East Meath to North Dublin Grid Upgrade Environmental Impact Assessment Report (EIAR): Volume 2

Chapter 19 - Risk of Major Accidents and / or Disasters

EirGrid

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Contents

19. Risk of Major Accidents and / or Disasters

19.1 Introduction

This Chapter of the Environmental Impact Assessment Report (EIAR) assesses the likely potential significant impacts of the East Meath – North Dublin Grid Upgrade (hereafter referred to as the Proposed Development) on the environment, deriving from its vulnerability to risks of major accidents and / or disasters during the Construction Phase and Operational Phase.

The Proposed Development is described in Chapter 4 (Proposed Development Description) in Volume 2 of this EIAR. The design of the Proposed Development has evolved through the application of a comprehensive design iteration process with particular emphasis on minimising the potential for environmental impacts, where practicable, whilst ensuring the objectives of the Proposed Development are maintained. In addition, feedback received from the comprehensive consultation programme undertaken throughout the option selection and outline design development programme have been incorporated, where appropriate.

19.1.1 Risk of Major Accidents and/or Disasters

Article 3 of Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (hereafter referred to as the Environmental Impact Assessment (EIA) Directive) requires for the assessment of expected effects of major accidents and / or disasters within environmental impact assessment (EIA). Article 3(2) of the Directive states that the:

> '*effects referred to in paragraph 1 on the factors set out therein shall include the expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned.*'

In addition, Annex IV of the EIA Directive states that the EIAR shall contain:

> '*A description of the expected significant adverse effects of the project on the environment deriving from the vulnerability of the project to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to Union legislation such as Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or relevant assessments carried out pursuant to national legislation may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies*'.

The Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA 2022) elaborate on risk assessment further under Section 3.7.3:

> '*To address unforeseen or unplanned effects the Directive further requires that the EIAR takes account of the vulnerability of the project to risk of major accidents and / or disasters relevant to the project concerned and that the EIAR therefore explicitly addresses this issue. The extent to which the effects of major accidents and / or disasters are examined in the EIAR should be guided by an assessment of the likelihood of their occurrence (risk)*'.

Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major accident hazards involving dangerous substances, amending and subsequently repealing Council Directive

96/82/EU (hereafter referred to as the Seveso III Directive) is also considered in this assessment. S.I. No. 209/2015 – Chemical Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015 (hereafter referred to as the COMAH Regulations) transposed the Seveso III Directive into Irish law. The Seveso III Directive and the COMAH Regulations outline the legal obligations for operators of industrial establishments where dangerous substances are stored. These establishments are referred to as Seveso sites and are classified as Upper Tier or Lower Tier establishments. As per Regulation 25 of the COMAH Regulations, Upper Tier establishments are required to submit information regarding their operations to the Health and Safety Authority (HSA). Each Seveso site has a consultation zone which is the 'area liable to be affected by a major accident' at the site, as outlined A Framework for Major Emergency Management. Guidance Document 1. A Guide to Risk Assessment in Major Emergency Management (DEHLG 2010). Therefore, if a development falls within the specified consultation zone of a Seveso site, the HSA must be consulted. The Proposed Development does not fall within the consultation zone for any Seveso sites. However, a review of the potential for impacts on emergency response accesses to Seveso sites from their respective nearest hospital and fire stations was also undertaken.

This Chapter identifies how risks of major accidents and / or disasters relevant to the Proposed Development have been identified and how those risks have been managed. This Chapter considers:

- Major accidents and / or disasters that the Proposed Development may be vulnerable to;
- Whether a major accident and / or disaster occurring could result in likely significant adverse environmental impacts, and if so, what these would be; and
- Existing and proposed mitigation measures to prevent or mitigate the likely significant adverse impacts of such events on the environment.

19.1.2 Definitions

At the time of undertaking this assessment, no clear definition of the term 'major accident and / or disaster' has been outlined in the context of the EIA Directive. For the purpose of this assessment, the following definitions from the Institute of Environmental Management and Assessment (IEMA) Major Accidents and Disasters in EIA: A Primer (hereafter referred to as the IEMA Primer) (IEMA 2020) and the EPA Guidelines (EPA 2022) have been adopted:

