



Appendix G



235145-05/06/2023-SIAR Vol.4 Appendices Part 6



PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P21139

Borehole / Pit No

TP03A2

Location

Gortyrhilly and Inchamore W.F

Sample No

Depth

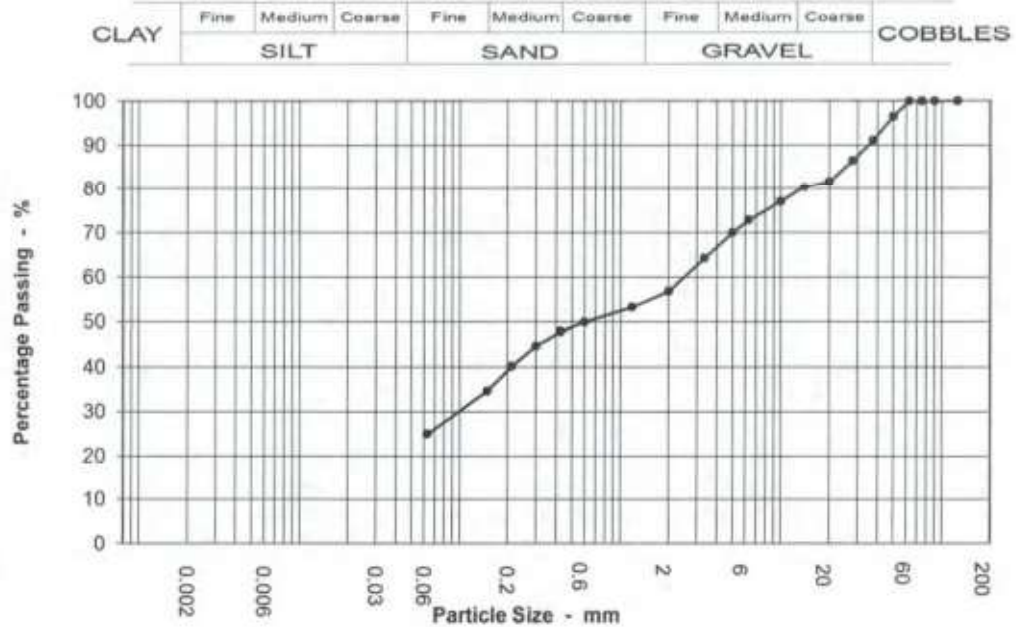
0.00 m

Soil Description

Very clayey very sandy GRAVEL

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	97		
37.5	91		
28	87		
20	82		
14	80		
10	77		
6.3	73		
5	70		
3.35	64		
2	57		
1.18	53		
0.6	50		
0.425	48		
0.3	45		
0.212	40		
0.15	35		
0.063	25		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	43.0
Sand	32.0
Silt & Clay	25.0

Grading Analysis	
D100	63.00
D60	2.49
D10	
Uniformity Coefficient	



PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref P21139

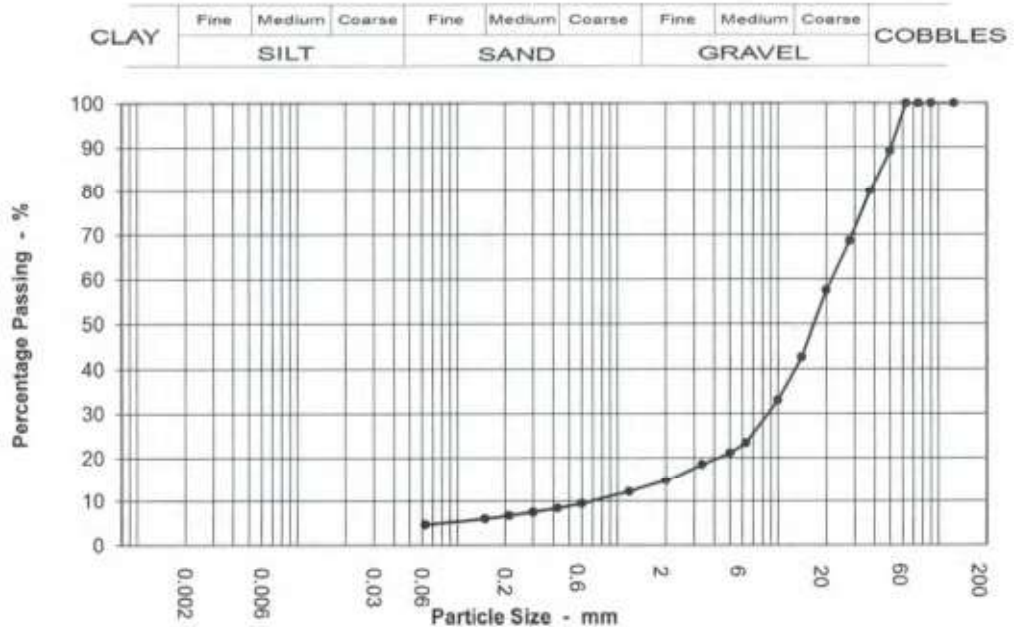
Borehole / Pit No TP08A1

Location **Gortyrahilly and Inchamore W.F**

Sample No
Depth 0.00 m

Soil Description **Clayey sandy GRAVEL**

Sample type B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	89		
37.5	80		
28	69		
20	58		
14	43		
10	33		
6.3	23		
5	21		
3.35	18		
2	15		
1.18	12		
0.6	9		
0.425	8		
0.3	7		
0.212	7		
0.15	6		
0.063	5		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	85.0
Sand	10.0
Silt & Clay	5.0

Grading Analysis	
D100	63.00
D60	21.50
D10	0.70
Uniformity Coefficient	31.00



PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P21139

Borehole / Pit No

TP08A2

Location

Gortyrhilly and Inchamore W.F

Sample No

Depth

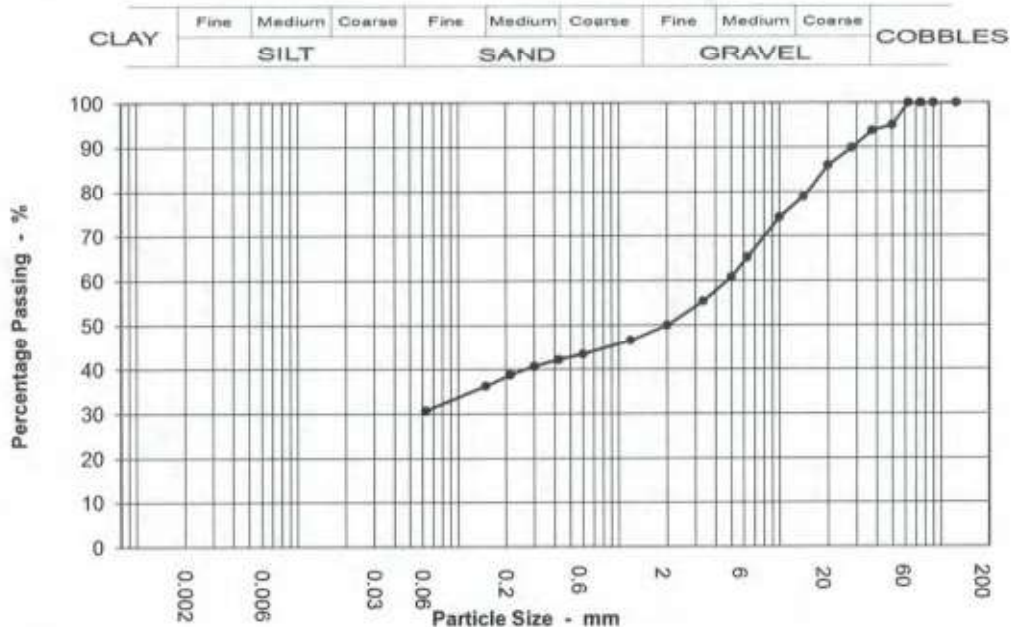
0.00 m

Soil Description

Slightly sandy gravelly CLAY

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	95		
37.5	94		
28	90		
20	86		
14	79		
10	74		
6.3	65		
5	61		
3.35	55		
2	50		
1.18	47		
0.6	43		
0.425	42		
0.3	41		
0.212	39		
0.15	36		
0.063	31		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	50.0
Sand	19.0
Silt & Clay	31.0

Grading Analysis	
D100	63.00
D60	4.68
D10	
Uniformity Coefficient	



PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P21139

Borehole / Pit No

TP11A2

Location

Gortyrhilly and Inchamore W.F

Sample No

Depth

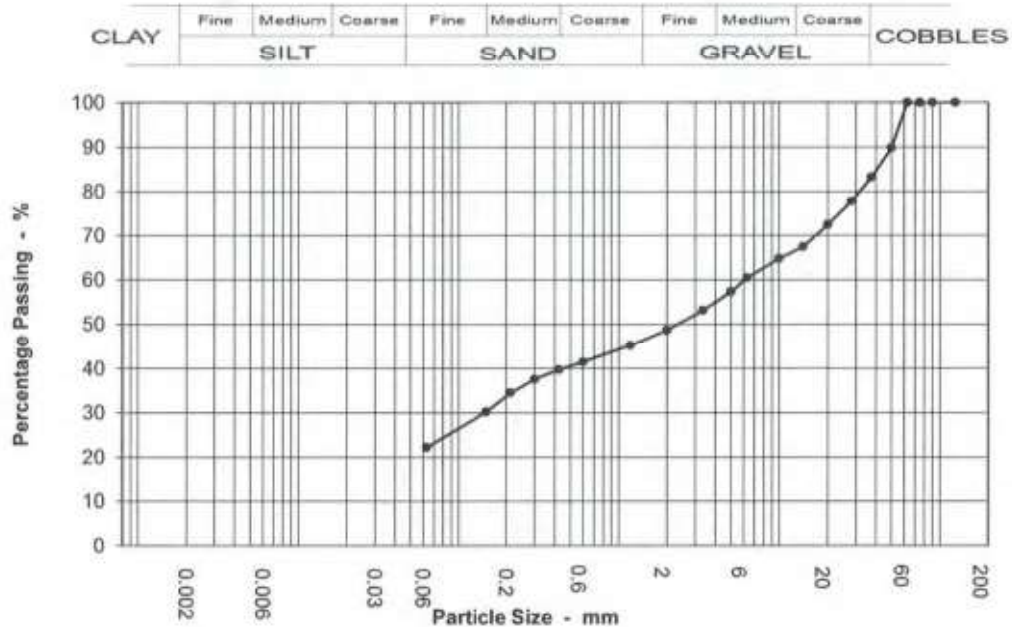
0.00 m

Soil Description

Very clayey very sandy GRAVEL

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	90		
37.5	83		
28	78		
20	72		
14	67		
10	65		
6.3	60		
5	57		
3.35	53		
2	49		
1.18	45		
0.6	41		
0.425	40		
0.3	38		
0.212	34		
0.15	30		
0.063	22		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	51.0
Sand	26.0
Silt & Clay	22.0

Grading Analysis	
D100	63.00
D60	6.08
D10	
Uniformity Coefficient	



PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P21139

Borehole / Pit No

TP13A1

Location

Gortyrahilly and Inchamore W.F

Sample No

Depth

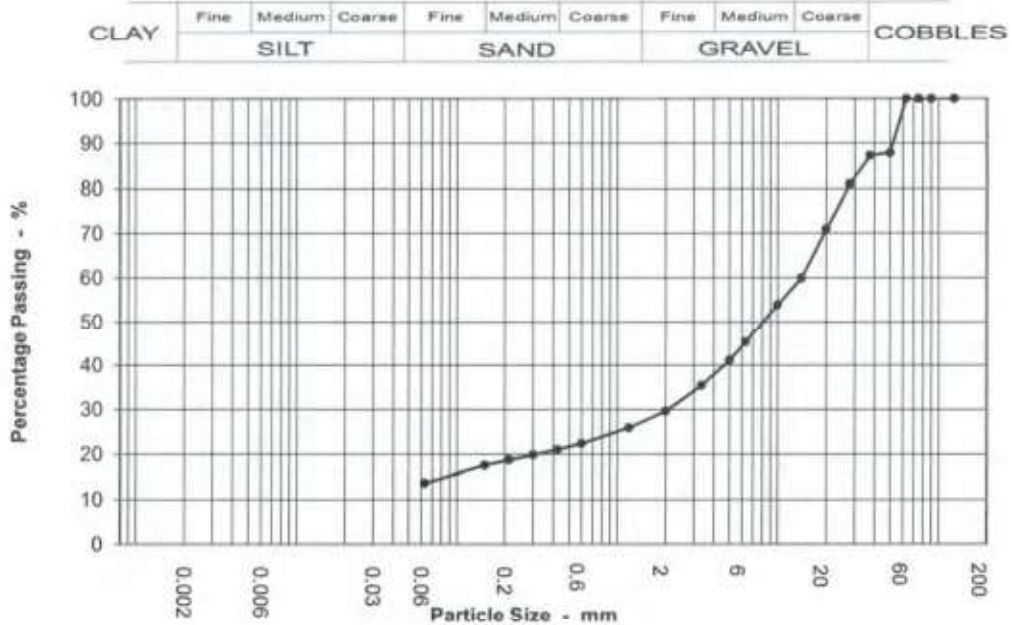
0.00 m

Soil Description

Clayey sandy GRAVEL

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	88		
37.5	87		
28	81		
20	71		
14	60		
10	54		
6.3	45		
5	41		
3.35	35		
2	30		
1.18	26		
0.6	22		
0.425	21		
0.3	20		
0.212	19		
0.15	18		
0.063	14		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	70.0
Sand	16.0
Silt & Clay	14.0

