



Volume 1 - Non Technical Summary

Moneypoint Security of Supply

February 2024

Electricity Supply Board



Moneypoint Security of Supply

Non Technical Summary

February 2024

This page left intentionally blank for pagination.

Mott MacDonald
South Block
Rockfield
Dundrum
Dublin 16
D16 R6V0
Ireland

T +353 (0)1 2916 700
mottmac.com

Moneypoint Security of Supply

Non Technical Summary

February 2024

Directors: B Williams BE (Hons) MEngSc
CEng MIEI FConsEI (Managing), R
Jefferson MSCSI MRICS BSc Dip Con
Law, J Shinkwin BE (Hons) DipMechEng
CEng MIEI, T Keane BE (Hons) CEng
MIET, J H K Harris BSc CEng (British), C
H Travers MEng CEng (British), I M
Galbraith MRICS BSc (Hons) MSc
(British), E G Roud FCA MA (Hons)
Economics (British)
Innealtóirí Comhairleach (Consulting
Engineers)
Company Secretary: E Counihan ACCA
Registered in Ireland no. 53280.
Mott MacDonald Ireland Limited is a
member of the Mott MacDonald Group

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
PL	06.02.24	Various	LG	NR	For Planning Consent

Document reference: 229101323_401 | 1 | PL |

Information class: Standard

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

Contents

1	Introduction	1
1.1	Introduction	1
1.2	Project Overview	1
1.3	About the Applicant	2
1.4	Site Location	2
1.5	Industrial Emissions Licensing	3
1.6	COMAH Regulations	3
1.7	Project Description	4
1.8	Construction and Dismantling works	6
1.9	Construction Methodology	7
	1.9.1 Construction Supervision and Monitoring	7
2	EIA Methodology	8
2.1	Screening	8
2.2	EIA Scoping	8
2.3	EIAR Methodology	9
2.4	Consultations and Engagement	9
2.5	Structure of the EIAR	10
3	Project Need	12
4	Alternatives	13
4.1	Alternatives Considered	13
4.2	Fuel Conversion	13
	4.2.1 Do nothing	13
	4.2.2 Alternative Sites	13
	4.2.3 Alternative Technologies and Fuels	14
4.3	Fuel Storage / Supply Arrangement	15
4.4	New Auxiliary Boilers	15
4.5	Ash Storage Area Modifications	16
4.6	Ash Recovery for FGD System	17
4.7	Coalyard Dismantling	17
4.8	Conclusions	18
5	Population and Human Health	19
6	Air	20
7	Climate	21

8	Noise and Vibration	22
9	Biodiversity	23
10	Surface Water Resources and Flooding	26
11	Land, Soils and Hydrogeology	27
12	Architecture, Archaeology and Cultural Heritage	28
13	The Landscape	30
14	Traffic and Transport	32
15	Material Assets and Waste Management	33
16	Major Accidents and/or Disasters	35
17	Interactions of Effects	36
18	Mitigation and Monitoring	38

Tables

Table 2.1: Structure of EIAR Volume 2	10
---------------------------------------	----

Figures

Figure 1.1: Strategic Location of Moneypoint Generating Station	3
Figure 1.2: Proposed Layout (excluding Ash Storage Area)	5
Figure 1.3: Proposed layout of Ash Storage Area	6
Figure 4.1: Indicative locations of presently permitted landfills	16
Figure 8.1: Noise sensitive locations and noise monitoring locations	22

1 Introduction

1.1 Introduction

An Environmental Impact Assessment Report (EIAR) has been prepared to accompany a planning application to An Bord Pleanála, by the Electricity Supply Board; hereafter referred to as ESB or ‘the Applicant’.

The ESB are required to submit a strategic infrastructure development application under Section 37E of the Planning and Development Act 2000 (as amended), for the change of fuel type used for electricity generation at Moneypoint Generating Station (i.e from coal to Heavy Fuel Oil [HFO]) for a temporary period of five years, and for associated works to facilitate construction and operation of the station, which is located in the townlands of Carrowdotia South, Carrowdotia North and Ballymacrinan, Killimer, Kilrush, County Clare, V15 R963.

Mott MacDonald Ireland Limited were appointed by the ESB to prepare the EIAR for lodgement with the planning application. This Non Technical Summary forms Volume 1 of the overall EIAR, which comprises the following:

Volume 1 (this volume) Non Technical Summary

Volume 2 Environmental Impact Assessment Report

Volume 3 EIAR Technical Appendices

The EIAR has been prepared in support of the planning application, in accordance with the requirements of Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU, together, referred to as the “EIA Directive”.

This Non-Technical Summary summarises the assessment of environmental effects as a result of the project, as stated within the EIAR, and includes:

- An overview of the project, the scope of the environmental assessment completed,
- Alternatives considered; and
- Impacts associated with the development.

It uses, in so far as is possible, non-technical language to summarise the detailed assessments for each of the environmental topics contained within the EIAR.

1.2 Project Overview

Moneypoint Generating Station comprises an existing large complex of structures for the purpose of electricity generation. Electricity generation occurs at three. ca. 300MW rated coal-fired units (Units 1 to 3), which entered service between 1985 and 1987. Moneypoint is primarily a coal fired station, with Heavy Fuel Oil (HFO) used as a start-up fuel and in limited other circumstances. ESB has long signalled its intention to cease burning coal at Moneypoint Generating Station from the end of 2025, as part of their broader strategy which commits ESB to a zero-carbon future.

Moneypoint Generating Station is a strategically important part of the energy generation network across Ireland and contributes to ensuring that energy needs are met nationwide, meeting on average ca.12-15% of national demand.

It is proposed to convert its primary fuel source to Heavy Fuel Oil (HFO), with limited run hours, from late 2024 until the end of 2029 (hereafter referred to as the “proposed development”). The proposed development will act as an out of market generator of last resort and will operate only when required by the Transmission System Operator (EirGrid) for security of supply reasons.

The proposed development aims to ensure that the power station remains viable as an energy generation node until 2029. Thereafter, ESB intends on transforming the site and redeveloping it as a hub for the offshore renewable sector as part of the ESB’s ‘Towards Zero’ Strategy. This future project also aims to deliver the phasing out of fossil fuels under the Programme for Government (2020) and will be subject to its own consenting processes (i.e planning consent).

