

# Culmullin 220kV Substation

Outline Construction Environmental Management Plan  
(CEMP)

Energia Solar Holdings

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# 1. Introduction

## 1.1 Background

AECOM Ireland Ltd. have been appointed to undertake an Outline Construction Environmental Management Plan (Outline CEMP) for Energia Solar Holdings (hereafter referred to as the 'Applicant').

The Outline CEMP sets out the procedures, standards, work practices and management responsibilities to address potential environmental effects that may arise from the construction of a 220 kilo Volt (kV) Air Insulated Switchgear (AIS) substation, named Culmullin 220kV Substation (hereafter referred to as the 'Proposed Development').

The Outline CEMP outlines the approach that will be adopted to environmental management throughout the Proposed Development, with the primary aim of reducing any adverse effects from construction on the environment. It could therefore form part of the Contract Documents for the construction phase. The Outline CEMP remains at all times a live document, subject to amendment including the revision and addition of content throughout the works. In this context, the values and information presented herein is subject to change and refinement through the selection of the Contractor and the delivery of the Proposed Development.

The Outline CEMP shall be further refined and expanded by the appointed Contractor following planning into a full Contractor CEMP as more certainty and more information becomes available in terms of the proposed layout, construction methods, programme and potential environmental impacts to be mitigated against. The elements contained within this Outline CEMP will be included in the Contractor's CEMP, which will be prepared prior to construction by the appointed Contractor and approved by the Applicant.

At the end of the construction phase, the appointed Contractor shall prepare a Handover Environmental Management Plan (HEMP) that shall contain essential environmental information needed by the bodies responsible for the future maintenance and operation of the asset.

With this purpose in mind, it therefore follows that this Outline CEMP should be treated as a live document throughout the lifecycle of the Proposed Development, requiring regular review and update as necessary.

## 1.2 Objectives of a CEMP

The objectives of a CEMP are to:

- Act as a continuous link and reference document for environmental issues between the design, construction, testing and commissioning stages of the Proposed Development.
- Demonstrate how construction activities and supporting design shall properly integrate the requirements of environmental legislation, planning consent conditions, policy, good practice, and those of the environmental regulatory authorities and third parties.
- Record environmental risks and identify how they will be managed during the construction period.
- Record the objectives, commitments and mitigation measures to be implemented together with programme and date of achievement.
- Identify key staff structures and responsibilities associated with the delivery of the Proposed Development, and environmental control and communication and training requirements as necessary.
- Describe the appointed Contractor's proposals for ensuring that the requirements of the environmental design are achieved, or are in the process of being achieved, during the Contract Period.
- Act as a vehicle for transferring key environmental information at handover to the body responsible for operational management. This shall include details of the asset, short and long-term management requirements, and any monitoring or other environmental commitments.
- Provide a review, monitoring and audit mechanism to determine effectiveness of, and compliance with, environmental control measures and how any necessary corrective action shall take place.

## 1.3 Scope of the Outline CEMP

The scope of this Outline CEMP covers the design and construction of the Proposed Development. The spatial scope of the Proposed Development will cover the:

- Site boundary.

- Any additional working areas.
- Access to and egress from Site(s).

Details on the Proposed Development are provided in Chapter 2 (Description of the Proposed Development). This Outline CEMP considers the following subject areas:

- Environmental Management.
- General Site Management.
- Biodiversity.
- Land and Soils.
- Water Quality.
- Air Quality.
- Climate.
- Noise and Vibration.
- Cultural Heritage.
- Landscape and Visual.
- Traffic Management.
- Waste Management.

It is noted that the Outline CEMP provides guidance, both descriptive and prescriptive, for the information to be included in the CEMP by the appointed Contractor and the CEMP is the Contractor produced document that describes how the information and conditions provided in the Outline CEMP is incorporated and adhered to respectively.

This Outline CEMP will be updated by the appointed Contractor and will be signed off by Meath County Council (MCC) prior to construction. The Contractors CEMP should take account the Outline CEMP and any planning conditions upon grant of permission for the Proposed Development.

## **2. Description of the Proposed Development**

### **2.1 Site Location**

The Site of the Proposed Development is located at Woodtown, Co. Meath (ITM coordinates: 690069, 750028). The R154 (regional road) (Trim Road) is approximately 2.9 km north, R125 is approximately 2.5km east, R156 is approximately 3.3km south and the L2207 local road is approximately 2.7km to the west (Figure 2-1).

The nearest residential settlements (towns and villages) to the Site are Summerhill, approximately 6km to the southwest, Trim approximately 12km to the northwest, Dunshaughlin, approximately 7km to the northeast, and Dunboyne approximately 13.5km to the southeast.

The redline boundary of the Proposed Development covers an approximate area of 7.3ha, with the substation boundary covering approximately 2.24ha, and the telecoms mast compound which is separate to the substation is 225m<sup>2</sup>.

The location of the Proposed Development in the context of the surrounding environment is shown in Figure 2-2.

Figure 2-1: Site Location<sup>1</sup>

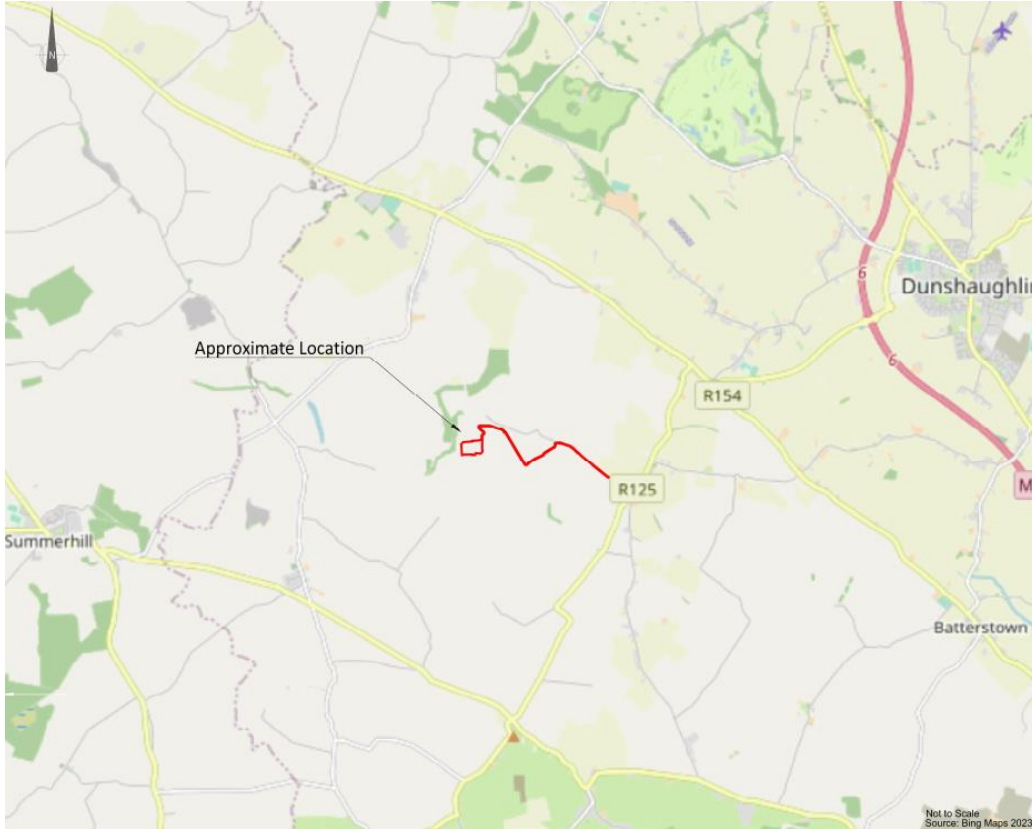
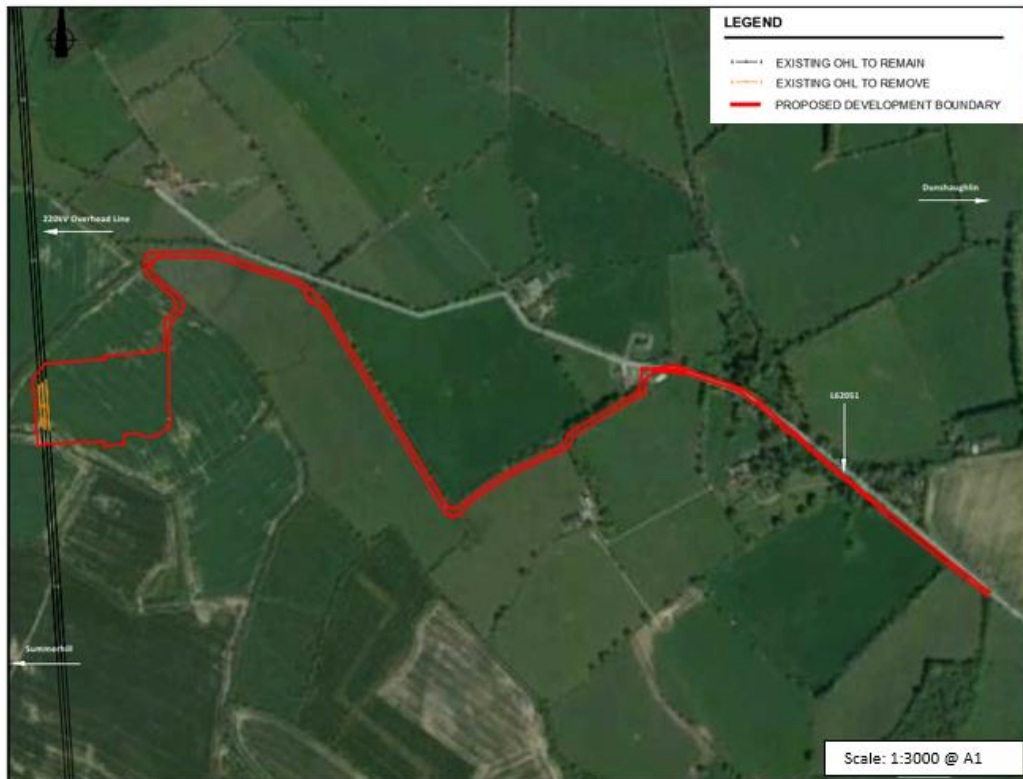


Figure 2-2: Indicative Site Location and Surrounding Environment<sup>2</sup>



<sup>1</sup> Source: Bing Maps (2023).