Grading Analysis	
D100	63.00
D60	14.00
D10	
Uniformity Coefficient	



PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P21139

Borehole / Pit No

TP24A1

Location

Gortyrahilly and Inchamore W.F

Sample No

Depth

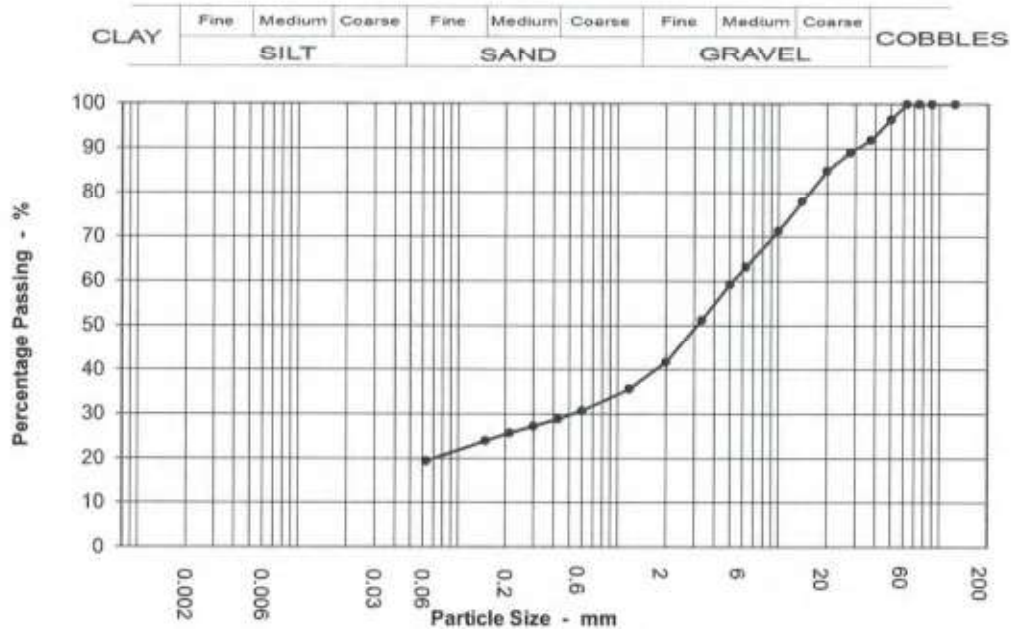
0.00 m

Soil Description

Clayey very sandy GRAVEL

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	97		
37.5	92		
28	89		
20	85		
14	78		
10	71		
6.3	63		
5	59		
3.35	51		
2	42		
1.18	36		
0.6	31		
0.425	29		
0.3	27		
0.212	26		
0.15	24		
0.063	19		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	58.0
Sand	22.0
Silt & Clay	19.0

Grading Analysis	
D100	63.00
D60	5.21
D10	
Uniformity Coefficient	



PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P21139

Borehole / Pit No

TP30A1

Location

Gortyrhilly and Inchamore W.F

Sample No

Depth

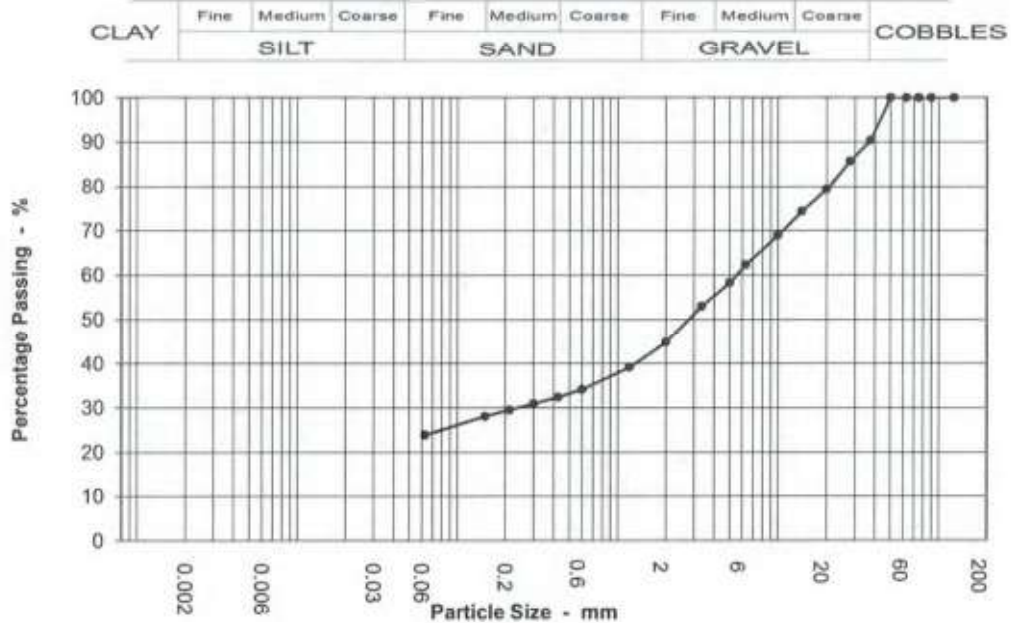
0.00 m

Soil Description

Very clayey very sandy GRAVEL

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	90		
28	86		
20	79		
14	74		
10	69		
6.3	62		
5	58		
3.35	53		
2	45		
1.18	39		
0.6	34		
0.425	32		
0.3	31		
0.212	30		
0.15	28		
0.063	24		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	55.0
Sand	21.0
Silt & Clay	24.0

Grading Analysis	
D100	50.00
D60	5.51
D10	
Uniformity Coefficient	

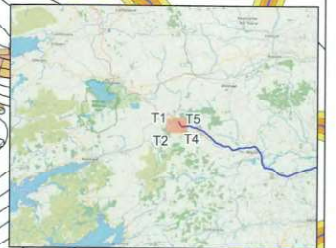
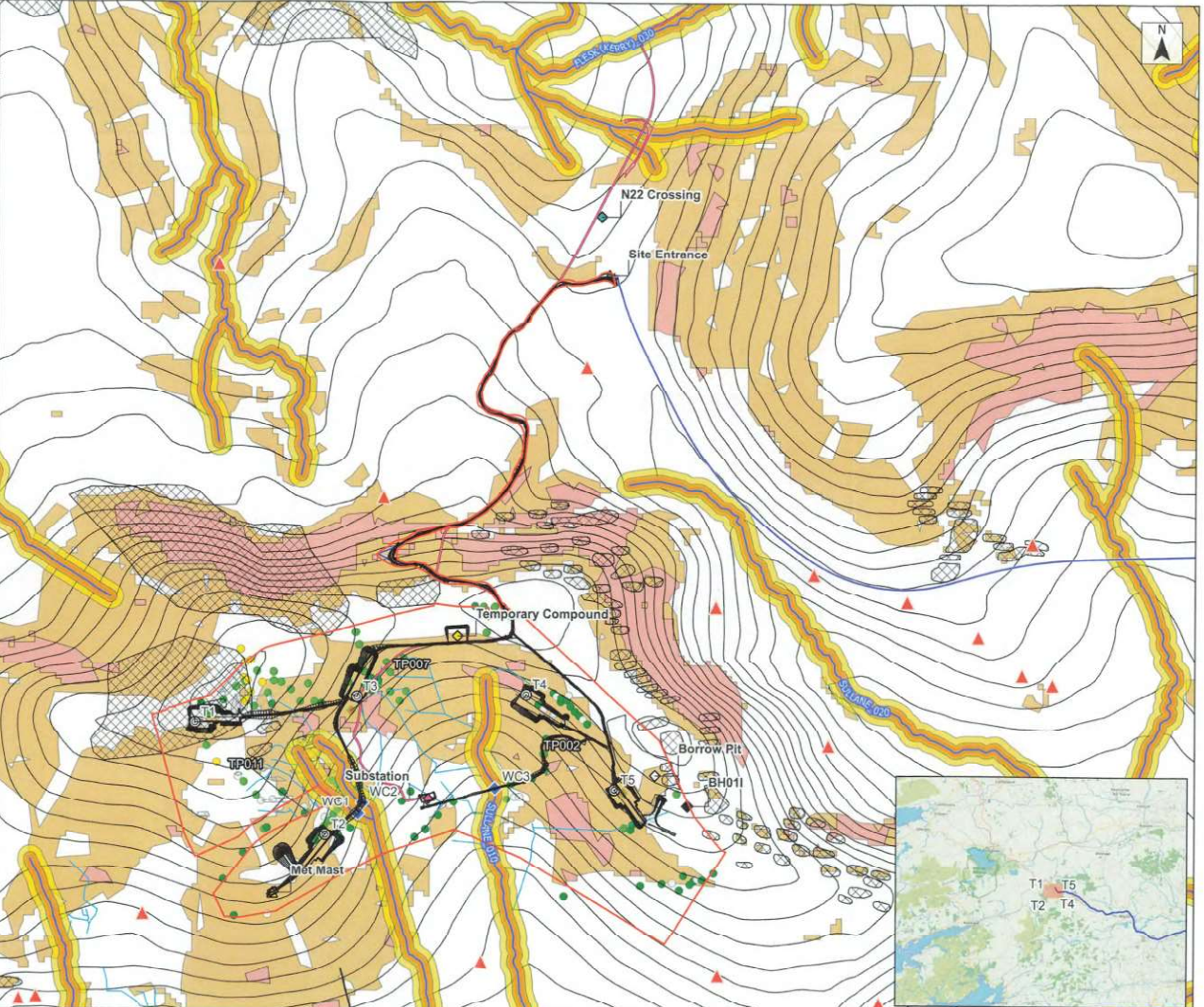


Appendix H

Inchamore Wind Farm
 Inchamore, Co. Cork / Co. Kerry
 App 8.1 - App H (a) 3188-A2 (01) IWF SI
 GeoHazards - Overview

- Legend**
- Development Layout**
- wf Red Line Z3
 - 230113 Site Layout
 - Turbine Locations
 - Site Entrances
 - Proposed Met Mast
 - Watercourse Crossings
 - Proposed Borrow Pits
 - Proposed Temporary Construction Compound
 - Proposed On-Site Substation
 - BH location
 - House Locations
- UGC**
- Inchamore Grid Connection Route
 - HDD Crossings
- Delivery**
- Redline-250 Haul Road - 256-Polyline
 - Turbine Delivery Route
 - Redline-250 Haul Road - 256-Polyline
 - Turbine Delivery Route
- Hydrology**
- WFD_RiverWaterbodiesActive
 - 25m SW Buffer
 - 50m SW Buffer
 - 15m Existing Significant Drain Buffer
 - A1&A2_Existing Drainage
- Topography**
- 10 m GSDM Contours
 - Bedrock Outcrop (GSI)
 - Bedrock Outcrop Observed
- Geology**
- 3188-A2-IWF Peat Depth Probe Data
 - 0.0 - 0.1m
 - 0.1 - 0.5m
 - 0.5 - 2.0m
 - 2.0 - 3.5m
 - Geological Linework (100k GSI)
 - inlandslope Susceptibility
 - High
 - Moderately High
 - 3188-A2-IWF SI Trial Pit Data
 - Yes, Iron Pan Present
- Project ID: 604162 Inchamore Wind Farm
 Projection: ITM
 Drawn by: Sven K.
 Version: 13/04/2023
- References/Sources:**
 Environmental Protection Agency (EPA)
 Geological Services Ireland (GSI)
 Bing Aerial / Geotiff / Open Street Map / Google Roads
 GSDM Elevation Contours
 Phase 1 (250m Grid Peat Depth - Greensource)
- Note: Data points presented are georeferenced using open source data and/or a geotiff file. This drawing / map is considered a conceptual model with reasonable accuracy for the purposes of environmental assessment. This drawing should not be relied upon for detailed design purposes.

Scale: 0 200 400 m

Inchamore Wind Farm
 Inchamore, Co. Cork / Co. Kerry
 App 8.1 - App H (b) 3188-A2 (01) IWF SI
 GeoHazards - W NW

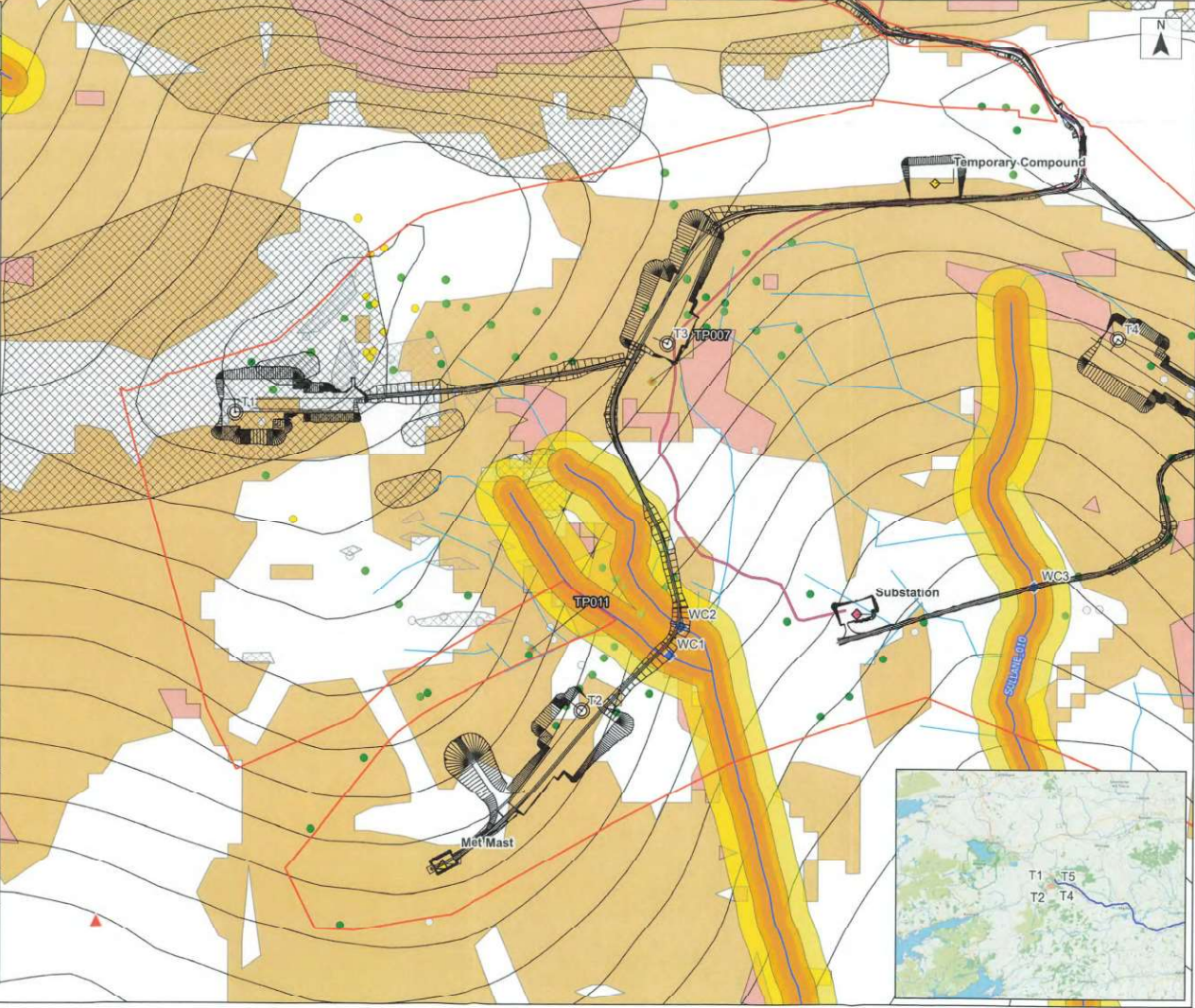
- Legend**
- Development Layout**
- WR Red Line Z3
 - 230313 Site Layout
 - Turbine Locations
 - Proposed Met Mast
 - Watercourse Crossings
 - Proposed Temporary Construction Compound
 - Proposed On-Site Substation
 - House Locations
- UGC**
- Inchamore Grid Connection Route
- Delivery**
- Turbine Delivery Route
- Hydrology**
- WFD_RiverWaterbodiesActive
 - 25m SW Buffer
 - 50m SW Buffer
 - 15m Existing Significant Drain Buffer
 - A18A2_Existing Drainage
- Topography**
- 10 m GDEM Contours
 - Bedrock Outcrop (GSI)
 - Bedrock Outcrop Observed
- Geology**
- 3188-A2-IWF Peat Depth Probe Data
 - 0.0 - 0.1m
 - 0.1 - 0.5m
 - 0.5 - 2.0m
 - 2.0 - 3.5m
- Landslide Susceptibility**
- High
 - Moderately High
 - 3188-A2-IWF SI Trial Pit Data
 - Yes, Iron Pan Present

Project ID: 604162 Inchamore Wind Farm
 Projection: ITM
 Drawn by: Sven K.
 Reviewed by: Sven K.
 Version: 13/04/2023

References/Sources:
 Environmental Protection Agency (EPA)
 Geological Services Ireland (GSI)
 Bing Aerial / GeoPlive / Open Street Map / Google Roads
 GDEM Elevation Contours
 Phase 1 (250m Grid Peat Depth - Greensource)

Note: Data points presented are georeferenced using open source data and/or a handheld GPS. This drawing / map is considered a conceptual model with reasonable accuracy for the purposes of environmental assessment. This drawing should not be relied upon for detailed design purposes.

