

16. SCHEDULE OF MITIGATION

16.1 Introduction

All mitigation measures relating to the operational phase of the Proposed Development at Carnsore Wind Farm are set out in the relevant chapters of the EIAR (Environmental Impact Assessment Report) submitted as part of the planning permission application.

This section of the EIAR groups together all of the mitigation measures presented in the planning documentation. All mitigation measures which will be implemented during the operational and decommissioning phases of the project are outlined in Table 16-1. The mitigation measures can be grouped together according to their environmental field/topic under the following headings:

- > Health and Safety
- > Drainage and the Water Environment
- > Subsoils and bedrock
- > Biodiversity
- > Noise
- > Air Quality/Dust
- > Cultural Heritage

By presenting the mitigation proposals in the below format, it is intended to provide an easy to audit list that can be reviewed and reported on during the operational phase of the project. The tabular format in which the below information is presented, can be further expanded upon during the course of operation and provides a reporting template for site compliance audits.

16.2

EIAR Mitigation Measures

Table 16-1 Schedule of Mitigation, Carnsore Wind Farm

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
Operational Phase				
MM1	EIAR Chapter 5	<p>Regarding <u>Health and Safety</u> during the operational phase:</p> <ul style="list-style-type: none"> ○ Mitigation measures that are currently in place will continue during the extended operation of the Proposed Development to ensure that the risks posed to staff, landowners and the general public remain negligible throughout the operational life of the wind farm. ○ An operational phase Health and Safety Plan is currently in place and will continue to fully address identified Health and Safety issues associated with the operation of the site. ○ During the operation of the wind farm regular maintenance of the turbines will be carried out by the turbine manufacturer or appointed service company. A project or task specific Health and Safety Plan will be developed for these works in accordance with the site’s health and safety requirements. ○ During the operational phase there will be ongoing maintenance of the wind turbines and associated infrastructure. Access to the turbines is through a door at the base of the structure, which is locked at all times outside maintenance visits. 		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
MM2	EIAR Chapter 3, 6	<p>Regarding <u>Biodiversity Management</u> during the operational phase:</p> <ul style="list-style-type: none"> ○ As part of the continued operation of the wind farm a biodiversity management plan is being developed which will include a number of biodiversity enhancement initiatives, such as implementing pollinator-friendly management practices, in line with the recent Wind Energy Ireland’s pollinator guidance document. This will likely lead to an overall increase in available local habitat and species diversity. 		
MM3	EIAR Chapter 5	<p>Regarding <u>Residential Amenity</u> during the operational phase:</p> <ul style="list-style-type: none"> ○ All mitigation as outlined under noise and vibration, dust, traffic, visual amenity and shadow flicker in the EIAR, will be implemented in order to reduce insofar as possible impacts on residential amenity at properties located in the vicinity of the Carnsore Wind Farm development. ○ In the event of shadow flicker exceeding guidance levels at a residential dwelling surrounding the wind farm mitigation options will be discussed with the affected homeowner, if required, including: <ul style="list-style-type: none"> - Installation of appropriate window blinds in the affected rooms of the residence; - Planting of screening vegetation; - Other site-specific measures which might be agreeable to the affected party and may lead to the desired mitigation. 		

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MM4	EIAR Chapter 5, 11	<p>Regarding <u>Noise Control</u> during the operational phase:</p> <ul style="list-style-type: none"> ○ An assessment of the wind farm operational noise levels has been undertaken in accordance with best practice. A minor exceedance of the WEDG06 noise limits of 1 dB was found at one noise sensitive location (NSL) due to its proximity to turbine no. T13. ○ Predicted noise levels at the affected NSL for each of the turbines have been analysed in combination with wind direction analysis to determine a suitable curtailment strategy to achieve compliance with the noise limits. No further mitigation measures are required. ○ Special features such as Tonality, AM or LFN have not been identified in emissions. If such were found, certain modifications to turbine operation could be employed to prevent the issue as observed in past such instances at other wind farms. <p>Regarding <u>Noise Monitoring</u> during the operational phase:</p> <ul style="list-style-type: none"> ○ Should it be necessary to assess a complaint from a location which does not have an associated representative baseline curve, noise monitoring may be carried out and directional filtering applied to assess both wind farm noise and background. 		
MM5	EIAR Chapter 8, 9	<p>In order to limit impacts upon <u>Soils and the Water Environment</u> from potential leaks and spillages of hydrocarbons during routine maintenance works the following measures are proposed:</p> <ul style="list-style-type: none"> ○ All plant and machinery to be serviced before being mobilised to site; ○ No plant maintenance completed on-site, any broken down plant removed from site to be fixed; 		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
		<ul style="list-style-type: none"> ○ Refuelling completed in a controlled manner using drip trays at all times; ○ Mobile bowsers, tanks and drums stored in secure, impermeable bunded storage areas away from open water; ○ Only designated trained operators authorised to refuel plant on-site; ○ Procedures and contingency plans set up to deal with emergency accidents or spills; and, ○ Highest standards of site management maintained, and utmost care and vigilance followed to prevent accidental contamination or unnecessary disturbance to the site and surrounding environment during works. ○ The substation transformer is in a concrete bund capable of holding 110% of the stored oil volume, and all oil on site is stored in suitable bunds capable of holding 110% of the stored oil volume. Turbine transformers are located within the turbines, so any leaks would be contained within the turbine. 		
MM6	EIAR Chapter 10	<p>Regarding <u>Air Quality</u> during the operational phase:</p> <ul style="list-style-type: none"> ○ Any vehicles or plant brought onsite during the operational phase will be maintained in good operational order, thereby minimising any emissions that arise. 		
MM7	EIAR Chapter 2	In the event of further scoping responses being received from the EIA consultees, the comments of the consultees and any mitigation measures are considered during operation of the Carnsore Wind Farm development, subject to the outcome of the planning process.		