<sup>2</sup> Source: GoogleEarth (2023)

## 2.2 Overview of the Proposed Development

The Proposed Development will comprise a new 220kV AIS substation (Culmullin 220 kV Substation) looped into the existing Maynooth – Gorman 220kV overhead line (OHL) located at Woodtown, Co. Meath). The redline boundary of the Proposed Development covers an approximate area of 7.3 hectares (ha), with the substation boundary covering approximately 2.24ha.

It is intended that three solar energy projects will connect to the proposed substation via underground cables with a maximum voltage of 33kV which are considered to be exempted development under Class 26 of the Planning and Development Regulations 2001 (as amended). The substation is required to support, secure and transport the supply of electricity from these renewable energy developments, as part of its place on the wider solar scheme. Details of the solar projects which will connect to the proposed substation are included below:

- Woodtown (c. 120 megawatt (MW) MEC (export capacity)) at Culmullin, Woodtown, Arodstown & Summerhill, Co Meath. Permission for a solar PV Energy Development with a total site area of 206 ha, to include solar panels mounted on steel support structures, associated cabling and ducting, 54 No. MV Power Stations, 2 No. Client Substations, 4 No. Temporary Construction Compounds, access tracks, boundary security fencing and security gates, CCTV, landscaping and ancillary works, accessed via two existing accesses along the L62051. A planning application was submitted to Meath County Council (MCC) in November 2021 and granted planning consent in June 2022 (Planning Ref: 212214 which has been referred to An Bord Pleanála, a decision on the case was due at the time of writing this report. .
- Derryclare (c. 70 MW MEC) near Derryclare, Cloneymeth, Ballygortagh and Moynalvy, Summerhill, Co. Meath. Permission for a for a Solar PV Energy Development with a total site area of 108.68ha, to include solar panels mounted on steel support structures, associated cabling and ducting, 27 no. MV Power Stations, 3 No. Client Substations, 3 No. temporary construction compounds, access tracks, boundary security fencing and security gates, CCTV, landscaping and ancillary works. A planning application was submitted to MCC in May 2021 and was granted planning consent in January 2022 (Planning Ref: 21985).
- Bogganstown (c. 110 MW MEC), near Culmullin, Curraghtown, Cultromer, Gaulstown. Bogganstown, Cullendragh, Drumree, Co. Meath. Permission sought for a Solar PV Energy Development with a total site area of 171.34ha, to include solar panels mounted on steel support structures, associated cabling and ducting, 47 No. MV Power Stations, 3 No. Client Substations, 3 No. Temporary Construction Compounds, tracks, boundary security fencing and security gates, CCTV, landscaping and ancillary works, with a 40 year operational period currently under determination by the local planning authority – MCC (Planning Ref: 221508).

The Substation and grid connection will be constructed by the applicant to EirGrid specifications and ownership of the contestably constructed transmission system assets will be transferred to Electricity Supply Board (ESB)/EirGrid following construction. All works will be contained within the boundary of the Site.

The Proposed Development comprises:

- A new 220kV substation compound (approximately 2.24ha) consisting of:
  - Outdoor AIS equipment rated for the system voltage of 220kV equipped with 4 number 220kV cable bays.
  - Two number single storey buildings including an EirGrid standard control building with ancillary services, and a customer Medium Voltage (MV) module.
  - Two 180 megavolt amperes (MVA) oil-filled step-down power transformers within banded enclosures.
  - 14 lightning protection masts (25m in height).
  - A 2.6m tall palisade fence.
- Two new Line Cable Interface Mast (LCIMs), under existing OHL to facilitate the removal of a short section (approximately 60m) of the existing 220kV lines.
- Approximately 120m of new underground cables to connect the substation to the grid.
- Adjacent telecoms mast area (225m<sup>2</sup>) for substation communications between Maynooth and Gorman 220kV substations at either end of the existing 220kV OHL.
- Five passing bays on the L62051.

In addition to the above the Proposed Development will include the following:

- New site access off the L62051 and internal site access road.
- Car parking.
- Drainage infrastructure.



- All associated and ancillary site development works.

### 3. Environmental Management - General

#### 3.1 Overview

The CEMP will fully address the particular requirements of the objectives listed in **Section 1.2** of this Outline CEMP, and any updated or new supplementary environmental reports made available to the appointed Contractor as necessary. The CEMP shall also comply with the requirements of the relevant authorities/environmental bodies.

The CEMP shall be prepared by the appointed Contractor and submitted to MCC for approval prior to works commencing onsite. It shall be prepared in sufficient detail to describe the framework of the Contractor's proposed management, control and mitigation strategy for each environmental aspect. Consideration will also be given to relevant adjacent developments in the management of future construction activities onsite. The CEMP should include, where required, specific Method Statements for specific works (e.g., working in or near watercourses) and these should be included in Appendix A.

The CEMP shall be developed/updated as necessary during the course of the design and construction phases and will be reviewed on a regular basis with MCC as necessary.

#### 3.2 Environmental Aspects and Impacts

The appointed Contractor will prepare a specific Project Environmental Risk Assessment (ERA), which will be included in Appendix B. The Contractor should also include the following:

- Environmental guidelines on how to prepare an ERA.
- The guidelines and procedure on how to prepare/undertake an ERA and to assist in the identification of environmental aspects of the project's activities, products and services.
- Monitoring and checklists that shall be implemented to manage the environment.
- Environmentally sensitive area(s) and control measures to be implemented on site which will be included as an appendix to the CEMP.

#### 3.3 Roles and Responsibilities

The appointed Contractor shall employ a suitably experienced and qualified Construction Environmental Management Plan Co-ordinator (CEMP Co-ordinator) to undertake co-ordination of monitoring of the works' impacts and implementation of the Contractor's proposals, in respect of all environmental requirements. Further information is provided in Table 3.1.

A CEMP Co-ordinator or an Environmental Site Manager shall be present onsite for the duration of the Proposed Development. The CEMP Co-ordinator shall be the point of contact for dealing with environmental issues for the Contractor's employees, Subcontractors, relevant authorities/environmental bodies, and members of the public. The CEMP Co-ordinator will also be responsible for controlling the construction impacts arising from the activities of the Contractor and Subcontractors in accordance with the CEMP.

The CEMP Co-ordinator/Environmental Site Manager shall prepare, implement, manage, review and revise the CEMP with the sole purpose of ensuring that the environment is safeguarded at all times from anticipated or unexpected adverse impacts during construction.

Within the Contractor's team, the CEMP Co-ordinator shall have the authority to ensure that the CEMP is effectively implemented. The CEMP Co-ordinator will inform MCC of any transgressions in respect of the CEMP so that necessary sanctions can be imposed.

In general, the duties of the CEMP Co-ordinator shall include the following:

- Implementation of the CEMP procedures.
- Routine environmental monitoring, recording and reporting.
- Maintaining and auditing the CEMP and documents that underpin it.
- Environmental training including daily toolbox talks to site staff and design staff.
- Liaison with statutory authorities as required.
- Assist in liaison with the relevant authorities/environmental bodies and local community.

- Any other activities that may be necessary in order to protect wildlife and the environment during the works.

In addition, other environmental specialists as listed in Table 3.1 must be available to provide advice on the CEMP during construction. The CEMP shall typically place environmental responsibilities on the key roles within the Proposed Development as set out below.

**Table 3.1 Key Contractor Team Roles and Responsibilities (indicative)**

Role	Responsibilities
Contractor's Project Director	<ul style="list-style-type: none"> <li>▪ Assign specific environmental duties to competent members of the Contractor's Team.</li> <li>▪ Identify the environmental training needs of personnel under their control and arrange appropriate training programmes and ensure records are being maintained.</li> <li>▪ Ensure that significant environmental aspects identified for the Project are managed.</li> <li>▪ Promote the continual improvement of environmental performance.</li> </ul>
Environmental Site Manager	<ul style="list-style-type: none"> <li>▪ Develop, maintain and audit the CEMP (and supporting documents/plans) to ensure all aspects, impacts and statutory requirements etc. are reflected in the CEMP.</li> <li>▪ Develop and implement a programme of regular Project environmental inspections, monitoring, recording and reporting by the Environmental Site Manager in accordance with procedures set out in the CEMP.</li> <li>▪ Ensure that the works are constructed in line with the CEMP.</li> <li>▪ Liaise with statutory authorities.</li> <li>▪ Attend regular construction meetings to ensure environmental issues are discussed and addressed by the Contractor's Team.</li> <li>▪ Liaise with relevant authorities/environmental bodies and the local community as required.</li> <li>▪ Comply with duties under relevant legislation and company procedures in relation to environmental incident investigation and reporting.</li> <li>▪ Provide support and training to the workforce with regard to understanding environmental aspects, impacts, regulatory requirements, best practice, constraints and methods of working.</li> <li>▪ Nominate the Environmental Site Manager.</li> <li>▪ Appoint environmental specialists as required.</li> <li>▪ Ensure identified environmental specialists are in attendance onsite as required by the CEMP.</li> <li>▪ Review non-conformance reports provided by the Environmental Site Manager and/or the Inland Fisheries Ireland Environmental Advisors to identify any underlying issues or patterns to identify suitable ameliorative measures</li> </ul>
Contractor's Project Manager	<ul style="list-style-type: none"> <li>▪ Ensure that the CEMP is produced, maintained, implemented and distributed to all relevant parties.</li> <li>▪ Provide an on-call 24hr resource as a first point of contact for environmental issues/incidents.</li> <li>▪ Monitor the completion of corrective actions by the Site Manager and act as required to expedite completion.</li> <li>▪ Provide regular reports to the MCC on environmental performance, including details of any identified incidents or non-conformances and corrective actions.</li> <li>▪ Ensure that all personnel for whom they are responsible are aware of the CEMP and implement the relevant requirements.</li> <li>▪ Evaluate the competence of all subcontractors and suppliers and ensure that they are made aware of and comply with the CEMP and associated procedures.</li> <li>▪ Establish a consultation and communication system with all relevant stakeholders and interested parties associated with the Project, including employees, partners, sub-contractors, designers and third parties, etc., where relevant.</li> </ul>
Site Manager	<ul style="list-style-type: none"> <li>▪ Ensure that all personnel undergo suitable and sufficient environmental induction before starting work on the Project, and periodic refresher environmental awareness training throughout the construction.</li> <li>▪ Ensure staffs attend the appropriate environmental courses that are organised by the Environmental Site Manager or CEMP Co-ordinator. Ensure the Environmental Manager is maintaining records of training delivered to site staff.</li> <li>▪ Monitor the performance of personnel and activities under their control and ensure arrangements are in place so that all personnel can work in a manner which minimises risks to them and to the environment.</li> <li>▪ Undertake a programme of regular environmental inspections in liaison with the Environmental Site Manager.</li> <li>▪ Complete any corrective actions identified by the Environmental Site Manager and provide status reports as required to MCC.</li> <li>▪ Assist and support the Environmental Site Manager (CEMP Co-ordinator) and statutory bodies in the investigation of any incidents.</li> <li>▪ Notify the Environmental Site Manager of all environmental issues or incidents arising over the course of operations.</li> </ul>
Environmental Specialists (i.e. Ecological Clerk of	<ul style="list-style-type: none"> <li>▪ Attend site as required to monitor the protection of asset in accordance with the requirements of relevant legislation, the Environmental Considerations Report (ECR) mitigation measures, the construction contract and the CEMP.</li> <li>▪ Identify potential risks to wildlife and develop suitable control measures.</li> </ul>