1.3 About the Applicant

The ESB was established in 1927 as a statutory corporation in the Republic of Ireland under the Electricity (Supply) Act 1927. With a holding of 95%, ESB is majority owned by the Irish Government, with the remaining 5% held by the trustees of an Employee Share Ownership Plan.

ESB owns and operates assets across the electricity market; from generation, through transmission and distribution, to supply. In addition, ESB provides associated services such as supplying gas, using its networks to carry fibre for telecommunications and developing electric vehicle public charging infrastructure.

ESB provides approximately 43% of electricity generation capacity in the Irish all-island market and supplies electricity to approximately 1.4 million customers. ESB Group employs approximately 7,000 people.

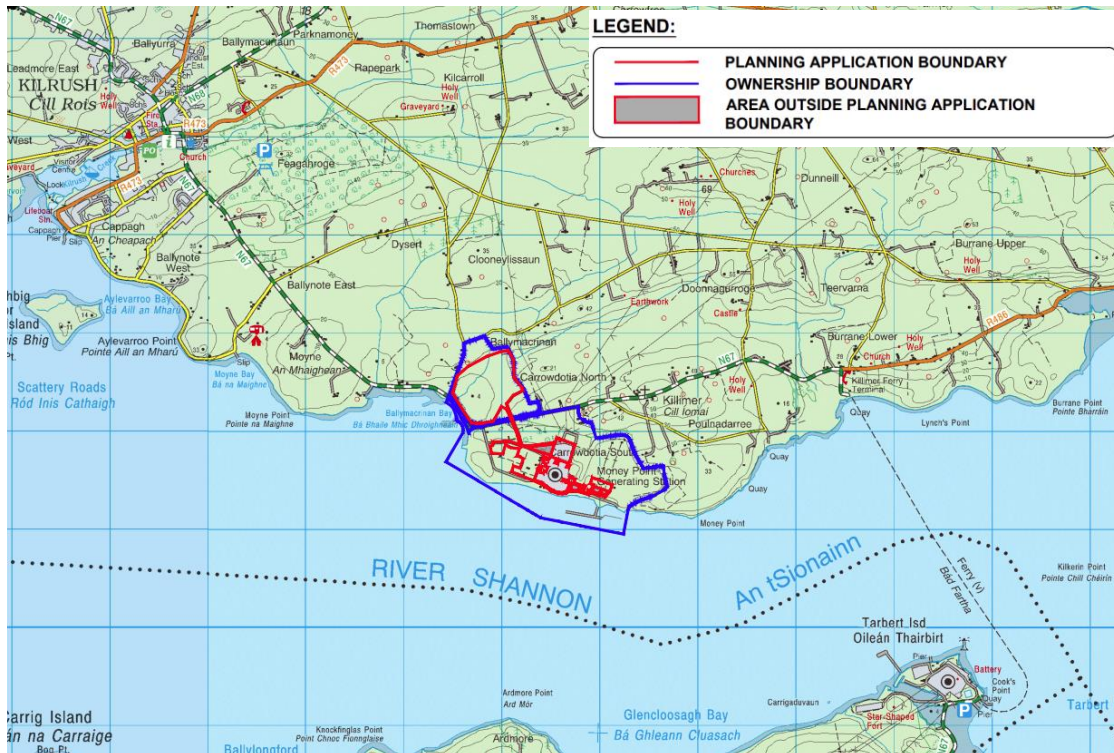
ESB’s mission is to bring sustainable and competitively priced energy solutions to its customers and its vision is to be Ireland’s foremost energy company competing successfully in the all-island market.

1.4 Site Location

Moneypoint Generating Station lies on the northern shore of the Shannon Estuary, in the townland of Carrowdotia North, Carrowdotia South and Ballymacrinan, County Clare, and is located approximately 4km southeast from Kilrush, the nearest town, and approximately 1.8km west of Killimer village. Figure 1.1 shows the strategic location of Moneypoint Generating Station.

Moneypoint Generating Station lies within a larger ESB landholding comprising approximately 180 hectares of land onshore and approximately 65 hectares within the nearshore (i.e areas below the [historic] high water mark).

Figure 1.1: Strategic Location of Moneypoint Generating Station



Source: ESB, Strategic Site Location Map, Drawing reference: QP-000017-65-D451-001-001-000

1.5 Industrial Emissions Licensing

Moneypoint Generating Station is licensed by the Environmental Protection Agency pursuant to the Industrial Emission (IE) Directive and the transposed Irish legislation (i.e. Environmental Protection Agency Act 1992 as amended).

It is not proposed to change any of the existing emission limit values in the extant IE licence (Licence Register Number: P0605-04). The proposed development will require an update to the existing IE licence from the EPA; namely, to add the proposed auxiliary boiler exhaust stack as an emission point. Ultimately the EPA is the competent authority in relation to the IE licence, emissions and environmental management.

ESB made a request for a Technical Amendment to the EPA on 15 December 2023 to include the proposed development under the IE licence. This request included in its submission, information relating to compliance, as required under the Best Available Techniques (BAT) conclusions for Large Combustion Plants (2021/2326/EU) for both coal and HFO combustion.

1.6 COMAH Regulations

The Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015, (S.I. No. 209 of 2015) (“the COMAH Regulations”), implement the Seveso III Directive (2012/18/EU). The purpose of the COMAH Regulations is to lay down rules for the prevention of major accidents involving dangerous substances, and to seek to limit, as far as possible, the consequences for human health and the environment of such accidents, with the overall objective of providing a high level of protection in a consistent and effective manner.

The COMAH Regulations apply to any establishment where dangerous substances are present in quantities that exceed specified thresholds. The dangerous substances and threshold

quantities are specified in Schedule 1 of the Regulations. Depending on the quantity of substances present at an establishment, it may either be a lower tier establishment or an upper tier establishment.

