



# Appendix 9.4

## Baseline Noise Survey

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Note: This appendix includes a number of photographs which have been included for the purpose of confirming the adopted measurement location at each property. The property owner's consent was obtained to use these photographs and also extended to the collection and use of the obtained baseline measurement data.





# 9.1 Measurement Location A: Blair Farm

Site Information	
Location	Blair Farm
Equipment	Ordnance Survey (OS) Grid Reference
Installation Location	X
	Y
	232466 602449
Installation	Microphone tripod mounted at 1.2 metre (m) height. Windscreen and secondary windscreen installed. Secondary battery case connected.
Measurement Location	Installed on grass approximately 5m from façade of out building and approximately 18m from façade of dwelling.
Ambient Sound	Distant livestock and birdsong were the dominant noise sources. A tractor passing on the track 40m to the south was noted at installation.

Monitoring Information			
WSP Measurement System Reference	Cube 3 (calibrator 01dB Metrarvib CAL 21, serial number 34344461)		
System Timeclock	Install	Collection	Significant Drift?
	BST +11s	BST +8s	No
Acoustic Calibration	Install	Collection	Significant Drift?
	+0.30 decibels (dB)	+0.2dB	No
Measurement times	Start	End	
	09:30 19 August 2020	10:00 17 September 2020	



Photograph 9.4.1 Installed Measurement Location Looking South



Figure 9.4.1 Measurement Location Plan



Photograph 9.4.2 Installed Measurement Location Looking North



## 9.2 Measurement Location B: Glenalla

Site Information	
Location	Glenalla
Equipment Installation Location	OS Grid Reference
	X Y
	234676 600232
Installation	Microphone tripod mounted at 1.2m height. WS-15 windscreen installed.
Measurement Location	Installed on grass approximately 34m to north of the dwelling. Selected in consideration of access restrictions to property. Advised by owner that previous windfarm noise surveys had also been undertaken at this location.
Ambient Sound	Noise environment observed to comprise birdsong, livestock and very distant sound of running water.

Monitoring Information			
WSP Measurement System Reference	Rion 3 (calibrator Rion NC-74, serial number: 34246512)		
System Timeclock	Install	Collection	Significant Drift?
	BST +0s	BST -4s	No
Acoustic Calibration	Install	Collection	Significant Drift?
	0.0dB	-0.1dB	No
Measurement times	Start	End	
	16:50 19 August 2020	10:00 11 September 2020	



Photograph 9.4.3 Installed Measurement Location Looking South East



Figure 9.4.2 Measurement Location Plan



Photograph 9.4.4 Installed Measurement Location Looking North West.



## 9.3 Measurement Location C: Genoch Cottage

Site Information	
Location	Genoch Cottage
Equipment Installation Location	OS Grid Reference
	X Y
	239050 600780
Installation	Microphone tripod mounted at 1.2m height. Windscreen and secondary windscreen installed. Secondary battery case attached.
Measurement Location	Installed on grass embankment approximately 6m from south facing aspect of dwelling and 3m above ground level of dwelling.
Ambient Sound	Birdsong, distant livestock and general domestic sounds observed at install (including voices and washing machine). Occasional distant agricultural machinery noise was observed from farm to the north. A flue extract pipe was observed on the roof of the dwelling closest to the installed equipment, approximately 7m horizontal distance, but no noise from this flue was observed at install. Back door of property approximately 6.5m slat distance to equipment, washing machine located behind door.

Monitoring Information			
WSP Measurement System Reference	DUO 6 (calibrator 01 dB-Stell CAL 21, serial number: 34134166)		
System Timeclock	Install	Collection	Significant Drift?
	BST +0s	BST +24s	No
Acoustic Calibration	Install	Collection	Significant Drift?
	-0.2dB	-0.53dB	No
Measurement times	Start	End	
	11:30 19 August 2020	14:50 17 September 2020	



Figure 9.4.3 Measurement Location Plan



Photograph 9.4.5 Installed Measurement Location Looking East



Photograph 9.4.6 Installed Measurement Location Looking West



## 9.4 Measurement Location D: Tairlaw Toll

Site Information	
Location	Tairlaw Toll
Equipment Installation Location	OS Grid Reference
	X Y
	239833 599519
Installation	Microphone tripod mounted at 1.2m height. Windscreen and secondary windscreen installed. Secondary battery case attached.
Measurement Location	Installed on grass approximately 10m from façade of dwelling. A static home is situated approximately 7m to the north.
Ambient Sound	Birdsong, distant livestock, and occasional vehicles passing on road in front of dwelling. Distant sound of sewing machine observed at install (from inside static home).

