



Cush Wind Farm

Environmental Impact Assessment Report

Annex 11.10: Outline Noise Monitoring Programme

Cush Wind Limited

Galetech Energy Services

Clondargan, Stradone, Co. Cavan Ireland

Telephone +353 49 555 5050

www.galetechenergy.com



Contents

1.0	Introduction	1
1.1	Purpose of this Report	1
1.2	Roles and Responsibility	1
	1.2.1 Cush Wind Limited	1
	1.2.2 Acoustic Consultant	1
1.3	Post-Construction Noise Monitoring Programme	1
	1.3.1 Introduction.....	1
	1.3.2 Equipment.....	1
	1.3.3 Location	2
	1.3.4 Duration and Timing	2
	1.3.5 Procedures for Monitoring	2
	1.3.6 Monitoring Records	3
1.4	Mitigation Measures	3
1.5	Contact Details	3



1.0 Introduction

Galetech Energy Services (GES), on behalf of Cush Wind Limited ('the Developer'), has prepared this Outline Noise Monitoring Programme to establish the operational procedures and protocols to be followed in relation to the monitoring of noise levels at dwellings in the vicinity of the Cush Wind Farm.

The Cush Wind Farm is located in rural Co. Offaly, approximately 4km north of the town of Birr and c. 28km south-west of Tullamore, County Offaly. The project comprises 8 no. wind turbines and all other associated ancillary infrastructure.

1.1 Purpose of this Report

This report has been prepared to detail, in outline form, the methodologies and processes to be followed during the monitoring of noise levels for the operational phase of the proposed development.

1.2 Roles and Responsibility

1.2.1 Cush Wind Limited

Cush Wind Limited will be responsible for procuring and contracting a suitably qualified acoustic consultant to carry out the post-construction noise monitoring campaign.

1.2.2 Acoustic Consultant

The Acoustic Consultant, to be appointed by the Developer subject to planning permission being granted, will be responsible for verifying the application and implementation of this programme and associated procedures, supervision of the implementation of all agreed corrective measures, and for updating the programme when necessary. The Acoustic Consultant will be suitably trained and qualified, with experience in carrying out noise monitoring campaigns at wind energy developments.

1.3 Post-Construction Noise Monitoring Programme

1.3.1 Introduction

The noise monitoring programme will be undertaken in accordance with industry best practice to demonstrate that operational-phase noise emissions from the proposed development are below the relevant noise limits. It is anticipated that noise limits will be prescribed by way of a condition of consent and this programme will be updated, prior to the commencement of development, to account for the precise requirements of the relevant planning condition.

1.3.2 Equipment

Measurements will be taken using a sound level meter which fulfils the requirements of the Institute of Acoustics *Good Practice Guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise*. It is proposed that noise levels will be measured for 10-minute periods to allow for data to be compared to wind and operational wind turbine data which will also be measured in 10-minute intervals. Audio recordings will be made using sufficient bandwidth to allow for appropriate analysis for tones to be carried out. All noise measurements shall be carried out in accordance with the *Assessment of Noise with Respect to Community Response*, as amended by ISO Recommendations R 1996-1.

Rainfall will also be measured at a location within the Cush Wind Farm to facilitate the exclusion of noise samples affected by heavy rain.

1.3.3 Location

While it is likely that post-construction monitoring will be undertaken at the same locations used in the Environmental Impact Assessment Report (EIAR) (**Chapter 11**) to allow for a direct comparison of predicted and actual noise levels and verification of the accuracy of the noise prediction modelling software, the precise locations for monitoring will be agreed in writing with the Planning Authorities prior to the commencement of development.

If, at any of the above locations, siting of the noise measurement equipment is not practicable, then a proxy location will be chosen in accordance with the standard guidance. Full details of the proxy location, including a justification of its selection as an appropriate alternative will be included in the noise survey report.

At each survey location, the microphone will be mounted at approximately 1.5m above ground level, fitted with a 150mm (minimum) outside diameter windshield, and placed outside the relevant dwellings as outlined above. Measurements will be made in 'free-field' conditions, ensuring that the microphone is located at least 3.5m from any building facade or any other reflecting surface, except the ground.

1.3.4 Duration and Timing

Monitoring will commence as soon as is practicable following commissioning of the wind turbines and will be undertaken for a duration of between 2 no. and 6 no. weeks, which is considered to be a sufficient time period to assess a suitable range of wind conditions (both speed and direction) across both day and night periods.

1.3.5 Procedures for Monitoring

The following criteria will be observed during noise monitoring:-

- Where possible, the location selected will represent that used by the residents for outdoor amenity;
- The microphone will be at least 3.5m from a building facade in order to correlate the results to a free-field noise level. Care will be taken not to locate the meter near extraneous noise sources e.g. heating systems or farm machinery;
- The microphone will be no more than 1.5m above the ground, to ensure that a representative level can be measured, but yet the microphone itself is not overly exposed;
- Measurements will be carried out in terms of the noise parameter specified within the relevant condition of consent. Best practice currently recommends 'LA90, 10min' which is the "A" weighted noise level measured over consecutive 10-minute periods; and
- The Acoustic Consultant carrying out the noise monitoring may, at their discretion, measure other noise parameters to enable identification of any recorded tonal noise or extraneous noise.

The following details will be recorded:-

- The date, time, location and duration of the measurement;
- All predominant noise sources will be noted. This includes those related to wind farm operation and those independent of the project (e.g. on-going agricultural operations or traffic);

- Weather conditions will be recorded including wind speed and direction, rain and ground frost; and
- Details of the equipment calibration will be noted to ensure accurate readings are taken. This will include the time and date of the calibration, the calibration level and the result.

1.3.6 Monitoring Records

All noise monitoring records will be held in a dedicated file. Following completion of the monitoring campaign, a report outlining the results of the monitoring will be prepared and will be made available to the Planning Authorities in accordance with the relevant planning condition or upon request.

1.4 Mitigation Measures

If following the completion of the noise monitoring campaign, any exceedances in the prescribed limits are found; the Developer will immediately implement a strategy of 'noise reduced operations' through the de-rating of turbines to ensure that noise limits are complied with. Should such a strategy be required, the precise arrangements for reduced operations will be agreed, in writing, with the Planning Authorities.

1.5 Contact Details

The owner of the wind farm will be responsible for procuring and contracting a suitably qualified consultant to carry out the noise monitoring campaign. The owner can be contacted via the Cush Wind Farm website (www.cushwindfarm.ie). Additional contact information will also be furnished to the Planning Authority and will be provided on the project website.

