



Technical Note

Title:	Vale of Leven Wind Farm		
Client:	Vale of Leven Wind Farm Limited		
Reference:	2061556-RSKA-TN-001-(02)		
Date:	10 February 2025		
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1 Introduction

RSK Acoustics has undertaken a noise impact assessment as part of the Environmental Impact Assessment Report (EIAR) submission for the Vale of Leven Wind Farm. Since the original assessment, the hub height of the proposed turbines has been reduced from 164 m to 134 m and the noise impact assessment has therefore been updated to reflect the changes.

The computer noise model has been updated with the new proposed hub height. The predicted results have been compared against the noise limits presented in the original assessment. The noise limits were derived from the results of the noise survey undertaken on site and are still relevant to the updated assessment.

No further changes to the original model and assessment have been undertaken. For full details of the original assessment, baseline survey and candidate turbine please to the EIAR.

2 Noise Impacts

2.1 Noise Predictions

Noise generated during the operation of the proposed turbines has been predicted at the closest sensitive receptors to the proposed works. Neighbouring receptors are likely to experience similar or lower magnitudes of noise. Predictions have been made using computation noise modelling software, SoundPlan v9.1. The modelling parameters are presented in Table 1 below.

Item	Setting
Algorithm	Institute of Acoustics, 2013 'Good Practice Guide on Wind Turbine Noise'. ISO 9613-2:2024 'Acoustics — Attenuation of sound during propagation outdoors — Part 2: General method of calculation'.
Ground Absorption	Due to the rural nature of the proposed development, $G=0.5$
Met Conditions	10 degrees Celsius, 70% humidity Wind from source to the receiver
Façade Corrections	Predictions are given in a free field environment; no façade corrections have been applied
Receptor Height	All results are presented at a height of 4 m above ground, representative of first floor bedroom windows.

Item	Setting
Source Modelling	All turbines have been modelled at a relative hub height to ground of 134 m.
Terrain	The model includes LiDAR terrain data as provided by the project team

Table 1 Modelling Parameters

2.2 Results

Updated predictions at the assessed noise sensitive receptors are shown in Table 2 below, with the original predictions shown in Table 3 for reference. The difference between the predictions is shown in Table 4.

Location	Standardised 10 m Height Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
Gallangad Lodge	16.9	17	17.5	20.9	24.6	28.1	32.2	32.2	32.2	32.2
Highdykes Farm	19.8	19.8	20.3	23.8	27.5	31	35.2	35.2	35.2	35.2

Table 2 Updated Operational Noise Levels, dB L_{A90}

Location	Standardised 10 m Height Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
Gallangad Lodge	21.4	15	17.2	22.7	28	32.4	34.1	34.1	34.1	34.1
Highdykes Farm	24.4	18.2	20.4	25.9	31.1	35.4	37	37	37	37

Table 3 Original Operational Noise Levels, dB L_{A90}

Location	Standardised 10 m Height Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
Gallangad Lodge	-4.5	2	0.3	-1.8	-3.4	-4.3	-1.9	-1.9	-1.9	-1.9
Highdykes Farm	-4.6	1.6	-0.1	-2.1	-3.6	-4.4	-1.8	-1.8	-1.8	-1.8

Table 4 Difference in Operation Noise Levels due to Reduced Hub Height, dB L_{A90}

Calculations show that the reduced hub height, has reduced the predicted noise levels at both receptors across the majority of wind speeds.

The noise limits for the receptors, derived from the survey results, are shown below in Table 5 and Table 6. The updated predicted noise levels have been compared against these noise limits, the results are shown in Table 7 and Table 8.

Location	Standardised 10 m Height Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
Gallangad Lodge	35.5	35.9	36.7	38.0	39.7	41.9	44.6	47.7	51.2	55.3
Highdykes Farm	35.0	35.0	36.0	37.2	38.6	40.1	41.8	43.7	45.7	47.9

Table 5 Applied Noise Limit, dB (Quiet Daytime)

Location	Standardised 10 m Height Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
Gallangad Lodge	43.0	43.0	43.0	43.0	43.0	43.0	44.4	47.3	50.5	54.1
Highdykes Farm	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	44.0	47.4

Table 6 Applied Noise Limit, dB (Night-time)



Location	Standardised 10 m Height Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
Gallangad Lodge	-18.6	-18.9	-19.2	-17.1	-15.1	-13.8	-12.4	-15.5	-19.0	-23.1
Highdykes Farm	-15.2	-15.2	-15.7	-13.4	-11.1	-9.1	-6.6	-8.5	-10.5	-12.7

Table 7 Operational Assessment, Margin to Limit dB (Quiet Daytime)

Location	Standardised 10 m Height Wind Speed (m/s)									
	3	4	5	6	7	8	9	10	11	12
Gallangad Lodge	-26.1	-26.0	-25.5	-22.1	-18.4	-14.9	-12.2	-15.1	-18.3	-21.9
Highdykes Farm	-23.2	-23.2	-22.7	-19.2	-15.5	-12.0	-7.8	-7.8	-8.8	-12.2

Table 8 Operational Assessment, Margin to Limit dB (Night-time)

The comparisons indicate that the operational noise levels of proposed development will be under the noise limits at both receptors and across all wind speeds assessed.

3 Conclusions

RSK Acoustics has undertaken additional noise modelling to account for a reduction in hub height of the proposed turbine for the Vale of Level Wind Farm. Predicted noise levels have been compared against derived noise limits for noise sensitive receptors within the study area.

Predicted noise levels are below noise limits at both receptors across all windspeeds assessed; as with the outcome of the original assessment within the EIAR, the effect of the proposal remains not significant.



The logo for RSK acoustics features a stylized green and grey circular icon on the left, followed by the text "RSK" in a bold, green, sans-serif font and "acoustics" in a grey, lowercase, sans-serif font.