Monitoring Information			
WSP Measurement System Reference	Cube 1 (calibrator 01 dB-Metravib CAL 21, serial number 3434463)		
System Timeclock	Install	Collection	Significant Drift?
	BST + 8mins 0s	BST +7min 58s	No
Acoustic Calibration	Install	Collection	Significant Drift?
	+0.88dB	+0.79dB	No
Measurement times	Start	End	
	12:30 19 August 2020	14:30 17 September 2020	



Figure 9.4.4 Measurement Location Plan



Photograph 9.4.7 Installed Measurement Location Looking South.



Photograph 9.4.8 Installed Measurement Location Looking North.



## 9.5 Measurement Location E: White Row

Site Information	
Location	White Row
Equipment Installation Location	OS Grid Reference
	X Y
	234609 595771
Installation	Microphone tripod mounted at 1.2m height. WS-15 windscreen installed. Secondary battery case attached.
Measurement Location	Installed on grass approximately 4m from stand of pine trees and 4.5m from open side of barn. All other possible locations are affected to some degree by sound of running water and tress rustling in the breeze.
Ambient Sound	Birdsong, sound of wind through pine trees and distant livestock observed to be the main sources of sound. Occasional metallic rattle from barn structure moving in breeze.

Monitoring Information			
WSP Measurement System Reference	Rion 2 (calibrator NC-74, serial number 34615220)		
System Timeclock	Install	Collection	Significant Drift
	BST +0s	BST +2s	No
Acoustic Calibration	Install	Collection	Significant Drift?
	+0dB	-0.1dB	No
Measurement times	Start	End	
	14:20 19 August 2020	13:00 17 September 2020	



Figure 9.4.5 Measurement Location Plan



Photographs 9.4.9 and 9.4.10 Installed Measurement Location Looking North West (9.3.9) and East (9.3.10).



## 9.6 Measurement Location F: Doughty Farm

Site Information	
Location	Doughty Farm
Equipment Installation Location	OS Grid Reference
	X Y
	232500 597688
Installation	Microphone tripod mounted at 1.2m height. Windscreen and secondary windscreen installed. Secondary battery case attached.
Measurement Location	Installed on grass approximately 18m to north-east of the dwelling.
Ambient Sound	Birdsong, distant livestock and general domestic sounds (including voices) observed at install. Occasional dogs barking. A door to an outbuilding was observed to be banging against its frame in the breeze. There are a number of dogs, which may roam free in the area with the equipment.

Monitoring Information			
WSP Measurement System Reference	Duo 8 (calibrator 01 dB-Stell CAL 21, serial number 50441999)		
System Timeclock	Install	Collection	Significant Drift
	BST +13s	BST +56s	No
Acoustic Calibration	Install	Battery Change	Collection
	-0.13dB	+0.16dB	-0.39dB
Measurement times	Start	End	
	15:30 19 August 2020	11:50 17 September 2020	
	12:20 17 September 2020	06:40 24 September 2020	