Scale: 0 100 200 m

Inchamore Wind Farm
 Inchamore, Co. Cork / Co. Kerry
 App 8.1 - App H (c) 3188-A2 (01) IWF SI
 Geohazards - E SE

Legend

Development Layout

- WF
 - Red Line 23
 - 230313 Site Layout
 - Turbine Locations
 - Watercourse Crossings
 - Proposed Borrow Pits
 - Proposed Temporary Construction Compound
 - Proposed On-Site Substation
 - BH location
 - House Locations
- UGC
 - Inchamore Grid Connection Route
- Delivery
 - Turbine Delivery Route
 - Turbine Delivery Route
- Hydrology
 - WFD_RiverWaterbodiesActive
 - 25m SW Buffer
 - 50m SW Buffer
 - 15m Existing Significant Drain Buffer
 - A1&A2_Existing Drainage
- Topography
 - 10 m GDEM Contours
 - Bedrock Outcrop (G03)
 - Bedrock Outcrop Observed
- Geology
 - 3188-A2-IWF Peat Depth Probe Data
 - 0.0 - 0.1m
 - 0.1 - 0.5m
 - 0.5 - 2.0m
 - Landslide Susceptibility
 - High
 - Moderately High
 - 3188-A2-IWF SI Trial Pit Data
 - Yes, Iron Pan Present

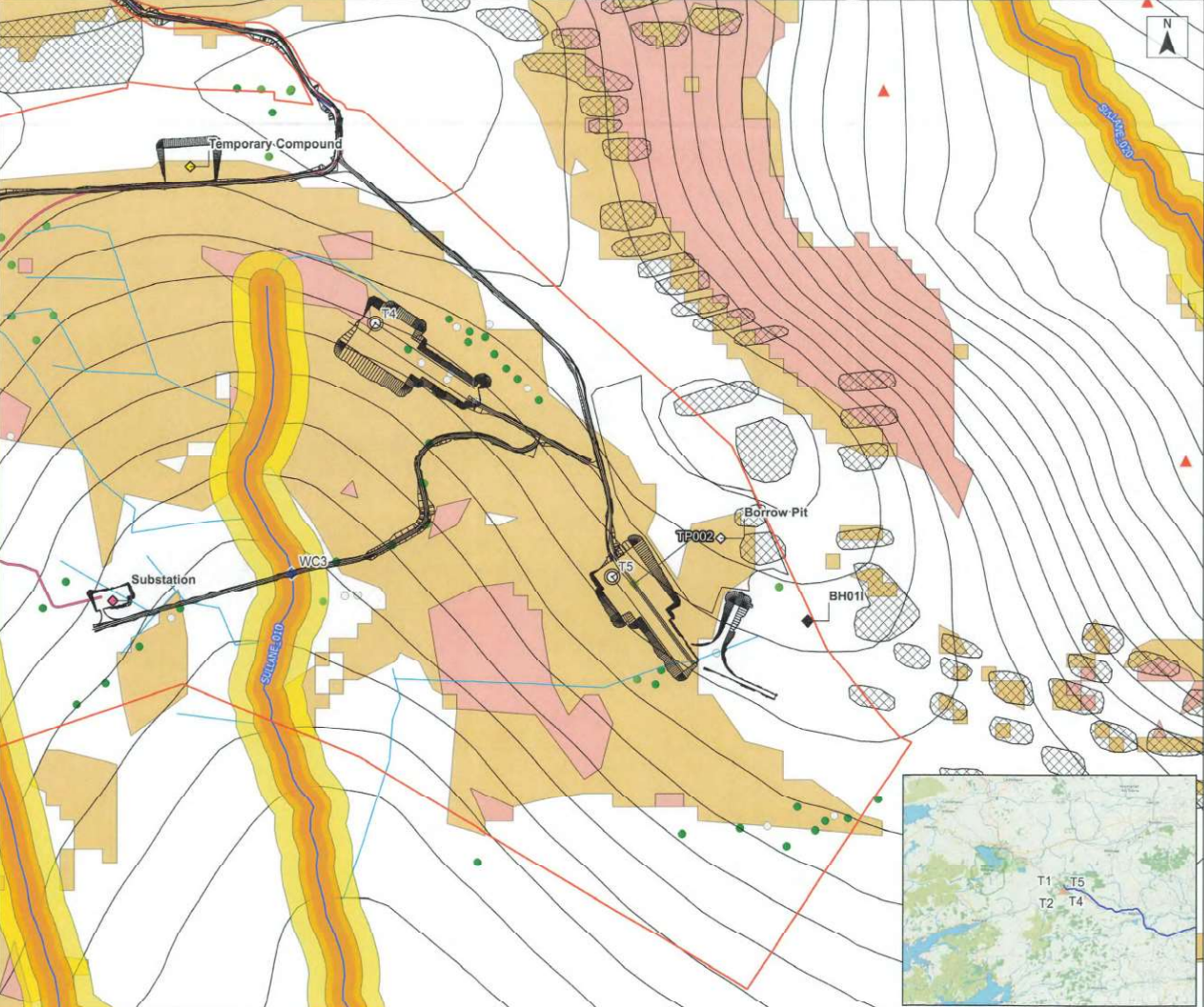
Project ID: 604162 Inchamore Wind Farm
 Projection: ITM
 Drawn by: Sven K.
 Reviewed by: Sven K.
 Revision: 13/04/2023

References/Sources:
 Environmental Protection Agency (EPA)
 Geological Services Ireland (GSI)
 Bing Aerial / GeoEye / Open Street Map / Google Roads
 QDEM Elevation Contours
 Phase 1 (250m Grid) Peat Depth - Greensource

Note: Data points presented are georeferenced using open source data and/or a handheld GPS. This drawing / map is considered a conceptual model with reasonable accuracy for the purpose of environmental assessment. This drawing should not be relied upon for detailed design purposes.

Scale: 0 100 200 m

RSK





Appendix I

Appendix I Stability Risk Matrices and Ratings.



		Landslide History (μ_{HL})		
Accounting for Landslide History and Substrate Topology with a view to adjusting calculated FoS (FoS Adjustment = $\mu_{STOP} * \mu_{HL}$)		No History of Landslides in the vicinity of site.	Some instances of landslides in the vicinity of site	Recorded landslides occurrences within the site
Substrate Topology Characteristics (μ_{STOP})	μ	1	2	4
Substrate is parallel to surface topology.	4	FoS -0.25	FoS - 0.5	FoS - 0.5
Substrate varies from surface topology to a minor extent.	2	FoS + 0.0	FoS -0.25	FoS - 0.5
Substrate varies from surface topology to a significant extent.	1	FoS + 0.25	FoS + 0.0	FoS -0.25
FoS Adjustment Coefficient (μ)		4	8	16
		2	4	8
		1	2	4

		FoS re Slope Stability (μ_{FOS})		
Ranking Risk re Potential for Adverse Consequences on Sensitive Receptors ($RR_{SF} = \mu_{FOS} * \mu_{SF}$)		Acceptable (FoS = >1.3)	Marginally Stable (Acceptable) (FoS = 1-1.3)	Unstable (FoS = <1)
Significant Feature (μ_{SF})	μ	1	2	4
Non-critical infrastructure.	1	Neg.	Neg.	Low
Sensitive receptors e.g. surface water feature	2	Neg.	Low	Mod.
Community, dwellings and buildings.	4	Low	Mod.	High
RR_{SF} Coefficient (μ)		1	2	4
		2	4	8
		4	8	16

		Distance to Sig. Feature (μ_{DIST})		
Accounting for distance to Sensitive Receptors ($RR_D = \mu_{RRSF} * \mu_{DIST}$)		>150m	50-150m	<50m
Risk Ranking re Significant Feature (μ_{RRSF})	μ	1	2	4
Neg. (RR _{SF} = 1-2)	1	Neg.	Low	Mod.
Low (RR _{SF} = 4)	2	Low	Mod.	High
Mod. (RR _{SF} = 8)	4	Mod.	High	High
High (RR _{SF} = 16)	8	High	High	High
RR_D Coefficient (μ)		1	2	4
		2	4	8
		4	8	16
		8	16	32

Client: Inchamore Wind DAC
Project Title: Inchamore Wind Farm
Document Title: Construction Environmental Management Plan

Date: May 2023
Project No: 6226
Document Issue: Final

MANAGEMENT PLAN 5 – WASTE MANAGEMENT PLAN



INCHAMORE WIND DAC

**INCHAMORE WIND FARM
CO. CORK**

**CONSTRUCTION ENVIRONMENTAL
MANAGEMENT PLAN
(CEMP)**

**MANAGEMENT PLAN 5
WASTE MANAGEMENT PLAN**

May 2023

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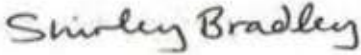



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DOCUMENT APPROVAL

PROJECT	Inchamore Wind Farm	
CLIENT / JOB NO	Inchamore Wind DAC	6226
DOCUMENT TITLE	Construction Environmental Management Plan (CEMP) Waste Management Plan	

Prepared by		Reviewed/Approved by
Document Final	Name Shirley Bradley	Name David Kiely
Date May 2023	Signature 	Signature 

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Company Reg No. 149104 VAT Reg. No. IE6546504D



CONTENTS

1	INTRODUCTION	1
1.1	Scope and Requirements.....	1
1.2	Waste Prevention & Waste Regulations:.....	1
1.2.1	<i>A Circular Economy</i>	<i>1</i>
1.3	Benefits of Waste Prevention.....	5
1.4	Reference Documentation	6
2	WASTE MANAGEMENT PLAN MINIMUM REQUIREMENTS	6
2.1	Planning.....	7
2.2	Implementation	7
2.3	Monitoring.....	7
2.3.1	<i>Checks and Records.....</i>	<i>7</i>
2.3.2	<i>Waste Inventory.....</i>	<i>7</i>
2.3.3	<i>Monitoring of Site Waste Management Plan</i>	<i>8</i>
2.4	Completion, Audit and Review	8
2.5	Site Waste Management as Part of Site Induction process	8
3	GENERAL WASTE MANAGEMENT PRINCIPLES.....	8
4	ANTICIPATED CONSTRUCTION WASTE STREAMS	10
4.1	Waste from Staff Facilities	10
4.1.1	<i>General Waste Generate at Staff facilities</i>	<i>10</i>
4.1.2	<i>Sewage.....</i>	<i>11</i>
4.2	Concrete	11
4.2.1	<i>Concrete Waste and wash-out water</i>	<i>11</i>
4.3	Chemicals, Fuel and Oils	12
4.3.1	<i>Transport of Diesel/Oils to the site</i>	<i>13</i>
4.3.2	<i>Refuelling on Site.....</i>	<i>13</i>
4.4	Packaging.....	13
4.5	Waste Metals	14
5	EXCAVATED MATERIALS	14
5.1	Anticipated materials to be excavated on site.	14
5.1.1	<i>Classification and Plan for Excavated Materials on site</i>	<i>14</i>
5.2	Estimated Volumes of Soil	14
5.3	Waste or Not Waste.....	15
6	PEST CONTROL.....	16

Appendix A - Licenced Facilities

1 INTRODUCTION

1.1 Scope and Requirements

This Management Plan is a 'live' document that can be reviewed and updated at regular intervals throughout the project life cycle. The Contractor is required to develop and adapt this document in line with the activities of the project being undertaken for the Development. The contractor will approve this Plan (and any future amendments of the document) with the Ecological Clerk of Works prior to any work commencing.

The information in this document forms part of the Construction Environmental Management Plan (CEMP) and is the Site Waste Management Plan for the Project.

The CEMP and the measures detailed in this Waste Management Plan are part of the main requirements for consents for planning permissions. As such, the contractor (and all sub-contractors) on site are obligated to incorporate these waste requirements (contained herein) in all operations.

The general methods and principles detailed within this document will be adhered to by the contractor as they are committed to reduce the resources it uses in the construction work of the Development.

1.2 Waste Prevention & Waste Regulations:

1.2.1 A Circular Economy

On a global level, the linear consumption model of increasing extraction of natural resources and disposal of waste is a major contributor to habitat and biodiversity loss and contributes to global warming. According to the circularity gap report 2020¹, material consumption has trebled from 26.7 billion tonnes in 1970 to 92 billion tonnes in 2017. A primary driver of global habitat loss and deforestation is the extraction of resources, the majority of which are wasted.

Half of total greenhouse gas (GHG) emissions and more than 90% of biodiversity loss and water stress come from resource extraction and processing. A transition to a circular economy offers the possibility of a sustainable alternative future and is a fundamental step towards achieving climate targets and United Nations Sustainable Development Goals (SDGs).