Role	Responsibilities
Works (ECoW)	<ul style="list-style-type: none"> <li>▪ Provide status reports and updates to the Environmental Site Manager in the completion of their activities.</li> </ul>

### 3.4 Emergency Response and Environmental Training

All personnel working on the Proposed Development will attend a site induction. Personnel attending such an induction will complete a site induction record acknowledging attendance and confirming that they understand and agree to comply with the requirements of the Site. Copies of all certificates of competency, licences and other qualifications as deemed necessary by the Contractor will be copied and documented. The environmental induction will run concurrently with safety awareness training.

Induction will include:

- Overview of the goals and objectives of the environmental policy and CEMP.
- Awareness in relation to the environmental risk associated with the Proposed Development and methods of avoiding environmental risks as identified within the CEMP, the planning conditions, and any other relevant plans, documents, or reports.
- Awareness of roles and individual responsibilities and environmental constraints to specific jobs.
- Location of any sensitive receptors on or adjacent to the Site.
- Location of habitats and species to be protected during construction, how activities may affect them and methods necessary to avoid impacts, controls to minimise noise and the importance of pollution prevention measures to protect nearby watercourses and sensitive receptors including residential properties.

### 3.5 Daily Pre-Work Briefings, Toolbox Talks and Training

All supervisors will be required to carry out daily briefings at the commencement of each shift to ensure environmental issues specific to the work being performed are being addressed. All personnel involved with site works must be briefed and sign onto the daily briefing form prior to commencing activities.

Toolbox talks may be conducted prior to the start of specific work elements where there is a substantial environmental risk or when required to reinforce ongoing environmental issues. Any toolbox talk training conducted will ensure that relevant information is communicated to the workforce and that feedback can be provided on issues of interest or concern.

Personnel and sub-contractors working on environmentally sensitive sites will be provided with environmental training to achieve a level of awareness and competence appropriate to their assigned activities. Targeted environmental awareness training may be provided to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk of environmental impact. Environmental training will be recorded, and the records will be available for inspection upon request.

### 3.6 Community and Stakeholder Engagement

A Community Liaison Officer will be appointed and will take all reasonable steps to engage with stakeholders in the local community, focusing on those who may be affected by the construction works including residents, businesses, community resources and specific vulnerable groups. Communication with the local community, the Planning Authority and other relevant stakeholders shall be undertaken at an appropriate level and frequency throughout construction.

The Community Liaison Officer will establish a Communications Management Plan which will specify obligations in relation to regular consultation and public communications activities required during the construction of the Proposed Development. The Contractor will facilitate regular consultation in accordance with the specifications and cooperate with this plan.

Details of the available communication channels and designated points of contact for members of the public to contact during construction will be established in advance of the commencement of construction and displayed around the site.

### 3.7 Complaints

A Complaints Register for internal communication and for receiving, documenting and responding to environmental complaints from external parties will be established and will be maintained.

When a complaint is received the following information must be taken as a minimum:

- Method of receipt (telephone calls, letters, emails, etc.).
- Date and time of the complaint are recorded.
- Name of complainant (if provided).
- Nature of complaint.

A record of and details of the remedial actions carried out will also be documented. All complaints received from external sources and incidents must be reported to the Environmental Site Manager and the appropriate site personnel (e.g., Senior Management). Complaints must be dealt with in a timely manner and reported to the Applicant.

### 3.8 Monitoring and Inspections

Environmental focused monitoring and inspection activities will be carried out throughout the lifetime of the Proposed Development. The frequency of these monitoring and inspection activities will be agreed in advance of construction with the Applicant and would be in line with planning conditions. Additional monitoring and inspection will take place outside of the agreed frequency where an incident occurs or where activities that can have a significant environmental impact are occurring.

Regular site inspections will be undertaken by the Contractor's CEMP Co-ordinator/Environmental Site Manager to monitor compliance with the CEMP and record inspection results. It is anticipated that a daily visual check and a detailed weekly check will be carried out and these records will be available to MCC upon request.

During the construction phase the following monitoring measures will be considered:

- Regular inspection of surface water run-off and sediments controls.
- Soil sampling to confirm disposal and short-term storage options for excavated soils.
- Regular inspection of construction/mitigation measures will be undertaken e.g., concrete pouring, refuelling etc.
- Dust monitoring and monitoring of dust control measures.
- Noise and vibration monitoring and monitoring of noise and vibration control measures.
- Surface water monitoring (if required).
- Daily monitoring of general housekeeping onsite.

### 3.9 Environmental Auditing

Planned and documented audits (including waste and environmental audits) aimed at evaluating the conformance of the project shall be carried out throughout the construction phase of the Proposed Development. The frequency of the audits will be agreed in advance with Applicant. As a minimum this would include:

- Weekly site walkover with results presented at the Contractors' regular meetings with the Applicant.
- Dedicated waste audits will be carried out at a frequency agreed in advance with MCC. All waste types and records would be available for review upon request.
- The CEMP will be reviewed and audited every six months and updated in line with current guidance and legislation.

### 3.10 Consents and Licences

All statutory consents and licences required to commence onsite construction activities will be obtained ahead of works commencing, allowing for the appropriate notice period. It will be the responsibility of the appointed Contractor to ensure all consents and licences required are in place prior to the start of construction.

These will include, but are not limited to:

- Site notices.
- Construction commencement notices.
- Licence to connect to existing utilities (inc. Water) and mains sewers, where required.

- Abstraction and/or discharge licenses.
- Road opening/closure licences.

## 4. Environmental Management - Procedures and Plans

### 4.1 General Site Management

An example list of relevant legislation and guidance will be prepared by the appointed Contractor and included in the CEMP. This will be updated by the Contractor when finalising the CEMP and the legislation and guidance will be adhered to at all times during the construction phase. It is the Contractors responsibility to ensure all the relevant legislation and guidance is adhered to during construction.

#### 4.1.1 Working Hours

Site working hours are to be updated by the Contractor in line with MCC requirements and any planning conditions that may relate to working hours.

Onsite construction works are likely to take place between during normal construction hours i.e., 07.00 to 19.00, Monday to Friday and 08.00 to 13.00 on Saturday or as directed by MCC. Working outside these hours will only take place in exceptional circumstances unless agreed in advance with MCC.

No works shall take place on Sundays or Bank Holidays. In exceptional cases, MCC may permit works to proceed outside the above times/days. This will be subject to the written agreement of the MCC prior to such works proceeding. Locations of works that are anticipated to be outside normal working hours will be defined and confirmed.

The proposed programme for the Culmullin works will be approximately 24 months from initial enablement works through to commissioning. It is expected that the civil works will take approximately 2 to 3 months, with a further four weeks estimated for cable installation, jointing and testing and reinstatement. Construction works associated with the substation will be approximately 20 to 24 months.

#### 4.1.2 Site Housekeeping

Good housekeeping is an important part of good environmental practice and helps to maintain a more efficient and safer site. The Site should be tidy, secure, and have clear access routes that are well signposted. The appearance of a tidy, well-managed site can reduce the likelihood of theft, vandalism, complaints and/or specific hazards that could affect the safe operation of the other businesses in the area, such as bird hazards and wind-blown litter.

As outlined in the fourth edition of CIRIA's '*Environmental good practice on site guide*' (C741), when considering good housekeeping, the appointed Contractor will implement the following steps:

- Adequately plan the Site with designated areas of materials and waste storage.
- Segregate and label different types of waste as it is produced and arrange frequent removal.
- Keep the Site tidy and clean.
- Ensure that no wind-blown litter or debris leaves the site, use covered skips to prevent wind-blown litter.
- Keep hoarding tidy - repair and repaint when necessary, removing any fly posting or graffiti.
- Frequently brush-clean wheel washing facilities and keep haul routes clean from site derived materials.
- Keep roads free from mud by using a road sweeper.
- Ensure the Site is secure.

#### 4.1.3 Control of Concrete and Lime

Mitigation and monitoring measures to limit potential impacts associated with the use of natural resources throughout the course of the Proposed Development are as follows:

- Ready-mixed concrete will be brought to the site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline wastewaters or contaminated water (for example storm water) to the underlying subsoil and groundwater.
- The pouring of concrete will take place within a designated area protected (for example by a geosynthetic material) to prevent concrete runoff into the soil/groundwater media.

- Any use of concrete in proximity to watercourses will be carefully controlled to avoid spillage. No onsite batching should occur. Washout from mixing will be carried out only in a designated contained impermeable area.
- Wash down and washout of concrete transporting vehicles will take place at an appropriate designated area (offsite) and direct discharge of wash water to ground or surface waters will be strictly prohibited. Alternatively, where washout takes place onsite, it will be carried out in a designated, carefully managed onsite washout area.
- Wastewater from washing of concrete lorry chutes will be directed into a concrete washout container, lined with an impermeable membrane. The container should be of good condition, should not overflow or leak and should be easily accessible to vehicles. The containers must be checked and emptied at a frequency equivalent to the volume of concrete being used and no runoff should leave the washout location. The area must be clearly marked and must be located away from storm drain inlets, open drainage facilities, water courses and ditches.

