29.9	21.6	23.3	21.0	20.7	20.1	20.2	19.6	18.2	12.5	7.7	16.1	16.3	18.6	18.6	
Burgar Hill wind farm	21.3	21.3	20.7	21.0	19.9	19.1	19.1	20.1	21.2	21.3	21.8	26.0	26.9	18.3	18.2	17.4	17.3	17.1	33.3	39.0	39.0	17.0	17.0	19.5	22.1	
Costa Head wind farm	27.1	27.9	28.4	31.1	29.8	28.8	26.6	22.0	21.2	20.9	17.8	24.9	23.6	30.2	30.1	30.1	29.0	28.9	19.6	17.9	12.1	38.0	37.8	38.6	32.8	
Dale Fm turbines (x2)	30.0	26.9	28.4	38.0	19.8	16.5	16.7	33.5	11.9	11.2	4.7	5.6	5.8	13.4	12.9	11.9	11.9	10.8	0.5	-4.7	-10.0	5.8	6.1	9.1	5.5	
Comparison with Nisthill (predicted level per development minus predicted level due to Nisthill), dB. Where predicted levels are within 10 dB of Nisthill cumulative effects between the two require further consideration (in bold and grey fill where cumulative effects occur)																										
Hundland turbines (x2)	27.6	27.7	27.1	26.9	26.2	25.6	25.7	12.5	9.1	9.9	17.1	28.4	29.0	25.1	24.9	24.8	24.5	24.3	27.2	26.4	26.2	24.9	24.9	25.7	26.9	
Nisthouse turbine	29.1	29.3	28.4	28.7	27.5	26.7	26.4	8.9	19.1	19.6	22.8	31.6	32.3	26.4	26.3	26.1	25.8	25.7	30.7	29.6	29.5	26.9	26.9	27.6	29.5	
Newhouse turbine	26.7	25.3	20.5	19.5	8.7	2.8	17.0	32.1	36.5	36.1	33.0	31.3	34.1	5.9	7.4	9.4	10.8	12.5	32.6	30.0	30.4	16.4	16.2	16.8	25.2	
Ludenhill turbine	31.3	31.6	32.5	32.3	32.8	32.8	34.7	32.0	30.7	30.5	32.6	32.7	33.5	32.6	32.6	32.6	32.6	32.7	32.6	32.5	32.0	32.5	31.9	31.9	31.8	31.7
Burgar Hill wind farm	29.8	30.8	30.2	30.2	30.7	30.1	30.4	32.4	21.0	22.0	21.0	32.5	8.8	9.8	15.3	15.1	15.3	15.7	15.1	0.4	-8.8	-18.8	11.0	11.1	11.0	8.0
Costa Head wind farm	14.9	13.2	11.5	5.8	7.2	7.4	11.9	19.2	22.0	21.4	16.5	9.4	13.3	8.4	3.2	2.7	3.9	3.3	11.1	6.6	8.2	-10.0	-9.7	-8.1	-2.4	
Dale Fm turbines (x2)	12.1	14.2	11.5	18.7	17.2	17.2	21.8	27.7	31.3	31.1	29.6	28.7	31.1	20.3	20.5	20.8	21.1	21.4	30.2	29.2	30.3	22.2	22.1	21.4	24.8	
Determination of significant presented headroom; compares predicted level from turbines excluding Nisthill with the applicable Overall Noise Limit (ONL). Where significant presented headroom is NOT present values in bold and grey fill. Where >10 dB difference between Nisthill and cumulative developments predicted cumulative level = 0 dB																										
Applicable ONL, dB _{L,eq,10min}	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	36.8	38.2	38.2	37.4	37.4	37.4	37.4	37.4	39.0	39.0	39.0	40.0	40.0	40.0	44.9	39.9
Predicted cumulative noise level (excl. Nisthill), dB _{L,eq,10min}	0.0	0.0	0.0	31.1	32.1	35.1	0.0	35.5	34.1	33.4	0.0	28.5	26.9	32.2	31.5	30.9	29.0	28.9	30.3	33.4	12.1	0.0	37.8	38.6	33.1	
Headroom between limit and prediction, dB	45.0	45.0	45.0	13.9	12.9	9.9	45.0	9.5	10.9	11.6	36.8	9.7	11.3	5.2	5.8	6.5	8.1	8.5	8.7	5.6	26.9	40.0	2.2	6.3	6.8	
Derivation of residual noise limits (RNL); where headroom is present RNL = ONL log minus cautious prediction (predicted cumulative level +2dB). Where no headroom available RNL = ONL minus 10 dB. Where no cumulative wind farm predictions are within 10 dB, predicted cumulative level = 0 dB																										
Cautious cumulative prediction (predicted level +2dB)	2.0	2.0	2.0	33.1	34.1	37.1	2.0	37.5	36.1	34.4	2.0	30.5	28.9	34.2	33.5	32.9	31.0	30.9	32.3	35.4	14.1	2.0	39.8	40.6	35.1	
RNL = ONL minus cautious prediction, dB _{L,eq,10min}	45.0	45.0	45.0	44.7	44.6	44.2	45.0	44.1	44.4	44.6	36.8	37.4	37.7	34.5	35.0	35.4	36.2	36.3	37.9	36.5	39.0	40.0	26.1	42.9	38.1	
RNL = ONL minus 10 dB, dB _{L,eq,10min}	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	26.8	28.2	28.2	27.4	27.4	27.4	27.4	27.4	29.0	29.0	29.0	30.0	30.0	34.9	29.9	