- Accident – something that happens by chance or without expectation;
- Disaster – a natural hazard (e.g. earthquake) or a man-made / external hazard (e.g. act of terrorism) with the potential to cause an event or situation that meets the definition of a major accident;
- Major Accident – events that threaten immediate or delayed serious environmental effects to human health, welfare and / or the environment and require the use of resources beyond those of the client or its appointed representatives to manage. Whilst malicious intent is not accidental, the outcome (e.g. train derailment) may be the same and therefore many mitigation measures will apply to both deliberate and accidental events;
- Risk –the likelihood of an impact occurring, combined with the effect or consequence(s) of the impact on a receptor if it does occur;
- Risk event – an identified, unplanned event, which is considered relevant to the Proposed Development and has the potential to result in a major accident and / or disaster, subject to assessment of its potential to result in a significant adverse effect on an environmental receptor;
- Vulnerability – describes the potential for harm as a result of an event, for example due to sensitivity or value of receptors. In the context of the EIA Directive, the term refers to 'exposure and resilience' of the Proposed Development to the risk of a major accident and / or disaster. Vulnerability is influenced by sensitivity, adaptive capacity and magnitude of impact; and

- Significant environmental effect (in relation to a major accident and / or disaster assessment) – includes the loss of life, permanent injury and temporary or permanent destruction of an environmental receptor which cannot be restored through minor clean-up and restoration. In addition, a 'Significant' impact resulting from major accidents and / or disasters is identified if it meets the criteria for 'Significant', 'Very Significant' or 'Profound' under the EPA Guidelines.

The assessment of major accidents and disasters in this Chapter considers the occurrence of major accidents and incidences. As such, it considers accident scenarios that would not reasonably be covered by the other topic assessments.

19.2 Methodology

19.2.1 Scope and Context

The identification, control and management of risk is an integral part of the design and assessment process throughout all stages of a project lifecycle. For example, a Flood Risk Assessment (Appendix A12.1 in Volume 3 of this EIAR) was carried out to assess the vulnerability of the Proposed Development to flooding in order to mitigate, where required. The elements of the Proposed Development that incorporate measures that are designed to eliminate, reduce, isolate and control the occurrence of major accidents have been described throughout the EIAR, where required. Measures to control risks associated with Construction Phase activities are incorporated into the Construction Environmental Management Plan (CEMP), and its associated appendices, which form standalone documents in this planning application pack.

The methodology for this risk assessment is as follows:

- Identify major accidents and / or disasters (i.e. unplanned incidents) that the Proposed Development may be vulnerable to; and
- Assess the consequent impacts and significance of such incidents in relation to the environmental, social and economic receptors that may be affected.

Such risks may be present at the Construction Phase and / or Operational Phase of the Proposed Development.

19.2.2 Relevant Guidelines, Policy and Legislation

The development of the risk assessment methodology has been prepared in accordance with the following guidelines and legislation:

- S.I. No. 291 of 2013 - Safety, Health and Welfare at Work (Construction) Regulations 2013, as amended by S.I. No. 528/2021 - Safety, Health and Welfare at Work (Construction) (Amendment) Regulations 2021 (hereafter referred to as the Safety, Health and Welfare (Construction) Regulations);
- Number 10 of 2005 - Safety, Health and Welfare at Work Act 2005 (hereafter referred to as the Safety, Health and Welfare at Work Act);
- S.I. No. 138/2012 - Building Regulations (Part A Amendment) Regulations 2012, as amended by S.I. No. 229 of 2021 - Building Control (Amendment) Regulations 2021;
- S.I. No. 299/2007 - Safety, Health and Welfare at Work (General Application) Regulations 2007, as amended by S.I. No. 255/2023 - Safety, Health and Welfare at Work (General Application) (Amendment) Regulations 2023 (hereafter referred to as the Safety, Health and Welfare at Work (General Application) Regulations);
- EPA Guidelines (EPA 2022);
- Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission 2017);

- IEMA Primer (IEMA 2020);
- A National Risk Assessment for Ireland 2023 (Government of Ireland 2023);
- Strategic Emergency Management National Structures and Framework (Department of Defence 2020);
- Guidance on Assessing and Costing Environmental Liabilities (EPA 2014);
- Department of Housing, Local Government and Heritage (DHLGH) A Framework for Major Emergency Management (DHLGH 2021); and
- A Framework for Major Emergency Management. Guidance Document 1. A Guide to Risk Assessment in Major Emergency Management (DEHLG 2010).

The following external plans and assessments have also informed the assessment:

- Major Emergency Plan of Fingal County Council (FCC) (FCC 2023);
- Meath County Council (MCC) Major Emergency Plan (MCC 2019); and
- Maximum Aircraft Movement Data and the Calculation of Risk and PSZs: Dublin Airport (Department of Transport and DEHLG 2005).