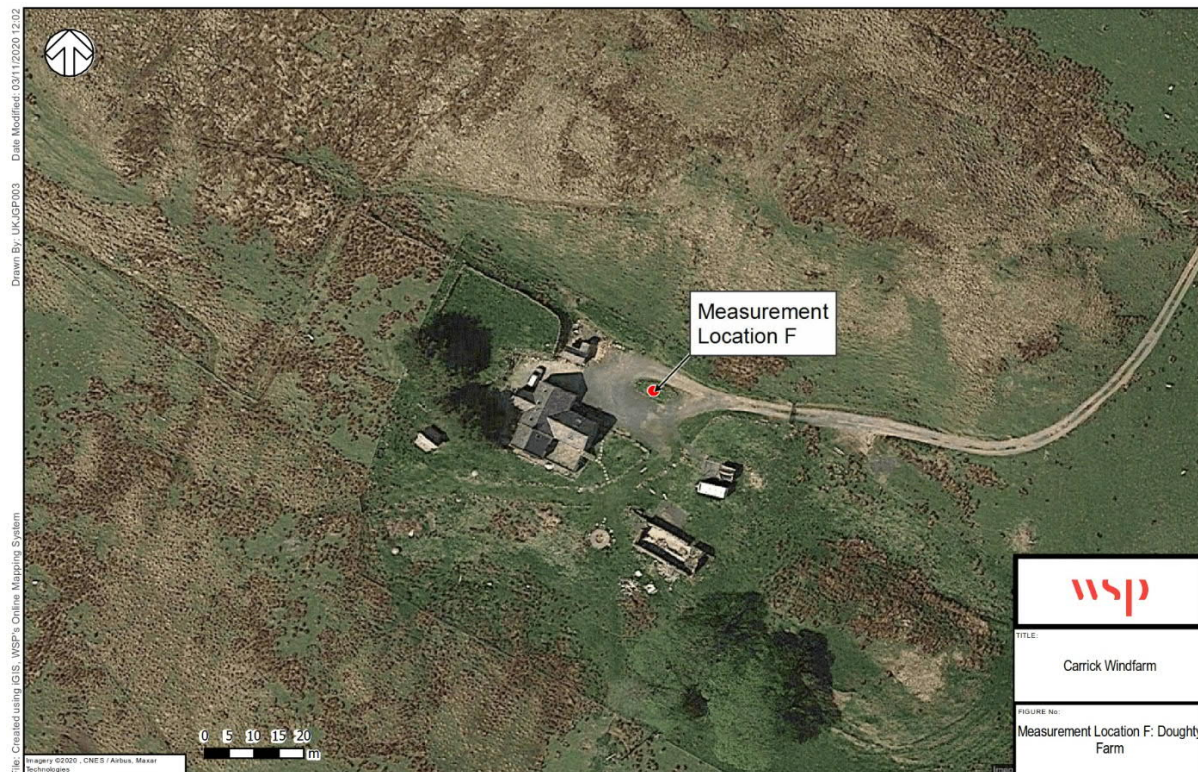


Figure 9.4.6 Measurement Location Plan



Photograph 9.4.11 Installed Measurement Location Looking West.

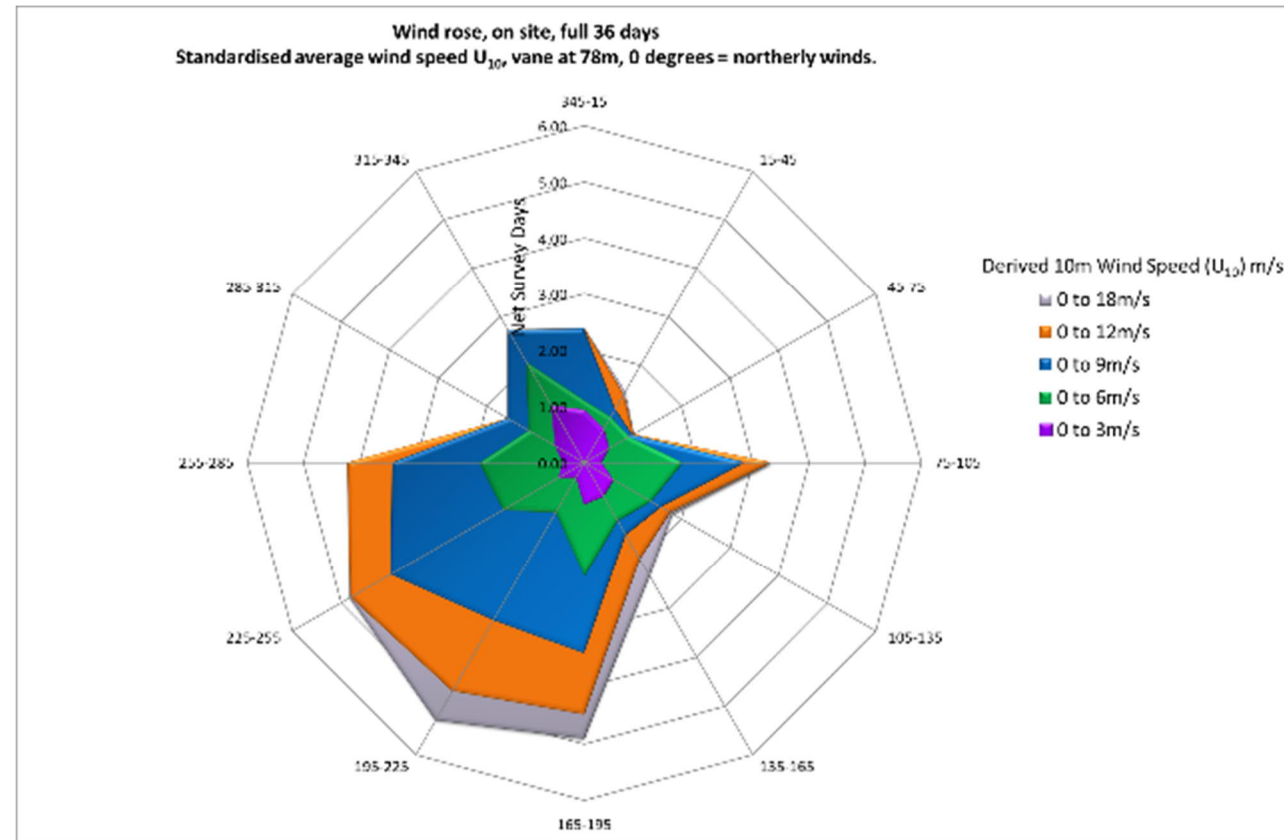


Photograph 9.4.12 Installed Measurement Location Looking South East.

