

## DECIBEL - Main Result

Calculation: 5 Old WTG

Noise propagation model:

ISO 9613-2:2024 United Kingdom

Wind speed:

4.0 m/s - 12.0 m/s, step 1.0 m/s

Ground attenuation:

General, Ground factor: 0.5

Valley effect, Penalty: 3.0 dB

Topographic screening, Reduction: 2.0 dB

Type of demand in calculation:

WTG noise is compared to ambient noise plus 5dB margin with the option of a floor setting (e.g. 35dB)

Noise values in calculation:

All noise values are 90% exceedence values (L90) designed to show compliance with ETSU-R-97 limits

Pure tones:

Fixed penalty added to source noise of WTGs with pure tones

WTG catalogue

Uncertainty margin:

0.0 dB; Uncertainty margin in NSA has priority

Calculation height above ground level:

4.0 m

Octave band data required

All coordinates are in  
British TM-OSGB36/Airy (GB/IE)

### WTGs

g)	Easting	Northing	Z	Row data/Description	WTG type			Power, rated	Rotor diameter	Hub height	Noise data		First wind speed	LwaRef	Last wind speed	LwaRef
					Valid	Manufact.	Type-generator				Creator	Name				
			[m]				[kW]	[m]	[m]			[m/s]	[dB(A)]	[m/s]	[dB(A)]	
1	424,115	191,390	109.3	BONUS 1.3 MW 1300-25...No	BONUS	1.3 MW-1,300/250	1,300	62.0	50.0	EMD	Level 0 - - octave - 06-2003	4.0	98.0	12.0	106.0	g
2	423,930	191,427	112.1	BONUS 1.3 MW 1300-25...No	BONUS	1.3 MW-1,300/250	1,300	62.0	50.0	EMD	Level 0 - - octave - 06-2003	4.0	98.0	12.0	106.0	g
3	424,300	191,353	107.9	BONUS 1.3 MW 1300-25...No	BONUS	1.3 MW-1,300/250	1,300	62.0	50.0	EMD	Level 0 - - octave - 06-2003	4.0	98.0	12.0	106.0	g
4	423,738	191,463	113.3	BONUS 1.3 MW 1300-25...No	BONUS	1.3 MW-1,300/250	1,300	62.0	50.0	EMD	Level 0 - - octave - 06-2003	4.0	98.0	12.0	106.0	g
5	424,488	191,315	106.0	BONUS 1.3 MW 1300-25...No	BONUS	1.3 MW-1,300/250	1,300	62.0	50.0	EMD	Level 0 - - octave - 06-2003	4.0	98.0	12.0	106.0	g



Existing WTG

Scale 1:10,000

## DECIBEL - Assumptions for noise calculation

Calculation: 5 Old WTG

Noise calculation model:  
ISO 9613-2:2024 United Kingdom

Wind speed (at 10 m height):  
4.0 m/s - 12.0 m/s, step 1.0 m/s

Ground attenuation:  
General, Ground factor: 0.5  
Valley effect, Penalty: 3.0 dB  
Topographic screening, Reduction: 2.0 dB

Meteorological coefficient, CO:  
Selected option: Fixed value: 0.0 dB

Type of demand in calculation:  
3: WTG noise is compared to ambient noise plus margin (UK, AT etc.)

Noise values in calculation:  
All noise values are 90% exceedance values (L90)

Pure tones:  
Fixed penalty added to source noise of WTGs with pure tones  
WTG catalogue

Height above ground level, when no value in NSA object:  
4.0 m; Don't allow override of model height with height from NSA object

Uncertainty margin:  
0.0 dB; Uncertainty margin in NSA has priority  
Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:  
0.0 dB(A)

Octave data required  
Frequency dependent air absorption

63	125	250	500	1,000	2,000	4,000	8,000
[dB/km]	[dB/km]	[dB/km]	[dB/km]	[dB/km]	[dB/km]	[dB/km]	[dB/km]
0.1	0.4	1.0	1.9	3.7	9.7	32.8	117.0

The air absorption is for a temperature of 10.0 degrees C and 70.0 % humidity.

All coordinates are in  
British TM-OSGB36/Airy (GB/IE)

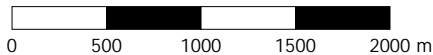
WTG: BONUS 1.3 MW 1300-250 62.0 !0!  
Noise: Level 0 - - octave - 06-2003