Moneypoint Generating Station is listed as an "Upper Tier establishment" and is subject to regular routine inspection by the Health and Safety Authority (which is the Central Competent Authority for the Regulations), typically on an annual basis, the most recent inspection was undertaken by the HSA on 26 September 2023.

1.7 Project Description

The conversion of fuel type for electricity generation at the existing Moneypoint Generating Station site will necessitate new development, such as new tanks for increased HFO storage, extensions to existing building and the provision of new plant/equipment. It will also require the removal of equipment used in the conveyance of coal within the site, which will become redundant following the cessation of coal burning activities. In addition, the proposed development will result in a reduction of ash volumes from the combustion process. Consequently, this reduction of ash volumes for deposition in the existing on-site Ash Storage Area will result in the final capped profile of the Ash Storage Area (ASA) being 1.85m below the currently consented level (i.e the profile granted planning permission by Clare County Council, planning reference: 14/373).

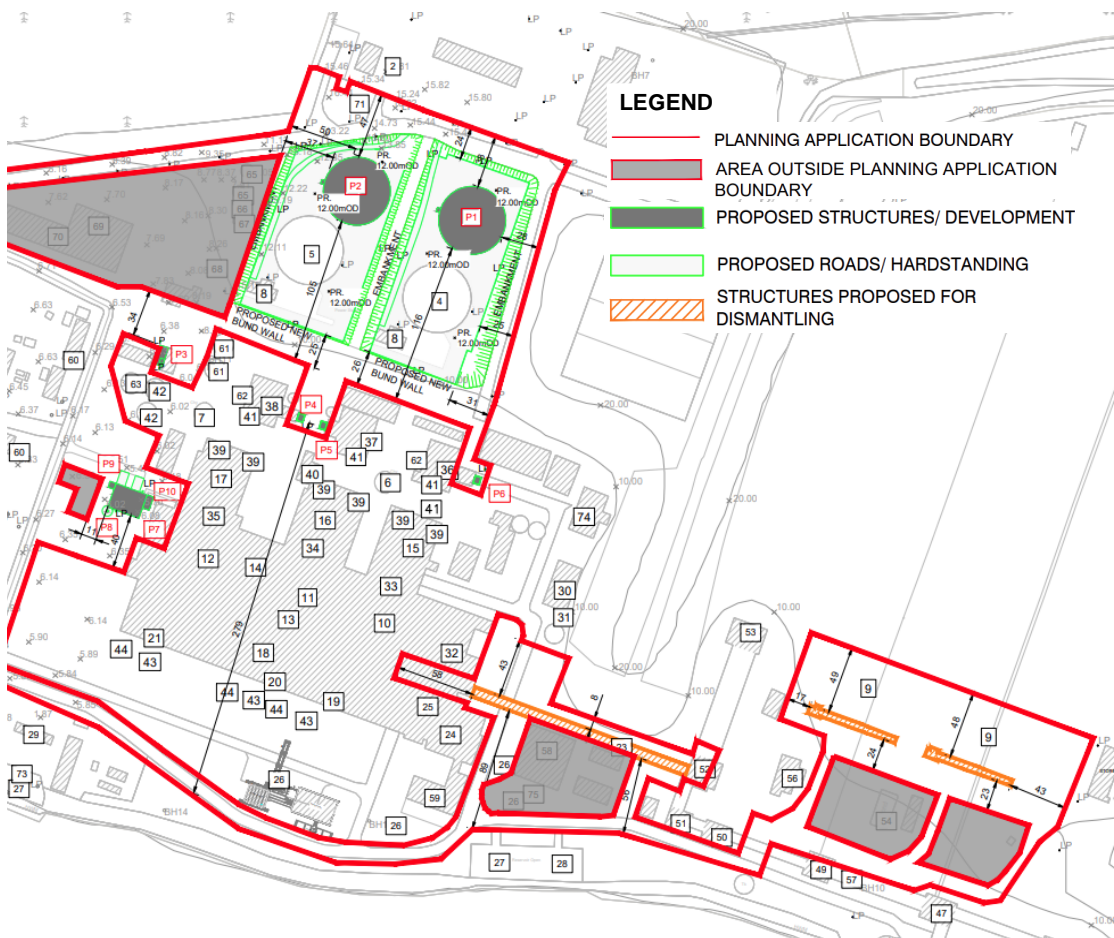
The proposed works do not include any changes to the existing generating units, beyond normal maintenance. These have already been designed to fire either fully or partially with HFO. There will also be no change to the existing boilers, turbines, transformers or associated equipment. Each unit is connected to the national grid through the existing 400KV/220kV substations. No changes to the HFO forwarding systems and electricity transmission infrastructure will be required to facilitate the proposed transition to HFO. No works or changes are proposed at the existing loading jetty area.

A full description of the proposed development (as listed within the statutory public notices required for the planning application) is provided hereunder. Figure 1.2 illustrates the proposed development layout with regards to the proposed works (excluding the proposed works to the Ash Storage Area) at the main generating station complex, namely numbered points 1 to 6 in the development description below. Figure 1.3 shows the extent of the area which will be reprofiled at the Ash Storage Area.

1. Transition and conversion of the existing coal fired power station's primary fuel from coal to Heavy Fuel Oil (HFO) for limited hours of operation and a temporary period of five years until the 31 December 2029;
2. Construction of 2no. HFO tanks each with a capacity of 25,000 tonnes (approx. 48.7m diameter x 15m H) and associated bund walls (approx. 5.0m high);
3. Construction of a new boiler house (approx. 24m L x 18m W x 11m H) to house 2no. auxiliary boilers (1no. electric and 1no. distillate, each approx. 22.7MW (thermal output), including:
 - 1no. blow down vessel (approx. 4.5m wide x 13m high)
 - 1no. exhaust Stack (approx. 1.0m diameter and 30m H)
 - 1no. annex structure (approx. 10.0m L x 5m W x 4m H)
4. Construction of an extension to each of the existing 3no. Flue Gas Desulphurisation Absorbers (FGD) - units 1, 2 and 3, to provide additional reclaimed ash unloading facilities (ash injection plant extension), comprising:
 - 1no. conveyor enclosure (approx. 7.0m L x 2.5m W x 22m H)
 - 1no. hopper enclosure (approx. 6m L x 5m W x 6m H)

