



codling
wind park

Environmental Impact Assessment Report

Volume 4

Appendix 24.7 DCC noise
risk assessment - OTI
construction phase





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APPENDIX 24.7 DCC CONSTRUCTION NOISE RISK ASSESSMENT

1 Introduction

1. Codling Wind Park Limited (hereafter 'the Applicant') is proposing to develop the Codling Wind Park (CWP) Project, which is located in the Irish sea approximately 13 - 22 km off the east coast of Ireland, at County Wicklow.
2. This appendix forms part of **Chapter 24 Noise and Vibration** of the Environmental Impact Assessment Report (EIAR) for the CWP Project.

2 Risk Assessment Methodology

3. Prior to the commencement of work on the site a construction and demolition plan must be developed. When developing the construction and demolition plan reference must be made to the requirements of the Dublin City Council Air Quality Monitoring and Noise Control Unit's Good Practice Guide for Construction and Demolition.
4. In order to ensure that demolition and construction work does not have an adverse impact on those living and working nearby, the following best practice guidance has been developed. All construction and demolition work has the potential to have adverse environmental impacts no matter what the scale. The following best practice guide sets out the measures which all developers should consider prior to commencement of work and provides further recommendations for the control of noise, vibration and air pollution.
5. A risk based approach is to be used taking into account the locality, nature of the work and the expected duration of the work.

2.1 Risk Assessment A – Locality/Site Information

6. The site should be assessed in relation to the duration of the work, distance to sensitive receptors, ambient noise levels and working hours. Tick the field most likely to apply and add up the number of ticks in each column.

2.2 Risk Assessment B - Work Information

7. Tick the field that is most likely to represent the works in each category, add up the total number of ticks in each column.

2.3 Total Risk Assessment

8. The table 'total risk assessment' contains the sub-total numbers from 'Risk Assessment A and B. The column in total risk assessment with the most ticks indicates the risk category that should be employed for the site.

9. If two risk categories have an equal number of ticks, the higher category of the two shall apply. Once the risk category is known the 'good practice measures' outlined in this code of practice shall be employed.
10. The OTI and OfTI (intertidal area) risk assessment is presented in Section 3. It considers construction noise which could occur at any NSLs within the location of the construction works in the Poolbeg area, which includes the Coastguard Cottages, the wider Irishtown, Ringsend and Sandymount areas and the planned residential development at the former Irish Glass Bottle Site.

3 OTI and OfTI (intertidal area) Risk Assessment

3.1 Locality

11. Identify those who may be affected by noise, including particularly sensitive locations (hospitals/schools) and determine ambient noise levels (noise maps or noise monitoring)

Table 1: DCC construction risk assessment A– Locality OTI and OfTI (intertidal area)

	Low	Medium	High
Expected duration of work			
Less than 6 months			
6 months to 12 months			
Over 12 months			X
Proximity of nearest sensitive receptors			
Greater than 50 metres from site	X		
Between 25m and 50m			
Less than 25 metres			
Hospital or school within 100 metres			
Day time ambient noise levels			
High ambient noise levels (>65dB(A))			
Medium ambient noise levels (55-65dB(A))		X	
Low ambient noise levels (<55dB(A))			
Working Hours			
7am – 6pm Mon-Fri; 8am-1pm Sat	X		
Some extended evening or weekend work		X	
Some night time working, including likelihood of concrete power floating at night			X
SUBTOTAL A	2	2	2

3.2 Work information

Table 2: DCC construction risk assessment B – Work Information OTI and OfTI (intertidal area)

	Low	Medium	High
Location of works			
Majority within existing building			
Majority External			X
External Demolition- N/A			
Limited to two weeks			
Between 2 weeks and 3 months			
Over three months			
Ground Works			
Basement level planned			
Non-percussive methods only			
Percussive methods for less than 3 months			
Percussive methods for more than 3 months			X
Piling			
Limited to one week			
Bored Piling Only			
Impact or vibratory piling			X
Vibration generating activities			
Limited to less than 1 week			
Between 1 week and 1 month			
Greater than 1 month			X
SUBTOTAL B	0	0	4

3.3 OTI and OfTI (intertidal area) risk assessment results

Table 3: DCC construction risk assessment results OTI and OfTI (intertidal area)

	Low	Medium	High
Risk Assessment A	2	2	2
Risk Assessment B	0	0	4
Total	2	2	6

12. The column in total risk assessment with the most ticks indicates the risk category that should be employed for the site.
13. The CWP onshore transmission infrastructure (OTI) the intertidal area (OfTI (intertidal area)) have been assessed and identified as a high risk site in accordance with the DCC Air Quality Monitoring and Noise Control Unit's Good Practice Guide for Construction and Demolition. The remaining section outlines the mitigation measures required as a result of the high risk categorisation.