## 4.2 Biodiversity

Potential impacts during construction can include habitat loss, habitat deterioration, disturbance (i.e., visual, vibration and noise, temporary barriers to connectivity, etc.) and the potential for the release of pollutants and contaminants (i.e., suspended solids, oils, fuels, paints, concrete, lime, etc.) to receiving watercourses.

A range of factors influence the potential significance of effects including vulnerability of individual receptors (e.g., condition of vegetation, or fitness of faunal populations), time of year and lifecycle stage of a species impacted, and the potential for unforeseen events such as extreme weather (including flooding of working areas), or introduction of invasive species to exacerbate predicted impacts.

### 4.2.1 Potential Impacts

The hedgerows and treelines on the Site, will not be removed during the construction phase (refer to Table 6 of the Ecological Impact Assessment (EclA) report, AECOM 2023).

The Proposed Development will result in the permanent loss of land (approximately 2.3ha of arable land), which may be used by badgers for foraging, although the presence of badger has not been confirmed within the Site. There is also the potential for habitats within the Site to be impacted during construction. Habitats within the Site, include hedgerows, treelines, woodland, and watercourses.

The Site is unlikely to be used by nesting birds, however birds nesting nearby may use it for feeding. However, the bird species present onsite can reliably be expected to be common and widespread, both locally and nationally, and a large area of suitable wintering habitat will remain both onsite and in the wider area. However, if vegetation clearance works take place within the bird nesting season, obstruction and/or destruction of active birds' nests may occur.

There is also the potential for inappropriately placed construction lighting to prevent the use of certain areas by foraging or commuting bats.

### 4.2.2 Environmental Mitigation and Control Measures and Proposals

For each of the potential sources of an environmental impact on the existing environment, the appointed Contractor will identify the control and protection measures to be implemented. The following general control and mitigation measures should be followed as a minimum to ensure no significant adverse direct and indirect effects on the environment arise from the Proposed Development.

The Outline CEMP should be read in conjunction with the mitigation measures outlined in the Ecological Impact Assessment (EclA) report (AECOM, 2023). All mitigation measures from the EclA and ECR as well as any planning consent conditions (should the Proposed Development be granted planning permission) or mitigation measure identified during pre-construction surveys will be included within the Contractors CEMP by the contractor. The appointed Contractor will review all planning documents and all pre-construction surveys when preparing the Contractors CEMP.

#### 4.2.2.1 Roles and Responsibilities

The following duties in relation to ecology should be included under the Environmental Site Manager responsibilities:



- Prior to commencement of construction, a suitably experienced Ecological Clerk of Works (ECoW), will be appointed by the appointed Contractor. The ECoW will be a full member of a relevant professional institute such as the Chartered Institute of Ecology and Environmental Management (CIEEM), have relevant experience in the management of ecological constraints during construction, and hold or have held a protected species licence(s) in the Republic of Ireland. The ECoW will be appointed sufficiently in advance of the Proposed Development to arrange for any mitigation requirements to be incorporated into the appointed Contractor's site-specific Method Statements and programme.
- The ECoW will be responsible for advice and provision of services in relation to implementation of ecological mitigation measures described in the planning package in addition to any required as a condition of any consent(s).
- The ECoW will be engaged and consulted on a regular basis by the Environmental Site Manager. The Environmental Site Manager and the ECoW will ensure that the ecological mitigation and control measures are satisfactorily implemented.
- The appointed Contractor will liaise with the ECoW on all matters relating to ecology including mitigation (particularly protected species including badgers, roosting bats and nesting birds).
- The appointed Contractor will engage and consult with the ECoW and a bat specialist prior to any felling or removal of trees within the Site and if bats are unexpectedly encountered during any element of construction works.

The appointed Contractor will accommodate the ECoW, whose role will be to:

- Oversee carrying out of pre-construction surveys to the appropriate specifications.
- Communicate relevant matters to mcc, and other stakeholders as relevant.
- Review the contractor method statements for compliance with the mitigation in the ECR.
- Attend site meetings and input to contractor toolbox talks prior to commencement of the proposed development.
- Determine the potential requirement for licences and provide specialist input.

#### 4.2.2.2 Mitigation Measures

The following are standard mitigation measures which will be implemented throughout construction phase of the Proposed Development. These will serve to mitigate possible effects on a range of ecological features, including protected and notable mammals, and amphibians and reptiles.

Embedded mitigation are those measures which have been incorporated into the design of a development and which aim to avoid or reduce adverse effects, including on ecological features. Embedded mitigation which is achieved through the design of a development can be considered at the impact assessment stage whereas mitigation measures which are not an integral part of the design ('specific mitigation') are considered following an initial assessment of the ecological impacts, giving rise to an assessment of residual effects which would occur following the implementation of mitigation.

- The appointed Contractor will be required to implement appropriate communications including reporting of environmental practice onsite, toolbox talks, daily briefings, an environmental noticeboard (with ecological information, spill/emergency response and refuelling area/procedure) and signage (including ecological exclusion areas).
- All site personnel involved in the construction and operation of the Proposed Development will be made aware of the ecological features present and the mitigation measures and working procedures which must be adopted. This will be achieved as part of the Site induction process through the delivery of a toolbox talk. In addition, briefings will be provided to all Site personnel in advance of those works which are considered to present an increased risk of impacting upon ecological features.

The following measures will be implemented to protect biodiversity:

- A relevant Method Statement(s) must be produced by the appointed Contractor describing how loss or damage to the hedgerow and treeline will be avoided. Such mitigation must be implemented in full.
- Root protection zones will be clearly demarcated around retained trees and hedgerow. No machinery will enter these areas, nor will any material be stored within them.

- If construction works take place more than 18 months from the time of surveys informing the EclA, pre-construction checks for the presence of badgers will be required. Should the presence of a badger sett be identified within the Proposed Development then appropriate mitigation will be implemented.
- Standard measures to ensure that this species is not killed or injured to include: excavations to be covered overnight to prevent animals from falling in, and a means of escape to be provided, standard pollution prevention measures to be implemented.
- To prevent injury/death to badger during construction, excavations will be covered overnight to prevent animals from falling in and provided with a means of escape (means of escape includes battering of slopes sufficient to allow badger or other mammals to escape).
- Construction works must be restricted to the hours of daylight (for bats). Should artificial lighting be required for construction, this must be directional and illuminate the intended working area only, with light spill onto adjacent habitats managed with the use of cowls etc. The treeline and hedgerow should be protected from light spill.
- Any additional lighting required for the Proposed Development should be designed to prevent light spill onto the adjacent habitats..
- Vegetation removal required to facilitate works for the Proposed Development should be carried out outside the bird nesting season (taken to be from March to August, inclusive).
- Where there is no alternative but to clear vegetation in the bird breeding season, a suitably experienced ecologist will check for active bird nests prior to the clearance taking place. Where active nest(s) are found, the ecologist will establish exclusion zone(s) of appropriate size from which machinery, personnel and materials will be excluded until the nesting attempt(s) have finished. Note that it is difficult to locate all bird nests in extensive habitat, therefore checking for nests will be treated as a last resort, and vegetation clearance in the period September to February is preferred.
- Preparation of Method Statement to ensure these species are not killed/injured and habitats that may support these species are retained and protected during construction activities, as far as possible.
- If construction works take place more than 18 months from the time of surveys referenced in the EclA, pre-construction checks will be required for invasive species, bats and terrestrial mammals. This will include an inspection for resting and breeding places for both terrestrial mammals and bats. Should resting or breeding places be found a derogation licence will be acquired from NPWS<sup>3</sup> and conditions followed prior to works commencing in the vicinity of the resting or breeding place.

#### 4.2.2.3 Enhancement

It is proposed to incorporate enhancement of the treeline and hedgerow with native species by the Substation Site (refer to landscape mitigation drawings 60657534-ACM-DWG-CM-528 to 530 included with this application). Non-native species should not be included.

Further enhancements that could be considered during construction include:

- The provision of bat boxes within the Site. These would have to be of appropriate specification for the species likely to be present and suitably located, specifically not within areas which may be lit as a result of the Proposed Development.
- Bird nest boxes.

#### 4.2.2.4 Monitoring

During construction an Ecologist will monitor the site from pre-construction surveys, during the Construction Phase.

No specific ecological monitoring is recommended.

Pre-construction surveys may be required, especially if survey data becomes more than 18 months old.

### 4.3 Land and Soils

The risk of potential negative impacts on the land and soils environment occurring during the construction phase of the Proposed Development (in the absence of adequate management and mitigation measures) can arise from several activities. For example, weathering and erosion of the surface soils, increased silt levels or pollutants from the construction processes, accidental spills and impacted runoff.

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<sup>3</sup> National Parks and Wildlife Services



### 4.3.1 Potential Impacts

Potential construction phase impacts would be associated with the following:

- Excavation and stockpiling of soils, which could lead to soil erosion.
- Potential accidental spills of fuels, chemicals, concrete and lime to ground.
- Depletion of natural resources, through use of quarried material as fill.

### 4.3.2 Environmental Mitigation and Control Measures and Proposals

#### 4.3.2.1 Management of Excavated Materials

Temporary storage of soil will be carefully managed in such a way as to prevent potential negative impact on the receiving environment and the soil material will be stored away from any surface water drains. It will be necessary to designate areas within the site where stockpiles will be established in order to facilitate the efficient transfer of material within the site. In order to minimise the potential environmental impact from stockpiles, it will be necessary to adopt the following mitigation measures:

- Store excavated topsoil for reuse in stockpiles less than 2m high to prevent damage to the soil structure. Other excavated materials of lower engineering quality can be stored in higher stockpiles.
- Segregate different grades of soil where they arise.
- Minimise movements of materials within the stockpiles in order to reduce the degradation of the soil structure.

In order to minimise the impact of the Proposed Development on local geology, where possible, excavated material will be reused on site and imported material including fill and hard standing will be obtained from local sources.