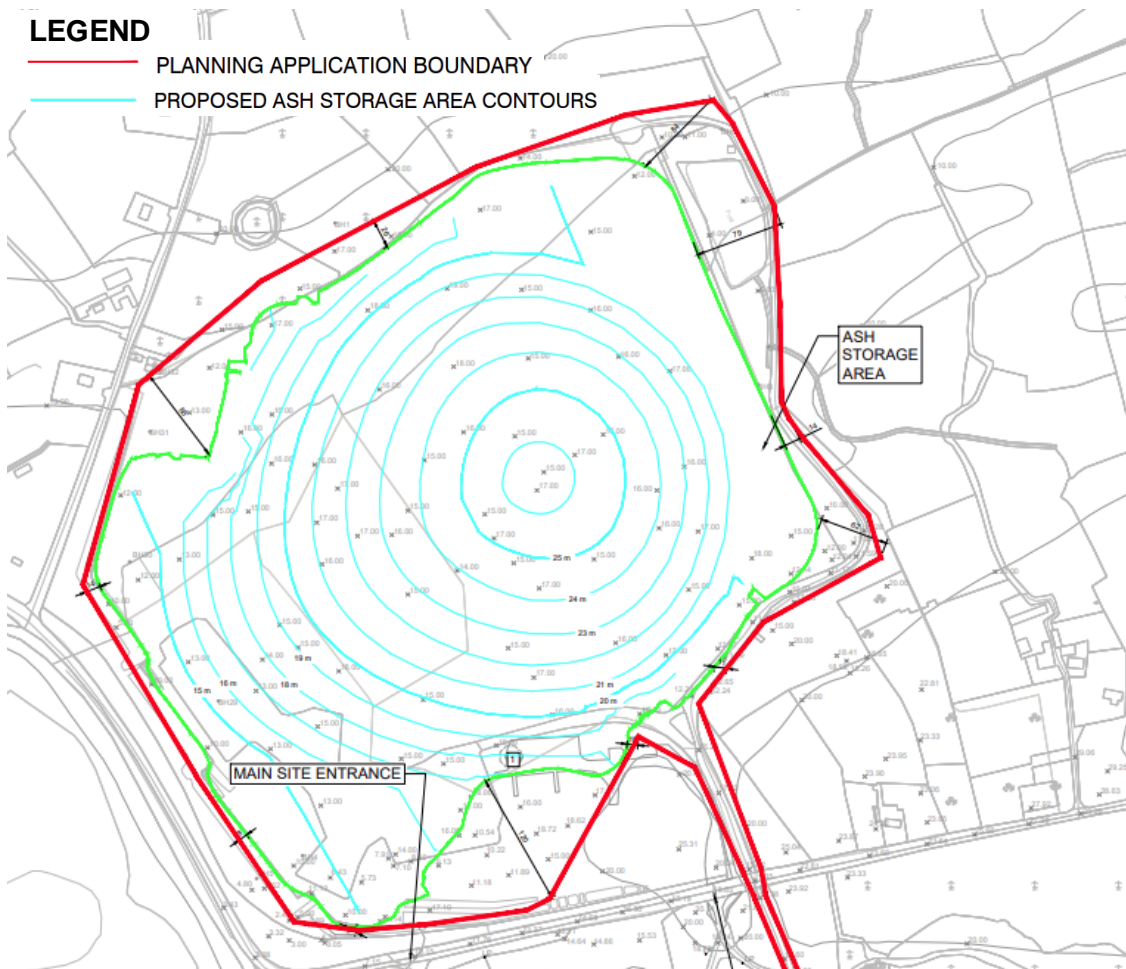
5. Construction of a reclaimed ash unloading facility at the existing landfill capping batching plant, comprising a hopper enclosure adjoining the existing batching plant (approx. 14.0m L x 6.5m W x 6.0m H) and conveyor enclosure (approx. 3.5m L x 3.5m W x 11.5m H)
6. Dismantling and removal of 2no. mobile stacker reclaimers and 1no. coal conveyor bridge;
7. Changes to existing permitted Flue Gas Desulphurisation (FGD) by-product and ash storage area (ASA) arrangements (Pl. Ref. 14/373) to utilise spare capacity in the existing ASA [capping layer thickness increase from 0.6m (*minimum*) up to a maximum of 1.6m] with an overall proposed reduction in height of the currently permitted ASA by approx. 1.85m; and,
8. All associated ancillary site development works to facilitate the proposed development, including a new lighting arrangement, surface water drainage, internal roads and temporary construction compounds and laydown areas.

Figure 1.2: Proposed Layout (excluding Ash Storage Area)



Source: ESB, proposed Site Layout Sheet 2 of 3, Drawing Ref: QP-000017-65-D451-005-002-000

Figure 1.3: Proposed layout of Ash Storage Area



Source: ESB, Proposed Site Layout, Sheet 3 of 3, Drawing Ref: QP-000017-65-D451-005-003-000

1.8 Construction and Dismantling works

Construction of the proposed development is expected to take ca. 21 months from September 2024, subject to grant of planning permission.

During this period, the three existing generating units will be undergoing maintenance overhauls. One unit will switch to firing HFO followed by the other two units, as stocks of coal are reduced. This means that that the plant can operate using HFO almost immediately subsequent to planning permission being granted, and at the request of EirGrid.

A contractor compound and laydown area and associated welfare facilities are long established on the Moneypoint Generating Station site complex. It is proposed to continue to use these facilities for the proposed development. As such, no preconstruction or site mobilising works are anticipated prior to commencement of the construction works.

It is anticipated that the construction works will be undertaken in one phase and each element of the works will be constructed sequentially.

It is proposed to dismantle and remove the stacker reclaimers and metal steelwork within the coal yard and rising conveyors 13A and 13B to ground level, once all coal stocks have been exhausted. These are largely metal structures and dismantling will be by controlled dismantling

only. It is envisaged that a separate contract will be required to undertake this element of the works. The dismantling process is expected to take four months and these works will not coincide with the construction works.