4 Mitigation Measures

Table 4 : General considerations

All site staff shall be briefed on noise mitigation measures and the application of best practicable means to be employed to control noise.	All sites
Good Quality site hoarding should be erected to maximise the reduction in noise levels	Medium and High risk sites
The contact details of the contractor and site manager shall be displayed to the public, together with the permitted operating hours, including any special permissions given for out of hours work	Medium and High risk sites
The site entrance shall be located to minimise disturbance to noise sensitive receptors	Medium and High risk sites
Internal haul routes shall be maintained and steep gradients shall be avoided	Medium and High risk sites
Material and plant loading and unloading shall only take place during normal working hours unless the requirement for extended hours is for traffic management(i.e road closure) or health and reasons(application must be made to DCC a minimum of 4 days prior to proposed works)	All sites
Use rubber linings in chutes, dumpers and hoppers to reduce impact noise	High risk sites
Minimise opening and shutting of gates through good coordination of deliveries and vehicle movements	Medium and High risk sites
No materials shall be burned on site	All sites
Adequate dust/debris screening should be in place at the site boundary to contain and minimise the amount of windblown dust. This must be maintained in good condition at all times.	Medium and High Risk sites
All consignments containing material with the potential to cause air pollution being transported by skips, lorries, trucks or tippers must be covered during transit on and off site.	All sites
The site shall be dampened down as necessary to minimise windblown dust when necessary or during periods of dry weather.	All sites
Dust suppression equipment must be used when point source emissions are likely.	All sites
The entry and exit points to the site should be constructed of hard standing which is regularly dampened to minimise dust emissions.	Medium and High Risk Sites

Table 5: Plant

Ensure that each item of plant and equipment complies with the noise limits quoted in the relevant European Commission Directive 2000/14/EC	All sites
Fit all plant and equipment with appropriate mufflers or silencers of the type recommended by the manufacturer	All sites
Use all plant and equipment only for the tasks for which it has been designed	All Sites
Shut down all plant and equipment in intermittent use in the intervening periods between work or throttle down to a minimum	All sites
Power all plant by mains electricity where possible rather than generators	Medium and High Risk Sites
Maximise screening from existing features or structures and employ the use of partial or full enclosures for fixed plant	Medium and High Risk Sites
Locate movable plant away from noise sensitive receptors	All sites

Table 6: Vehicle activity

Ensure all vehicle movements (on site) occur within normal working hours. (other than where extension of work requiring such movements has been granted in cases of required road closures or for health and safety reasons)	All sites
Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public roads. If unavoidable engines should be turned off.	Medium and High Risk Sites
Minimise the opening and closing of the site access through good coordination of deliveries and vehicle movements	Medium and High Risk Sites
Plan the site layout to ensure that reversing is kept to a minimum	Medium and High Risk Sites
Where reversing is required use broadband reverse sirens or where it is safe to do so disengage all sirens and use banks-men	Medium and High Risk Sites
Rubber/neoprene or similar non-metal lining material matting to line the inside of material transportation vehicles to avoid first drop high noise levels.	Medium and High Risk Sites
Wheel washing of vehicles prior to exiting the site shall take place to ensure that adjoining roads are kept clean of dirt and debris. Regular washing of adjoining streets should also be carried out by the developer, as required by mechanical road sweepers	Medium and High Risk Sites

Table 7: Demolition phase

Employ the use of acoustic screening; this can include planning the demolition sequence to utilise screening afforded by buildings to be demolished.	Medium and High Risk Sites
If working out of hours for Health and Safety reasons (following approval by DCC) limit demolition activities to low level noise activity unless absolutely unavoidable)	All sites

Use low impact demolition methods such as non-percussive plant where practicable	Medium and High Risk Sites
Use rotary drills and ‘bursters’ activated by hydraulic or electrical power or chemically based expansion compounds to facilitate fragmentation and excavation of hard material.	High Risk sites
Avoid the transfer of noise and vibration from demolition activities to adjoining occupied buildings through cutting any vibration transmission path or by structural separation of buildings	Medium and High Risk Sites
Consider the removal of larger sections by lifting them out and breaking them down either in an area away from sensitive receptors or off site.	High Risk Sites

Table 8: Ground works and piling phase

The following hierarchy of groundwork/piling methods should be used if ground conditions, design and safety allows: <ul style="list-style-type: none"> • pressed in methods, e.g., hydraulic jacking • Auger/bored piling • Diaphragm walling • Vibratory piling or vibro-replacement • Driven Piling or dynamic consolidation 	Medium and High Risk Sites
The location and layout of the piling plant should be designed to minimise potential noise impact of generators and motors	Medium and High Risk Sites
Where impact piling is the only option utilise a non-metallic dolly between the hammer and driving helmet or enclose the hammer and helmet with an acoustic shroud	Medium and High Risk Sites
Consider concrete pour sizes and pump locations. Plan the start of concrete pours as early as possible to avoid overruns	Medium and High Risk Sites
Where obstructions are encountered, work should be stopped and a review undertaken to ensure that work methods that minimise noise are used.	Medium and High Risk Sites
When using an auger piling rig do not dislodge material from the auger by rotating it back and forth. Use alternate methods where safe to do so.	Medium and High Risk Sites
Prepare pile caps using methods which minimise the use of breakers, e.g., use hydraulic splitters to crack the top of the pile.	Medium and High Risk Sites