¹ <https://www.circularity-gap.world/2020> [Accessed online 28/03/2023]

The Waste Action Plan for a Circular Economy (Department of Environment, Climate and Communications, 2020) is Ireland's National Waste Policy 2020 – 2025 and is the new roadmap for waste planning and management. This Plan shifts focus away from waste disposal and looks instead to how we can preserve resources by creating a circular economy.

The Plan outlines the contribution of the sector to the achievement of a number of other national plans and policies including the Climate Action Plan². It also matches the level of ambition being shown across the European Union through the European Green Deal³, which encompasses a range of actions supporting circularity and sustainability. To support the policy, regulation is already being used (Circular Economy Legislative Package), or in the pipeline (Single Use Plastics Directive).

Goals of the Waste Action Plan for household and business include:

- Recycling targets for waste collectors
- Standardised bin colours across the State: green for recycling, black for residual and Brown for organic waste.
- Waste recovery levy to encourage recycling
- Waste oversight body to manage consumer rights
- Education and awareness campaign to improve segregation

Plastic, packaging and single use plastic goals include:

- Single use items banned from July 2021 include: Cotton bud sticks
 - Cutlery
 - Plates
 - Stirrers
 - Chopsticks
 - Straws
 - Polystyrene containers
 - Oxo-degradable plastic products
- Significantly reduce single use plastics being placed on the market by 2026
- All packaging reusable or recyclable by 2030

Food waste goals include:

² Climate Action Plan 2023 CAP23 Changing Ireland for the Better, Dept of the Environment, Climate and Communications, 2023. <https://www.gov.ie/en/publication/7bd8c-climate-action-plan-2023/> [Accessed online 28/03/2023]

³ A European Green Deal, Striving to be the first climate-neutral continent, European Commission. https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en [Accessed 28/03/2023]

- Halve our food waste by 2030
- Waste segregation infrastructure for apartment dwellers
- Sustainable food waste management options for all homes and businesses

Extended Producer Responsibility goals include for:

- Mandatory extended producer responsibility for all packaging producers before 2024 EU Deadline
- New rules for schemes to incentivise good practice in waste recycling and drive better product design
- Producers liable for modulation fees

In terms of construction and demolition wastes, the Plan aims to

- Streamline by-product notification and end-of-waste decision making
- Revision of the 2006 best practice guidelines for Construction and Demolition Waste
- Working group to develop national end-of-waste applications for priority waste streams

The Textiles related goals include:

- Textile action group to explore options to improve future circularity in textiles
- Consider global impacts of the international trade in used textiles
- Work with irish designers and retailers to promote eco-design for clothing and textiles

Enforcement goals in the Plan include:

- Expanded role for Local Authorities to address priority waste enforcement challenges
- Unauthorised sites action plan and anti dumping toolkit
- Fixed penalty notices for breaches of waste law

Treatment of wastes as part of the Plan include:

- Review state support for development of recycling infrastructure
- Standardise waste streams accepted at civic amenity sites
- Examine legislation and procedures for development of waste management infrastructure

Government leadership on Circular Economy goals include:

- High level all of government circular economy strategy

- Inclusion of green criteria and circular economy principles in all public procurement
- Develop circular economy sectoral roadmaps
- Explore how Ireland's digital sector can accelerate transition to a circular economy

A Resource Opportunity

In 2012, the Department of the Environment, Community and Local Government published the Waste Management Policy in Ireland (DoECLG, 2012). One of its guiding principles is to minimise waste.

The Waste Hierarchy which contractors are obligated to apply: (Source: EC⁴):



The waste management hierarchy applies to all waste, including hazardous waste. The top of the hierarchy indicates that the priority should be in preventing waste being produced in the first place.

The Contractor will:

- Ensure that the disposal and recovery of waste does not present a risk to water, air, soil, plants and animals
- Not allow waste disposal to constitute a public nuisance through excessive noise levels or unpleasant odours, or to degrade places of special natural interest

⁴ European Commission [Accessed Online 03/05/2022]
https://ec.europa.eu/environment/topics/waste-and-recycling/waste-framework-directive_en

- Prohibit the dumping or uncontrolled disposal of waste
- Prepare Waste Management Plans
- Ensure that waste treatment operations are licensed
- Require waste collectors to have special authorization and to keep records
- Ensure that the waste which cannot be prevented or recovered is disposed of without causing environmental pollution.

The EU Integrated Pollution Prevention and Control Directive (Directive 96/61/EC) provides for a permit system for activities including waste management. In adherence with this Directive the Contractor must:

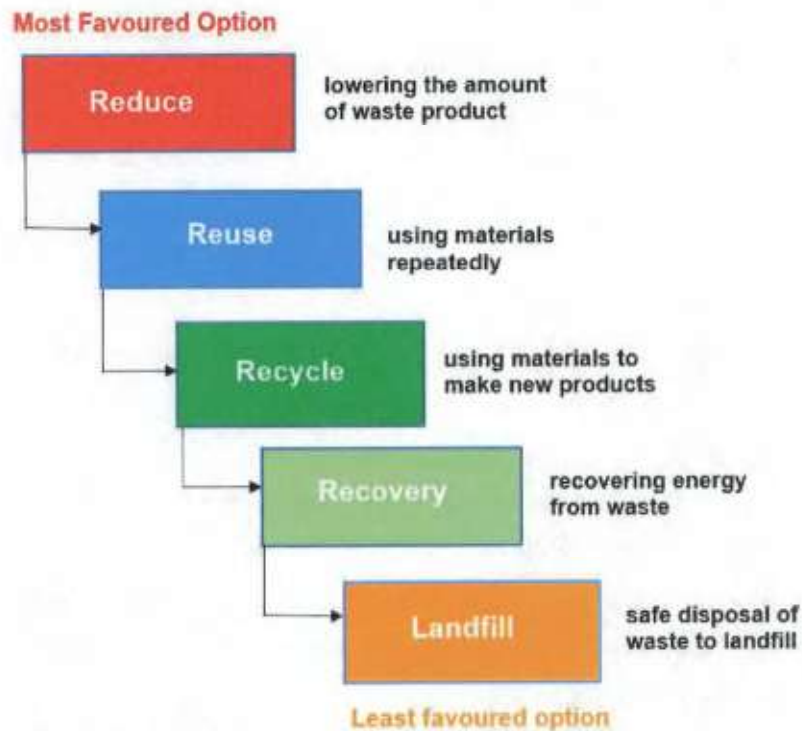
- Be in possession of a waste permit for waste disposal, and
- Be prepared at all times for inspection regarding monitoring of waste activities.

1.3 Benefits of Waste Prevention

The contractor will prevent waste through implementing reduction and effectively managing resources from the design stage of construction to the completion of the construction of the project. This will ensure that:

- Legal obligations are met;
- Waste production is minimised;
- Build costs are minimised;
- A framework for continuous assessment and best practice is implemented, and
- Carbon emissions and negative environmental impacts of and from waste materials are reduced.

The following image explains this in more detail. The least favoured option is to dispose of waste to landfill where embodied energy is not recovered. The Waste Hierarchy (EU Waste Framework Directive, 2008) is outlined below:



1.4 Reference Documentation

As well as the Waste Management Act 1996, as amended, other guidance documents have been used to develop this plan. These include:

Pollution Prevention Guidelines:

Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects, Department of Environment, Heritage & Local Government, July 2006.

EU Directive:

Article 4 of Waste Framework Directive (Directive 2008/98/EC)

This sets out the five steps for dealing with waste (waste hierarchy).

2 WASTE MANAGEMENT PLAN MINIMUM REQUIREMENTS

A Site Waste Management Plan involves the following stages:

- Planning;
- Implementation;
- Monitoring, and
- Review.

2.1 Planning

The planning stage of the Development has taken into account the nature of the site, design of the wind farm, environmental considerations and construction methods to minimise the quantity of waste produced on site during its construction.

2.2 Implementation

This Waste Management Plan will include:

1. An inventory of waste type expected to be produced in the course of the project.
2. Estimates of each type of waste that will be produced in the construction of this wind farm.
3. A statement showing how the contractor will minimise each type of waste to be produced prior to any activity generating this waste.
4. Procedures for identification of the waste management actions proposed for each different waste type, including re-using, recycling, recovery and disposal (in accordance with the waste hierarchy priorities).

2.3 Monitoring

2.3.1 Checks and Records

All stores on site of oil, fuel, chemicals etc will be regularly checked (in particular in extreme weather conditions) for evidence of leaks or spills. The timing of each of these checks is detailed in Section 3. These checks will be visual inspections to look for evidence of contamination.

Records of all visual checks will be maintained and be available for inspection on request. Waste Management will be a regular item on team meetings as required by the CEMP. Waste Management Practices will be revised at these meetings. A waste audit will be carried out every six months (Section 2.3.3 Monitoring of Site Waste Management Plan).

2.3.2 Waste Inventory

A waste inventory will be maintained and kept up to date. It will include an inventory of all waste materials leaving the site for disposal and the name of the licensed operator and intended disposal facility. A Waste Inventory Spreadsheet will be added to this plan by the Contractor.

2.3.3 **Monitoring of Site Waste Management Plan**

The contractor will appoint a person to implement and monitor the Waste Management Plan. This will be the Environmental Manager.

As stated, the Waste Management Plan will include an inventory of the types and estimates of the waste to be produced on site. The appointed person will ensure that a Site Waste Audit is carried out every six months.

2.4 **Completion, Audit and Review**

Upon completion of construction works but before the end of the defects correction period, a Waste Management Review will be undertaken. The aim of this is to identify project progress, measure compliance with licenses and to consider lessons learnt.

A Waste Management Review will be carried out at the end of construction.

2.5 **Site Waste Management as Part of Site Induction process**

All workers on-site at the Development will be fully briefed with the Waste Management Plan. All site visitors will be briefed on appropriate waste storage and disposal units. Littering on site will not be tolerated. All personnel have a Duty of Care to challenge others noted littering on site.

3 **GENERAL WASTE MANAGEMENT PRINCIPLES**

- 3.1 The Contractor will avoid or minimise the volume of waste generated.
- 3.2 All wastes will be stored at the Site Compound until it can be transferred to a licensed waste facility by a waste permit holder. Any wastes arising from the Project will not be stored within a minimum distance of 65 m from watercourses or drains.
- 3.3 Waste storage and disposal will be carried out in a way which prevents pollution in compliance with legislation.
- 3.4 All waste to be transported off-site to a licensed disposal site. The nearest licenced waste facility is over 20 km south-east of the Site in Codrum, Macroom, Co. Cork (Civic Amenity Services). Excavated material along the Grid Connection Route will be removed to a licenced waste facility. A list of waste facilities within the vicinity of the Development has been included in **Appendix A**. Duty of Care Waste Control dockets must be produced and filed on site with each load. These **MUST** detail:

- An adequate description of the waste;
 - Where the waste came from;
 - The appropriate code from the List of Wastes Regulations for the waste (commonly referred to as the European Waste Codes)⁵ ;
 - Information on the quantity and nature of the waste and how it is contained;
 - Names and addresses of the transferor at Inchamore Wind Farm (the person currently in control of the waste) and the transferee (usually either a registered waste carrier or a waste management licence holder (waste manager)
 - The Standard Industry Classification code (2007 or 2003 for hazardous waste only) of the business from where the waste was received
 - Where applicable, indicate that the Waste Hierarchy has been complied with
 - The place, date and time of transfer of the waste. If using a season ticket, the period for which it is valid (i.e., valid from dd/mm/yyyy to dd/mm/yyyy)
- 3.5 Only trained operatives will handle hazardous substances. All stored hazardous waste will be clearly labelled.
- 3.6 All oil storage facilities will be located within the construction compound and will have secondary containment facilities of 110% storage capacity (e.g., bund, enclosure, drip tray). All of these will be regularly inspected for visual signs of leaks or something that would impact on their capacity – e.g., a drip tray full of rainwater.
- 3.7 Waste storage areas will be clearly located and signed. Key waste streams will be separated.
- 3.8 All waste will be transported from site at appropriate frequency by a registered waste contractor to prevent over-filling of waste containers.
- 3.9 Frequency of Checks. The contractor will ensure that all storage facilities are checked on a weekly basis. The checklist for completion is attached below.

⁵ <https://www.epa.ie/publications/monitoring--assessment/waste/2019-FULL-template.pdf>

VISUAL WASTE STORAGE CHECKLIST		
Waste Area Checked	Date Checked	Initials of Checker
GENERAL OFFICE WASTE		
BOWSER		
PORTALOO		
EXCAVATED SOIL		
WASHINGS		
CONCRETE		
OIL		
HAZARDOUS WASTE e.g., 17 05 03* soil and stones containing hazardous substances 6		

4 ANTICIPATED CONSTRUCTION WASTE STREAMS

As stated previously, the Contractors will outline prior to commencement of construction all anticipated waste streams to be produced at the construction site at the Development.

4.1 Waste from Staff Facilities

4.1.1 General Waste Generate at Staff facilities

There will be the typical waste generated in an office such as left-over food and sandwich wrappers. This is a non-hazardous waste. All such waste will be stored appropriately and safely from wind, rain and wild animals that often tear apart rubbish bags. Provision for separation of waste streams will be provided so that e.g., paper and cardboard waste and bottles may be recycled.

* <https://www.epa.ie/publications/monitoring--assessment/waste/2019--FULL-template.pdf>

4.1.2 Sewage

The self-contained port-a-loo units will be located within the contractors compound and will be managed and serviced regularly (by removal of the contents by tanker to a designated sewage treatment plant such as Ballyvourney/Ballymakeera Wastewater Treatment Plant). Port-a-loo units will be removed off site on completion of construction. Toilet waste is a non-hazardous waste.

4.2 Concrete

4.2.1 Concrete Waste and wash-out water

Precast concrete will be used wherever possible i.e., formed offsite. Elements of the Development where precast concrete will be used have been identified and are indicated in the CEMP. Elements of the Development where the use of precast concrete will be used include structural elements of watercourse crossings (single span / closed culverts) as well as Cable Joint Bays. Elements of the Development where the use of precast concrete is not possible includes turbine foundations and joint bay pit excavations.