Rm/WIND SPEED																										
NSR Name	Valtan NSR1	Dale NSR2	Belmont NSR3	Lochside Cottage NSR4	Stoneymliders NSR5	Newhouse NSR6	Myres NSR7	Nithouse NSR8	Mucklehouse-H NSR9	Hundland NSR10	Skazuoy NSR11	Dale Costa NSR12	Luchview NSR13	Bakiha NSR14	Kelowna NSR15	Viewforth NSR16	Fenies NSR17	Slighorn NSR18	Whitemire NSR19	Hewin NSR20	Castlehill NSR21	Mannobreck NSR22	Swannay House NSR23	Surtgate NSR24	Crerna Farm NSR25	
Predicted level per development, dBL_{AES} (down-wind propagation)																										
Nithill	42.1	41.1	39.9	36.7	37.0	36.2	38.5	41.2	43.3	42.3	34.3	34.3	36.8	33.6	33.3	32.7	32.9	32.2	30.7	24.5	20.2	28.0	28.2	30.4	30.3	
Hundland turbines (x2)	16.6	15.5	14.9	11.9	12.9	12.7	14.9	30.7	36.2	34.5	19.3	8.0	9.9	10.7	10.5	10.1	10.5	10.0	5.6	0.2	-3.8	5.1	5.3	6.9	5.5	
Newhouse turbine	15.1	13.9	13.6	10.1	11.6	14.2	14.2	37.6	26.3	24.8	13.6	4.8	6.6	9.3	9.1	8.7	9.2	8.6	2.1	-3.0	-7.2	3.2	3.4	4.9	2.9	
Newhouse turbine	17.4	17.8	21.5	19.3	30.4	36.0	23.6	11.2	8.9	8.3	3.4	5.1	4.8	29.8	28.0	25.4	24.2	21.8	0.2	3.4	-8.1	13.7	14.1	15.7	7.2	
Ludenhill turbine	31.5	30.1	28.0	25.2	24.8	23.4	24.4	29.8	33.1	32.3	24.5	22.2	24.0	21.6	21.3	20.8	20.9	20.2	18.9	13.2	8.5	16.8	17.0	19.3	19.3	
Burgar Hill wind farm	22.3	22.3	21.7	22.0	20.9	20.1	21.1	22.2	22.3	22.8	27.0	27.9	19.3	19.2	18.4	18.3	18.0	18.0	34.3	40.0	17.9	18.0	20.5	23.1	23.1	
Costa Head wind farm	27.1	27.9	28.4	31.1	29.8	28.8	26.6	22.0	21.2	20.9	17.8	24.9	23.6	30.2	30.1	30.1	29.0	28.9	19.6	17.9	12.1	38.0	37.8	38.6	32.8	
Dale Fm turbines (x2)	31.6	28.5	30.0	19.6	21.4	18.1	18.3	35.1	13.5	12.8	6.3	7.2	7.4	15.0	14.5	13.5	13.5	12.4	2.1	-3.1	-8.4	7.4	7.7	10.7	7.1	
Comparison with Nithill (predicted level per development minus predicted level due to Nithill), dB. Where predicted levels are within 10 dB of Nithill cumulative effects between the two require further consideration (in bold and grey fill where cumulative effects occur)																										
Hundland turbines (x2)	25.5	25.6	25.0	24.8	24.1	23.5	23.6	10.4	7.0	7.8	15.0	26.3	26.9	23.0	22.8	22.7	22.4	22.2	25.1	24.3	24.1	22.8	22.8	22.8	23.6	24.8
Newhouse turbine	27.0	27.2	26.3	26.6	25.4	24.6	24.3	8.6	17.0	17.5	20.7	29.5	30.2	24.3	24.2	24.0	23.7	23.6	28.6	27.5	27.4	24.8	24.8	25.5	27.4	27.4
Newhouse turbine	24.6	23.2	18.4	17.4	6.6	0.2	14.9	30.0	34.4	34.0	30.9	29.2	32.0	3.8	5.3	7.3	10.4	30.5	27.9	28.3	14.3	14.1	14.7	23.1	23.1	
Ludenhill turbine	30.8	31.0	31.9	31.5	32.2	32.8	34.1	31.4	30.2	30.0	9.8	12.1	12.8	12.0	12.0	11.9	12.0	11.8	13.3	13.7	13.2	11.4	11.3	11.1	11.0	
Burgar Hill wind farm	19.8	18.8	18.3	14.7	16.1	16.0	18.4	20.0	21.0	20.0	11.5	7.8	8.8	14.3	14.1	14.5	14.7	14.2	-0.6	-0.8	19.8	10.0	10.2	30.0	7.0	
Costa Head wind farm	14.9	13.2	11.5	5.6	7.2	7.4	11.9	19.3	22.0	21.4	16.5	9.4	13.3	3.4	3.2	2.7	3.9	3.3	11.1	6.6	8.4	-10.0	-9.7	-8.1	-2.4	
Dale Fm turbines (x2)	10.5	12.6	9.8	17.1	15.6	18.1	20.2	26.1	29.7	29.5	28.0	27.1	29.5	18.7	18.9	19.2	19.5	19.8	28.6	27.6	28.7	20.6	20.5	19.8	23.2	
Determination of significant presented headroom; compares predicted level from turbines excluding Nithill with the applicable Overall Noise Limit (ONL). Where significant presented headroom is NOT present values in bold and grey fill. Where >10 dB difference between Nithill and cumulative developments predicted cumulative level = 0 dB																										
Applicable ONL, dBL _{AES,10min}	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	39.1	39.9	39.9	38.8	38.8	38.8	38.8	38.8	40.0	40.0	40.0	42.2	42.2	47.0	42.4	