The following development-specific documents have also informed the assessment:

- CEMP and its associated appendices which are included as standalone documents in this planning application pack, which address the following topics:
  - Construction Resource and Waste Management;
  - Construction Traffic Management;
  - Non-Native Invasive Species Management;
  - Surface Water Management; and
  - Environmental Incident Response.
- Flood Risk Assessment (refer to Appendix A12.1 in Volume 3 of the EIAR).

19.2.3 Risk Assessment Methodology

The risk assessment is set out in three stages:

- Identification and Screening;
- Risk Classification; and
- Risk Evaluation.

19.2.3.1 Identification and Screening

The first stage of the assessment is to identify potential unplanned risks that the Proposed Development may be vulnerable to. An initial list of relevant hazards which may make the Proposed Development vulnerable to major accidents and /or disasters was sourced through consultation with the engineering team for the Proposed Development, and by consulting the guidelines and reference documentation. These were grouped into 'risk events'.

The list of potential risk events that could lead to major accidents and / or disasters (refer to Appendix A19.1 (Hazard Identification Record) in Volume 3 of this EIAR) was subjected to an initial screening assessment to identify those that meet the scoping criteria. Where appropriate, risk events were screened out of the assessment according to the following scoping criteria:

- Major accidents and / or disasters associated with Construction Phase and Operational Phase activities that fall within the scope of health and safety legislation and associated obligations;

- Major accidents and / or disasters as a result of Seveso sites, for which the Proposed Development does not fall within the specified consultation distance for that Seveso site and for which the Proposed Development has no significant interaction with access to the designated hospital(s) and fire stations identified on a Seveso site's emergency plans;
- Risk events where no 'source-pathway-receptor' linkage exists to result in a major accident and / or disaster (i.e., an oil spill occurring at an oil depot that is not located near to a watercourse and for which there is no pathway from source to receptor);
- Major accidents and / or disasters where risk events are not applicable to that particular geographic location (e.g., volcanic activity, earthquakes and risk of nuclear accidents in Ireland);
- Risk events in relation to the operation of the Proposed Development infrastructure during the Operational Phase. The scope of this assessment for the Operational Phase relates to the provision of infrastructure only and not to the use of that infrastructure. The operation of the electricity infrastructure will be subject to EirGrid and Electricity Supply Board (ESB) management and protocol;
- Risk events that possess low likelihood / low consequence, as they do not meet the criteria to be brought forward for further consideration (i.e., they do not meet the definition of a major accident and / or disaster), for example the risk of traffic accidents on the wider road network causing delays to Construction Phase or Operational Phase vehicles;
- Risk events that possess high likelihood / high consequence, as these would be considered high risk and unacceptable for the development of the Proposed Development; and
- Risk events in relation to existing emergency access arrangements and response plans for facilities along the route of the Proposed Development. Emergency accesses along the route of the Proposed Development will be retained insofar as is possible throughout the Construction Phase. Where activities during the Construction Phase of the Proposed Development will interface with emergency access arrangements, the appointed contractor will consult with the affected landowners / site operators and the emergency services to agree, where required, alternative emergency access arrangements and changes to response plans for the duration of the works.

19.2.3.2 Risk Classification

Following the initial identification and screening process, the remaining major accidents and / or disasters risk events were evaluated with regard to the likelihood of occurrence and the potential impact. The rating criteria adopted for the assessment follows that used in A Guide to Risk Assessment in Major Emergency Management (DEHLG 2010). The EPA Guidelines (EPA 2022) state that the risk assessment must be based on a 'worst-case' approach. Therefore, the consequent rating assumes that all proposed mitigation measures and safety procedures have failed to prevent the occurrence of a major accident and / or disaster. The classification and rating of likelihood and consequence, as taken from A Guide to Risk Assessment in Major Emergency Management are provided in Table 19.1 and Table 19.2, respectively.

Table 19.1: Classification of Likelihood

Rating	Classification	Impact Description
1	Extremely Unlikely	May occur only in exceptional circumstances; once every 500 or more years
2	Very Unlikely	Is not expected to occur; no recorded incidents or anecdotal evidence; and/or very few incidents in associated organisations, facilities or communicates; and/or little opportunity, reason or means to occur. May occur once every 100 to 500 years.
3	Unlikely	May occur at some time; and / or few, infrequent, random recorded incidents or little anecdotal evidence; some incidents in associated or comparable organisations worldwide; some opportunity, reason or means to occur. May occur once every 10 to 100 years.
4	Likely	Likely to or may occur; regular recorded incidents and strong anecdotal evidence. Will probably occur once every one year to 10 years
5	Very Likely	Very likely to occur; high level of recorded incidents and/or strong anecdotal evidence. Will probably occur more than once a year.