1.9 Construction Methodology

A Construction Environmental Management Plan (CEMP) is included as Appendix C to the EIAR and will be implemented during the construction phase, in consultation with Clare County Council. The CEMP will remain a 'live' document which will be implemented as a minimum. It will be reviewed and revised as necessary in consultation and agreement with the local authority to ensure that the measures implemented are effective. The CEMP will be a key contract document, which will ensure that all mitigation measures are implemented.

The appointed Contractor will implement the construction Resource and Waste Management Plan (included as part of the CEMP) which will ensure that optimum levels of waste prevention, reduction, reuse, recycling, and recovery are achieved throughout the duration of the proposed development. The RWMP will also remain a 'live' document which will be implemented as a minimum. The RWMP will be reviewed and revised as necessary, in consultation and agreement with the local authority, to ensure that the measures implemented are effective.

A construction Traffic Management Plan (TMP) will also be included as part of the CEMP. The TMP will be reviewed and revised, as necessary, in consultation and agreement with the local authority to ensure that the measures implemented are effective. The implementation of the TMP will mitigate potential construction traffic impacts on the public road network. All construction activities, including construction traffic, will be managed through the CEMP.

The TMP will ensure that potential impacts resulting from construction traffic on the local community, businesses and other industry adjacent to the site, are minimised. The Contractor will be required to develop their construction Traffic Management Plan to suit the access and egress of the site, their delivery and laydown requirements, expected movements of construction traffic, the size of the Contractor's compound along with their programme of works.

Specific haul routes, details of any oversized loads (if required) and a Traffic Management Plan will be prepared in advance of construction. This TMP will be agreed with Clare County Council, if required.

1.9.1 Construction Supervision and Monitoring

An Environmental Clerk of Works (EnCoW) will be employed by the Contractor to oversee implementation of mitigation. This will include monitoring and auditing the works and contractor programmes and works method statements, to ensure mitigation is correctly implemented. The EnCoW will also manage consultation with environmental bodies, including the NPWS and IFI. The EnCoW will be responsible for carrying out regular monitoring of the Contractors CEMP and will report monitoring findings, in writing, to ESB on a regular basis (at least weekly, but immediately in the case of incidents or accidents).

2 EIA Methodology

The EIAR has been prepared in accordance with the EIA Directive and Environmental Protection Agency's (EPA) Guidelines on the information to be contained in Environmental Impact Assessment Reports 2022 (hereafter referred to as the "EPA Guidelines 2022"). For each assessment, a precautionary approach has been applied to ensure that the worst-case scenario has been considered in the assessment. This approach provides a resilient method where it may not be possible to identify the exact design parameters before final design stage. It accommodates flexibility in design and construction while ensuring that the greatest environmental impacts and maximum extents are assessed in the EIAR.

Detailed methodologies are presented in each chapter of the EIAR. The amended EIA Directive requires that the EIAR provides: "A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge".

Article 3(1) of the EIA Directive lists environmental factors to be assessed for direct and indirect effects of the project. The chapter headings of the EIAR are based on this list. The EIAR also complies with Article 5 of the EIA Directive which lists the components of an EIAR. The description of likely significant effects is prepared in accordance with Annex IV of the EIA Directive. The EIAR requirements for consultation, as defined in Article 6 of the EIA Directive, were also complied with.

2.1 Screening

Screening is the first stage of the EIA process, whereby a decision is made as to whether an EIA is required. A mandatory EIA has been met for several elements of the development, these are listed below:

Schedule 5, Part 1

- 2 (a). A thermal power station or other combustion installation with a heat output of 300 megawatts or more."

Schedule 5, Part 2

- 6 (d). Storage facilities for petrochemical and chemical products, where such facilities are storage to which the provisions of Articles 9, 11 and 13 of Council Directive 96/82/EC apply."
- 11. Installations for the disposal of waste with an annual intake greater than 25,000 tonnes not included in Part 1 of this Schedule.

2.2 EIA Scoping

Scoping is the process of identifying the significant issues which should be addressed by a particular impact assessment as well as the means or methods of carrying out the assessment. Scoping of an EIAR is voluntary for a developer. While this EIAR has been developed in line with EIA Directive 2014/52/EU, formal scoping of this EIAR has not been undertaken. Informal scoping has been informed by way of consultation with the key stakeholders and undertaking pre application consultations with both Clare County Council and An Bord Pleanála.

2.3 EIAR Methodology

This EIAR has been prepared in line with the Planning and Development Act, 2000 (S.I. No. 30/2000), as amended, and associated Regulations; the EPA Guidelines 2022 and associated Advice Notes; Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, 2018); and the European Commission Guidance on the preparation of the Environmental Assessment Report 2017. Guidelines and guidance documents specific to each environmental factor are listed in the individual chapters of the EIAR.

The receiving environment for each environmental factor describes the existing state of environmental characteristics and conditions. This includes sensitivity and significance of those environmental factors that are likely to be significantly affected by the proposed development. As per the EIA Directive, the do-nothing effects are also considered i.e., state of future receiving environment in the absence of the proposed development.

For the effects identified, each chapter of the EIAR describes the temporal scope, i.e., duration of the effects identified, and the spatial scope, i.e., area over which the effects may occur. The source-pathway-receptor model is used to determine the spatial scope. A receptor is defined as “any element in the environment which is subject to impacts”. The effects are described in accordance with the EPA Guidelines 2022.

The significance of potential impacts is dependent on the sensitivity of the receiving environment and the character of the predicted impact, as shown in the EPA Guidelines 2022. Professional judgement plays a key role where magnitude or significance of impacts cannot be quantified with certainty. Where significant adverse impacts are likely, mitigation measures are proposed to offset these impacts.

The assessment of impacts is conducted for construction, operational and decommissioning phase. Mitigation is proposed as per the EPA Guidelines 2022 and is divided into four strategies: avoidance, prevention, reduction, and offsetting. Residual impacts that remain once mitigation has been implemented, are also identified and discussed in each chapter.

A key aspect of EIAR is assessment of cumulative effects. In each chapter, the nature and scale of other developments in the vicinity of the proposed development have been evaluated to identify potential for significant cumulative effects. There is no potential for transboundary effects as all proposed works are within Ireland. The EIAR also includes assessment of interaction of effects that may arise due to the effects of the proposed development on various environmental factors.