Source	Source/Date	Creator	Edited
Manufacturer	2003-06-30	EMD	2005-06-24 2:53 PM

Status	Hub height [m]	Wind speed [m/s]	LwA.ref [dB(A)]	Pure tones		Octave data							
						63 [dB]	125 [dB]	250 [dB]	500 [dB]	1000 [dB]	2000 [dB]	4000 [dB]	8000 [dB]
From slope	50.0	4.0	98.0	No	From nearest other wind speed	82.1	88.7	91.6	90.7	90.6	90.9	85.6	77.1
Interpolated	50.0	5.0	99.0	No	Generic data	80.6	87.6	91.0	93.6	93.4	90.5	85.7	76.2
Interpolated	50.0	6.0	100.0	No	Generic data	81.6	88.6	92.0	94.6	94.4	91.5	86.7	77.2
Interpolated	50.0	7.0	101.0	No	Generic data	82.6	89.6	93.0	95.6	95.4	92.5	87.7	78.2
From Windcat		8.0	102.0	No		86.1	92.7	95.6	94.7	94.6	94.9	89.6	81.1
Extrapolated	50.0	9.0	103.0	No	Generic data	84.6	91.6	95.0	97.6	97.4	94.5	89.7	80.2
Extrapolated	50.0	10.0	104.0	No	Generic data	85.6	92.6	96.0	98.6	98.4	95.5	90.7	81.2
Extrapolated	50.0	11.0	105.0	No	Generic data	86.6	93.6	97.0	99.6	99.4	96.5	91.7	82.2
Extrapolated	50.0	12.0	106.0	No	Generic data	87.6	94.6	98.0	100.6	100.4	97.5	92.7	83.2

### DECIBEL - Map 4.0 m/s

Calculation: 5 Old WTG



Map: EMD OpenStreetMap , Print scale 1:40,000, Map center British TM-OSGB36/Airy (GB/IE) East: 424,113 North: 191,389

Existing WTG

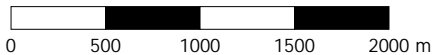
Noise calculation model: ISO 9613-2:2024 United Kingdom. Wind speed: 4.0 m/s  
Height above sea level from active line object

### DECIBEL - Map 5.0 m/s

Calculation: 5 Old WTG



(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL



Map: EMD OpenStreetMap , Print scale 1:40,000, Map center British TM-OSGB36/Airy (GB/IE) East: 424,113 North: 191,389

Existing WTG

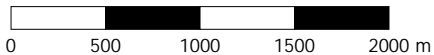
Noise calculation model: ISO 9613-2:2024 United Kingdom. Wind speed: 5.0 m/s  
Height above sea level from active line object

### DECIBEL - Map 6.0 m/s

Calculation: 5 Old WTG



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Map: EMD OpenStreetMap , Print scale 1:40,000, Map center British TM-OSGB36/Airy (GB/IE) East: 424,113 North: 191,389

Existing WTG

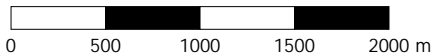
Noise calculation model: ISO 9613-2:2024 United Kingdom. Wind speed: 6.0 m/s  
Height above sea level from active line object

### DECIBEL - Map 7.0 m/s

Calculation: 5 Old WTG



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Map: EMD OpenStreetMap , Print scale 1:40,000, Map center British TM-OSGB36/Airy (GB/IE) East: 424,113 North: 191,389

Existing WTG

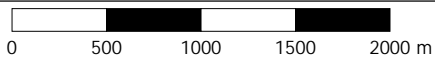
Noise calculation model: ISO 9613-2:2024 United Kingdom. Wind speed: 7.0 m/s  
Height above sea level from active line object

### DECIBEL - Map 8.0 m/s

Calculation: 5 Old WTG



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Map: EMD OpenStreetMap , Print scale 1:40,000, Map center British TM-OSGB36/Airy (GB/IE) East: 424,113 North: 191,389

Existing WTG

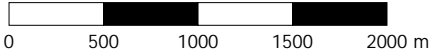
Noise calculation model: ISO 9613-2:2024 United Kingdom. Wind speed: 8.0 m/s  
Height above sea level from active line object

### DECIBEL - Map 9.0 m/s

Calculation: 5 Old WTG



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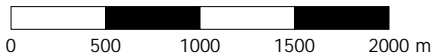
Existing WTG  
Map: EMD OpenStreetMap , Print scale 1:40,000, Map center British TM-OSGB36/Airy (GB/IE) East: 424,113 North: 191,389  
Noise calculation model: ISO 9613-2:2024 United Kingdom. Wind speed: 9.0 m/s  
Height above sea level from active line object

## DECIBEL - Map 10.0 m/s

Calculation: 5 Old WTG



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Map: EMD OpenStreetMap , Print scale 1:40,000, Map center British TM-OSGB36/Airy (GB/IE) East: 424,113 North: 191,389

Existing WTG

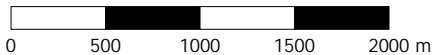
Noise calculation model: ISO 9613-2:2024 United Kingdom. Wind speed: 10.0 m/s  
Height above sea level from active line object

### DECIBEL - Map 11.0 m/s

Calculation: 5 Old WTG



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Map: EMD OpenStreetMap , Print scale 1:40,000, Map center British TM-OSGB36/Airy (GB/IE) East: 424,113 North: 191,389

Existing WTG

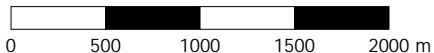
Noise calculation model: ISO 9613-2:2024 United Kingdom. Wind speed: 11.0 m/s  
Height above sea level from active line object

## DECIBEL - Map 12.0 m/s

Calculation: 5 Old WTG



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Map: EMD OpenStreetMap , Print scale 1:40,000, Map center British TM-OSGB36/Airy (GB/IE) East: 424,113 North: 191,389

Existing WTG

Noise calculation model: ISO 9613-2:2024 United Kingdom. Wind speed: 12.0 m/s  
Height above sea level from active line object