Predicted cumulative noise level (incl. Nithill), dBL _{AES,10min}	0.0	0.0	30.0	31.1	36.7	0.0	37.6	36.2	34.5	24.5	29.1	27.9	33.0	37.2	31.3	30.3	28.9	31.3	34.4	12.1	0.0	37.8	38.6	33.2	33.2	
Headroom between limit and prediction, dB	45.0	45.0	15.0	13.9	11.9	8.3	45.0	7.4	8.8	10.5	14.6	10.8	11.9	5.7	6.5	7.4	8.5	9.9	8.7	5.6	27.9	42.2	4.4	8.4	9.2	
Derivation of residual noise limits (RNL); where headroom is present RNL = ONL log minus cautious prediction (predicted cumulative level +2dB). Where no headroom available RNL = ONL minus 10 dB. Where no cumulative wind farm predictions are within 10 dB, predicted cumulative level = 0 dB																										
Cautious cumulative prediction (predicted level +2dB)	2.0	2.0	32.0	33.1	35.1	38.7	2.0	39.6	38.2	36.5	26.5	31.1	29.9	35.0	34.2	33.3	32.3	30.9	33.3	36.4	14.1	2.0	39.8	40.6	35.2	
RNL = ONL minus cautious prediction, dBL _{AES,10min}	45.0	45.0	44.8	44.7	44.5	43.8	45.0	43.5	44.0	44.3	38.9	39.3	39.4	36.3	36.9	37.3	37.6	38.0	38.9	37.5	40.0	42.2	38.5	45.9	41.5	
RNL = ONL minus 10 dB, dBL _{AES,10min}	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	29.1	29.9	29.9	28.8	28.8	28.8	28.8	28.8	30.0	30.0	30.0	32.2	32.2	37.0	32.4	

Site/WIND SPEED																										
NSR Name	Valtan	Dale	Belmont	Lochside Cottage	Stoneymliders	Newhouse	Myres	Nithouse	Muckleshouse-H	Hundland	Skazouy	Dale Costa	Luchview	Bakieha	Kelowna	Viewforth	Fenies	Slighorn	Whitemire	Hewin	Castlehill	Mannobreck	Swannay House	Surtgate	Crerna Farm	
NSR ID	NSR1	NSR2	NSR3	NSR4	NSR5	NSR6	NSR7	NSR8	NSR9	NSR10	NSR11	NSR12	NSR13	NSR14	NSR15	NSR16	NSR17	NSR18	NSR19	NSR20	NSR21	NSR22	NSR23	NSR24	NSR25	
Predicted level per development, dB _{L_{eq}} (down-wind propagation). Nithouse and Muckleshouse turbines assumed to be switched off - predicted levels at Nithouse and Muckleshouse/Hundland set at 0 dB, no amendment to predicted levels from these turbines at other NSRs																										
Nithill	42.1	41.1	39.9	36.7	37.0	36.2	38.5	41.2	43.3	42.3	34.3	34.3	36.8	33.6	33.3	32.7	32.9	32.2	30.7	24.5	20.2	28.0	28.2	28.2	30.4	30.3
Hundland turbines (x2)	18.7	17.6	17.0	14.0	15.0	14.8	17.0	-	-	-	21.4	10.1	12.0	12.8	12.6	12.2	12.6	12.1	7.7	2.3	-1.7	7.2	7.4	9.0	7.6	
Nithouse turbine	17.2	16.0	15.7	12.7	13.7	13.7	16.3	-	-	-	15.7	6.9	8.7	11.4	11.2	10.8	11.3	10.7	4.2	-0.9	-5.1	5.3	5.5	7.0	5.0	
Newhouse turbine	19.6	20.0	23.6	21.4	22.1	28.1	25.7	33.3	11.0	10.4	5.5	7.2	6.8	11.9	10.1	27.5	26.3	23.9	2.3	-1.3	-6.0	15.8	16.2	17.8	9.3	
Ludenhill turbine	32.2	30.8	28.8	25.0	25.6	24.2	25.1	30.5	33.9	33.1	25.2	23.0	24.7	22.3	22.0	21.5	21.6	20.9	19.6	13.9	9.2	17.5	17.7	20.0	20.0	
Burgar Hill wind farm	23.3	23.3	22.7	23.0	21.9	21.1	22.1	23.2	23.3	23.3	28.0	28.0	28.0	28.0	20.2	19.4	19.2	19.0	32.3	35.3	41.0	18.9	19.0	21.5	24.3	
Costa Head wind farm	27.1	27.9	28.4	31.1	29.8	28.8	26.6	22.0	21.2	20.9	17.8	24.9	23.6	30.2	30.1	30.1	29.0	28.9	19.6	17.9	12.1	38.0	37.8	38.6	32.8	
Dale Fm turbines (x2)	32.6	29.5	31.0	20.6	22.4	19.1	19.3	16.1	14.5	13.8	7.3	8.2	8.4	16.0	15.5	14.5	14.5	13.4	3.1	-2.1	-7.4	8.4	8.7	11.7	8.1	
Comparison with Nithill (predicted level per development minus predicted level due to Nithill), dB. Where predicted levels are within 10 dB of Nithill cumulative effects between the two require further consideration (in bold and grey fill where cumulative effects occur)																										