2.4 Consultations and Engagement

Consultation and engagement was undertaken for the proposed development with both statutory and non-statutory stakeholders. This included a pre-application consultation with An Bord Pleanála. Stakeholder consultation was carried out proportionate to the scale and significance of likely impacts associated with the needs of the proposed development. In this instance, where a formal response was provided by a stakeholder, these were discussed with the project team. Table 1.2 of Volume 2 of the EIAR provides a summary of all stakeholder consultation received and outlined appropriate responses to same.

A pre application meeting was held with An Bord Pleanála on the 11 August 2023. ABP subsequently confirmed, by letter dated 17 November 2023, that the proposed development does fall within the scope of Schedule 7 of Section 37A of the Planning and Development Act, 2000 (as amended) The proposed development would be strategic infrastructure development (SID) and that any application for approval for the proposed development must therefore be made directly to An Bord Pleanála.

A pre-planning meeting was also held with Clare County Council (CCC) on the 20 September 2023, at which the ESB provided a presentation and outline of the proposed development and likely SID application. A letter from ESB was circulated by the Council to the elected Members in September 2023. This outlined the future energy generation proposals for Moneypoint, the proposed transition from coal to oil, and the subsequent decommissioning of the generation station.

ESB have also held consultation meetings with the Environmental Protection Agency (EPA) and the Health and Safety Authority (HSA), details of which are provided in Section 1.7.4 and Section 1.7.5 respectively, of the EIAR, Volume 2.

ESB hold regular engagement meetings with landowners neighbouring the Moneypoint Generating Station which have resulted in positive responses from the community. During one such engagement in September 2023, ESB informed the landowners of the proposed development.

In addition to the above, there has been media coverage on the proposed development across local and national news outlets. Such coverage has highlighted that the conversion from coal to HFO, is an important step in decarbonising the energy sector and that the retention of Moneypoint as a power generator of last resort, will be vital to ensuring national security of supply in the period up to 2030. Media coverage has also reiterated ESB’s intention to operate Moneypoint as an out of market generator, which will operate, at the instruction of EirGrid, during times of shortage of generation.

2.5 Structure of the EIAR

This EIAR has been prepared in accordance with the EIA Directive and having regard to the *Guidelines on the information to be contained in Environmental Impact Assessment Reports* (EPA, 2022)¹.

The EIAR is presented in three volumes, as below. This report presents Volume 1 of the EIAR.

Volume 1 this Non-Technical Summary (NTS) of Volume 2 of the EIAR, including a summary of each technical section of the EIAR.

Volume 2 includes the Main Report, the structure of which is as set out in Table 2.1

Table 2.1: Structure of EIAR Volume 2

Chapter No.	Chapter Title
1	Introduction
2	Need for the Proposed Development
3	Alternatives Considered
4	Description of the Proposed Development
5	EIAR Methodology
6	Population and Human Health
7	Air Quality
8	Climate
9	Noise and Vibration
10	Biodiversity
11	Surface Water Resources and Flooding
12	Land, Soils and Hydrogeology

¹ Hereafter the “EPA Guidelines 2022”.

Chapter No.	Chapter Title
13	Archaeology, Architectural and Cultural Heritage
14	The Landscape
15	Traffic and Transport
16	Material Assets and Waste Management
17	Major Accidents and/or Disasters
18	Interactions between Environmental Factors
19	Summary of Mitigation and Monitoring Measures
20	References

Volume 3 includes appendices providing supporting information to Volume 2 of the EIAR.

3 Project Need

Ireland's national energy policy is focused on three pillars: (1) sustainability, (2) security of supply and (3) competitiveness. Ireland must reduce greenhouse gas emissions from the energy sector by at least 80% by 2050, compared to 1990 levels, while ensuring security of supply of competitive energy sources. The Commission for Regulation of Utilities (CRU) has a statutory responsibility, under the European Communities (Internal Market in Electricity) Regulations (SI 60 of 2005) (the "Regulations"), to have regard to the security of supply of electricity and under Regulation 28(5), to take such measures as it considers necessary to protect security of supply. The proposed development, as described within Chapter 4 of the EIAR, will contribute to the security of energy supply in Ireland for five years, until the 31 December 2029, and will act as an out of market generator of last resort and will operate only when required by the Transmission System Operator (EirGrid), for security of supply reasons.

Moneypoint Generating Station is a strategically important part of the energy generation network across Ireland and contributes to ensuring that energy needs are met nationwide, meeting on average 25% of national demand. The proposed development aims to ensure that the power station remains viable as an energy generation node until the end of 2029, whereafter the ESB intends on transforming the site and its redevelopment as a hub for the offshore renewable sector as part of the Company's 'Towards Zero' Strategy and the Government's Project Ireland 2040 strategy.

Under the Regulations, Regulation 28(10) provides that where the CRU has identified a likely and substantial risk to security of supply, the CRU, with Ministerial consent, may direct the transmission system operator, the public electricity supplier or any licensed undertakings, as appropriate, to undertake all or any such arrangements as the CRU considers necessary, including financial arrangements, relating to security of supply, in a manner approved by the CRU. The use of Regulation 28(10) is on the basis that it is "*not practicable in the time available otherwise to ensure security of supply*".

Issues around security and continuity of supply have recently arisen because of unexpected generator outages, the dispatchable nature of some renewables and delays in delivery of new gas fired generation capacity. EirGrid's identification of a potential capacity shortfall, is set out in its All-Island Generation Capacity Statement (GCS) 2021 and in its latest revision for the ten-year period 2023 to 2032. Consequently, as a result of the forecasted capacity deficits and pursuant to Regulation 28(10), the ESB have entered in to a Targeted Contract Mechanism (TCM) with EirGrid for the purpose of security of supply generation and strategic fuel storage in response to the national emergency relating to security of electricity supply. The fulfilment of this TCM is provided for within the proposed development.