#### 4.3.2.2 Fuel and Chemical Handling

The following mitigation measures will be implemented to reduce the potential for accidental spills and leaks during the construction phase:

- Designate a bunded storage area at the contractor's compound(s) and away from open ground and surface water gullies or drains for oils, solvents and paints used during construction. The fuel storage tanks shall be bunded to a volume of 110% of the capacity of the largest tank/container within the bunded area or 25% of the total capacity of all the tanks within the bund, whichever is the greater.
- Drainage from the bunded area shall be diverted for collection and safe disposal. All containers within the storage area will be clearly labelled, so that appropriate remedial action can be taken in the event of a spillage. When moving drums from the bunded storage area to locations within the site plot, a suitably sized spill pallet will be used for containing any spillages during transit.
- Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in designated impermeable refuelling areas isolated from surface water drains.
  - Where mobile fuel bowsers are used on the Site, in the event of a machine requiring refuelling outside of the designated area, fuel will be transported in a mobile double skinned tank.
  - Adequate stocks of hydrocarbon absorbent materials (e.g., spill-kits and/or booms) shall be held onsite in order to facilitate response to accidental spills. Spill response materials shall also be stored on all construction vehicles.

#### 4.3.2.3 Control of Concrete and Lime

All ready-mixed concrete will be brought to site by truck. Wash down and washout of concrete transporting vehicles will take place at an appropriate designated area and direct discharge of wash water to ground or surface waters will be strictly prohibited.

#### 4.3.2.4 Sources of Aggregates and Clean Fill for the Project

The source of aggregate and fill material will be carefully selected and vetted in order to ensure that it is of a reputable origin and that it is 'clean' (i.e., will not contaminate the environment). The project contract and procurement procedures will be developed to ensure that aggregates are sourced from reputable sources. All potential suppliers will be vetted for the following criteria:

- Environmental management status.
- Regulatory and legal compliance status.

Only suppliers who are in compliance with the planning requirements will be considered for inclusion in the project. Likewise, 'clean' fill material will only be sourced from suppliers who comply with the above requirements.

The use of quarried material would lead to the depletion of a non-renewable natural resource. However, quantities of fill material required to be imported to site are likely to be extremely small, when compared to the national demand for aggregates.

## 4.4 Water

Development works by their nature have the potential to impact watercourses and groundwater by way of pollution.

### 4.4.1 Potential Impacts

The main potential impacts associated with the construction of the Proposed Development include:

- Vegetation removal, site stripping and bulk earthworks as part of the construction would leave deposits exposed to erosion by wind or rain and this could potentially lead to increases in sediment loading of the surface water network.
- Contamination of surface water from suspended sediments may also be caused by runoff from material stockpiles and dirt from vehicles.

During construction of the Proposed Development, there is a risk of accidental pollution of surface water and groundwater from the following sources:

- Spillage or leakage of oils, fuels, hydraulic fluids, paints and chemicals stored onsite.
- Spillage or leakage of oils, fuels and hydraulic fluids from construction machinery or site vehicles.
- Spillage of oil or fuel from refuelling machinery onsite.

### 4.4.2 Environmental Mitigation and Control Measures and Proposals

#### 4.4.2.1 Sedimentation (Suspended Solids)

Drainage channels and streams will be clearly identified on site and shown on method statements and site plans.

During the construction activities there will be a requirement for diverting rainwater away from the construction areas, into nearby drainage channels and streams.

Visual inspections of roads and wheel washing at Site entry/egress points will be undertaken to prevent the accumulation of dirt.

Excavations will only remain open for limited time periods to reduce groundwater and surface water ingress and water containing silt will be passed through a settlement tank or adequate filtration system prior to discharge. A discharge consent will be obtained as necessary for disposal of dewatering water and groundwater arising from pumping (if any) or such water may be disposed of as construction site run off where appropriate. Spoil and temporary stockpiles including stone stockpile areas will be positioned in locations which are distant from drainage systems and retained drainage channels, away from areas subject to flooding. Runoff from spoil heaps will be prevented from entering watercourses by diverting it through onsite settlement ponds and removing material as soon as possible to designated storage areas.

Silt traps will be placed across the works boundary in any areas adjacent to watercourses to avoid siltation of watercourses. These will be maintained and cleaned regularly throughout the construction phase. Attention will also be paid to preventing the build-up of dirt on road surfaces, caused by trucks and other plant entering and exiting the Site.

#### 4.4.2.2 Fuel and Chemical Handling

The following mitigation measures would be implemented to reduce the potential for accidental spills and leaks during the construction phase:

- Designate a bunded storage area at the contractor's compound(s) and away from surface water gullies or drains for oils, solvents and paints used during construction. The fuel storage tanks shall be bunded to a volume of 110% of the capacity of the largest tank/container within the bunded area or 25% of the total capacity of all the tanks within the bund, whichever is the greater.
- Drainage from the bunded area shall be diverted for collection and safe disposal. All containers within the storage area will be clearly labelled, so that appropriate remedial action can be taken in the event of a

spillage. When moving drums from the bunded storage area to locations within the site plot, a suitably sized spill pallet will be used for containing any spillages during transit.

- Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in designated impermeable refuelling areas isolated from surface water drains.
- Where mobile fuel bowsers are used on the site, in the event of a machine requiring refuelling outside of the designated area, fuel will be transported in a mobile double skinned tank.
- Adequate stocks of hydrocarbon absorbent materials (e.g. spill-kits and/or booms) shall be held onsite in order to facilitate response to accidental spills. Spill response materials shall also be stored on all construction vehicles.

#### 4.4.2.3 Control of Concrete and Lime

All ready-mixed concrete will be brought to site by truck. Wash down and washout of concrete transporting vehicles will take place at an appropriate designated area and direct discharge of wash water to surface waters will be strictly prohibited.

## 4.5 Air Quality

Negative air quality impacts can come from many sources during construction. Emissions from the construction phase are transient in nature and will include emissions from vehicles, and dust-raising activities from earthworks and construction processes. Dust and air pollution, including odours, can cause disruption to properties and the public adjacent to the construction works, and can also have adverse impacts upon other environmental receptors, including watercourses and ecologically designated sites.

### 4.5.1 Potential Impacts

Mitigation and general control measures shall be required so that construction works are carried out in such a manner that emissions of dust and other pollutants are limited, and that best practicable means are employed to minimise disruption, risks to human health, and to avoid unnecessary impacts on sensitive ecological habitats.

The construction dust and particulate matter assessment follows the step-by-step approach set out in relevant IAQM guidance (2014). This process is summarised in the sub-sections below.

Step 1 of the IAQM construction dust guidance is to screen the requirement for a more detailed assessment. According to the guidance, no further assessment is required if there are no receptors within a certain distance of the works. The screening distances set by the IAQM guidance are:

- Receptors sensitive to amenity and human health impacts within 350m of the construction site boundary and/or within 50m of a public road used by construction traffic that is within 500m of the site entrance.
- Nature conservation receptors located within 50m of the construction site boundary and/or within 20m of a public road used by construction traffic that is within 500m of the site entrance.

There are a limited number of high sensitivity amenity and human health sensitive receptors within 50m of the of the construction access and within 50m of the R125 that is within 500m of the Site access point. There is also low sensitivity farmland adjacent to the Site in all directions. There are no designated sites for nature conservation within the area covered by the screening distances.

Due to the presence of the high sensitivity amenity and human health sensitive receptors within the screening distances set by the guidance, the more detailed assessment is required and is set out below.

Step 2A requires the determination of the dust emission magnitude, which the guidance states is based on the scale of the anticipated works with the following activities: demolition, earthworks, construction (i.e. the building and erection of structures), trackout (the deposition of dust and particulate matter onto public roads by construction vehicles) and should be classified as Small, Medium, or Large. In this instance, the construction works will only be concerned with earthworks. construction and trackout. No demolition work is proposed.

**Earthworks:** The Site is anticipated to require earthworks associated with soil-stripping, ground levelling and excavation works. For the purpose of this assessment, the area of earthworks is considered to exceed 10,000m<sup>2</sup> and require the handling of a large mass of materials and multiple earth-moving vehicles. As such, the dust emissions magnitude of effect for earthworks is Large.

**Construction:** Potentially dusty materials that may be in use during construction works are concrete (if delivered dry), sand and hard core, which will be stored and handled at the site throughout construction. Other construction materials are likely to be prefabricated with little dust emissions potential. For the purpose of this assessment, the

volume of construction work is considered to be between 25,000 and 100,000m<sup>3</sup> and require the storage and handling of potentially dusty material. As such, the dust emissions magnitude of effect for construction is Medium.

**Trackout:** The peak number of daily HGV construction vehicle movements associated with the site is anticipated to be in the order of 30 per day. There is also anticipated to be periods when onsite haul routes are not surfaced, particularly during the earlier phases of construction. As such, the dust emissions magnitude of effect for trackout is Large.

Step 2B of the IAQM construction dust guidance requires the determination of the sensitivity of the area to construction dust impacts. According to the guidance, this is based on the sensitivity of individual receptors, the proximity and number of those receptors, background PM10 concentrations and site-specific factors, such as local terrain, meteorology and natural and existing windbreaks.

In this instance, there are a limited number of High sensitivity amenity and human health receptors within 50m of a public road used by construction traffic that is within 500m of the Site access road, and a large area of Low sensitivity within 20m of the Site boundary. This equates to an area of Low sensitivity for dust soiling amenity impacts overall. Background PM10 concentrations are estimated to be around 17 µg/m<sup>3</sup> and this, coupled with the limited number of receptors and their proximity to the construction site, means that the sensitivity of the area to health impacts is also Low.

Step 2C of the IAQM construction guidance then concerns the determination of the risk of dust impacts, which is informed by the dust emission magnitude identified in Step 2A and the sensitivity of the area identified in Step 2B.

For dust soiling amenity and human health impacts, the large dust emission magnitude identified for earthworks and trackout equate to a low risk of dust impacts during those activities. The Medium dust emission magnitude identified for construction works also equates to a low risk of dust impacts.

#### 4.5.2 Environmental Mitigation, Control Measures and Proposals

Step 3 of the IAQM construction dust guidance then uses the risk of dust impacts identified in Step 2C to compile an appropriate list of dust mitigation to offset that risk and ensure that a significant effect does not occur. The IAQM guidance relevant to the construction dust assessment lists measures that should be applied, if practical, relative to the risk identified.