Hundland turbines (x2)	23.4	23.5	22.9	22.7	22.0	21.4	21.5	40.2	42.3	42.3	32.9	24.2	24.8	20.9	20.7	20.6	20.3	20.1	23.0	22.2	22.0	20.7	20.7	20.7	21.5	22.7
Nithouse turbine	24.0	25.1	24.2	24.5	23.3	22.5	22.2	49.3	45.3	45.4	18.6	27.4	28.1	22.2	22.1	21.9	21.6	21.5	26.5	25.4	25.3	22.7	22.7	23.4	25.3	
Newhouse turbine	22.5	21.1	16.3	15.3	4.5	-1.9	12.8	27.9	32.3	31.9	28.8	27.1	29.9	3.7	3.2	5.2	6.6	8.3	28.4	25.8	26.2	12.2	12.0	12.6	21.0	
Ludenhill turbine	18.9	19.3	11.1	10.8	11.4	12.0	13.4	10.7	9.4	9.4	11.3	12.3	11.3	11.3	11.2	11.9	11.3	11.3	10.6	11.0	10.5	10.5	10.4	10.4	10.3	
Burgar Hill wind farm	19.8	19.8	17.3	17.7	15.1	15.0	17.4	19.0	20.0	19.0	10.5	6.8	7.8	15.3	15.1	13.2	13.7	13.2	-0.6	-0.8	-0.8	9.0	9.2	9.0	6.6	
Costa Head wind farm	14.9	13.2	11.5	5.6	7.2	7.4	11.9	19.3	22.0	21.4	16.5	9.4	13.3	3.4	3.2	2.7	3.9	3.3	11.1	6.6	8.4	-10.0	-9.7	-8.1	-2.4	
Dale Fm turbines (x2)	9.5	11.6	8.9	16.1	14.6	17.1	19.2	25.1	28.7	28.5	27.0	26.1	28.5	17.7	17.9	18.2	18.5	18.8	27.6	26.6	27.7	19.6	19.5	18.8	22.2	
Determination of significant presented headroom; compares predicted level from turbines excluding Nithill with the applicable Overall Noise Limit (ONL). Where significant presented headroom is NOT present values in bold and grey fill. Where >10 dB difference between Nithill and cumulative developments predicted cumulative level = 0 dB																										
Applicable ONL, dB _{L_{eq}} 10min	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	41.6	41.6	41.6	40.2	40.2	40.2	40.2	40.2	40.2	41.0	41.0	41.0	44.2	44.2	47.0	44.9
Predicted cumulative noise level (excl. Nithill), dB _{L_{eq}} 10min	35.4	35.0	31.0	31.1	34.4	38.6	0.0	0.0	33.9	38.2	25.2	29.7	28.9	34.2	33.1	32.0	30.9	30.1	32.3	17.9	12.1	18.9	17.9	38.7	33.2	
Headroom between limit and prediction, dB	9.6	45.0	14.0	13.9	10.6	6.4	45.0	45.0	11.1	6.8	19.4	15.9	12.7	6.0	7.0	8.2	9.3	10.1	8.7	23.1	28.9	25.3	6.3	8.3	11.6	
Derivation of residual noise limits (RNL); where headroom is present RNL = ONL log minus cautious prediction (predicted cumulative level +2dB). Where no headroom available RNL = ONL minus 10 dB. Where no cumulative wind farm predictions are within 10 dB, predicted cumulative level = 0 dB																										
Cautious cumulative prediction (predicted level +2dB)	37.4	37.0	33.0	33.1	36.4	40.6	2.0	2.0	35.9	40.2	27.2	31.2	30.9	36.2	35.1	34.0	32.9	32.1	34.3	19.9	14.1	20.9	39.9	40.7	35.1	
RNL = ONL minus cautious prediction, dB _{L_{eq}} 10min	44.2	45.0	44.7	44.7	44.4	43.1	45.0	45.0	44.4	43.2	41.4	41.1	41.2	37.9	38.5	39.0	39.3	39.4	39.9	41.0	41.0	44.2	42.2	45.9	44.4	
RNL = ONL minus 10 dB, dB _{L_{eq}} 10min	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	31.6	31.6	31.6	30.2	30.2	30.2	30.2	30.2	30.2	31.0	31.0	31.0	34.2	34.2	37.0	34.9

30m/s WIND SPEED																										
NSR Name	Valtan NSR1	Dale NSR2	Betmont NSR3	Lochside Cottage NSR4	Stonemylders NSR5	Newhouse NSR6	Myres NSR7	Nithhouse NSR8	Mucklehouse-H NSR9	Hundland NSR10	Skozzy NSR11	Dale Costa NSR12	Luchview NSR13	Bakieha NSR14	Kelowna NSR15	Viewforth NSR16	Fines NSR17	Slighorn NSR18	Whitemire NSR19	Hewin NSR20	Cattlehill NSR21	Mannobreck NSR22	Swannay House NSR23	Surtgate NSR24	Cruma Farm NSR25	
Predicted level per development, dB _{L_{eq}} (down-wind propagation). Nithhouse, Mucklehouse and Newhouse turbines assumed to be switched off - predicted levels at Nithhouse, Mucklehouse and Newhouse set at 0 dB, no amendment to predicted levels from these turbines at other NSRs																										