The need for the proposed development is supported by European, national, regional, sectoral and local planning policies and objectives relating to energy development and energy security of supply. The Planning Report, submitted as part of this application, provides an overview of these and demonstrates how the proposed development will be consistent with the realisation of these commitments, policies and objectives.

4 Alternatives

4.1 Alternatives Considered

Various options surrounding the proposed development, are set out in Chapter 3 of the EIAR. This chapter describes the do nothing scenario and alternatives that were considered for the proposed development, under each of the headings below and the reasons for the selection of the preferred options.

- Fuel conversion
- New HFO tanks
- New auxiliary boilers
- Ash Storage Area (ASA) modifications
- Ash recovery for processing
- Partial coalyard dismantling

4.2 Fuel Conversion

4.2.1 Do nothing

If the proposed conversion to HFO as the primary fuel and two new HFO storage tanks does not proceed, it is possible that extended power outages could occur in the absence of sufficient generators or fuel to cover the winter peaks in the period 2024 to 2029. This would have a significant adverse effect, in terms of energy requirements and supply, on the island of Ireland.

To maintain security of supply it will be necessary to continue the operation of Moneypoint fuelled by coal. This is against the stated aim and strategy of the ESB, which is to cease all coal operation by the end of 2025 and enable the future development of offshore wind from the Moneypoint site. The continued operation on coal and continued use of consented FGD by-product storage will also have a knock-on effect on the future development of the Green Atlantic @ Moneypoint, which will provide a construction base for the offshore wind development post 2025.

Coal also does not offer the same flexibility as HFO due to longer start up, ramp up and shut down times.

4.2.2 Alternative Sites

Given the concerns about security of supply, EirGrid and ESB are agreed on a Temporary Contracting Mechanism (TCM) for the provision of Security of Supply generation, of up to 3000 hours per unit per year, for the period 2024 to 2029, with breakout clauses in 2027 and 2028 if sufficient new generation has entered the market. The proposed development will act as an out of market generator of last resort.

Moneypoint is a site of existing coal fired generation. The proposed development is to change the primary fuel from coal to HFO, construct two new HFO storage tanks to double the strategic storage on site, reinstate the auxiliary steam system to improve reliability and reduce start-up times and move the FGD By-product storage area to the existing Ash Storage Area, which has excess capacity. Moneypoint was identified as meeting all the necessary criteria below as it was otherwise pencilled for closure in 2025.

The majority of the existing infrastructure at Moneypoint Generating Station can be utilised, thereby negating the need to undertake extensive works as part of this proposed development and mitigating potential environmental impacts by avoidance.

The proposed development will not require the acquisition or development of any greenfield areas, mitigating by avoidance, potential environmental impacts.

The site has a long history of power generation and an established infrastructure network, thus establishing the principle and acceptability of energy generation and transmission infrastructure and use at the site. As the necessary transmission infrastructure is already in place and available to take the electricity generated, there will not be any requirement for works to upgrade the transmission infrastructure in the area as a result of the proposed development.

4.2.3 Alternative Technologies and Fuels

EirGrid have sought generation technologies that could be delivered quickly. Given that the existing plant already has the capability of 100% HFO firing in addition to coal, it can be re-configured quickly and could generate significant amounts of electricity and comply with environmental emission controls and legislation. HFO conversion also offers the option of strategic 'freeing up' of the existing coalyard for future development associated with the Green Atlantic @ Moneypoint, where the existing coal handling equipment could be removed, and the area made available for future reconfiguration for offshore wind farm assembly.

HFO firing offers greater plant flexibility, reliability and improved start-up times. The proposed two additional HFO tanks, which will double the existing strategic capacity to 100,000 tonnes of HFO, will facilitate full load running for up to 20 days, thus providing cover for an extended high pressure/no wind scenario. The extra HFO tanks would provide critical important strategic storage during a time of high gas market volatility, both in terms of price and availability. This proposed 20 days of HFO fuel storage would, however, be considerably lower than the 13 weeks plus offered by coal storage in the existing coalyard.

Alternative fuels, including gas conversion and biomass have been reviewed; however, in both cases, significant modifications will be required on the boilers, fuel handling and storage systems which are not commercially or technically feasible in the time available i.e. before the end of 2025.

- Gas conversion - A conversion to gas will require running a new gas pipeline. The pipeline would likely need to be ca.25km in length, from where the existing GNI pipeline crosses the River Shannon east of Labasheeda. It would likely also require construction of a new gas AGI (Above Ground Installation). A feasibility study has been carried out by Gas Networks Ireland (GNI). In addition, it is estimated that in a 'best case scenario', this would take six years to construct. Discussions with the Boiler OEM (Original Boiler Manufacturer), regarding the suitability of these coal units for a gas conversion, has indicated that significant modifications would be required and would require significant plant outages, cost in the region of €30 million per unit and take approximately five years to design and build. It would not be possible or practical to deliver this upgrade by the end of 2025. A significant amount of additional construction works would be required to undertake this which has the potential to have much greater and more complex environmental impacts than the subject proposed development.
- Biomass co-firing studies were carried out on Moneypoint in 2008 and testing carried out in 2010, which showed that the existing mills were not suitable for biomass. A biomass conversion would require repurposing of the existing coalyard, which would consequently require an extended outage of the entire plant and delay the future development proposal of the offshore Green Atlantic @ Moneypoint. In addition, it would not be possible or practical to undertake such conversion before the end of 2025. A significant amount of additional

construction works would be required to implement this, which has the potential to have much greater and more complex environmental impacts than the subject proposed development.

4.3 Fuel Storage / Supply Arrangement

There are two existing HFO tanks of 25,000 tonne capacity each, located in two separate earth bund areas, just north of the main unit buildings.

Up to 13 weeks of coal storage is possible in the existing coal yard.

The fuel storage/ supply arrangement alternatives considered include:

- Remain operational on coal (do nothing alternative)
- Operating with the existing two tanks only
- Leasing HFO tanks
- New HFO tanks

Typically, there is low renewable power generation during winter months. At this time, there is typically a high-pressure cyclone over the country which results in a period of very low temperature, low wind generation, reduced rainfall and very high energy requirements. It is common for this high-pressure cyclone to last a number of weeks; ideally, strategic storage needs to meet this extended energy shortfall period.