Table 19.2: Classification of Consequence

Rating	Classification	Impact	Description
1	Minor	Life, Health, Welfare, Environment, Infrastructure, Social	• Small number of people affected; no fatalities and small number of minor injuries with first aid treatment • No contamination, localised effects • <0.5 million euro • Minor localised disruption to community services or infrastructure (<6 hours)
2	Limited	Life, Health, Welfare, Environment, Infrastructure, Social	• Single fatality; limited number of people affected; a few serious injuries with hospitalisation and medical treatment required. Localised displacement of a small number of people for 6-24 hours. Personal support satisfied through local arrangements • Simple contamination, localised effects of short duration • 0.5 million to 3 million euro • Normal community functioning with some inconvenience
3	Serious	Life, Health, Welfare, Environment, Infrastructure, Social	• Significant number of people in affected area impacted with multiple fatalities (<5), multiple serious or extensive injuries (20), significant hospitalisation. Large number of people displaced for 6-24 hours or possibly beyond; up to 500 evacuated. External resources required for personal support. • Simple contamination, widespread effects or extended duration • 3 million to 10million euro • Community only partially functioning, some services available
4	Very Serious	Life, Health, Welfare, Environment, Infrastructure, Social	• 5 to 50 fatalities, up to 100 serious injuries, up to 2,000 evacuated • Heavy contamination, localised effects or extended duration • 10 million to 25 million euro • Community functioning poorly, minimal services available
5	Catastrophic	Life, Health. Welfare, Environment, Infrastructure, Social	• Large numbers of people impacted with a significant number of fatalities (>50), injuries in the hundreds, more than 2000 evacuated. • Very heavy contamination, widespread effects of extended duration. • >25 million euro • Serious damage to infrastructure causing significant disruption to, or loss of, key services for prolonged period. Community unable to function without significant support

19.2.3.3 Risk Evaluation

In accordance with A Guide to Risk Assessment in Major Emergency Management (DEHLG 2010), the evaluated major accidents and / or disasters risk events were compared to a risk matrix to determine the level of significance of each risk event.

These have been grouped according to three categories:

- High Risk – events that have an evaluation score of 15 to 25, as indicated by the Red Zones in Table 19.3;
- Medium Risk – events that have an evaluation score of 8 to 12, as indicated by the Amber Zone in Table 19.3; and
- Low Risk – events that have an evaluation score of 1 to 6, as indicated by the Green Zone in Table 19.3.

Table 19.3: Levels of Significance

Likelihood	5 – V. Likely					
	4 – Likely					
	3 – Unlikely					
	2 – V. Unlikely					
	1 – Ext. Unlikely					
		1 – Minor	2 – Limited	3 – Serious	4 – V. Serious	5 – Catastrophic
	Consequence of Impact					

Significant impacts resulting from major accidents and / or disasters are adverse impacts that are described as 'Significant', 'Very Significant' or 'Profound' under the EPA Guidelines (EPA 2022). Consequently, major accidents and / or disasters risk events that fall within the Amber or Red Zones ('Medium' or 'High' risk events) are considered to present risk of significant impacts and are brought forward for further consideration and assessment for mitigation.

19.3 Potential Impacts

19.3.1 'Do Nothing' Scenario

With respect to the risk of major accidents and / or disasters, the 'Do Nothing' scenario means that there would be no changes to existing infrastructure or utilities as a result of the Proposed Development. Therefore, there would be a Neutral impact on the risk of major accidents and / or disasters under the Do Nothing scenario.

19.3.2 Risk Evaluation

As mentioned in Section 19.2.3.2, the potential impacts in this Section assume a worst-case scenario, which does not consider the implementation of mitigation measures or emergency plans which would be put in place to reduce the likelihood and potential impact of any major accidents and / or disasters. A Risk Register has been developed which contains all the plausible scenarios identified during the Construction Phase and Operational Phase of the Proposed Development and has been evaluated using the criteria in Section 19.2.3.2 and Section 19.2.3.3. This is provided in Table 19.4.