Nithhill	42.1	41.1	39.9	36.7	37.0	36.2	38.5	41.2	43.3	42.3	34.3	34.3	36.8	33.6	33.3	32.7	32.9	32.2	30.7	24.5	20.2	28.0	28.2	28.2	30.4	30.3
Hundland turbines (x2)	20.8	19.7	19.1	16.1	17.1	16.0	19.1	-	-	-	23.5	12.2	14.1	14.9	14.7	14.3	14.7	14.2	9.8	4.4	0.4	9.3	9.5	11.1	9.7	9.7
Nithhouse turbine	19.3	18.1	17.8	14.3	15.8	15.8	18.4	-	-	-	17.8	9.0	10.8	13.5	13.3	12.9	13.4	12.8	6.3	3.2	-3.0	7.4	7.6	9.1	7.1	7.1
Newhouse turbine	21.7	22.1	25.2	23.6	24.6	-	27.8	15.4	13.1	13.5	7.6	9.3	9.0	34.0	32.2	29.6	26.0	4.4	0.8	-3.9	17.9	18.3	19.9	11.4	11.4	
Ludenhill turbine	32.8	31.3	29.3	26.5	26.1	24.7	25.6	31.0	34.4	33.6	25.8	23.5	25.2	22.9	22.6	22.1	22.1	21.5	20.2	14.5	9.7	18.0	18.3	20.6	20.6	20.6
Burgar Hill wind farm	23.0	23.0	22.4	22.7	21.6	20.8	21.8	22.9	23.8	23.5	27.7	28.6	20.0	19.9	19.1	18.0	18.7	37.0	35.0	40.7	18.6	18.7	18.6	18.7	21.2	24.0
Costa Head wind farm	27.1	27.9	28.4	31.1	29.8	28.8	27.9	26.6	22.0	21.2	20.9	17.8	24.0	23.6	30.2	30.1	30.1	29.0	28.9	19.6	17.9	12.1	38.0	37.8	38.6	32.8
Dale Fm turbines (x2)	34.9	31.8	33.3	22.9	24.7	21.4	21.6	38.4	16.8	16.1	9.6	10.5	10.7	18.3	17.8	16.8	16.8	15.7	5.4	0.2	-5.1	10.7	11.0	14.0	10.4	10.4
Comparison with Nithhill (predicted level per development minus predicted level due to Nithhill), dB. Where predicted levels are within 10 dB of Nithhill cumulative effects between the two require further consideration (in bold and grey fill where cumulative effects occur)																										
Hundland turbines (x2)	21.3	21.4	20.8	20.6	19.9	19.3	18.4	40.2	42.3	34.6	30.8	22.1	22.7	18.8	18.6	18.5	18.2	18.0	20.9	20.1	19.9	18.6	18.6	19.4	20.6	20.6
Nithhouse turbine	22.8	23.0	22.1	22.4	21.2	20.4	20.1	49.3	45.3	33.3	16.5	25.3	26.0	20.1	20.0	19.8	19.5	19.4	24.4	23.3	23.2	20.6	20.6	21.3	23.2	23.2
Newhouse turbine	20.4	19.0	14.2	13.2	24	38.2	10.7	25.8	30.2	29.8	26.7	25.0	27.8	-0.4	1.1	3.1	4.5	6.2	26.3	23.7	24.1	10.1	9.9	10.5	18.9	18.9
Ludenhill turbine	9.8	9.8	10.6	10.2	10.9	11.5	12.9	10.2	8.9	10.7	8.8	10.8	11.8	10.7	10.7	10.6	10.8	10.7	10.5	10.0	10.5	10.0	10.0	9.9	9.8	9.7
Burgar Hill wind farm	19.1	18.1	17.6	14.0	15.4	15.3	17.7	19.3	20.3	19.3	10.8	6.6	8.2	13.6	13.4	13.6	14.0	13.5	9.8	-10.5	20.5	9.3	9.8	9.8	6.8	6.8
Costa Head wind farm	14.9	13.2	11.5	5.8	7.2	7.4	11.9	19.3	22.0	21.4	16.5	9.4	13.3	3.4	3.2	2.7	3.9	3.3	11.1	6.6	8.4	-10.0	-9.7	-8.1	-2.4	
Dale Fm turbines (x2)	7.2	9.3	6.6	13.8	12.3	14.8	16.9	22.8	26.4	26.2	24.7	23.8	26.2	15.4	15.6	15.9	16.2	16.5	25.3	24.3	25.4	17.3	17.2	16.5	19.9	19.9
Determination of significant presented headroom; compares predicted level from turbines excluding Nithhill with the applicable Overall Noise Limit (ONL). Where significant presented headroom is NOT present values in bold and grey fill. Where >10 dB difference between Nithhill and cumulative developments predicted cumulative level = 0 dB																										
Applicable ONL, dB _{L_{eq}} 10min	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	43.9	43.4	43.4	41.5	41.5	41.5	41.5	41.5	41.5	42.0	42.0	42.0	44.2	44.2	47.0	47.0
Predicted cumulative noise level (excl. Nithhill), dB _{L_{eq}} 10min	37.0	36.6	33.2	31.1	35.8	28.8	0.0	0.0	34.4	39.9	25.8	29.5	28.6	35.5	34.3	32.8	31.7	30.7	32.0	17.9	12.1	21.3	38.0	38.7	33.5	33.5
Headroom between limit and prediction, dB	8.0	10.4	11.7	13.9	9.2	16.2	45.0	45.0	10.6	5.1	19.1	13.9	14.7	6.0	7.2	8.6	8.6	10.8	10.0	24.1	29.9	22.9	6.2	8.3	13.5	13.5