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Decommissioning Phase				
MX1	EIAR Chapter 4	In the event that the Proposed Development is decommissioned after the 15 years extension of life, a Decommissioning Plan, including a Waste Management Plan, Traffic Management Plan and potential Invasive Species Survey / Management Plan will be prepared for agreement with the local authority. This will be a comprehensive plan updated in line with decommissioning methodologies that may exist at the time.		
MX2	EIAR Chapter 9	Regarding the <u>Water Environment</u> : <ul style="list-style-type: none"> The key mitigation measure during the decommissioning phase is the avoidance of sensitive aquatic areas. There are no watercourses within or immediately adjacent to the Proposed Development site and therefore no direct impacts to surface waters are likely. No in-stream works would be required during the decommissioning of the existing wind farm. Best construction practices will be adhered to throughout the decommissioning phase of the development. 		
MX3	EIAR Chapter 4, 8, 9, 10, 11	Regarding <u>dust, noise and vibration</u> during decommissioning of subsurface infrastructure: <ul style="list-style-type: none"> It is proposed to leave turbine foundations in place underground and to cover them with earth and reseed as appropriate. On removal of turbines, the covering of the foundation will be completed using locally sourced material (e.g. topsoil) where possible. Leaving the turbine 		

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		<p>foundations in-situ is considered a more environmentally prudent option, as to remove large volumes of reinforced concrete from the ground could result in significant environment nuisances such as noise, dust and/or vibration.</p> <ul style="list-style-type: none"> ○ Use of an appropriate native seed mix to assist in revegetation and accelerate the resumption of the natural drainage management that will have existed prior to any construction is recommended. 		
MX4	EIAR Chapter 8, 9	<p>In order to limit impacts upon <u>Soils and the Water Environment</u> from potential leaks and spillages of hydrocarbons during decommissioning works the following measures are proposed:</p> <ul style="list-style-type: none"> ○ All plant and machinery to be serviced before being mobilised to site and regularly inspected for leaks and fitness of purpose during use. ○ No plant maintenance completed on-site, any broken down plant removed from site to be fixed. ○ Fuel volumes stored on site should be minimised. Any fuel storage areas will be bunded appropriately. ○ Refuelling completed in a controlled manner using drip trays at all times. ○ Mobile bowsers, tanks and drums stored in secure, impermeable bunded storage areas away from open water. ○ Only designated trained operators authorised to refuel plant on-site. ○ Procedures and contingency plans set up to deal with emergency accidents or spills. ○ Highest standards of site management maintained, and utmost care and vigilance followed to prevent accidental contamination or unnecessary disturbance to the site and surrounding environment during works. ○ The substation transformer is in a concrete bund capable of holding 110% of the stored oil volume, and all oil on site is stored in suitable 		

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		<p>bunds capable of holding 110% of the stored oil volume. Turbine transformers are located within the turbines, so any leaks would be contained within the turbine.</p> <ul style="list-style-type: none"> ○ An emergency plan for the decommissioning phase to deal with accidental spillages will be developed. Spill kits will be available to deal with and accidental spillage within and outside the refuelling area. ○ A programme for the regular inspection of plant and equipment for leaks and fitness for purpose will be developed at the outset of the decommissioning phase. 		
MX5	EIAR Section 10	<p>Regarding <u>Air Quality</u> during the decommissioning phase:</p> <ul style="list-style-type: none"> ○ Any vehicles or plant brought onsite during the operational phase will be maintained in good operational order, thereby minimising any emissions that arise. 		
MX6	EIAR Chapter 11	<p>Regarding <u>Noise and Vibration</u> control during the decommissioning phase:</p> <p>Various mitigation strategies may be employed to reduce construction noise and vibration impacts, including the following:</p> <ul style="list-style-type: none"> ○ Limiting operation of noisiest activities to exclude periods identified as important to residential amenity. ○ Selection of items of plant with lower noise levels. ○ Engagement and dialogue between construction contractor and local community. ○ Monitoring of site noise levels to ensure compliance with limits. 		

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		<ul style="list-style-type: none"> ○ Assign responsibility for issues relating to noise to a competent member of site staff. ○ If necessary, install local noise barriers with absorptive linings near to specific sources, during construction works. ○ Provide enclosures around generators. ○ Switch off engines and equipment when not required. ○ Warning reversing alarms should give adequate warning but have minimum impact on people outside site. ○ Plant and activities should be reviewed so they are the quietest available (and therefore demonstrate use of best practicable means). ○ Further guidance provided in British Standard BS5228 on construction noise reduction will also be implemented where appropriate. 		
MX7	EIAR Chapter 11	<p>Regarding Site <u>Traffic</u> related impacts during the decommissioning phase:</p> <ul style="list-style-type: none"> ○ A Traffic Management Plan will be developed to minimise impacts to the local road network and submitted as part of the Decommissioning Plan, for agreement with the local authority. 		
MX8	EIAR Chapter 12	<p>Regarding <u>Cultural Heritage</u> during the decommissioning phase:</p> <ul style="list-style-type: none"> ○ Given the presence of archaeological monuments within the EIAR site boundary, the decommissioning phase could potentially have a number of direct negative impacts on the known cultural heritage. A suite of mitigation measures would be required to include full time presence of an archaeologist during decommissioning works to ensure that no significant or adverse impacts take place to the monuments and cultural heritage features located therein. 		



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		<ul style="list-style-type: none">○ Furthermore, buffer / exclusion zones and fencing may be required to ensure that large turbine / crane components do not encroach on the monuments' extent.		