

Hornsea Offshore Wind Farm

Project Two

Environmental Statement
Volume 6 – Onshore

Annex 6.9.3 **Operational Noise Model Output**

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smartwind.co.uk

SMart Wind Limited

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SMart Wind Limited
11th Floor
140 London Wall
London
EC2Y 5DN

Tel 0207 7765500

Email info@smartwind.co.uk

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**Predicted Operational Noise Levels:
Downwind – moderate adverse case**

Receiver	Floor	1500 MW HVDC	1800 MW HVDC	1800 MW HVAC
Fairfields	GF	32.0	31.5	28.9
Fairfields	1.FL	33.4	32.8	30.9
Kettlebridge Lane	GF	25.6	26.2	22.4
Kettlebridge Lane	1.FL	26.7	26.9	23.1
LT1	GF	21.6	19.7	17.2
LT2	GF	28.4	27.2	25.2
Rosedene Swinster Lane	GF	28.3	28.6	23.1
Rosedene Swinster Lane	1.FL	29.9	29.8	23.9
Scrub Lane	GF	28.2	27.9	24.5
Scrub Lane	1.FL	29.9	29.2	25.6
The Moorings	GF	23.0	24.4	19.2
The Moorings	1.FL	24.6	25.7	20.4
The Willows Farm	GF	21.7	23.7	18.3
The Willows Farm	1.FL	23.0	24.7	19.2

**Predicted Operational Noise Levels:
One-third Octave Spectra - Downwind**

Fairfields. 1.FI	Broadband dB	One-third Octave Spectrum. dB LAeq							
Option	$L_{Aeq,T(DW)}$	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz
1800 MW HVAC	30.9	24.7	21.0	20.8	25.0	23.1	22.1	6.2	3.7
1500 MW HVDC	33.4	26.5	25.6	25.9	26.9	26.8	14.7	4.2	2.2
1800 MW (2x900 MW) HVDC	32.8	26.2	25.3	24.9	26.2	25.0	19.5	2.5	0.7

**Predicted Operational Noise Levels:
One-third Octave Spectra – Day, Evening, Night & L_{den}**

Receiver	Floor	Predicted Sound Pressure Level (dB L _{Aeq,T})											
		L _{Day}			L _{Evening}			L _{Night}			L _{den}		
		1500 MW HVDC	1800 MW HVDC	1800 MW HVAC	1500 MW HVDC	1800 MW HVDC	1800 MW HVAC	1500 MW HVDC	1800 MW HVDC	1800 MW HVAC	1500 MW HVDC	1800 MW HVDC	1800 MW HVAC
Fairfields	GF	27.9	27.8	21.3	28.1	27.9	21.4	27.7	27.6	21.1	34.2	34.1	27.6
Fairfields	1.FL	29.7	29.2	22.9	29.8	29.3	23.0	29.4	28.9	22.6	35.9	35.4	29.1
Kettlebridge Lane	GF	22.9	24.0	18.4	23.1	24.3	18.7	22.9	24.0	18.5	29.3	30.4	24.9
Kettlebridge Lane	1.FL	24.4	25.1	19.6	24.7	25.3	19.8	24.4	25.1	19.6	30.8	31.5	26.0
LT1	GF	19.9	17.4	14.8	20.1	17.7	15.0	19.9	17.4	14.8	26.3	23.8	21.2
LT2	GF	24.5	23.9	18.0	24.7	24.1	18.2	24.3	23.7	17.8	30.8	30.2	24.3
Rosedene Swinster Lane	GF	25.0	25.5	19.9	25.2	25.8	20.2	24.9	25.4	19.8	31.3	31.9	26.3
Rosedene Swinster Lane	1.FL	27.0	27.2	21.4	27.3	27.5	21.7	26.9	27.1	21.3	33.4	33.6	27.8
Scrub Lane	GF	24.3	24.4	18.5	24.6	24.7	18.8	24.2	24.3	18.4	30.7	30.8	24.9
Scrub Lane	1.FL	26.6	26.0	20.1	26.8	26.2	20.3	26.5	25.8	19.9	32.9	32.3	26.4
The Moorings	GF	19.7	21.5	15.5	20.0	21.7	15.7	19.8	21.5	15.5	26.2	27.9	21.9
The Moorings	1.FL	22.0	23.3	17.3	22.2	23.5	17.6	22.0	23.3	17.3	28.4	29.7	23.7
The Willows Farm	GF	18.5	21.2	14.1	18.7	21.4	14.3	18.6	21.3	14.2	25.0	27.7	20.6
The Willows Farm	1.FL	20.5	22.6	15.5	20.7	22.8	15.7	20.6	22.7	15.6	27.0	29.1	22.0