Derivation of residual noise limits (RNL); where headroom is present RNL = ONL log minus cautious prediction (predicted cumulative level +2dB). Where no headroom available RNL = ONL minus 10 dB. Where no cumulative wind farm predictions are within 10 dB, predicted cumulative level = 0 dB																										
Cautious cumulative prediction (predicted level +2dB)	39.0	36.6	35.3	33.1	37.8	30.8	2.0	2.0	36.4	41.9	27.8	31.5	30.6	37.5	36.3	34.8	33.7	32.7	34.0	19.9	14.1	23.3	40.0	40.7	35.5	35.5
RNL = ONL minus cautious prediction, dB _{L_{eq}} 10min	43.8	44.3	44.5	44.7	44.1	44.8	45.0	45.0	44.4	42.1	43.8	43.1	43.2	39.3	39.9	40.4	40.7	40.9	41.2	42.0	42.0	44.2	42.1	45.8	46.7	46.7
RNL = ONL minus 10 dB, dB _{L_{eq}} 10min	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	33.9	33.4	33.4	31.5	31.5	31.5	31.5	31.5	32.0	32.0	32.0	34.2	34.2	37.0	37.0	37.0

31m/s WIND SPEED																									
NSR Name	Valtan NSR1	Dale NSR2	Belmont NSR3	Lochside Cottage NSR4	Stoneymliders NSR5	Newhouse NSR6	Myres NSR7	Nithhouse NSR8	Mucklehouse-H NSR9	Hundland NSR10	Skazouy NSR11	Dale Costa NSR12	Luchview NSR13	Bakieha NSR14	Kelowna NSR15	Viewforth NSR16	Fenies NSR17	Slighan NSR18	Whitemire NSR19	Hewin NSR20	Castlehill NSR21	Mannobreck NSR22	Swannay House NSR23	Surtidale NSR24	Crerna Farm NSR25
Predicted level per development, dB _{L_{eq}} (down-wind propagation). Nithhouse, Mucklehouse and Newhouse turbines assumed to be switched off - predicted levels at Nithhouse, Mucklehouse and Newhouse set at 0 dB, no amendment to predicted levels from these turbines at other NSRs																									
Nithhill	42.1	41.1	39.9	36.7	37.0	36.2	38.5	41.2	43.3	42.3	34.3	34.3	36.8	33.6	33.3	32.7	32.9	32.2	30.7	24.5	20.2	28.0	28.2	30.4	30.3
Hundland turbines (x2)	20.9	19.8	19.2	16.2	17.2	17.0	19.2	-	-	-	23.6	12.3	14.2	15.0	14.8	14.4	14.8	14.3	9.9	4.5	0.5	9.4	9.6	11.2	9.8
Nithhouse turbine	21.4	20.2	19.9	16.4	17.9	17.9	20.5	-	-	-	19.9	11.1	12.9	15.6	15.4	15.0	15.5	14.9	8.4	3.3	-0.9	9.5	9.7	11.2	9.2
Newhouse turbine	22.7	23.1	26.7	24.1	35.6	-	28.8	36.4	34.1	33.5	8.6	10.3	10.0	35.0	33.2	30.6	29.4	22.0	5.4	1.8	-2.8	18.9	19.3	20.9	12.4
Ludenhill turbine	32.8	31.4	29.4	26.6	26.2	24.8	25.7	31.1	34.4	33.6	25.9	23.6	25.3	23.0	22.7	22.2	22.2	21.6	20.3	14.6	9.8	18.1	18.3	20.7	20.7
Burgar Hill wind farm	24.3	24.3	23.7	24.0	22.9	22.1	23.1	24.2	24.3	24.8	29.0	29.9	29.9	21.3	21.2	20.4	20.2	20.0	36.3	42.0	19.9	20.0	22.5	25.3	25.3
Costa Head wind farm	27.1	27.9	28.4	31.1	29.8	28.8	26.6	22.0	21.2	20.9	17.8	24.9	23.6	30.2	30.1	30.1	29.0	28.9	19.6	17.9	12.1	38.0	37.8	38.6	32.8
Dale Fm turbines (x2)	36.5	33.4	34.9	24.5	26.3	23.0	23.2	20.0	18.4	17.7	31.2	12.1	12.3	19.9	19.4	18.4	18.4	17.3	7.0	1.8	-3.5	12.3	12.6	15.6	12.0
Comparison with Nithhill (predicted level per development minus predicted level due to Nithhill), dB. Where predicted levels are within 10 dB of Nithhill cumulative effects between the two require further consideration (in bold and grey fill where cumulative effects occur)																									
Hundland turbines (x2)	21.2	21.3	20.7	20.5	19.8	19.2	19.3	40.2	42.3	3.5	30.7	22.0	22.6	18.7	18.5	18.4	18.1	17.9	20.8	20.0	19.8	18.5	18.5	19.3	20.5
Nithhouse turbine	20.7	20.0	20.0	20.3	19.1	18.3	18.0	49.3	45.3	11.2	14.4	23.2	23.9	18.0	17.9	17.7	17.4	17.3	22.3	21.2	21.1	18.5	18.5	19.2	21.1
Newhouse turbine	19.4	18.0	13.2	12.7	1.4	38.2	9.7	24.8	29.2	28.8	25.7	24.0	26.8	-1.4	0.1	2.1	3.5	5.2	25.3	22.7	23.1	9.1	8.9	9.5	17.9
Ludenhill turbine	9.8	8.9	10.5	10.1	10.8	11.4	12.8	10.1	8.9	18.7	8.4	10.7	11.5	10.6	10.6	10.5	10.7	10.6	9.9	10.4	9.9	9.9	9.7	9.7	9.6