Table 19.4: Risk of Major Accidents and Disasters in the Absence of Mitigation

Risk ID	Event	Proposed Development Element	Likelihood	Rating	Consequence	Rating	Resulting Risk Category
Construction Phase							
A	Utilities – Risk of gas explosion due to the strike of a gas mains during excavation works.	Proposed Underground Cable	Unlikely	3	Serious. Potential fatalities and injuries. Hazards associated with the explosion to neighbouring residents, businesses and activities. Potential to discharge deleterious material to adjacent watercourses.	3	Medium
B	Utilities – Risk of exposure to and release of untreated wastewater due to the strike of local sewers during excavation.	Proposed Underground Cable	Unlikely	3	Limited. Potential injury. Hazards associated with exposure to untreated wastewater (diseases etc.). Potential untreated wastewater to discharge to adjacent watercourse.	2	Low
C	Utilities – Risk of striking water mains supply.	Proposed Underground Cable	Unlikely	3	Minor. Potential injury for nearby personnel and potential displacement of local residences and business in the event of flooding. Clean mains water supply so no potential for contamination.	1	Low
D	Utilities – Risk of striking and damaging overhead lines (such as electricity, telecoms, fibre optics etc.) that cross the Proposed Development.	Throughout	Unlikely	3	Limited. Potential fatality and injuries. Potential localised disruption / inconvenience to community.	2	Low
E	Utilities – Risk of striking and damaging underground cables (such as electricity, telecoms, fibre optic etc.) during excavation.	Proposed Underground Cable	Unlikely	3	Limited. Potential fatality and injuries. Potential localised disruption/inconvenience to community.	2	Low
F	Contamination Event - Risk of encountering unknown contaminated ground and mobilisation during construction / hazardous pipe materials (i.e. asbestos pipes) and potential damage to brittle pipes during construction works.	Throughout	Unlikely	3	Limited. Potential injury from exposure to hazardous substances. Potential for a limited number of people to be affected and for short duration localised effects.	2	Low

Risk ID	Event	Proposed Development Element	Likelihood	Rating	Consequence	Rating	Resulting Risk Category
G	Contamination Event – Pollution event leading to environmental damage to watercourses or groundwater, particularly associated with the potential release of silt to the aquatic environment.	Works locations near watercourses	Unlikely	3	Serious. Potential to cause environmental damage to the aquatic environment and associated species and to ecologically designated areas.	3	Medium
H	Biosecurity – Risk of spread of invasive species during construction works.	Throughout	Likely	4	Serious. Potential for contamination over an extended duration and potential to lead to more widespread effects.	3	Medium
I	Ground Collapse - Risk of excavation works leading to subsidence of land / ground collapse / encountering unstable ground during construction.	Throughout	Unlikely	3	Limited. Potential for injuries. Potential disruption to the local road network.	2	Low
J	Horizontal Directional Drilling (HDD) during construction leading to subsidence of land, with the potential to lead to an accident, particularly on major roads and rail lines traversed by HDD.	HDD crossings at M1 Motorway, M2 Motorway and M3 Motorway and adjacent railway line.	Unlikely	3	Limited. Potential fatality and injuries. Potential disruption to the local road network.	2	Low
K	Transport Accident - Major road traffic accidents resulting from Construction Phase traffic and works taking place adjacent to live traffic.	Throughout	Unlikely	3	Limited. Potential fatality and injuries. Potential disruption to the local road network.	2	Low
L	Transport Accident - Aircraft related accident due to proximity of the Proposed Scheme to Dublin Airport and its associated flight paths.	Eastern extent of Proposed Development passing north of Dublin Airport and toward Belcamp Substation.	Extremely Unlikely	1	Very Serious. Potential for a significant number of fatalities and injuries, significant damage to infrastructure and disruption to the road network.	4	Low
M	Tree Stability - Risk of trees with unstable roots falling during surface and excavation works / potential for contact with overhead lines, residents, properties, pedestrians and road users.	Throughout	Unlikely	3	Limited. Potential fatality and injuries. Localised effects and short duration. Potential for some minor damage to local infrastructure.	2	Low

Risk ID	Event	Proposed Development Element	Likelihood	Rating	Consequence	Rating	Resulting Risk Category
N	Extreme Weather Event – Risk of extreme weather events such as prolonged flooding resulting in sediment load runoff during construction, storm damage, snowstorm, wildfire.	Throughout	Unlikely	3	Limited. Potential for injuries. Potential for contamination. Potential localised displacement of a small number of people and short duration and localised effects.	2	Low
O	Industrial Incident – Explosion / fire occurring at adjacent live and operational electricity substations.	Woodland and Belcamp Substations	Very Unlikely	2	Limited. Potential fatality and injuries. Localised effects and short duration. Potential for some damage to local infrastructure.	2	Low
Operational Phase							
P	Transport Accident - Aircraft related accident due to proximity of the Proposed Scheme to Dublin Airport and its associated flight paths.	Eastern extent of Proposed Development passing north of Dublin Airport and toward Belcamp Substation.	Extremely Unlikely	1	Very Serious. Potential for a significant number of fatalities and injuries, significant damage to infrastructure and disruption to the road network.	4	Low
Q	Extreme weather events – risk of extreme weather events such as prolonged flooding, resulting in sediment load runoff, storm damage etc.	Throughout	Unlikely	3	Limited. Potential fatality and injuries. Potential damage to infrastructure.	2	Low
R	Industrial Incident – Explosion / fire occurring at adjacent live and operational electricity substations.	Woodland and Belcamp Substations.	Very Unlikely	2	Limited. Potential fatality and injuries. Localised effects and short duration. Potential for some damage to local infrastructure.	2	Low