Table 9: Monitoring

Establish pre-existing levels of ambient noise by baseline monitoring or use of the noise maps.	Medium and High Risk Sites
Carry out regular on site observation monitoring and checks/audits to ensure that BPM is being used at all times. Such checks shall include; <ul style="list-style-type: none"> • Hours of work • Presence of mitigation measures • Number and type of plant 	High Risk Sites

<ul style="list-style-type: none"> Construction methods <p>Site reviews must be recorded and made available for inspection</p>	
<p>Monitor noise and vibration continuously during demolition, piling, excavation and sub and superstructure works at agreed locations and report to DCC at agreed intervals and in an agreed format.</p> <p>To comply with this the following must take place.</p> <p>The monitoring locations for existing sites as agreed with officers of Dublin City Council must remain in situ. If additional monitoring is required this will be provided and the new locations will be agreed with Dublin City Council. For all new sites the monitoring locations must be agreed with Dublin City Council.</p> <p>The results of the monitoring must be forwarded to officers of the Air Quality Monitoring and Noise Control Unit every two weeks in the following format:</p> <ul style="list-style-type: none"> Provide the construction noise level as defined in British Standard 5228 and the peak particle velocity readings for the hours of operation of the site. This will include the construction noise level for any overtime period worked outside of normal working hours. Provide a report detailing and discussing the noise and vibration levels over the reporting period. If a breach is recorded the follow up action that took place to prevent any further breaches must be included in the report. This information must be provided in electronic format. If results are required owing to complaints the results will be provided as soon as possible by the contractor to Dublin City Council. 	High Risk Sites
<p>Appraise and review working methods, processes and procedures on a regular basis to ensure continuous development of BPM</p>	Medium and High Risk Sites
<p>The 'ABC' Method detailed in Paragraph E.3.2 of BS 5228-1:2009 shall be used to determine acceptable noise levels for day, evening and night time work.</p>	Medium and High Risk Sites
<p>Vibration levels must be kept below 1.0 mm/sec (PPV) where possible. Where levels are expected to exceed this value residents must be warned and an explanation given.</p>	Medium and High Risk Sites
<p>Appropriate dust suppression must be employed to prevent fugitive emissions affecting those occupying neighbouring properties or pathways</p>	All sites
<p>Appropriate dust suppression must be employed to prevent fugitive emissions affecting those occupying neighbouring properties or pathways</p>	All sites
<p>Street and footpath cleaning must be undertaken during the demolition and ground works phase to minimise dust emissions</p>	Medium and High Risk Sites
<p>Continuous dust monitoring along the site boundary should be undertaken during any demolition or ground works</p>	High Risk Sites

Table 10: Communication and liaison

<p>A Community Liaison Plan should be developed by the developer in consultation with local residents/businesses and a single point of contact nominated to engage with Dublin City Council and the residents/businesses and to handle complaints and communication of site information. A copy of this plan must be sent to Dublin City Council Planning Department as a</p>	Medium and High Risk Sites
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matter of urgency in the case of sites where development has already commenced and 14 days in advance of commencement of works for any other site	
Contact details for the site manager and liaison officer should be displayed prominently on the site hoarding	Medium and High Risk Sites
All staff should be briefed on the complaints procedure and the mitigation requirement and their responsibilities to register and escalate complaints received.	Medium and High Risk Sites
Send regular updates at appropriate intervals to all identified affected neighbours/ businesses via a newsletter and post relevant information on the site hoarding. Also make the information available via email/website including weekly noise monitoring reports	Medium and High Risk Sites
Arrange regular community liaison meetings at appropriate intervals including prior to commencement of the project.	High Risk Sites
Meet regularly with neighbouring construction sites to ensure activities are coordinated to minimise any potential cumulative issues.	High Risk Sites

Table 11: Extensions of working hours in exceptional circumstances

Ensure at least 4 days notice is given to Dublin City Council Planning Department when applying for extensions to normal working hours. Do not undertake out of hours work unless permission to do so has been granted.	All sites
The applicant must demonstrate in writing that the works required cannot be carried out during normal working hours. The documentation sent in must be accompanied by a detailed engineering or/and traffic management or/and safety case as to why the works are required outside normal hours.	All sites
Power floating after 6pm is the only activity that will be permitted during the extensions where they relate to required large concrete pours. All reasonable and appropriate measures to minimise noise associated with these works must be put in place and no works other than those approved may be carried out during extended working hours.	All sites
The Developer/his agent must give the times and dates of the proposed work, and the mitigation measures that are to be used to minimise noise/disturbance.	All sites
Advise neighbours about requirement for and duration of any permitted works outside of normal working hours, and associated environmental mitigation measures being put in place during the course of the extended works, following receipt of approval from DCC.	All sites
All complaints will be referred directly to the site liaison person and a reply must issue to the complaint within 3 hours of receipt of the complaint.	All sites
A log of all complaints and a summary of how they were dealt with should be kept and be made available to DCC, as required.	All sites
Any breaches of permitted working hours or permitted extended working hours or developers or subcontractors not carrying out their requirements under this protocol may lead to enforcement action and may also result in the withdrawal of any extension of hours of works for a period that will be at the discretion of Dublin City Council.	All sites