Burgar Hill wind farm	12.8	16.8	16.3	12.7	14.1	18.0	16.4	18.0	19.0	18.0	9.6	5.8	6.8	12.3	12.2	12.3	12.7	12.2	-9.6	-11.8	21.8	8.1	8.2	8.0	5.0
Costa Head wind farm	14.9	13.2	11.5	5.6	7.2	7.4	11.9	19.3	22.0	21.4	16.5	8.4	13.3	3.4	3.2	2.7	3.9	3.3	11.1	6.6	8.2	-10.0	-9.7	-8.1	-2.4
Dale Fm turbines (x2)	5.6	7.7	5.0	12.7	10.7	13.2	15.3	21.2	24.8	24.6	23.1	22.2	24.6	13.8	14.0	14.3	14.6	14.9	23.7	22.7	23.8	15.7	15.6	14.9	18.3
Determination of significant presented headroom; compares predicted level from turbines excluding Nithhill with the applicable Overall Noise Limit (ONL). Where significant presented headroom is NOT present values in bold and grey fill. Where >10 dB difference between Nithhill and cumulative developments predicted cumulative level = 0 dB																									
Applicable ONL, dB _{L_{eq}} 10min	45.0	45.0	45.0	45.0	45.0	45.0	45.0	46.2	46.2	46.2	46.2	45.3	45.3	42.7	42.7	42.7	42.7	42.7	42.7	42.0	42.0	44.2	44.2	47.0	47.0
Predicted cumulative noise level (incl. Nithhill), dB _{L_{eq}} 10min	38.0	35.5	34.9	31.1	36.6	28.8	28.8	0.0	34.4	40.0	28.4	30.4	29.9	36.3	34.9	33.4	32.7	31.0	33.3	33.6	12.1	23.8	38.0	38.8	33.7
Headroom between limit and prediction, dB	7.0	9.5	10.1	13.9	8.4	16.2	16.2	46.2	11.8	6.2	17.8	14.9	15.3	6.4	7.7	9.3	10.4	11.6	9.7	22.4	29.9	20.4	6.2	8.3	13.3
Derivation of residual noise limits (RNL); where headroom is present RNL = ONL log minus cautious prediction (predicted cumulative level +2dB). Where no headroom available RNL = ONL minus 10 dB. Where no cumulative wind farm predictions are within 10 dB, predicted cumulative level = 0 dB																									
Cautious cumulative prediction (predicted level +2dB)	40.0	37.5	36.9	33.1	38.6	30.8	30.8	2.0	36.4	42.0	30.4	32.4	31.9	38.3	36.9	35.4	34.2	33.0	35.3	21.6	14.1	25.8	40.0	40.8	35.2
RNL = ONL minus cautious prediction, dB _{L_{eq}} 10min	43.3	44.1	44.3	44.7	43.9	44.8	44.8	46.2	45.7	44.1	46.1	45.1	40.7	41.3	41.8	42.0	42.1	40.9	42.0	42.0	44.1	42.1	42.1	45.8	46.7
RNL = ONL minus 10 dB, dB _{L_{eq}} 10min	35.0	35.0	35.0	35.0	35.0	35.0	35.0	36.2	36.2	36.2	36.2	35.3	35.3	32.7	32.7	32.7	32.7	32.7	32.7	32.0	32.0	34.2	34.2	37.0	37.0

32m/s WIND SPEED																									
NSR Name	Valtan	Dale	Belmont	Lochside Cottage	Stoneymliders	Newhouse	Myres	Nithhouse	Mucklehouse-H	Hundland	Skozzy	Dale Costa	Luchview	Bakieha	Kelowna	Viewforth	Fenies	Slighorn	Whitemie	Hewin	Castlehill	Mannobreck	Swannay House	Surtidate	Crerna Farm
NSR ID	NSR1	NSR2	NSR3	NSR4	NSR5	NSR6	NSR7	NSR8	NSR9	NSR10	NSR11	NSR12	NSR13	NSR14	NSR15	NSR16	NSR17	NSR18	NSR19	NSR20	NSR21	NSR22	NSR23	NSR24	NSR25
Predicted level per development, dB _{L_{eq}} (down-wind propagation). Nithhouse, Mucklehouse and Newhouse turbines assumed to be switched off - predicted levels at Nithhouse, Mucklehouse and Newhouse set at 0 dB, no amendment to predicted levels from these turbines at other NSRs																									
Nithhill	42.1	41.1	39.9	36.7	37.0	36.2	38.5	41.2	43.3	42.3	34.3	34.3	36.8	33.6	33.3	32.7	32.9	32.2	30.7	24.5	20.2	28.0	28.2	30.4	30.3
Hundland turbines (x2)	20.9	19.8	19.2	16.2	17.2	17.0	19.2	-	-	-	23.6	12.3	14.2	15.0	14.8	14.4	14.8	14.3	9.9	4.5	0.5	9.4	9.6	11.2	9.8
Nithhouse turbine	21.4	20.2	19.9	16.4	17.9	17.9	20.5	-	-	-	19.9	11.1	12.9	15.6	15.4	15.0	15.5	14.9	8.4	3.3	-0.9	9.5	9.7	11.2	9.2
Newhouse turbine	22.7	23.1	26.7	24.1	35.6	-	28.8	36.4	34.1	33.5	8.6	10.3	10.0	35.0	33.2	30.6	29.4	22.0	5.4	1.8	-2.8	18.9	19.3	20.9	12.4
Ludenhill turbine	32.8	31.4	29.4	26.6	26.2	24.8	25.7	31.1	34.4	33.6	25.9	23.6	25.3	23.0	22.7	22.2	22.2	21.6	20.3	14.6	9.8	18.1	18.3	20.7	20.7