The results from the evaluation have been applied to Table 19.5.

Table 19.5: Evaluation of Level of Significance in the Absence of Mitigation

Likelihood						
	5 – V. Likely					
	4 – Likely			[H]		
	3 – Unlikely	[C]	[B] [D] [E] [F] [I] [J] [K] [M] [N] [Q]	[A] [G]		
	2 – V. Unlikely		[O] [R]			
	1 – Ext. Unlikely				[L] [P]	
		1 – Minor	2 – Limited	3 – Serious	4 – V. Serious	5 – Catastrophic
	Consequence of Impact					

From examining the plausible risks presented in Table 19.5, Risk IDs B, C, D, E, F, I, J, K, L, M, N, O, P, Q and R are considered as being below the threshold of significance set for the purposes of this assessment (Green Zone or 'Low' risk event). No risks have been assessed to fall within the Red Zone ('High' risk scenario) and Risk IDs A, G and H fall within the Amber Zone ('Medium' risk event) and are therefore brought forward for further consideration and assessment of mitigation measures. These three Risk IDs fall within the Construction Phase. No Operational Phase risks fell within the Amber Zone and are therefore not considered further. The scenario with the highest risk score relates to risk H associated with the Proposed Development.

19.3.3 Seveso Sites

A review of the Upper Tier and Lower Tier sites in County Meath and County Dublin (HSA 2024a; 2024b), and their respective distances from the Proposed Development was undertaken. No Seveso sites are located within 1 kilometre of the Proposed Development, and therefore, the Proposed Development does not fall within the maximum consultation zone for any Seveso sites. The Proposed Development also does not interface with any potential emergency service response routes for any Seveso sites. Therefore, the Proposed Development is not vulnerable to or does not present a risk to any Seveso sites and no impact is anticipated as a result of the Proposed Development.

19.4 Mitigation and Monitoring Measures

19.4.1 Inherent Design

As mentioned in Section 19.1, the design of the Proposed Development has evolved through comprehensive design iteration, with particular emphasis on avoiding or reducing the potential for environmental impacts, where practicable.

Regulation 15 of the Safety, Health and Welfare at Work (Construction) Regulations places a duty on designers carrying out work related to the design of a project to take account of the 'General Principles of Prevention' as listed in Schedule 3 of the Safety, Health and Welfare at Work Act. In addition to the duties imposed by Regulation 15 of the Safety, Health and Welfare at Work (Construction) Regulations, designers must comply with Section 17(2) of the Safety, Health and Welfare at Work Act which requires persons who design a project for construction work to ensure, so far as is reasonably practicable, that the project is designed and is capable of being constructed to be safe and without risk to health, can be maintained safely and without risk to health during use, and complies in all respects, as appropriate, with other relevant legislation. This includes S.I. No. 138/2012 - Building Regulations (Part A Amendment) Regulations 2012 (as amended) and, if the works being designed are intended for use as a workplace, the relevant parts of the Safety, Health and Welfare at Work (General Application) Regulations. In accordance with these requirements, the engineering design team established a consistent and appropriate means of assessing the risks that may arise from design decisions using a Design Risk Assessment and Hazard Elimination Risk Reduction Register,

and of applying the General Principles of Prevention, measures that are to be embedded into the design of the Proposed Development.

19.4.2 Plans and Procedures

19.4.2.1 Construction Phase

The plans outlined in this Section have been developed to effectively manage and minimise risk by ensuring that every reasonable effort will be made to ensure that environmental impacts during construction will be avoided or reduced, where possible. Specific mitigation measures are also included in the relevant chapters of this EIAR, and summarised in Chapter 21 (Summary of Mitigation and Monitoring Measures).