In this instance, a Low risk of dust impacts was identified due the potential dust emission magnitude and the sensitivity of the area. Therefore, the list of IAQM recommended mitigation measures provided below is proportionate to the risk identified. The final list of mitigation measures to be taken forward during the construction works will be defined within the appointed contractor's Proposed Development's CEMP application document.

IAQM recommended Dust (and particulate matter) mitigation measures for Low risk sites are as follows:

- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary.
- Display the head or regional office contact information.
- Develop and implement a dust management plan (DMP).
- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.
- Undertake daily onsite and offsite inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked.
- Carry out regular site inspections to monitor compliance with the DMP, record inspection results.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues onsite when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.

- Erect solid screens/barriers or enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used onsite cover as described below.
- Cover, seed or fence long-term stockpiles to prevent wind whipping.
- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where practicable.
- Impose and signpost maximum-speed-limits on surfaced and unsurfaced haul roads and work areas.
- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression technique.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment if it is fitted.
- Ensure equipment is readily available onsite to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.
- Avoid bonfires and burning of waste materials.
- Avoid scabbling (roughening of concrete surfaces) if possible.
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out.
- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
- Record all inspections of haul routes and any subsequent action in a site logbook.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
- Ensuring that there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.

## 4.6 Climate

### 4.6.1 Potential Impacts

The greatest contribution to construction emissions is from worker travel, accounting for 35% of construction emissions.

The operational GHG footprint is considered to reflect a robust worst-case as the calculations have been carried out using current emissions factors. Embodied carbon and emissions associated with energy and fuel use are anticipated to be lower in the future as a result of grid decarbonisation and machinery and vehicle electrification in line with Ireland's net zero carbon emissions target for 2050.

### 4.6.2 Environmental Mitigation, Control Measures and Proposals

It is recommended that the following GHG mitigation measures are implemented:

- Preparation of a Construction Environment Management Plan (CEMP) prior to construction which sets out various measures required by contractors to reduce GHG emissions, including:
  - Specification of locally sourced materials with lower embodied carbon content where feasible, in line with circular economy principles.
  - Turning off machinery engines when not in use.
  - Ensuring regular maintenance of construction machinery.
  - Handling materials efficiently on site to minimise the waiting time for loading and unloading, thereby reducing potential emissions.
  - A requirement for the appointed contractor to implement an energy management system (EMS) for the duration of the works.

It is recommended that the following mitigation measures are implemented:

- The Substation to be constructed at a level above any potential flooding.
- Have a policy in place for flood defence which is reviewed on a regular basis. For example, portable flood defence equipment deployed at strategic locations (e.g., aqua sack, barriers, high speed pumps).
- Substation equipment (e.g., cables) to be specified for use in higher temperatures projected in the future.
- Maximise the use of natural ventilation to keep internal temperatures within plant and equipment operating within their optimum parameters.

## 4.7 Noise and Vibration

Noise and vibration impacts may arise from a wide variety of sources during construction and to varying degrees during the course of the works, depending upon the stage of construction (i.e., ground works, etc.).

### 4.7.1 Potential Impacts

Noise and vibration from the Proposed Development will potentially occur during the construction and operational phases of the Proposed Development. Construction activities will include the following elements as shown in Table 4.1.

**Table 4.1 Main Construction Elements and Associated Activities**

Element	Description of activities
Site Preparation and Enabling Works	Site establishment. Site clearance works. Construction of temporary site drainage. Bulk earthworks including excavation and removal of topsoil/soil. Minor earthworks at passing bay locations. Infilling of material for internal access road, site compound and laydown area. Landscaping/reinstatement.
Underground Cables	Trenching and installation of underground cables, cable joint bays and pulling pits. Installation of the associated above ground infrastructure (cable marker posts, communication boxes and access points).
LCIM Construction Loop-in	The site preparation required for the loop-in OHL will be limited with minimal site clearance required. Excavation and berm construction. Pouring of concrete foundations for mast structures. Backfill and tower body installation.
Substation Construction	Pouring of concrete foundations (potentially piling works if required). Erection of steel frame and cladding walls and roofs for any required buildings. Permanent foul and surface water drainage works. Installation of above ground and underground cabling. Electrical installation, commissioning and operation. Other miscellaneous civil works including erection of fencing, provision of site entrance, paving etc.

Construction activities, and associated noise emissions, will gradually phase out from pre-construction followed by commissioning and testing of the Substation and equipment. The highest noise levels are expected to occur during the early stages of site preparation and enabling works, mainly due to earthwork processes. Increases in road traffic on the existing road network may also give rise to noise impacts, again principally due to vehicle movements associated with earthworks (i.e., transportation of material).

Once constructed, the Proposed Development will incorporate some sound generating elements. In particular two 360MVA transformer and an air source heat pump serving the associated control building. Potential noise impacts associated with these sources are discussed further below. Due to the nature of the Proposed Development, once constructed, no significant increase in road traffic is expected on the existing road network. Therefore, no assessment of operational phase road traffic noise has been carried out.

#### 4.7.2 Noise

Noise limits for construction works are provided by the NRA Guidelines and BS 5228. The NRA Guidelines provide fixed limits, whereas BS 5228 provides limits which vary depending on the ambient sound levels at the receptors.

As the ambient sound levels at the receptors are unknown at the time of this assessment the lowest noise limit provided by the 'ABC' method in BS 5228 (Category A threshold values) should be used. Where the NRA guidelines and BS 5228 differ, the most stringent criteria will be used.

Category A threshold values from BS 5228 and the maximum permissible sound levels from the NRA guideline have been compared and the most stringent criteria chosen. For different times of day these are outlined below in Table 4.2.

**Table 4.2 Construction Noise Limit at Receptors**

Period	Noise limit $L_{Aeq, T}$
Weekday Daytime (07:00 to 19:00)	65
Weekday Evening (19:00 to 23:00)	55
Saturday Mornings (07:00 to 13:00)	65
Saturday Afternoons and Evenings (13:00-23:00)	55
Sundays and Bank Holidays Daytime (08:00 to 16:30)	55
Night-time (23:00-07:00)	45

Table 4.1 describes the stages of construction and the activities that will be involved. At the time of writing, the construction programme for the Proposed Development is at a relatively early stage. Therefore, the details required to complete a quantitative assessment of construction noise were not available. Instead, a qualitative assessment has been carried out based on the best practice recommendations presented in BS5228.

Due to the relatively large distances between the construction site and nearby sensitive receptors (950m or greater, depending on the receptor), it is expected to be relatively straightforward to achieve the limits detailed in Table 4.2 through the adoption appropriate noise mitigation and site management measures.

##### 4.7.2.1 Traffic - Changes due to Construction

Construction of the site is anticipated to take 24 months additional traffic movements are expected to peak at 80 vehicles per day, with 30 of those movements being Heavy Goods Vehicle (HGV).

Baseline traffic flows are not known at this time, however, this is a relatively small number of additional vehicles and therefore is not expected to result in a sufficient increase in traffic levels to result in a significant adverse impact.

#### 4.7.3 Environmental Mitigation and Control Measures and Proposals

All plant items used during the construction phase of the Proposed Development should comply with standards outlined in 'European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations,' (1998).

Reference is made to 'BS 5228: Noise control on construction and open sites', which offers detailed guidance on the control of noise from construction activities.

The following various practices should be adopted during construction, including:

- Limiting the hours during which noisy site activities occur to 07.00-19.00 Monday to Friday and 08.00 to 13.00 on Saturday inclusive.
- Appointing a site representative responsible for matters relating to noise.
- Establishing channels of communication between the contractor/applicant, MCC and residents.

Furthermore, it is envisaged that a variety of practicable noise control measures will be employed. These include:



- Selection of construction plant with low inherent potential for generation of noise and/or vibration.
- Erection of temporary barriers around items such as construction generators or high duty compressors. For maximum effectiveness, the barrier will be positioned as close as possible to either the noise source or receiver. The barrier will be constructed of material with a mass of  $> 7\text{kg/m}^2$  and have no gaps or joints in the barrier material. As a rough guide, the length of a barrier will be five times greater than its height. A shorter barrier would be bent around the noise source, so no part of the noise source is visible from the receiving location.
- Siting of noisy construction plant as far away from sensitive properties as permitted by site constraints.

## 4.8 Cultural Heritage

### 4.8.1 Potential Impacts

None of the recorded heritage assets within the study area will be physically impacted by the Proposed Development. The western extent of Layby 2 extends into the Zone of Notification for the site of the ruined medieval parish church of Culmullin (ME043-017) and its graveyard (ME043-017001).

The Proposed Development will not result in significant impacts upon the setting of heritage assets, and will not affect the significance, character or special interest of heritage assets. The Proposed Development will not impact upon the setting of any assets highlighted in the Meath County Development Plan 2021-2027, including Protected Structures, the Royal Canal and Boyne Navigation and associated structures or any historic parks, gardens and demesnes of heritage significance.

The Proposed Development comprises the construction of a substation within agricultural fields. Groundworks associated with the construction of the Proposed Development (such as topsoil/subsoil stripping, excavation of foundation and service trenches, the creation of an access road and a construction compound) would severely impact upon any previously unrecorded archaeological remains that may exist within the Site.

There is the possibility that the Site may have been utilised in the past for settlement or other activities before becoming agricultural land. Evidence of such activity would exist, as yet previously undiscovered archaeological sites and features. Any such sites and features would likely be of local interest and low importance although the archaeological interest and importance of, as yet, unrecorded assets can only be confirmed upon identification.

The potential impacts upon such archaeological sites and features would consist of the destruction of sites, features or deposits during construction and impacts upon sites, features or deposits to gain site access. The severity of these impacts can be reduced with appropriate mitigation.

### 4.8.2 Environmental Mitigation, Control Measures and Proposals

For each of the potential sources of an environmental impact on the existing environment, the appointed Contractor will identify the control and protection measures to be implemented. The following mitigation and general control measures should be followed as a minimum to ensure no significant adverse direct and indirect effects on the environment arise from the Proposed Development.