Where the use of precast concrete is not possible the following mitigation measures will apply:

- The acquisition, transport and use of any cement or concrete on site will be planned fully in advance and supervised at all times.
- Vehicles transporting such material will be clean upon arrival on site, that is; vehicles will be washed/rinsed removing cementitious material leaving the source location of the material. There will be no excess cementitious material on the vehicle which could be deposited on trackways or anywhere else on site. To this end, vehicles will undergo a visual inspection prior to being permitted to drive onto the proposed site or progress beyond the contractor's yard. Vehicles will also be in good working order.
- Any shuttering installed to contain the concrete during pouring will be installed to a high standard and will be checked for leak potential prior to fills. Additional measures will be taken, for example the use of plastic sheeting or other sealing products at joints.
- Concrete will be poured during metrological dry periods/seasons.—This will reduce the potential for surface water run off being significantly affected by freshly poured concrete. This will require limiting these works to dry

meteorological conditions i.e., avoid foreseen sustained rainfall (any foreseen rainfall event longer than 4-hour duration) and/or any foreseen intense rainfall event (>3mm/hour, yellow on Met Eireann rain forecast maps), and do not proceed during any yellow (or worse) rainfall warning issued by Met Eireann. This also will avoid such conditions while concrete is curing, in so far as practical.

- Ground crew will have a spill kit readily available, and any spillages or deposits will be cleaned/removed as soon as possible and disposed of appropriately.
- Pouring of concrete into standing water within excavations will be avoided. Excavations will be prepared before pouring of concrete by pumping standing water out of excavations to the buffered surface water discharge systems in place.
- Temporary storage of cement bound sand (if required) will be on hardstand areas only where there is no direct drainage to surface waters and where the area has been bunded e.g., using sandbags and geotextile sheeting or silt fencing to contain any solids in run-off.
- No surplus concrete will be stored or deposited anywhere on site. Such material will be returned to the source location or disposed of off-site appropriately. A concrete washings area can be seen on **Planning Drawing No. 6226-PL-803**.

4.3 Chemicals, Fuel and Oils

All storage containers of over 200 litres will have a secondary containment of 110% capacity to ensure that any leaking oil is contained and does not enter the aquatic environment. Oil waste is classified as hazardous.

A Chemical and Waste Inventory will be kept. This inventory will include:

- List of all substances stored on-site (volume and description).
- Procedures and location details for storage of all materials listed; and
- Waste disposal records, including copies of all Waste Transfer Notes detailing disposal routes and waste carriers used.
- Any tap or valve permanently fixed to the mobile unit through which oil can be discharged to the open or when delivered through a flexible pipe which is fitted permanently to the mobile unit, will be fitted with a lock and locked shut when not in use.
- Sight gauges will be fitted with a valve or tap, which will be shut when not in use. Sight gauge tubes, if used will be well supported and fitted with a valve.

- Mobile units must have secondary containment when in use/out on site.

Where mobile bowers are used on site guidelines will be followed so that:

- Any flexible pipe, tap or valve will be fitted with a lock where it leaves the container and be locked shut when not in use.
- Flexible delivery pipes will be fitted with manually operated pumps or a valve at the delivery end that closes automatically when not in use. Where possible, a nozzle designed to dispense oil is used.
- The pump or valve will have a lock and be locked shut when not in use.

4.3.1 Transport of Diesel/Oils to the site

Diesel is classified as a dangerous substance. Under the EU Directive 95/55/EC all such dangerous substances will be conveyed in a container that complies with the ADR (Accord Dangereux Routier). As such the manufacturer of each bowser will provide certification to contractors that the following:

- A leak-proof test certificate
- A copy of the IBC approval certificate
- An identification plate attached to the container

For loads in excess of 1000 litres (220 gallons), the bowser vehicle driver will have undergone training and hold a special license.

4.3.2 Refuelling on Site

Where possible all refuelling on site will be within the temporary compound within the re-fuelling area (see **Planning Drawing No. 6226-PL-803**). Only essential refuelling (e.g., cranes) will be carried out, outside of this area, but not within 65m of any watercourse. In such cases a non-permeable High-density Polyethylene (HDPE) membrane will be provided beneath connection points to catch any residual oil during filling and disconnection. This membrane will be inspected and if there is any sign of oil contamination, it will be removed from site by a specialist licensed waste contractor.

All vehicles will be well maintained and free from oil or hydraulic fuel leaks.

4.4 Packaging

Packaging will be brought on site and can include cardboard, wood and plastics used to package turbine components. In accordance with the waste hierarchy, packaging

will be returned to the originator ahead of re-use or recycling. Where this is not possible, waste will be separated as appropriate and safely stored on site appropriately site in anticipation of recycling. This waste is non-hazardous.

4.5 Waste Metals

Waste metals from concrete reinforcing etc will have commercial value and will be re-used or recycled with the appropriate licensed waste contractor. This waste is non-hazardous.

5 EXCAVATED MATERIALS

Excavated materials will be required for habitat and ecological restoration, reprofiling and backfilling in accordance with the **Peat and Spoil Management Plan**. As such, excavated materials will not be classified as waste except along the Grid Connection Route.

5.1 Anticipated materials to be excavated on site.

No excavated material will be removed from within the Site Boundary. Road surfacing will be stored in slabs for reuse/recycling.

It is anticipated that c. 50,271 m³ of sub-soil and 31,856 m³ of peat will be excavated during construction.

5.1.1 Classification and Plan for Excavated Materials on site

The contractor will liaise with the Local Authority on all aspects of waste management relating to excavated soil to ensure compliance during construction. The Ecological Clerk of Works will ensure all mitigation measures outlined are adhered to. All excavated materials are to be reused on site except that which is excavated along the Grid Connection Route. A list of potential Local Authority licenced facilities in the vicinity of the Development is included in **Appendix A**.

5.2 Estimated Volumes of Soil

Volumes are outlined in a **Peat and Spoil Management Plan** and provided in Management Plan 4 of the CEMP. Whilst there will be significant volumes of soil to be excavated on site during the construction of the Development, excavated material will be used for reinstatement and restoration works. Where this is not possible, e.g., along the Grid Connection Route and Turbine Delivery Route where some soils contain

hydrocarbons (hazardous material), the waste materials will be taken to a licenced facility by an authorised permit holder.

The **Peat and Spoil Management Plan** outlines the re-use proposals for excavated materials.

5.3 Waste or Not Waste

Any excavated materials which are not intended to be disposed of, or discarded, will NOT be considered as waste. It will not be regulated under waste management controls where the following six criteria are ALL met:

- i) Use is a necessary part of the planned works
- ii) Material is suitable for that use
- iii) Material does not require any processing or treatment before it is reused
- iv) No more than the quantity necessary is used
- v) Use of the material is not a mere possibility but a certainty and
- vi) Use of the soil will not result in pollution of the environment or harm to human health

Where excavated soil on site does not meet all of the six criteria listed above, for the purposes of waste description, it would fall under chapter 17 of the European Waste Catalogue (EWC) Construction and Demolition wastes. The EWC code '17 05 04 soil and stones (non-hazardous) waste or 17 05 03* soil and stones containing hazardous substances would apply. This will occur on along the Grid Connection Route and parts of the Off-site Road Upgrade Nodes (turning area off the N22).

The principles of the waste hierarchy will be strictly adhered to avoid and minimise production of excavated soil, and to ensure that all materials are recovered and reused on site.

6 PEST CONTROL

Responsible rodenticide use will be practiced on site. Incorrect use and management of rodenticide can indirectly have a negative impact on wildlife. Best practice use include:

- Pest control on site will be undertaken by a trained professional.
- Rodenticide baits will only be used for as long as is necessary to achieve satisfactory control.
- Good house-keeping and proper waste management practices will ensure there are no food sources available to vermin.
- A record of all bait points and the amount of bait laid will be maintained during the treatment. Activity will be noted at each bait point, including any missing or disturbed baits, as the treatment progresses.
- By carefully recording the sites of all bait points, responsible users of rodenticides will return to these sites at the end of the treatment and remove uneaten bait so that it does not become available to wildlife.
- The bodies of dead rodents may carry residues of rodenticides and, if eaten by predators or scavengers, may be a source of wildlife exposure to rodenticides.
- Regular searches for rodent bodies will be carried out, both during and after the treatment period. Bodies may be found for several days after rats have eaten the bait and rats may die up to 100 metres or more away from the baited site.
- Any rodent bodies will be removed from the Site and disposed of safely using the methods recommended on the label.
- Bait will be sufficiently protected to avoid accidentally poisoning other mammals and birds. Natural materials will be used where possible.
- Bait stations will be appropriate to the prevailing circumstances. They will provide access to the bait by rodents, while reducing the risks of non-target access and interference by unauthorised persons. They will protect the bait from contamination by dust or rain. Their design, construction and placement will be such that interference is minimised.
- On completion of the treatment, records will be updated to signify that the infestation is controlled and that, as far as reasonably practical, all steps have been taken to ensure that the site is now free of rodenticide bait.

WASTE INVENTORY

THE CONTRACTOR WILL PREPARE AND UPDATE REGULARLY A WASTE INVENTORY FOR INCLUSION IN THE WASTE MANAGEMENT PLAN

APPENDIX A

LICENCED FACILITIES

¹ Local Authority Waste Facility Register: Cork; 17 05 04			
Authorisation Reference	Name	Trading As	Address
WFP-CK-17-0173-01	Martin O'Regan Enterprises Ltd		Derry Berrings Co. Cork
WFP-CK-17-0178-01	Conhor Landfill Limited		Kilnaglory Ballincollig Co Cork
WFP-CK-18-0180-01	Mallow Contracts Limited		Corbally Waterfall Co. Cork
WFP-CK-13-0126-03	O'Flynn Construction Co. Unlimited Company		Knockanemore Ovens
COR-CK-18-0118-01	Greenvalley Plant Hire & Land Reclamation Ltd		Ballyheen South Kanturk Co Cork
WFP-CK-14-0137-02	Conhor Construction Ltd		Aherla Beg Aherla Co. Cork
WFP-CK-20-0203-01	Richard & Denis Carroll Plant Ltd		Clonfadda Macroom Co Cork
COR-CK-10-0029-03	Chris Barry Plant Hire Ltd		Thornhill Waterfall Castletownbere Co Cork
WFP-CK-20-0211-01	Ciaran Ryan Plant Hire Ltd		Gurranenagappul Clondrohid Macroom Co Cork
WFP-CK-20-0212-01	Mallow Contracts Ltd		Carhoo Lower Coachford Co Cork
COR-CK-16-0095-02	Tomas (Thomas) Mullins aka Thomas Mullins (Junior)		Scrahanagown Coolea Macroom Co Cork

¹ <http://www.nwcpc.ie/default.aspx>

Local Authority Waste Facility Register: Kerry; 17 05 04			
Authorisation Reference	Name	Trading As	Address
WFP-KY-15-0007-02	Killarney Waste Disposal Ltd		Sheans East Killarney Co. Kerry
WFP-KY-17-0006-01	Eugene McCarthy	Brendan Cronin Plant Hire	Deerpark Killarney Co Kerry
WFP-KY-20-0006-01	Liebherr Container Cranes Ltd	Liebherr Container Cranes Ltd	Knoppoge Killarney Co. Kerry
WFP-KY-20-0004-01	ML Lynch Civil Engineering Ltd		Brewsterfield Headford Killarney Co. Kerry
WFP-KY-20-0008-01	Jimmy O'Mahony		Gortanahaneboy East Rathmore Co Kerry
WFP-KY-20-0001-01	Healy Rae Plant Hire Ltd		Coologes Kilgarvan Co. Kerry
COR-KY-11-0008-03	Brian Bruton		Dromdoohig More Killarney Co. Kerry
COR-KY-22-0001-01	Kenmare Plant Hire Ltd.,	KPH Construction	Shronederragh Barraduff Killarney Co. Kerry

Local Authority Waste Facility Register: Kerry County; 17 05 03*						
Authorisation Reference	Name	Trading As	Address	Condition	X_ITM	Y_ITM
WFP-KY-18-0001-01	Higgins Waste & Recycling Services Ltd		Knockanacuig The Kerries Tralee Co Kerry V92 Y519	5,550 tonnes per annum limit.	482237	614575

17 05 03* soil and stones containing hazardous substances ²
 17 05 04 soil and stones other than those mentioned in 17 05 03

² <https://www.epa.ie/publications/monitoring--assessment/waste/2019--FULL-template.pdf>

Client: *Inchamore Wind DAC*
Project Title: *Inchamore Wind Farm*
Document Title: *Construction Environmental Management Plan*

Date: *May 2023*
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MANAGEMENT PLAN 6 – DECOMMISSIONING PLAN

INCHAMORE WIND DAC

**INCHAMORE WIND FARM
CO. CORK**

**CONSTRUCTION ENVIRONMENTAL
MANAGEMENT PLAN
(CEMP)**

**MANAGEMENT PLAN 6
DECOMMISSIONING PLAN**

MAY 2023

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DOCUMENT APPROVAL

PROJECT	Inchamore Wind Farm	
CLIENT / JOB NO	Inchamore Wind DAC	6226
DOCUMENT TITLE	Construction Environmental Management Plan (CEMP) Decommissioning Plan	

Prepared by		Reviewed /Approved by
Document Final	Name Shirley Bradley	Name Sean Molloy
Date May 2023	Signature 	Signature

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INCHAMORE WIND FARM, CO. CORK

DECOMMISSIONING PLAN

CONTENTS

1	INTRODUCTION	1
1.1	Scope of the Decommissioning Plan	1
2	SITE AND PROJECT DETAILS	3
2.1	Site Location and Description	3
2.2	Description of the Decommissioning	3
2.3	Targets and Objectives	4
2.4	Decommissioning Methodologies Overview	5
2.4.1	Introduction.....	5
2.4.2	Decommissioning Methodology	5
3	ENVIRONMENTAL CONTROLS	8
3.1	Site Drainage	8
3.2	Refuelling; Fuel and Hazardous Materials Storage.....	8
3.3	Dust Control	9
3.4	Noise Control	10
3.5	Invasive Species Management.....	11
3.6	Traffic Management	11
3.7	Waste Management Plan	11
3.7.1	Legislation	11
3.7.2	Waste Management Hierarchy.....	12
3.7.3	Waste Arising from Decommissioning.....	12
3.8	Environmental Management Implementation.....	14
3.8.1	Roles and Responsibilities.....	14
4	EMERGENCY RESPONSE PLAN	16
4.1	Emergency Response Procedure.....	16
4.1.1	Roles and Responsibilities.....	16
4.1.2	Initial Steps	17
4.1.3	Site evacuation/Fire Drill	18
4.1.4	Excessive Peat Movement.....	19
4.1.5	Onset of Peat Slide	19
4.1.6	Spill Control Measures.....	20
4.1.7	Environmental Investigation	20
4.2	Contact the Emergency Services	21
5	PROGRAMME OF WORKS	23
5.1	Decommissioning Schedule	23
6	MITIGATION PROPOSALS	24
7	COMPLIANCE AND REVIEW	30
7.1	Site Inspections and Environmental Audits.....	30
7.2	Auditing	30
7.3	Environmental Compliance.....	30
7.4	Corrective Action Procedure.....	31
7.5	Decommissioning Plan Review	32

1 INTRODUCTION

This Decommissioning Plan has been prepared by Jennings O'Donovan & Partners Limited on behalf of Inchamore Wind DAC for the decommissioning of the proposed Inchamore Wind Farm development and relevant infrastructure which is hereafter referred to as the Development. This document is being prepared, alongside an Environmental Impact Assessment Report (EIAR), as part of an application for planning permission for the Development to Cork County Council.