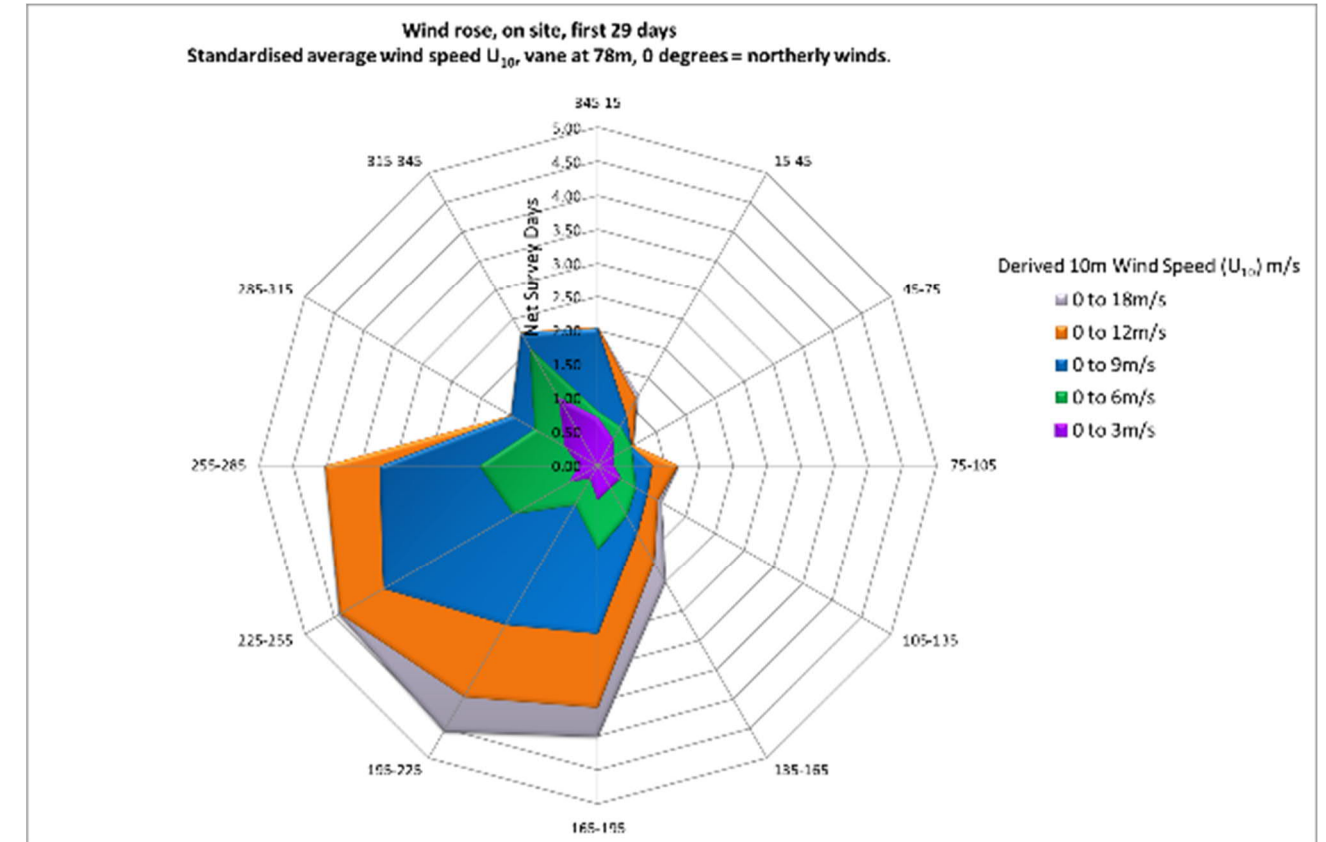


## 9.7 Wind Directions During Baseline Noise Survey

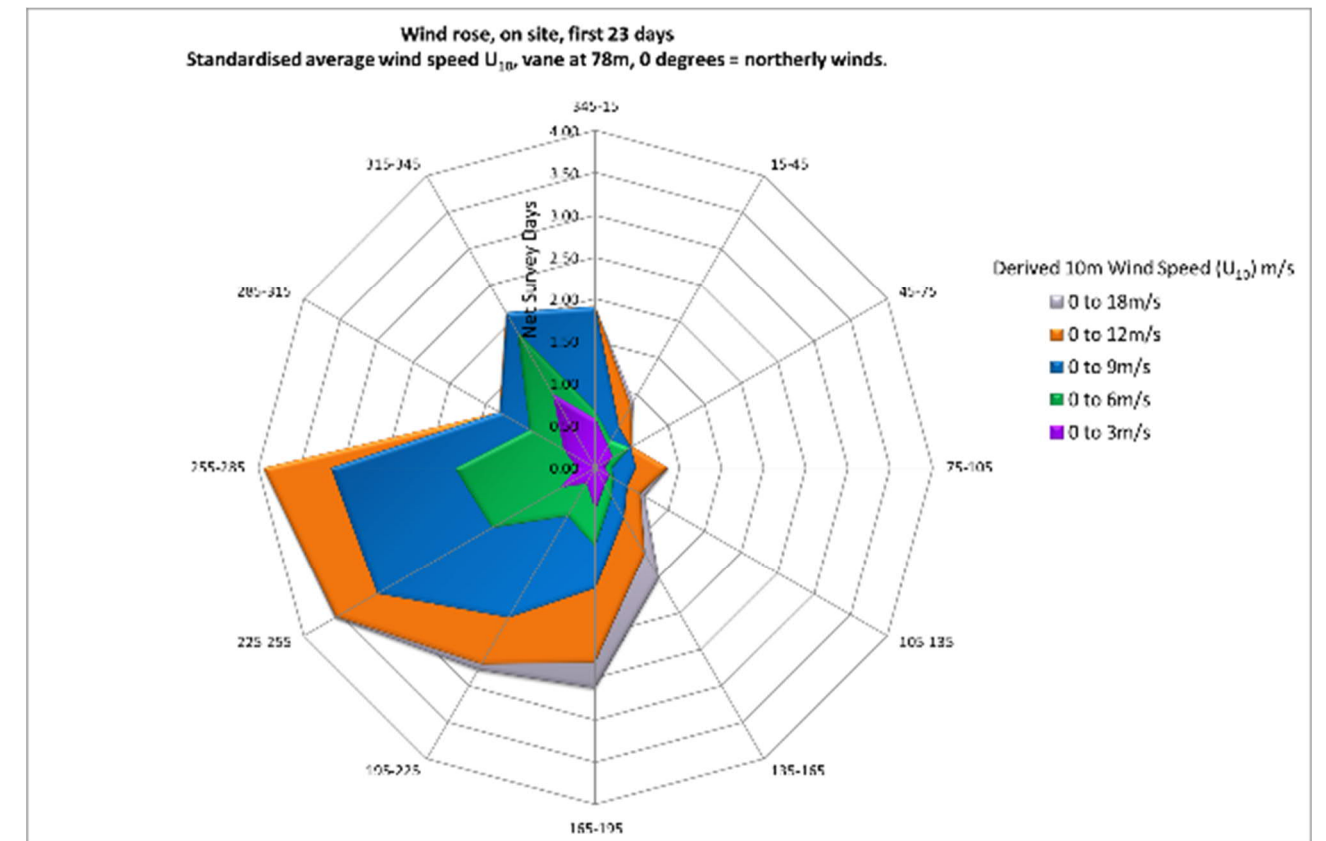
1. The following radar plots present the proportion of the time that winds from different directions arose over the course of the baseline noise survey.
2. Plots have been prepared for the full 36 day monitoring period (as undertaken at Location F), the 29 day monitoring period (as undertaken at measurement Locations A, C, D and E) and the 23 day monitoring period (as undertaken at measurement Location B).
3. The plots consider only the meteorological conditions during the ETSU-R-97 defined quiet daytime and night-time periods as utilised in the completed noise assessment.
4. The data is split into different wind speed ranges, based on average wind speeds at a standardised 10m height ( $U_{10}$ ). The wind direction was taken from the vane installed at 78m height.



Plot 9.4.1 Wind Directions During the Full 36 Day Baseline Noise Survey Period



Plot 9.4.2 Wind Directions During the First 29 Days of the Baseline Noise Survey



Plot 9.4.3 Wind Directions During the First 23 Days of the Baseline Noise Survey



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