#### 4.8.2.1 General Measures

- The Contractor shall ensure that mitigating measures outlined in the Outline CEMP, planning consent, MCC's requirements, and any updated or new supplementary environmental reports are included in the CEMP.
- The appointed Contractor will agree with the planning authority details regarding any further cultural heritage requirements (including, if necessary, further testing) prior to commencement of construction works and demolition on the Site.
- If any features of archaeological potential are discovered during the course of the construction phase, further archaeological mitigation may be required such as preservation in-situ or by record.

#### 4.8.2.2 Mitigation Measures

Given the potential for impacts to previously unrecorded archaeological remains, it is recommended that a programme of pre-development archaeological evaluation is undertaken in order to confirm the presence or absence previously unrecorded archaeological remains within the Site.

- Archaeological testing will be carried out at the pre-construction phase in areas where the Proposed Development has the potential to impact upon archaeological remains. All archaeological works (which will be agreed by the Archaeological Consultant and the NMS) will be carried out in compliance with the National



Monuments Acts 1930 – 2004 and Policy and Guidelines on Archaeological Excavation (Department of Arts, Heritage Gaeltacht and the Islands, 1999).

- Archaeological work within the Zone of Notification for the site of the ruined medieval parish church of Culmullin (ME043-017) and its graveyard (ME043-017001) will require submission of notification of proposed works to the National Monument Service at least two months in advance of works commencing.
- A suitably qualified and licensed Archaeological Contractor will be appointed to carry out the archaeological fieldwork. Relevant licenses will be acquired from the Department for Housing, Local Government and Heritage (DHLGH)/NMS and the National Museum of Ireland (NMI) for all archaeological works, which will be carried out in accordance with an Overarching Method Statement for Archaeological Works prepared by the Archaeological Consultant and agreed with the NMS. It is anticipated that all archaeological works will be completed pre-construction.
- The programme of pre-development archaeological testing would likely consist of the mechanical excavation of test trenches down to sterile glacial tills and bedrock by means of a smooth toothless bucket at specified locations within the Site but in particular within areas where construction will require sub-surface excavation works. The appointed archaeologist will undertake full-time monitoring of the excavation of the test trenches and where appropriate, carry out archaeological investigation.

## 4.9 Landscape and Visual

### 4.9.1 Potential Impacts

The following potential visual effects, direct and indirect landscape effects, as well as the duration and nature of effects arising from the Proposed Development, have been identified.

### 4.9.2 Effects at Construction Phase

Areas experiencing landscape and visual effects during the construction stage will be experienced locally and may be glimpsed from the nearby local road network. The sensitivity of views on residential receptors is considered high, particularly for the residents located along the local roads to the north and east of the Proposed Developments location, however distance will be a mitigating factor given the 900m between the nearest dwelling to the Proposed Developments boundary. It is considered that there will be some available views of construction works within the wider area due to the nature of the development and the open views across the landscape, however, local vegetation will screen the majority of potential views of the construction site.

Construction effects will result in:

- Potential effects to landscape character or visual amenity within the locality or the wider study area as a result of the visibility of construction activities such as ground works and associated construction machinery.
- Effects of temporary site infrastructure such as site traffic and construction compounds especially those located in areas adjacent to sensitive landscape and visual receptors.
- Potential physical effects arising from construction of the development and in particular on the landscape resource within the site area.

Landscape and visual effects and their significance during construction works will be temporary. They will be highest within the immediate vicinity of the Site. The majority of significant views of construction works will likely be experienced within a radius of approximately 200m of the construction site and distant views can range up to 750m radius, for properties located northeast of the Proposed Development. The nearest property is located approximately 900m northeast of the substation site. Given the undulating topography and abundant vegetation, the potential for views of construction works from east, south and west is reduced significantly and/or removed. The magnitude of visual effects is considered Moderate to High in available close distance views. Their significance is considered Moderate-Significant Adverse. The visibility of construction works within the wider study area will be related to vehicular construction traffic along the L62051 and the R125 to the east of the Site. The landscape and visual effects and their significance at construction stage will be temporary, adverse and range from Low/Negligible in the wider study area (approximately 200 to 600m and beyond) to Medium/High (within approximately 200m of the Site boundary). The significance will range from Slight/Not Significant Neutral in the wider study area to Moderate/Significant Adverse within approximately 200m radius from the boundary of the Proposed Development.

### 4.9.3 Environmental Mitigation, Control Measures and Proposals

The embedded landscape mitigation measures will maximise the retention of existing vegetation, where possible, particularly along the proposed access road to the substation. Spoil from the construction stage will be utilised to create a landscape berm approximately 0.6m in height with a slope gradient of 1:3 which will be planted with a mix of native shrubs and woodland and a native hedgerow will also be planted along the northeaster boundary of the proposed substation (refer Drawings 60657534-ACM-DWG-CM-528 to 530 included with this application) to increase screening from external areas. The selection of planting will be in coordination with the need for clearance beneath overhead transmission lines. The retention of existing vegetation, where possible, as well as the addition of raised shrub and woodland planting will retain existing screening from the east and increase screening effects in views from the northeast of the site.

As all mitigation is embedded in the Proposed Development and there is no additional mitigation proposed.

## 4.10 Traffic Management

This section provides an overview of the likely routing of construction vehicles, based on a most likely scenario of construction. It also prescribes the mitigation and general control measures necessary for the Contractor to minimise impacts upon construction operatives, the local community, residents and landowners directly affected by the works and associated traffic, travel management and vehicle usage.

This section is to be updated by the appointed Contractor within the Contractors CEMP to include information on site access routes, construction access points, construction haul routes, and construction parking.

The subject Site is located in between the road networks of the M3 and M4 motorways. These motorways can be access through the R125 and the R156.

The R125 is a single carriageway regional road. The R125 connects the R154 to the R156 within the study area the carriage way width is approximately 5.5m with no existing footpaths, cycle lanes or lighting column. The R125 is not a bus route. The R125 facilities access to a number of residential properties and farms. The speed limit along the R125 is 80km/hr.

The R156 is a single lane regional road that connects the R158 to the L2215. Within the study area the carriageway width is approximately 6m with no existing footpaths, cycle lanes or lighting column. The R156 is not a bus route. The R156 facilities access to a number of residential properties and farms. The speed limit along the R156 is 80km/hr.

The M3 is situated north of the proposed development and is approximately 26 metres in width. The M3 connects the M50 in Dublin to Kells Co. Meath the M3 is a dual lane motorway with a speed limit of 120km/hr. The M3 runs in a northwest direction from Dublin. There are no designated cycle lanes within the environs of the M3 and all junction to and from the M3 are non-signalised slip road junction points. There is no motorway lighting located along the M3, instead motorists depend on 'cat's eyes' at evening and night travel time.

The M4 is situated south of the proposed development and is approximately 26m in width. The M4 connects the M50 in Dublin to Kinegead county Westmeath the M4 is a dual lane motorway with a speed limit of 120km/hr. The M4 runs in a west direction from Dublin. There are no designated cycle lanes within the environs of the M4 and all junction to and from the M4 are non-signalised slip road junction points. There is no motorway lighting located along the M4, instead motorists depend on 'cat's eyes' at evening and night travel time.

### 4.10.1 Potential Impacts

#### 4.10.2 Traffic Generation Numbers and Expected Traffic Volumes at the Site

Construction of the site is anticipated to take 24 months additional traffic movements are expected to peak at 80 vehicles per day, with 30 of those movements being Heavy Goods Vehicle (HGV).

##### 4.10.2.1 Abnormal Loads

A Construction Traffic Management Plan (CTMP) will be developed in consultation with MCC and other stakeholders should consent be granted and in accordance with the requirements of TII for the delivery of abnormal loads

Overall, it is considered that the traffic generations will be low due to the nature of the development. Furthermore, the peak traffic generated by the development will be during the construction period and negligible traffic when the Proposed Development is in operation will be created, as this would be for occasional maintenance traffic.

### 4.10.3 Environmental Mitigation, Control Measures and Proposals

As part of embedded mitigation, the Proposed Development includes improvement works on the L62051. These works will involve the construction of five passing bays on the L62051. The locations of these improvements will be spaced at appropriate intervals so as to reduce the distances between two-way sections and passing bays, and in order to allow opposing drivers to see each other in sufficient time to give way at one-way.

A Construction Traffic Management Plan (CTMP) will be developed in consultation with Meath County Council (MCC), the Applicant and other stakeholders should consent be granted. Likely headings to be included in a CTMP would include but is not limited to the following.

Mitigation Measures for the site include but are not restricted to the below.

- An agreed route for construction traffic.
- An Abnormal Load Assessment (ALA) for any abnormal loads including horizontal swept path analysis and mitigation measures, if required, for any identified pinch points on the delivery route. The assessment will also consider escort arrangements and relevant signage.
- The necessary agreements and timing restrictions for construction traffic, for example Monday to Friday working only, prohibition during school drop off and pick up times and prohibition during loading times at commercial premises.
- Details of a proposed condition survey on access routes.
- Proposals for maintenance of the agreed routes for the duration of the construction phase.
- Proposals for monitoring and agreeing maintenance costs.
- Route signage.
- Maintaining access to commercial/business premises. For example, temporary accommodation works and additional information signage.
- Details of the advanced notification to the general public warning of any construction transport movements, specifically abnormal loads.
- Preparation of a travel plan for staff.
- Details of information road signage warning road users of construction traffic movements.
- Arrangements for regular road maintenance and cleaning, e.g. road sweeping in the vicinity of the site access point as necessary, wheel cleaning/dirt control arrangements.
- Contractor speed limits.
- Community and emergency services liaison details.

Further mitigation measures to reduce the traffic impact of the development construction would also be considered subject to further investigation and landowner agreements. These include:

- The use of Park and Share facilities for construction staff.
- The promotion of electric vehicles for general car/van access.

## 4.11 Waste Management

### 4.11.1 Potential Impacts

During the construction phase a range of waste materials will be generated. It is not envisaged that there will be a need to remove large quantities of excavated material from within the Site. It is therefore considered that there will not be a significant amount of waste generated from the construction of the Proposed Development.

### 4.11.2 Environmental Mitigation, Control Measures and Proposals

This section outlines the measures that will be undertaken to minimise the quantity of waste produced at the site and the measures to handle the waste in such a manner as to minimise the effects on the environment.