Decommissioning of the Development will be scheduled to take place after the proposed 35-year lifespan of the Project.

This report provides the environmental management framework to be adhered to during the decommissioning phase of the Development and it incorporates the mitigating principles to ensure that the work is carried out in a way that minimises the potential for any environmental impacts to occur.

As noted in the Scottish Natural Heritage report Research and Guidance on Restoration and Decommissioning of Onshore Wind Farms (SNH, 2013) reinstatement proposals for a wind farm are made approximately 30 years in advance, so within the lifespan of the wind farm. Due to the efficiency of modern-day turbines, it is estimated that their lifespan will be 35 years. The technological advances and preferred approaches to reinstatement are likely to change in the intervening decades.

In this regard, this Decommissioning Plan will be reviewed and updated for the written agreement of the Planning Authority prior to commencement of a decommissioning works. It will take account of the relevant conditions of the planning permission and current health and safety standards in accordance with the approach set out and the principles established in this document.

1.1 SCOPE OF THE DECOMMISSIONING PLAN

This plan for the decommissioning of the Development includes its connection to the national grid. Where the term 'Site' is used in the Decommissioning Plan it refers to the site of the Development and all works associated with the Development including enabling works. The Decommissioning Plan clearly outlines the mitigation measures and monitoring proposals that are required to be adhered to in order to complete the works in an appropriate manner.

The report is divided into eight sections, as outlined below:

Section 1 provides a brief introduction as to the scope of the report.

Section 2 outlines the Site and Project details, detailing the targets and objectives of this plan along with providing an overview of works methodologies that will be adopted throughout decommissioning.

Section 3 sets out details of the environmental controls to be implemented on site including the mechanisms for implementation. A waste management plan is also included in this section.

Section 4 outlines the Emergency Response Procedure to be adopted in the event of an emergency in terms of site health and safety and environmental protection.

Section 5 sets out a programme for the timing of the works.

Section 6 consists of a summary table of all mitigation measures to be adhered to during the decommissioning-phase.

Section 7 outlines the proposals for reviewing compliance with the provisions of this report.

2 SITE AND PROJECT DETAILS

2.1 SITE LOCATION AND DESCRIPTION

The Site, as shown in **Figure 2.1**, is located within an agricultural and forested landscape. Inchamore is situated between Milleeny, Co. Cork, Coomagearlahy, and Derryreag, in Co. Kerry. The nearest settlements are Inchamore which is situated 741 m to the south of the Site Boundary, and the village of Milleeny is located 1 km to the south-east of the Site Boundary. The Site is located 5.9 km west of Ballyvourney, Co. Cork and shares a boundary with the county boundary between Cork and Kerry. It is 54 km west of Cork City, and 23 km north-east of Kenmare, Co. Kerry.

The Site extends to 170 ha, of which a significant area is commercial forest owned by Coillte. The remaining land is third party land and the principal land use in the general area is comprised of a mix of agricultural sheep and cattle grazing, farmland, residential properties and open mountain heath. These existing uses will continue during the operation of the wind farm.

2.2 DESCRIPTION OF THE DECOMMISSIONING

- Removal of five wind turbines and concrete plinths.
- Removal of permanent meteorological mast.
- Removal of all associated underground electrical and communications cabling connecting the wind turbines to the wind farm substation. Ducting is to remain *in-situ*.

All other elements of the proposed development will remain in-situ. The Site Access Roads and all drainage systems will serve ongoing forestry and agriculture activity in the area. All other hard surfaced areas will be allowed to revegetate naturally. Based on the experience of the project team monitoring operational wind farm sites throughout the country, the approach of allowing these areas to revegetate naturally has proven to be very successful.

Cranes of similar size to those used for construction will disassemble each turbine using the same crane hardstands. The towers, blades and all above ground components will be removed from site and reused, recycled, or disposed of in a suitably licenced facility. (The financial costs of decommissioning, at current material values, will be more than met by the recycling value of the turbine components.)

Turbines will be cut on site so as to fit on articulated trucks, therefore allowing the use of the civil construction delivery route for removal.

The following elements are included in the decommissioning phase:

- Decommissioning works will be limited to action necessary to remove the wind farm structures, i.e., removal of turbines, cabling and the monitoring mast.
- Existing Hardstands will be utilised to act as a temporary compound for the appointed Contractor.
- Roads and associated drainage systems will remain in place to serve ongoing forestry and agriculture activity¹. Hardstanding areas will be allowed to revegetate naturally.
- Turbine plinths will be removed, and the hardcore covering turbine foundations will be allowed to revegetate naturally².
- Soil disturbance will be avoided.

2.3 TARGETS AND OBJECTIVES

This decommissioning plan has considered environmental issues as listed in Section 3.

The key targets are as follows:

- Ensure decommissioning works and activities are completed in accordance with mitigation and best practice approach presented in the accompanying Environmental Impact Assessment Report (EIAR) and associated planning documentation. A Schedule of Mitigation Measures has been included in **Appendix 17.1** of the EIAR.
- Ensure decommissioning works and activities have minimal impact/disturbance to local landowners and the local community. This will relate to transport, particularly of material off site with noise and dust also impacting on receptors at time of decommissioning to a lesser extent.
- Ensure decommissioning works and activities have minimal impact on the natural environment. Disturbance to habitats will be avoided and the use of existing infrastructure and drainage will ensure silt does not enter waterways.
- Adopt a sustainable approach to decommissioning. This means comparing alternative methods for turbine disassembly and taking the approach with the least impact on the natural environment; and,

¹ For a wind farm where the roads are not to be retained, natural revegetation is preferred to reprofiling, or the importation of soil.

² The covering of turbine foundations with soil material was discussed, and discounted. Instead, the possibility was discussed of roughening the surface of the concrete foundation, to assist in the initiation and subsequent growth and coalescence of flora. However, the foundations will in fact be covered with hardcore, so this step is unnecessary.

- Provide toolbox talks, environmental training and awareness of sensitive receptors and waste management within the Site for all project personnel.

The key site objectives are as follows:

- Avoidance of any pollution incident or near miss as a result of working around or close to existing watercourses and have emergency measures in place, in accordance with the Water Quality Management Plan. Similar mitigation measures to the construction phase will be implemented. Please Section 3 for more details.
- Avoidance of vandalism.
- Keeping all watercourses free from obstruction and debris.
- Sustainable drainage system /drainage design principles will be maintained and monitored to ensure efficiency.
- Keep impact of decommissioning works to a minimum on the local environment, namely watercourses, and wildlife through the use of defences such as buffers and silt fences.
- Correct fuel storage and refuelling procedures to be followed.
- Good waste management and housekeeping to be implemented.
- Air and noise pollution prevention to be implemented.
- Monitoring of the works and any adverse effects that it may have on the environment.

Section 3 discusses the above in more detail.

2.4 DECOMMISSIONING METHODOLOGIES OVERVIEW

2.4.1 Introduction

An experienced main contractor will be appointed to undertake the decommissioning of the Development. The main contractors will comply with the mitigation measures of the Construction and Environmental Management Plan (CEMP) prepared for the construction phase. An overview of the decommissioning methodologies is provided below.

2.4.2 Decommissioning Methodology

The proposed decommissioning methodology is summarised under the following main headings:

- Wind turbines;
- Turbine Foundations, and
- Underground Cabling.

2.4.2.1 Wind Turbines

Prior to any works being undertaken on wind turbines, they will be disconnected from the grid by the site operator in conjunction with ESB Networks and EirGrid. The dismantling and removal of wind turbines of this scale is a specialist operation which will be undertaken by the turbine supplier or competent subcontractor. Turbine dismantling will be undertaken in reverse order to methodology employed during their construction. Cranes will be brought back to site utilising the hard stand areas. The dismantling of turbines will be bound by the same safety considerations as will be the case during construction in terms of weather conditions. Works will not be undertaken during adverse weather conditions and in particular not during high winds.

The turbine blades will be cut on site and removed in articulated trucks, the details of which are assessed in **Chapter 15: Traffic & Transportation** of the EIAR which accompany this application.

The transport of disassembled turbines from the Site will be undertaken in accordance with a Transport Management Plan (Management Plan 7 of the CEMP). The Transport Management Plan will provide for all necessary safety measures, including a convoy and Garda escort as required, off-peak turning/reversing movements and any necessary safety controls.

The Met Mast will also be removed as its purpose will cease once the turbines have been dismantle and removed. In addition, the Met Mast is solely a requirement of the operational phase to satisfy EirGrid's requirements.

2.4.2.2 Turbine Foundations

On the dismantling of turbines, it is not intended to remove the concrete foundations from the ground. It is considered that their removal will be the least preferred options in terms of potential effects on the environment. Turbine plinths will be removed and hardcore from the hardstands will be used to cover the plinth area. The hardcore covering turbine foundations will be allowed to revegetate naturally.

2.4.2.3 Underground Cabling

The cabling on site will be pulled from the cable duct using a mechanical winch which will extract the cable and re-roll it on to a cable drum. This will be undertaken at each of the joint bays/pull pits along the cable. The ground above original pulling pits/joint bays will be

excavated to access the cable ducts using a mechanical excavator and will be fully reinstated once the cables are removed. Excavated material will be temporarily stored adjacent to the site of excavation at a height of less than 1 m and at 25 m distance from any watercourse.

The cable ducting will be left in-situ as it is considered the most environmentally prudent option, avoiding unnecessary excavation and soil disturbance for an underground element that is not visible with no environmental impact.

The onsite substation and associated grid connection will remain in place as it will be under the ownership of the ESB and will form a permanent part of the national electricity grid.

2.4.2.4 Transport Route Accommodation Works

Turbines will be cut at the hardstand locations on site so as to fit on articulated trucks, therefore allowing the use of the civil construction delivery route for removal. There will be no need for additional temporary works on access roads for the removal of turbines.

3 ENVIRONMENTAL CONTROLS

The following sections give an overview of the drainage design, dust and noise control measures, a waste management plan for the site and the implementation of the environmental management procedures for the site. Based on the nature and extent of the decommissioning works these are the key on-site controls that are applicable at decommissioning. (Associated mitigation measures are described in Section 6).

3.1 SITE DRAINAGE

The site drainage features for this site during its construction and operation are outlined in the EIAR and **Surface Water Management Plan** (Management Plan 3 of the Construction and Environmental Management Plan) which accompany this application. This document has been prepared on a preliminary (outline) basis and will be further developed and expanded following the appointment of the Contractors for the main construction/decommissioning works. Some items of this CEMP can only be finalised with appropriate input from the Contractors who will actually carry out the main construction/decommissioning works. This CEMP identifies, for the incoming Contractors, the key planning, environmental and contract document constraints that must be adhered to in order to deliver optimum environmental reassurance for the site. As stated in Section 2.2, the drainage system will serve ongoing activity on the area.

When the final Decommissioning Plan is prepared prior to decommissioning and presented as a standalone document, all drainage management measures, which will include maintenance of the operational drainage measures, will be included in that document. However, it should be noted that by the time decommissioning is undertaken after the planned 35-year lifespan of the Development, the areas within the Site will have revegetated substantially resulting in a drainage pattern that is similar to what existed prior to any construction. It is not anticipated that the decommissioning phase will interrupt this drainage regime in any way with the works proposed. As an additional measure, areas where freshly placed soil material as part of excavation works will be surrounded by silt fencing if deemed necessary until the area has naturally revegetated e.g., near joint bays.

3.2 REFUELLING; FUEL AND HAZARDOUS MATERIALS STORAGE

The plant and equipment used during decommissioning will require refuelling during the works. Appropriate management of fuels will be required to ensure that incidents relating to refuelling are avoided. The following mitigation measures, which are the same as those

proposed for the construction phase, are proposed to avoid release of hydrocarbons at the Site:

- Road-going vehicles will be refuelled off site wherever possible.
- On-site refuelling will be carried out at designated refuelling area at the temporary decommissioning compound at the Site. Existing Hardstands will be utilised to act as a temporary compound for the appointed Contractor. Machinery such as cranes will be refuelled directly by a mobile fuel truck that will come to site as required. Drip trays will be used in such circumstances.
- Only designated trained and competent operatives will be authorised to refuel plant on site. Mobile measures such as drip trays and fuel absorbent mats will be used during all refuelling operations.
- Fuel volumes stored on site will be minimised. The fuel storage areas will be bunded to 110% of the storage volume.
- The plant used will be regularly inspected for leaks and fitness for purpose.
- An emergency plan for the decommissioning phase to deal with accidental spillages will be developed. Spill kits will be available to deal with an accidental spillage in 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.

3.3 DUST CONTROL

Dust is unlikely to be generated in significant amounts from on-site activities during decommissioning. The extent of dust generation will depend on the type of activity undertaken, the proximity of activities to receptors and the nature of the dust, i.e., soil, and the weather. In addition, dust dispersion is influenced by external factors such as wind speed and direction and/or, periods of dry weather. Site traffic movements also have the potential to generate dust as they travel along the haul route.

Proposed measures, which are the same as those proposed for the construction phase, to control dust include:

- Any site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions.
- The designated public roads outside the site and along the main transport routes to the site will be inspected daily by the Site Manager for cleanliness and cleaned if deposits are found.

- Material handling systems and material storage areas influenced by convenience and ease of handling, and peat slippage safety.
- Water misting or sprays will be used in dry and windy if particularly dusty activities are necessary during dry or windy periods.
- The transport of soils or other material, which has significant potential to generate dust, will be undertaken in tarpaulin-covered vehicles.
- Daily inspection of the site to examine dust measures and their effectiveness.
- When in dry and/or windy weather and dirt is visible on the roads, sections of the haul route will be swept using a truck mounted vacuum sweeper.