19.4.2.1.1 Construction Environmental Management

The CEMP forms a standalone document in this planning application pack. The CEMP will be updated by the appointed contractor prior to the commencement of the Construction Phase, so as to include any additional measures required pursuant to conditions attached to any decision to grant approval. It will be a condition of the Employer's Requirements that the successful contractor, immediately following appointment, must detail in the CEMP the manner in which it is intended to effectively implement all the applicable mitigation measures identified in this EIAR.

The CEMP summarises the overall environmental management strategy that shall be adopted and implemented during the Construction Phase of the Proposed Development and must be read in conjunction with the construction details outlined in Chapter 4 (Proposed Development Description).

Details of mitigation measures proposed to address potential impacts arising from construction activities are described in Chapter 5 (Population) to Chapter 20 (Cumulative Impacts and Environmental Interactions), as appropriate, and are summarised in Chapter 21 (Summary of Mitigation and Monitoring Measures).

19.4.2.1.2 Construction Resource and Waste Management

Construction Resource and Waste Management is addressed in Appendix C of the CEMP (included as a standalone document in the planning application pack), to ensure that materials and waste arising during the Construction Phase of the Proposed Development will be managed in a way that ensures compliance with the provisions of Number 10 of 1996 – Waste Management Act, 1996, as amended. The Construction Resource and Waste Management Plan will be further developed by the appointed contractor.

19.4.2.1.3 Construction Traffic Management

The Construction Traffic Management Plan (CTMP) has been prepared to establish the manner in which the interface between the public and construction-related traffic will be managed and how vehicular movement will be controlled (refer to Appendix B of the CEMP, which is included as a standalone document in the planning application pack). It will be a condition of the Employer's Requirements that the successful contractor, immediately following appointment, must detail in the CTMP the manner in which it is intended to effectively implement all the applicable mitigation measures identified in this EIAR and any additional measures required pursuant to conditions imposed by An Bord Pleanála, should they grant approval. Further details on the assessment of construction traffic, and traffic related mitigation measures are provided in Chapter 14 (Traffic and Transport).

19.4.2.1.4 Non-Native Species Management

Non-Native Invasive Species Management is addressed in Appendix E of the CEMP (included as a standalone document in the planning application pack) to provide the strategy that will be adopted during the construction of the Proposed Development in order to manage and prevent the spread of non-native invasive

plant species. The Non-Native Invasive Species Management Plan will be developed by the appointed contractor using a suitably qualified ecologist as necessary.

Non-native invasive plant species have been identified and documented within the Proposed Development boundary, as well as in close proximity to the Proposed Development boundary. The survey results have been provided in Appendix E of the CEMP, in addition to potential management options for the treatment of non-native species.

19.4.2.1.5 Surface Water Management

Surface Water Management is addressed in Appendix D of the CEMP (included as a standalone document in the planning application pack), summarising the procedures and technical practices for implementing effective sediment, erosion and pollution control that will be adopted during the Construction Phase of the Proposed Development. The Surface Water Management Plan will be further developed by the appointed contractor.

19.4.2.1.6 Environmental Incident Response

Environmental Incident Response is addressed in Appendix A of the CEMP (included as a standalone document in the planning application pack), demonstrating how, in the unlikely event of an incident, response efforts will take place promptly, efficiently, and suitably for the particular circumstances. An Environmental Incident Response Plan will be developed by the appointed contractor. The management of the risk of major accidents and / or disasters occurring will continue throughout the planning, detailed design and Construction Phase of the Proposed Development. The CEMP and its appendices detail procedures that could be undertaken in the event of a significant release of sediment into a watercourse, or a significant spillage of chemical, fuel or other hazardous substances (e.g. concrete), a non-compliance incident with any permit or licence, or other such risks that could lead to a major pollution incident, including flooding. This assessment has considered the reasonable worst-case consequences, and as such, risks are unlikely to be greater than those that have been assessed within this EIAR. However, activities on-site will be monitored and controlled to ensure that risk does not increase over time.

19.4.2.2 Operational Phase

Given that there were no potential risks identified during the Operational Phase which fall within the Amber or Red Zones ('Medium' or 'High' risk scenarios), no mitigation or monitoring measures are proposed specific to reducing the risk of major accidents and / or disasters during the Operational Phase. The operation of the electricity infrastructure will be subject to EirGrid and ESB management and protocol.

19.4.3 Assessment of Mitigation Measures

As discussed in Section19.3.2, Risk IDs A, G and H, all identified during the Construction Phase, fall within the Amber Zone ('Medium' risk event), requiring further consideration and assessment of the proposed mitigation measures. This assessment is presented in Table 19.6.