For each of the potential sources of an environmental impact on the existing environment, the appointed Contractor will identify the control and protection measures to be implemented. The following mitigation and general control

measures should be followed as a minimum to ensure no significant adverse direct and indirect effects on the environment arise from the Proposed Development.

#### 4.11.2.1 Waste Management Plan (WMP)

A site-specific construction Waste Management Plan (WMP) will be prepared by the appointed Contractor for the Proposed Development and will be employed to ensure sustainable and effective waste management throughout the excavation and construction phases of the Proposed Development.

The WMP shall apply to all works carried out by the appointed Contractor and any subcontractors under its control. In preparing the plan, the Contractor shall consider the relevant waste management acts and regulations, litter pollution acts, and the Eastern-Midlands Region Waste Management Plan 2015-2021. The EPA Best practice guidelines for the preparation of resource and waste management plans for construction and demolition projects should be considered when producing the WMP for the Proposed Development. In developing the WMP, the appointed Contractor shall also consider the reuse of materials where practicable, where permitted under the relevant waste legislation, and where the material meets the engineering requirements.

#### 4.11.2.2 Waste Management Strategy

The appointed Contractor shall establish a system for the management of wastes in accordance with the Waste Management Hierarchy.

- Prevention.
- Minimisation.
- Reuse.
- Recycling.
- Disposal.

This hierarchy outlines that waste prevention and minimisation are the first priority in managing wastes, followed by waste reuse and recycling. Disposal of waste shall only be considered as a last resort.

The management of all hazardous waste materials, if they occur, will be coordinated in liaison with Health and Safety Management.

#### 4.11.2.3 Waste Storage

A dedicated and secure area will be located within the Site compound. The area will contain bins, and/or skips, and storage areas, into which all waste materials generated by construction site activities are to be stored.

Waste materials generated will be segregated at the site compound, where it is practical. Where the onsite segregation of certain waste types is not practical, offsite segregation will be carried out. There will be skips and receptacles provided to facilitate segregation at source. All waste receptacles leaving site will be covered or enclosed.

The Site Construction Manager will ensure that all staff are informed of the requirements for segregation of waste materials by means of clear signage and verbal instruction.

#### 4.11.2.4 Waste Identification and Classification

The appointed Contractor shall establish a procedure to identify and classify all waste arising at the site in accordance with the List of Waste (LoW) Code. The appointed Contractor shall ensure that the waste materials generated during the works are clearly identified as either hazardous or non-hazardous wastes, with reference to the guidance from the EPA (e.g. Procedure for the Identification of the Hazardous Components of Waste (2001)) where required and shall establish designated waste storage areas for the different types of waste that may arise.

For each waste stream identified by the appointed Contractor, and for each additional waste stream that may arise during the course of the works, the appointed Contractor shall identify the following:

- The appropriate low Code.
- A suitable Waste Collection Contractor in possession of a valid Waste Collection Permit for the collection of the particular waste within County Meath.
- The waste recovery or disposal site, including the transfer station where the waste may be transferred to upon leaving the site in possession of a valid Waste Facility Permit or Waste License, as appropriate.
- The recovery or disposal method for the waste.

Only Contractors in possession of a valid Waste Collection Permit shall collect wastes from the Site. The appointed Contractor responsible for the waste shall ensure that the Waste Collection Contractor:

- Is permitted to collect the particular waste.
- Is permitted to collect waste within county Meath.
- Uses a waste collection vehicle identified on the waste collection permit.
- Transfers the waste to a licenced waste facility identified on the waste collection permit.

The appointed Contractor shall ensure the following information is provided and available upon request:

- Transfer notes for controlled waste and consignment notes for hazardous waste must include an accurate description of the type, quantity and containment of waste. Standard industrial classification. The low code. Details of the waste carrier, who must be licensed.
- Sufficient information must be provided to ensure that the waste disposal operator is aware of the potential hazards of the substance.
- The appointed contractor should also ensure that returns for consignment notes are collected and retained.
- All documentation must be retained for a minimum of two years for transfer notes and three years for consignment notes and be available for inspection.

The appointed Contractor and all Trade Contractors removing waste directly from Site must provide the following documentation:

- Waste forecast.
- Licence documentation for all waste carriers removing waste and for all waste destinations receiving waste (to be approved before use).
- Recycling rates from facilities being used.
- Waste consignment notes (for a minimum of three years) for all hazardous waste. These must include the following:
  - Consignment note code.
  - Details of the site that the hazardous waste is removed from.
  - Details of waste disposal site.
  - Waste producer details if different to site details.
  - Description of the waste (written description, low code and sic number).
  - Details of process that has generated this waste.
  - Specific details of the waste- quantity, chemical/biological components, physical form and hazardous properties any special handling requirements.
  - Signature of consignor once completed.
- Waste transfer notes (for a minimum of two years) for all non-hazardous waste. These must include the following and should be reported:
  - Accurate description of the waste type (written description, low code and sic number).
  - Quantity and containment of waste.
  - Location, time and date of the waste transfer.
  - Names of both persons involved in the waste transfer.
  - Details of the waste carrier and facility, both must be licensed.
  - Waste carrier's registration number.

The appointed Contractor shall advise MCC or its representatives in advance if it proposes to act as the Waste Collection Contractor, subject to agreement. In the event that the appointed Contractor acts as the Waste Collection Contractor, it shall ensure that it has the relevant Waste Collection Permit(s) in place prior to commencement of the Proposed Development.

#### 4.11.2.5 Documentation of Waste

The appointed Contractor shall develop a Waste Documentation System within the overall documentation system for the works. The documentation to be maintained in relation to wastes includes the following (where applicable):

- The names of the agent(s) and the transporter(s) of the wastes.
- The name(s) of the person(s) responsible for the ultimate recovery or disposal of the wastes.
- The ultimate destination(s) of the wastes.
- Written confirmation of the acceptance and recovery or disposal of any hazardous waste consignments.
- The tonnages and low code for the waste materials.
- Details of any rejected consignments.
- The waste transfer forms for hazardous wastes transferred from the site.
- The transfrontier shipment of waste forms for hazardous wastes transferred abroad.
- The certificates of recycling, reuse or disposal for all wastes transferred from the site.
- The results of any analysis conducted on wastes.
- The results of any analysis conducted on excavated soil.

The appointed Contractor shall provide a report of all waste arising at the Site to include the information set out above. Information on the management of waste at the Site shall be made available to the Applicant or its representatives upon request. The original documentation relating to the management of waste shall be maintained at the Site.

#### **4.11.2.6 Responsibility**

It will be the responsibility of the appointed Contractor (inc. sub-contractors) to ensure that a written record of all quantities and natures of wastes removed from the site are maintained onsite in a waste file (in hardcopy or electronically).

It is the responsibility of the appointed Contractor (inc. sub-contractors) or his/her delegate that all contracted waste haulage drivers hold an appropriate waste collection permit for the transport of waste loads and that all waste materials are delivered to an appropriately licenced or permitted waste facility in compliance with the relevant Regulations.

Prior to commencement of the excavation and construction activity and removal of any waste offsite, details of the proposed destination of each waste material will be provided to MCC, along with waste collection permit numbers.

#### **4.11.2.7 Waste Audits**

Waste Audits and monitoring (including truck tracing) will be carried out at regular intervals through the construction phase of the Proposed Development.

The appointed Contractor, as part of regular site inspection audits, will determine the effectiveness of the waste management strategy and will determine the best methods for waste minimisation, reduction, re-use, recycling and disposal as the construction phase progresses and waste materials are generated.

#### **4.11.2.8 Soil Management Plan**

The appointed Contractor shall develop where applicable a Soil Management Plan (SMP) as part of the WMP outlining its proposal for the management and reuse of excavated materials from the Site, where permitted in accordance with the relevant legislation, and provided that the reuse meets the engineering requirements for material used within the works. The SMP will be required to include details such as:

- Depth and method of topsoil stripping and stockpiling, including separation of topsoil resources of different potential.
- Detail relevant stockpile procedures to track dates of creation, sources of materials, classification and disposal/recovery information.
- Methods of stripping and stockpiling of higher quality re-useable subsoil (if appropriate).
- Identification of landscaping topsoil requirements and assessment of suitability and availability of onsite resources (if appropriate).
- Detail relevant procedures for the unexpected finds of contaminated materials onsite including measures for the handling, treatment and management of contaminated materials.
- Means of protection of subsoil from compaction damage and remedial measures (ripping/subsoiling) for reinstatement.

- Means of erosion control and measures to prevent sediment laden run-off entering watercourses/standing water bodies.

In addition, where the appointed Contractor proposes to maximise the reuse of excavated soil in order to minimise the generation of waste, it shall set out how it proposes to manage and document this reuse to the satisfaction of MCC or its representatives. This shall include the following as a minimum:

- Identification and recording of the location from where the material was excavated.
- Delineation of areas where excavated soil is intended for disposal as waste, and where it is intended for reuse (where permitted).
- Delineation of areas of contaminated and uncontaminated soil (if present).
- Sampling of excavated soil (the number and location of soil samples).
- The proposal for the laboratory to carry out the testing.
- The suite of parameters for which the soil is to be tested.
- The criteria for assessing whether the soil is contaminated or uncontaminated.
- Geotechnical criteria for reuse.
- The appointed Contractor shall establish the controls necessary to manage the generation, handling and storage of waste at the Site.

## **Appendix A Construction, Erosion and Sediment Control Plan**

To be completed by the appointed Contractor.



## **Appendix B Contractor Method Statements**

To be completed by the appointed Contractor.

## **Appendix C Environmental Risk**

To be completed by the appointed Contractor.

## Appendix D List of Relevant Legislation and Guidance

To be completed by the appointed Contractor.

**Table D1: Relevant Legislation and Guidance**

Area	Publication
General	
Advanced Works	
Air Quality and Climate	
Cultural Heritage	
Biodiversity	
Water	
Land and Soils	
Noise and Vibration	
Traffic Management Plan	
Waste Management Plan	
Working Hours/Periods	

## Appendix E Figures

To be completed by the appointed Contractor.

## **Appendix F Waste Licence**

To be completed by the appointed Contractor.