3.4 NOISE CONTROL

The operation of plant and machinery, including site vehicles, is a source of potential impact that will require mitigation at all locations within the site. Proposed measures, which are the same as those proposed for the construction phase, to control noise include:

- Diesel generators will be enclosed in sound proofed containers to minimise the potential for noise impacts.
- Plant and machinery with low inherent potential for generation of noise and/or vibration will be selected. All plant and equipment to be used on-site will be modern equipment and will comply with the S.I. No. 359/1996 - European Communities (Construction Plant and Equipment) (Permissible Noise Levels) (Amendment) Regulations.
- Regular maintenance of plant will be carried out in order to minimise noise emissions. Particular attention will be paid to the lubrication of bearings and the integrity of silencers.
- All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the works.
- Compressors will be of the "sound reduced" models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers.
- Machines, which are used intermittently, will be shut down during those periods when they are not in use.
- Training will be provided by the Site Manager to drivers to ensure smooth machinery operation/driving, and to minimise unnecessary noise generation.
- Local areas of the haul route will be condition monitored and maintained, if necessary.

3.5 INVASIVE SPECIES MANAGEMENT

Prior to decommissioning, a suitably qualified ecologist will complete an invasive species survey of the Site to identify invasive species where any excavation will be required. An Invasive Species Management Plan will be implemented if invasive species are identified.

During the field surveys of 2020 to 2022, a search for Invasive Alien Species (IAS) listed under the Third Schedule of the European Communities Regulations 2011 (S.I. 477 of 2015) was conducted. No species listed on this schedule were recorded during the surveys.

3.6 TRAFFIC MANAGEMENT

A Traffic Management Plan will be prepared in advance of any decommissioning works. The traffic management arrangements for the removal of turbines although similar to those that will be implemented for construction materials delivery (to a lesser extent) as outlined in the EIAR, will be agreed in advance of decommissioning with the competent authority.

The Traffic Management Plan for the decommissioning phase will also include provision for the removal of underground cables from the underground ducts within the Site. Cables in public roads will be left in-situ as they will be the responsibility of the ESB.

3.7 WASTE MANAGEMENT PLAN

This waste management plan which outlines the best practice procedures during the decommissioning of the Development. The Waste Management Plan will outline the methods of waste prevention and minimisation by recycling, recovery and reuse at each stage of decommissioning. Disposal of waste will be a last resort.

3.7.1 Legislation

The Waste Management Act 1996 as amended requires that any waste related activity has to have all necessary licenses and authorisations. It will be the duty of the Waste Manager on the site of the Inchamore Wind Farm development to ensure that all contractors hired to remove waste from the site have valid Waste Collection Permits. It will then be necessary to ensure that the waste is delivered to a licensed or permitted waste facility. The hired waste contractors and subsequent receiving facilities must adhere to the conditions set out in their respective permits and authorisations. Waste removal-related traffic volumes during the decommissioning phase, will be similar or less than those anticipated and assessed for the construction phase.

The Department of the Environment provides a document entitled, 'Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects' (2006). No demolition will take place at this site.

3.7.2 Waste Management Hierarchy

The waste management hierarchy sets out the most efficient way of managing waste in the following order:

1. Prevention and Minimisation:

The primary aim of the Waste Management Plan will be to prevent and thereby reduce the amount of waste generated.

2. Reuse of Waste:

No material is likely to be reused on site during the Decommissioning phase. Materials such as cabling will be reused off-site.

3. Recycling of Waste:

There are several established markets available for the beneficial use of Construction and Demolition waste such as using waste concrete as fill for new roads.

4. Disposal of Waste to Landfill

At all times during the implementation of the Waste Management Plan, disposal of waste to landfill will be considered only as a last resort.

3.7.3 Waste Arising from Decommissioning

The relevant components will be removed from site for re-use, recycling or waste disposal. Any structural elements that are not suitable for recycling will be disposed of in an appropriate manner. All lubrication fluids will be drained down and put aside for appropriate collection, storage, transport and disposal. Any materials which cannot be re-used or recycled will be disposed of by an appropriately licenced contractor.

The waste types arising from the decommissioning of the Development are outlined in **Table 3.1** below.

Table 3.1 Waste Types Arising during the Decommissioning Phase

Material Type	Example	EWC Code
Cables	Electrical wiring	17 04 11
Metals	Copper, aluminium, lead and iron	17 04 07
Fibreglass	Turbine blade component	10 11 03
Hydrocarbons	Oils and lubricants drained from the turbines	13 01 01,13 02 04

3.7.3.1 Reuse

Many construction materials can be reused several times before they have to be disposed of:

- Electrical wiring can be reused on similar wind energy projects
- Elements of the turbine components can be reused but this will be determined by the condition that they are in.

3.7.3.2 Recycling

If a certain type of material cannot be reused, then recycling is the most suitable option. The opportunity for recycling during decommissioning will be limited and restricted to components of the wind turbines and met mast.

All wastes will be sorted and segregated on-site during the time of decommissioning. The anticipated volume of all waste material to be generated at the Inchamore Wind Farm development is low which provides the justification for adopting small containers as a method of waste storage.

3.7.3.3 Implementation

3.7.3.3.1 Roles and Responsibilities

The Ecological Clerk of Works will have responsibility for overseeing and the implementation of the objectives of the Decommissioning Plan, ensuring that all hired waste contractors have the necessary authorisations and that the waste management hierarchy is adhered to. The person nominated will have sufficient authority so that they can ensure everyone working on the decommissioning adheres to the management plan.

3.7.3.3.2 Training

It is important for the Decommissioning Waste Manager to communicate effectively with colleagues in relation to the aims and objectives of the waste management plan. All employees working on site during the decommissioning phase of the project will be trained in materials management and thereby, will be able to:

- Distinguish reusable materials from those suitable for recycling.
- Ensure maximum segregation at source.
- Co-operate with site manager on the best locations for stockpiling reusable materials.
- Separate materials for recovery.
- Identify and liaise with waste contractors and waste facility operators.

3.7.3.3.3 Record Keeping

The Waste Management Plan will provide systems that will enable all arisings and movements of construction waste to be recorded. This system will enable the contractor to measure and record the quantity of waste being generated. The Waste Management Plan can then be adapted with changes that are seen through record keeping.

3.7.3.4 Waste Management Plan Conclusion

The Waste Management Plan will be properly adhered to by all staff involved in the project and will be outlined within the induction process for all site personnel. Reuse of certain types of decommissioning wastes will cut down on the cost and requirement of raw materials at other sites therefore further minimising waste levels going to landfill. This Waste Management Plan outlines the main objectives that are to be adhered to.

3.8 ENVIRONMENTAL MANAGEMENT IMPLEMENTATION

3.8.1 Roles and Responsibilities

The Site Manager and/or Environmental Clerk of Works will be key members of the Contractors team.

In general, the Ecological Clerk of Works will maintain responsibility for monitoring the decommissioning works and Contractors/Sub-contractors from an environmental perspective. The Ecological Clerk of Works will act as the regulatory interface on environmental matters. The Site Manager will be responsible for reporting to and liaising with Cork Country Council and other statutory bodies as required.

A suitably qualified and experienced ecologist and any other suitably qualified and experienced professionals such as engineers and geotechnical experts will further advise the Ecological Clerk of Works and Site Manager. This will ensure there is no negative impact on the environment as a result of the decommissioning of the Development.

4 EMERGENCY RESPONSE PLAN

An Emergency Response Plan provides details of procedures to be adopted in the event of an emergency in terms of site health and safety and environmental protection.

4.1 EMERGENCY RESPONSE PROCEDURE

The site Emergency Response Plan includes details the response required and the responsibilities of all personnel in the event of an emergency. The Emergency Response Plan will require updating and submissions from the Contractor/Project Supervisor Decommissioning Stage (appointed to manage and co-ordinate health and safety matters during the construction stage) and sub-contractors as decommissioning progresses. Where sub-contractors are governed by their own emergency response procedure a bridging arrangement will be adopted to allow for inclusion of the sub-contractor's Emergency Response Plan within this document.

4.1.1 Roles and Responsibilities

The chain of command during an emergency response sets out who is responsible for coordinating the response. The Site Supervisor/Construction Manager will lead the emergency response which makes him responsible for activating and coordinating the emergency response procedure. The other site personnel who can be identified at this time who will be delegated responsibilities during the emergency response are presented in Figure 4.1. In a situation where the Site Supervisor/ Construction Manager is to coordinate the emergency response, the responsibility will be transferred to the next person in the chain of command outlined in Figure 4.1. This will be updated throughout the various stages of the project.

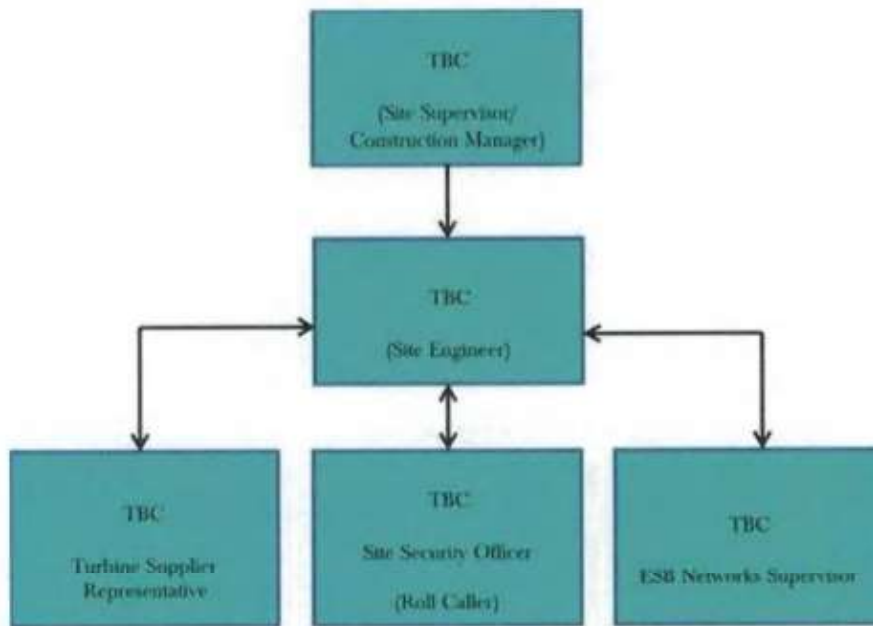


Figure 4.1 Emergency Response Procedure Chain of Command

4.1.2 Initial Steps

The following hazards have been identified as being potential situations that may require an emergency response in the event of an occurrence.

Table 4.1 Hazards associated with potential emergency situations

Hazard	Emergency Situation
Construction Vehicles: Dump trucks, tractors, excavators, cranes etc.	Collision or overturn which has resulted in operator or third-party injury.
Peat Instability	Excessive movement of peat on site; onset of peat slide.
Abrasive wheels/Portable Tools	Entanglement, amputation or electrical shock associated with portable tools
Contact with services	Electrical shock or gas leak associated with an accidental breach of underground services
Fire	Injury to operative through exposure to fire
Falls from heights including falls from scaffold towers, scissor lifts, ladders, roofs and turbines	Injury to operative after a fall from a height
Sickness	Illness unrelated to site activities of an operative e.g., heart attack, loss of consciousness, seizure
Turbine Specific Incident	This will be included the turbine manufacturers' emergency response plan.

In the event of an emergency situation such as the hazards outlined in Table 4.2 the Site Supervisor/Construction Manager will carry out the following:

- Establish the scale of the emergency situation and identify the number of personnel, if any, who have been injured or are at risk of injury.
- Where necessary, sound the emergency siren/foghorn that activates an emergency evacuation on the site. The Site Supervisor/Construction Manager must proceed to the assembly point if the emergency poses any significant threat to their welfare and if there are no injured personnel at the scene that require assistance. The Site Supervisor/Construction Manager will be required to use their own discretion at that point. In the case of fire, the emergency evacuation of the turbines and substation should proceed, without exception. The site evacuation procedure is outlined in Section 4.1.3.
- Make safe the area if possible and ensure that no identifiable risk exists with regard to dealing with the situation e.g., if a machine has turned over, ensure that it is in a safe position so as not to endanger others before assisting the injured.
- Contact the required emergency services or delegate the task to someone. If delegating the task, ensure that the procedures for contacting the emergency services as set out in Section 4.2 is followed.
- Take any further steps that are deemed necessary to make safe or contain the emergency incident e.g., cordon off an area where an incident associated with electrical issues has occurred.
- Contact any regulatory body or service provider as required e.g., ESB Networks the numbers for which are provided in Section 4.3.
- Contact the next of kin of any injured personnel where appropriate.

4.1.3 Site evacuation/Fire Drill

A site evacuation/fire drill procedure will provide basis for carrying out the immediate evacuation of all site personnel in the event of an emergency. The following steps will be taken:

- Notification of the emergency situation. Provision of a siren or foghorn to notify all personnel of an emergency situation.
- An assembly point will be designated in the construction compound area and will be marked with a sign. All site personnel will assemble at this point.
- A roll call will be carried out by the Site Security Officer to account for all personnel on site.

- The Site Security Officer will inform the Site Supervisor/Construction Manager when all personnel have been accounted for. The Site Supervisor/Construction Manager will decide the next course of action, which be determined by the situation that exists at that time and will advise all personnel accordingly.

All personnel will be made aware of the evacuation procedure during site induction. The Fire Services Acts of 1981 and 2003 require the holding of fire safety evacuation drills at specified intervals and the keeping of records of such drills.

4.1.4 Excessive Peat Movement

The wind farm infrastructure has been designed such that peat will be stable (See **EIAR Appendix 8.1 Site Investigations Report**). No excessive excavation works are proposed for the decommissioning phase. In the unlikely event of excessive peat movement or continuing peat movement recorded at a monitoring location, or identified at any location within the Site, but no apparent signs of distress to the peat (e.g., cracking, surface rippling) (not as a result of the decommissioning of the Wind Farm) then the following shall be carried out:

1. All decommissioning activities shall cease within the affected area.
2. Increased monitoring at the location shall be carried out. The area will be monitored, as appropriate, until such time as movements have ceased.
3. Re-commencement of limited construction activity will only start following a cessation of movement and the completion of a geotechnical risk assessment by a geotechnical engineer.
4. Such detailed monitoring and awareness will further ensure that the potential for a peat slide is absolutely minimised as actions arising from monitoring will reduce the significance of the possible negative effects.