Burgar Hill wind farm	24.3	24.3	23.7	24.0	22.9	22.1	23.1	24.2	24.3	24.8	29.0	29.9	29.9	21.3	21.2	20.4	20.2	20.0	38.3	42.0	19.9	20.0	22.5	25.3	25.3
Costa Head wind farm	27.1	27.9	28.4	31.1	29.8	28.8	26.6	22.0	21.2	20.9	17.8	24.9	23.6	30.2	30.1	30.1	29.0	28.9	19.6	17.9	12.1	38.0	37.8	38.6	32.8
Dale Fm turbines (x2)	36.5	33.4	34.9	24.5	26.3	23.0	23.2	20.0	18.4	17.7	31.2	12.1	12.1	19.9	19.4	18.4	18.4	17.3	7.0	1.8	-3.5	12.3	12.6	15.6	12.0
Comparison with Nithhill (predicted level per development minus predicted level due to Nithhill), dB. Where predicted levels are within 10 dB of Nithhill cumulative effects between the two require further consideration (in bold and grey fill where cumulative effects occur)																									
Hundland turbines (x2)	21.2	21.3	20.7	20.5	19.8	19.2	19.3	40.2	42.3	3.5	30.7	22.0	22.6	18.7	18.5	18.4	18.1	17.9	20.8	20.0	19.8	18.5	18.5	19.3	20.5
Nithhouse turbine	20.7	20.0	20.0	20.3	19.1	18.3	18.0	49.3	45.3	11.2	14.4	23.2	23.9	18.0	17.9	17.7	17.4	17.3	22.3	21.2	21.1	18.5	18.5	19.2	21.1
Newhouse turbine	19.4	18.0	13.2	12.7	1.4	38.2	9.7	24.8	29.2	28.8	25.7	24.0	26.8	-1.4	0.1	2.1	3.5	5.2	25.3	22.7	23.1	9.1	8.9	9.5	17.9
Ludenhill turbine	9.8	8.9	10.5	10.1	10.8	11.4	12.8	10.1	8.9	18.7	8.4	10.7	11.5	10.6	10.6	10.5	10.7	10.6	9.9	10.4	9.9	9.9	9.7	9.7	9.6
Burgar Hill wind farm	17.8	16.8	16.3	12.7	14.1	18.0	16.4	18.0	19.0	18.0	9.6	5.8	6.8	12.3	12.2	12.3	12.7	12.2	-9.6	-11.8	21.8	8.1	8.2	8.0	5.0
Costa Head wind farm	14.9	13.2	11.5	5.6	7.2	7.4	11.9	19.3	22.0	21.4	16.5	8.4	13.3	3.4	3.2	2.7	3.9	3.3	11.1	6.6	8.2	-10.0	-9.7	-8.1	-2.4
Dale Fm turbines (x2)	5.6	7.7	5.0	12.7	10.7	13.2	15.3	21.2	24.8	24.6	23.1	22.2	24.6	13.8	14.0	14.3	14.6	14.9	23.7	22.7	23.8	15.7	15.6	14.9	18.3
Determination of significant presented headroom; compares predicted level from turbines excluding Nithhill with the applicable Overall Noise Limit (ONL). Where significant presented headroom is NOT present values in bold and grey fill. Where >10 dB difference between Nithhill and cumulative developments predicted cumulative level = 0 dB																									
Applicable ONL, dB _{L_{eq}} 10min	45.0	45.0	45.0	45.0	45.0	45.0	45.0	46.2	46.2	46.2	46.2	45.3	45.3	42.7	42.7	42.7	42.7	42.7	42.7	42.0	42.0	44.2	44.2	47.0	47.0
Predicted cumulative noise level (incl. Nithhill), dB _{L_{eq}} 10min	38.0	35.5	34.9	31.1	36.6	28.8	28.8	0.0	34.4	40.0	28.4	30.4	29.9	36.3	34.9	33.4	32.7	31.0	33.3	33.6	12.1	23.8	38.0	38.8	33.7
Headroom between limit and prediction, dB	7.0	9.5	10.1	13.9	8.4	16.2	16.2	46.2	11.8	6.2	17.8	14.9	15.3	6.4	7.7	9.3	10.4	11.6	9.7	25.9	20.4	6.2	8.3	13.3	13.3
Derivation of residual noise limits (RNL); where headroom is present RNL = ONL log minus cautious prediction (predicted cumulative level +2dB). Where no headroom available RNL = ONL minus 10 dB. Where no cumulative wind farm predictions are within 10 dB, predicted cumulative level = 0 dB																									
Cautious cumulative prediction (predicted level +2dB)	40.0	37.5	36.9	33.1	38.6	30.8	30.8	2.0	36.4	42.0	30.4	32.4	31.9	38.3	36.9	35.4	34.2	33.0	35.3	21.6	14.1	25.8	40.0	40.8	35.2
RNL = ONL minus cautious prediction, dB _{L_{eq}} 10min	43.3	44.1	44.3	44.7	43.9	44.8	44.8	46.2	45.7	44.1	46.1	45.1	40.7	41.3	41.8	42.0	42.1	40.9	42.0	42.0	44.1	42.1	42.1	45.8	46.7
RNL = ONL minus 10 dB, dB _{L_{eq}} 10min	35.0	35.0	35.0	35.0	35.0	35.0	35.0	36.2	36.2	36.2	36.2	35.3	35.3	32.7	32.7	32.7	32.7	32.7	32.7	32.0	32.0	34.2	34.2	37.0	37.0