Table 19.6: Risk of Major Accidents and/ or Disasters (Medium Risk)- Assessment of Mitigation Measures

Risk ID	Event	Pre-Mitigation Risk Score	Mitigation Measures	Post-Mitigation Likelihood	Post-Mitigation Consequence	Post-Mitigation Risk Score
Construction Phase						
A	Utilities – Risk of gas explosion due to the strike of a gas mains during excavation works.	Medium	Please refer to CEMP and its appendices (included as standalone documents in this planning application pack) for details on pre-construction preparations that will be carried out to ensure that all utilities are identified and recorded prior to construction works.	2 Very Unlikely	2 Limited	Low
G	Contamination Event – Pollution event leading to environmental damage to watercourses or groundwater, particularly associated with the potential release of silt to the aquatic environment.	Medium	Please refer to Chapter 11 (Soils, Geology and Hydrogeology) and Chapter 12 (Hydrology) in Volume 2 of this EIAR, and the CEMP (notably Appendix D to the CEMP) (included as standalone documents in this planning application pack) for full details on design and mitigation measures to be put in place, to prevent contamination events.	2 Very Unlikely	2 Limited	Low
H	Biosecurity – Risk of spread of invasive species during construction works.	Medium	Please refer to Chapter 10 (Biodiversity) in Volume 2 of this EIAR, and the CEMP (notably Appendix E to the CEMP) (included as standalone documents in this planning application pack) for details on mitigation measures to be put in place, to prevent the spread of non-native invasive species.	2 Very Unlikely	3 Serious	Low
Operational Phase						
N/A						

Following the implementation of mitigation measures, Risk IDs A, G and H fall within the Green Zone ('Low' risk), as presented in Table 19.7, and are therefore not considered to present a risk of significant impacts.

Table 19.7: Evaluation of Levels of Significance – Post Mitigation

Likelihood	5 – V. Likely					
	4 – Likely					
	3 – Unlikely					
	2 – V. Unlikely		[A] [G]	[H]		
	1 – Ext. Unlikely					
		1 – Minor	2 – Limited	3 – Serious	4 – V. Serious	5 – Catastrophic
	Consequence of Impact					

19.5 Residual Impacts

There are no identified incidents and / or major accidents and / or disasters risk events that present a sufficient combination of risk and consequence that would lead to significant residual environmental impacts. No significant residual impacts have been identified either in the Construction or Operational Phases of the Proposed Development.

19.6 References

DHLGH (2021). A Framework for Major Emergency Management

DEHLG (2010). A Framework for Major Emergency Management. Guidance Document 1. A Guide to Risk Assessment in Major Emergency Management

Department of Defence (2020). Strategic Emergency Management National Structures and Framework

Department of Transport and DEHLG (2005). Maximum Aircraft Movement Data and the Calculation of Risk and PSZs: Dublin Airport

EPA (2014). Guidance on Assessing and Costing Environmental Liabilities

EPA (2022). Guidelines on the Information to be Contained in Environmental Impact Assessment Reports

European Commission (2017). Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report

FCC (2023). Major Emergency Plan of Fingal County Council

Government of Ireland (2023). A National Risk Assessment for Ireland 2023

HSA (2024a). Upper Tier Establishments (01.02.24). [Online] Available at https://www.hsa.ie/eng/your_industry/chemicals/legislation_enforcement/comah/list_of_establishments/upper_tier_sites_01_02_2024.pdf. Accessed 14 February 2024.

HSA (2024b). Lower Tier Establishments (12.02.24). [Online] Available at https://www.hsa.ie/eng/your_industry/chemicals/legislation_enforcement/comah/list_of_establishments/lower_tier_sites_12_02_2024.pdf. Accessed 14 February 2024.

IEMA (2020). Major Accidents and Disasters in EIA: A Primer

MCC (2019). Major Emergency Plan

Directives and Legislation

Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EU

Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment

Number 10 of 1996 – Waste Management Act, 1996, as amended

Number 10 of 2005 - Safety, Health and Welfare at Work Act 2005

S.I. No. 299/2007 - Safety, Health and Welfare at Work (General Application) Regulations 2007

S.I. No. 138/2012 - Building Regulations (Part A Amendment) Regulations 2012

S.I. No. 291 of 2013 - Safety, Health and Welfare at Work (Construction) Regulations 2013

S.I. No. 209/2015 – Chemical Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015

S.I. No. 229 of 2021 - Building Control (Amendment) Regulations 2021

S.I. No. 528/2021 - Safety, Health and Welfare at Work (Construction) (Amendment) Regulations 2021

S.I. No. 255/2023 - Safety, Health and Welfare at Work (General Application) (Amendment) Regulations 2023