4.1.5 Onset of Peat Slide

Neither the site activities nor the site characteristics are conducive to a peat slide arising as a result of decommissioning. In the highly unlikely event of an onset or actual detachment of peat then the following shall be carried out:

1. On alert of a peat slide incident, all activities will cease and all available resources will be diverted to assist in the required mitigation procedures.
2. For localised peat slides that do not represent a risk to a watercourse and have essentially come to rest the area will be stabilised initially by rock infill, if required. The failed area

and surrounding area will then be assessed by the geotechnical engineer and stabilisation procedures implemented. The area will be monitored, as appropriate, until such time as movements have ceased.

4.1.6 Spill Control Measures

Every effort will be made to prevent an environmental incident during the decommissioning phase of the project. Oil/fuel spillages if arising, are likely to be small and localised. The importance of a swift and effective response in the event of a spill is important. The following steps provide the procedure to be followed in the event of such an incident:

- Stop the source of the spill and raise the alarm to alert people working in the vicinity of any potential dangers.
- If applicable, eliminate any sources of ignition in the immediate vicinity of the incident.
- Contain the spill using the spill control materials, track mats or other material as required. Do not spread or flush away the spill.
- If necessary, cover or bund off any vulnerable areas where appropriate such as drains, watercourses or sensitive habitats.
- Clean up as much as possible using the spill control materials.
- Contain any used spill control material. Dispose of used materials appropriately using a fully licensed waste contractor with the appropriate permits so that further contamination is limited.
- Notify the Ecological Clerk of Works immediately giving information on the location, type and extent of the spill so that they can take appropriate action.
- The Ecological Clerk of Works will inspect the site and ensure the necessary measures are in place to contain and clean up the spill and prevent further spillage from occurring.
- The Ecological Clerk of Works will notify the appropriate regulatory body such as Cork County Council, and the Environmental Protection Agency, if deemed necessary.

4.1.7 Environmental Investigation

Any environmental incident must be investigated in accordance with the following steps.

- The Ecological Clerk of Works will be immediately notified.
- If necessary, the Ecological Clerk of Works will inform the appropriate regulatory authority. The regulatory authority will depend on the nature of the incident.
- The details of the incident will be recorded on an Environmental Incident Form which will provide information such as the cause, extent, actions and remedial measures used

following the incident. The form will also include any recommendations made to avoid reoccurrence of the incident.

- If the incident has impacted on a sensitive receptor such as an archaeological feature the Ecological Clerk of Works will halt work and will liaise with the Project Archaeologist.
- A record of all environmental incidents will be kept on file by the Ecological Clerk of Works and the Main Contractor. These records will be made available to the relevant authorities such as Cork County Council and/or Environmental Protection Agency if required.

The Ecological Clerk of Works will be responsible for any corrective actions required as a result of the incident e.g., an investigative report, formulation of alternative works methodologies or environmental sampling, and will advise the Main Contractor as appropriate.

4.2 CONTACT THE EMERGENCY SERVICES

In the event of requiring the assistance of the emergency services the following steps will be taken:

Ring 999 or 112.

Clearly state the situation and the location.

Await further instructions from Emergency Services.

Table 4.2 Emergency Contacts

Contact	Telephone no.
Client: FuturEnergy Ireland	01 6698565
Doctor – Ballyvourney Health Centre	026 45 341
Emergency Services – Ambulance, Fire, Gardaí	999/112
ESB Emergency Services	1850 372 999
Hospital – Cork University Hospital	021 49 22 000
Gas Networks Ireland Emergency	1850 20 50 50
Gardaí – Ballyvourney Garda Station	026 45 002

Contact	Telephone no.
Health and Safety Co-ordinator - Health & Safety Services	TBC
Health and Safety Authority	1890 289 389
Inland Fisheries Ireland (IFI)	1890 347 424
Project Supervisor Construction Stage (PSCS): TBC	TBC
Project Supervisor Design Stage (PSDS)*: Jennings O'Donovan & Partners Limited	071 9161416

* oversees the coordination of the design with the design team, architects engineers etc.

5 PROGRAMME OF WORKS

5.1 DECOMMISSIONING SCHEDULE

The decommissioning phase will take approximately 3 – 6 months to complete from commencing the removal of turbines to the final reinstatement of the site.

The decommissioning of the Development will take place after the 35-year operational period of the planning permission period has elapsed.

The phasing and scheduling of the main decommissioning task items are outlined in **Figure 5.1** below, where the 1st January has been shown as an indicative start date for decommissioning to commence.

ID	Task Name	Task Description	Q1			Q2			Q3			
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	Site Health and Safety		[Blue bar spanning Jan to Jun]									
2	Turbine Decommissioning	Disconnect Power Output	[Blue bar in Jan]									
3	Turbine and Met Mast Dismantling	Disassemble turbine components and met mast	[Blue bar spanning Feb to Apr]									
4	Turbine Removal	Transport of all turbine components off site	[Blue bar spanning Feb to May]									
5	Cable Removal	Remove underground cables from ducting	[Blue bar in Mar]									
6	Turbine Foundations Backfill	Reinstate foundation areas by covering with soil material	[Blue bar in May]									

Figure 5.1 Indicative Decommissioning Schedule

6 MITIGATION PROPOSALS

The decommissioning Mitigation Measures are presented in the following pages.

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 decommissioning phase of the project.

Table 6.1 Mitigation Measures

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
<i>Decommissioning Phase</i>				
MM1	EIAR Chapter 2 Project Description	This plan will be updated and agreed in writing with Cork County Council.		
MM2	Decommissioning Plan Section 3	A suitably qualified and experienced ecologist and any other suitably qualified and experienced professionals such as engineers and geotechnical experts will further advise the Ecological Clerk of Works and Site Manager on works and mitigation measures associated with the Decommissioning phase. This will ensure there is no negative impact on the environment as a result of the decommissioning of the Development.		
MM3	Decommissioning Plan Section 3	Prior to decommissioning, a suitably qualified (CIEEM accredited) ecologist will complete an invasive species survey of the material proposed for turbine foundation backfilling. The invasive species survey will also be undertaken along the cable route to identify invasive species at joint bay locations where excavation to expose the cabling for removal will be required.		
MM4	EIAR Chapter 2 Project Description Decommissioning Plan Section 2	The approach proposed for decommissioning is one of minimal intervention. <ul style="list-style-type: none"> • Decommissioning works will be limited to action necessary to remove the wind farm structures, i.e., removal of turbines, cabling and the monitoring mast. • Roads and associated drainage systems will remain in place to serve ongoing forestry and agriculture activity. • Hardstanding areas will be allowed to revegetate naturally. 		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
Decommissioning Phase				
		<ul style="list-style-type: none"> Turbine plinths will be removed, and the hardcore covering turbine foundations will be allowed to revegetate naturally. Soil disturbance will be avoided. A permanent permission is being sought for the substation. It is outside the scope of the decommissioning process. 		
MM5	EIAR Chapter 2 Project Description Decommissioning Plan Section 3	<p>The following mitigation measures are proposed to avoid release of hydrocarbons at the Site:</p> <ul style="list-style-type: none"> Road-going vehicles will be refuelled off site wherever possible. On-site refuelling will be carried out at designated refuelling area (Planning Drawing No. 803) at the Site. Machinery such as cranes will be refuelled directly by a fuel truck that will come to site as required. Only designated trained and competent operatives will be authorised to refuel plant on site. Mobile measures such as drip trays and fuel absorbent mats will be used during all refuelling operations. Fuel volumes stored on site will be minimised. The fuel storage areas will be bunded to 110% of the storage volume. The plant used will be regularly inspected for leaks and fitness for purpose. An emergency plan for the decommissioning phase to deal with accidental spillages will be developed. Spill kits will be available to deal with an accidental spillage in and outside the refuelling area. 		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
Decommissioning Phase				
		<p>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.</p> <ul style="list-style-type: none"> Vehicles will undergo a visual inspection prior to being permitted to drive onto the proposed site or progress beyond the Contractors' yard. Vehicles will also be in good working order. The Contractors and Ecological Clerk of Works will retain a record of all inspections/findings of Environmental Clerks within Section 4 of the main CEMP document. All records will be made available for discussion during meetings. 		
MM6	<p>EIAR Chapter 10 Air and Climate</p> <p>DP Section 3</p>	<p>Proposed measures to control dust, the same as those proposed for the construction phase, include:</p> <ul style="list-style-type: none"> Any Site Access Roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions. Although highly unlikely to occur, the designated public roads outside the site and along the main transport routes to the Site will be inspected daily by the Site Manager for cleanliness and cleaned if deposits are found. Material handling systems and material storage areas will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used in dry and windy if particularly dusty activities are necessary during dry or windy periods. 		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
Decommissioning Phase				
		<ul style="list-style-type: none"> The transport of soils or other material, which has significant potential to generate dust, will be undertaken in tarpaulin-covered vehicles. Daily inspection of the site to examine dust measures and their effectiveness. When in dry and/or windy weather and dirt is visible on the roads, sections of the haul route will be swept using a truck mounted vacuum sweeper. 		
MM7	EIAR Chapter 11 Noise Decommissioning Plan Section 3	<p>No significant construction noise effects have been identified. Therefore, no specific mitigation measures are required. However, general guidance for controlling construction noise through the use of good practice given in BS 5228 will be followed. During construction of the project, activity shall be limited to working times incorporated in any planning permission.</p> <p>During decommissioning noise levels are likely be no more than predicted in the construction phase as similar plant will be utilised. Any legislation, guidance or best practice relevant at the time of decommissioning will be complied with. All construction/decommissioning activities are temporary day time activities.</p>		
MM8	EIAR Chapter 15 Traffic and Transportation	<ul style="list-style-type: none"> Signage will be erected at the site entrance and on the N22 approaching the site. Construction traffic associated with decommissioning will be scheduled so as to avoid school drop off and collection times. 		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
<i>Decommissioning Phase</i>				
	Decommissioning Plan Section 3	<ul style="list-style-type: none"> All vehicles using or while in operation at the wind farm site shall either have roof mounted flashing beacons or will use their hazard lights. A speed limit of 25km/h shall apply to all vehicles within the wind farm site. 		
MM9	Decommissioning Plan Section 3	Waste Management is detailed in Section 3.7 of the Decommissioning Plan. A Waste Management Plan detailing the best practice procedures during the decommissioning of the Development will be prepared. The Waste Management Plan will outline the methods of waste prevention and minimisation by recycling, recovery and reuse at each stage of decommissioning. Disposal of waste will be a last resort.		
MM10	Decommissioning Plan Section 3	Ecological Clerk of Works will maintain responsibility for monitoring the decommissioning works and Contractors/Sub-contractors from an environmental perspective. The Ecological Clerk of Works will act as the regulatory interface on environmental matters. The Site Manager will be responsible for reporting to and liaising with Cork County Council and other statutory bodies as required.		

7 COMPLIANCE AND REVIEW

7.1 SITE INSPECTIONS AND ENVIRONMENTAL AUDITS

Routine inspections of decommissioning activities will be carried out on a daily and weekly basis by the Ecological Clerk of Works and the Site Supervisor/Construction Manager to ensure all controls are in place to prevent environmental impacts, relevant to the decommissioning activities taking place at the time.

Environmental inspections will ensure that the works are undertaken in compliance with this Decommissioning Plan and all other planning application documents. Only suitably trained staff will undertake environmental site inspections. These staff will have undergone third level educational training and will have experience in a similar role.

7.2 AUDITING

An Environmental audit will first be carried out prior to the Decommissioning Phase of the Development to ensure the implementation of mitigation measures. Further environmental audits will be carried on a monthly basis during the construction phase of the Project and again after the decommissioning of the wind turbines.

Environmental audits will be carried out by the Ecological Clerk of Works. An impartial and objective approach will be taken. Environmental audits will be conducted at monthly to determine to determine whether the Decommissioning Plan is being properly implemented and maintained. The results of environmental audits will be provided to the contractor.

An audit of compliance with the decommissioning mitigation measures will be completed by the Ecological Clerk of Works during the decommissioning phase of the development. The findings of each audit will be documented by the Ecological Clerk of Works in an audit report within the Decommissioning Plan for the site. The audit report will be made available to Cork on request.

7.3 ENVIRONMENTAL COMPLIANCE

The following definitions will apply in relation to the classification of Environmental Occurrences during decommissioning of the proposed wind farm development:

- **Environmental Near Miss:** An occurrence which if not controlled or due to its nature could lead to an Environmental Incident.

- **Environmental Incident:** Any occurrence which has potential, due to its scale and nature, to migrate from source and have an environmental impact beyond the immediate area of the incident.
- **Environmental Exceedance Event:** An environmental exceedance event occurs when monitoring results indicate that limits for a particular environmental parameter (as indicated in the Environmental Monitoring Programme) has been exceeded.

Any of these events will immediately trigger an investigation into the reason for the incident and the application of suitable mitigation where necessary.

Exceedance events can be closed out on achieving a monitoring result below the assigned limit for a particular environmental parameter e.g., 25 mg/L total suspended solids in waters (Inland Fisheries Ireland, 2016).

7.4 **CORRECTIVE ACTION PROCEDURE**

A corrective action is implemented to rectify an environmental problem on-site. Corrective actions will be implemented by the Site Supervisor/Construction Manager, as advised by the Site Environmental Clerk of Works. Corrective actions may be required as a result of the following:

- Environmental Audits
- Environmental Inspections and Reviews
- Environmental Monitoring
- Environmental Incidents
- Environmental Complaints

A Corrective Action Notice will be used to communicate the details of the action required to the main contractor. A Corrective Action Notice is a form that describes the cause and effect of an environmental problem on site and the recommended corrective action that is required. The Corrective Action Notice, when completed, will include details of close out and follow up actions.

If an environmental problem occurs on site that requires immediate attention direct communications between the Site supervisor/Construction Manager and the Ecological Clerk of Works will be conducted. This in turn will be passed down to the site staff involved. A Corrective Action Notice will be completed at a later date.

7.5 DECOMMISSIONING PLAN REVIEW

This Decommissioning Plan will be reviewed and confirmed prior to commencement of decommissioning works. Further details will be added to the plan during decommissioning works to adapt to specific situations or site conditions that are encountered that need to be considered by the Plan.

Client: *Inchamore Wind DAC*
Project Title: *Inchamore Wind Farm*
Document Title: *Construction Environmental Management Plan*

Date: *May 2023*
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MANAGEMENT PLAN 7 – TRAFFIC MANAGEMENT PLAN