As a result of the assessment of alternatives assessed relating to fuel storage/ supply arrangements, the preferred option is to add two new tanks similar to the existing two HFO tanks on site and to double the total onsite HFO storage capacity to 100,000 tonnes. The additional HFO storage capacity will provide this security of supply. This option was deemed the preferred arrangement on the basis that it will provide security of supply plus it offers potential to improve the overall containment of the HFO bunds on site whilst ensuring minimal reconfiguration of HFO pumping and piping.

4.4 New Auxiliary Boilers

A number of alternatives were considered and presented to EirGrid for inclusion in the TCM and generation connection agreement targets (called TOD's [Technical Offer Data]), which govern items such as ramp rates, starting times, minimum on times, minimum off times, primary/secondary/tertiary energy reserves etc. Each option considered contributed to different plant start times, CO₂ emissions and flexibility, but came with different costs. Any proposed alternative would also be required to operate in line with existing consenting regimes. The site also operates in line with the conditions of the applicable Greenhouse Gas Emissions (GHG) Permit (Permit Register Number IE-GHG070-10381-6). It is not proposed to change any of the existing emission limit values in the IE licence.

The alternatives considered for new auxiliary boilers include:

- No additional boilers (do nothing alternative)
- One 4MW boiler (Option A)
- One >16MW distillate boiler (Option B)
- One >16MW and one 4MW distillate boiler (Option C)
- Two >16MW distillate boilers (Option D)
- Two >16MW electric boilers (Option E)
- One >16MW distillate boiler and one >16MW electric boiler (Option F)

As a result of the assessment of alternatives assessed relating to new auxiliary boilers, Option F has been deemed as the preferred option. Two 22.7MW boilers have been selected as the preferred option, as these are also readily available in the market and would be easier to sell for reuse at the end of the operation of Moneypoint Generating Station.

4.5 Ash Storage Area Modifications

There are three consented repository areas on the Moneypoint site, as shown in Figure 4.1 and described as follows.

- FGD landfill Area A: FGD by-product is presently stored into area A located to the east of the coal yard; however capacity is expected to be reached in Q4 2024.
- FGD landfill Area B: Existing planning consent is in place for an additional FGD by-product landfill area B to the West of the main generating units. At present, this area is used for site laydown and contractor areas, and no FGD by-product has been stored in this area. Landfill area B has now been earmarked as part of the future Green Atlantic @ Moneypoint Project. It would be an inefficient use of land to deposit material in this area for the limited likely remaining timeframe of the station's operation.
- Ash Storage Area (ASA): Existing planning and EPA consent is in place for the storage of up to 4.8 million m³ of ash in the ASA. The planning permission (P14/373) for the current capacity was granted in 2014. The footprint of the ASA covers approximately 25 hectares. A survey completed in June 2023 indicated that there was ca. 1.3 million m³ of capacity remaining in the ASA.

Figure 4.1: Indicative locations of presently permitted landfills



Source: ESB

The alternatives considered for ash storage area modifications include:

- Utilising the consented FGD By-product Landfill Area B from January 2025 (do nothing alternative)
- Storing the FGD by-product in a designated cell in the ASA

- Finding a market for FGD by-product
- Increased capping layer in the ASA by the required thickness

The preferred option is to increase the capping layer in the ASA as it prevents the opening of a new repository site. It is worth noting that due to the reduction in future repository quantities the ASA will only have three phases instead of four and the finish height will be considerably lower.

4.6 Ash Recovery for FGD System

As the units switch to HFO only, insufficient fly ash (PFA) will be produced so ash will need to be reclaimed from the ASA and mixed in accordance with the ratios above for capping. As discussed in Section 4.2.5 of the EIAR, approximately 120 tonnes per week of fly ash will be required.

The ash recovery alternatives considered include:

- Increased free lime dosing
- Repurchasing dried ash from cement manufacturer
- Wet ash feed into the boiler
- PFA reclamation from the ASA, drying and feeding into existing PFA silo
- PFA reclamation from the ASA, feeding into each FGD absorber directly

Note: There is no do nothing option unless the existing situation remains or co-fire with coal as without a functioning FGD system the plant cannot meet IE licence ELVs and BAT for Sulphur Oxides (SO_x).

The preferred option is direct injection of reclaimed wet PFA into the FGD absorber upstream of the venturi where flue gas velocities are maximum.

4.7 Coalyard Dismantling

ESB intends on transforming the Moneypoint site and redeveloping it as a hub for the offshore renewable sector as part of the ESB's 'Towards Zero' Strategy. Part of this strategy aim is to cease all coal operation by the end of 2025. The expectation is that coal burning will cease in mid-2025 through careful coal stock management. A six month period has been allowed for any residual coal to be used and any coal recovery process to be embarked on, in order to minimise coal residual volumes.

A number of options were considered for coalyard dismantling, given the requirement to continuously inspect and maintain out of service plant, the requirements of future projects and the fact that the jetty, oil unloading arm, HFO supply pipework and trace heating will be required to receive marine HFO deliveries until 2029. There will also be an environment management requirement until such time the full coalyard and jetty is fully removed/remediated.

The four alternatives considered include:

- Retain all coalyard plant (do nothing alternative)
- Demolition/dismantling of all coalyard furniture (Option 1)
- Demolition/dismantling of landside coalyard furniture (Option 2)
- Dismantling of vulnerable infrastructure only (Option 3)

The preferred solution is Option 3 as it removes the majority of the high-risk plants whilst confirming Moneypoint's commitment to stop firing coal after 2025.

4.8 Conclusions

From the onset of the design process and during the consideration of alternatives, environmental constraints were considered and avoided, where possible. The proposed development will not require the acquisition or development of any greenfield areas, mitigating by avoidance, potential environmental impacts. The proposed development will also facilitate the strategic positioning (with regard to the availability of suitable and appropriate existing land within the site) of the future Green Atlantic @ Moneypoint project. The continued operation on coal and continued use of consented FGD by-product storage, will also have a knock-on effect on the development of the Green Atlantic @ Moneypoint. As discussed in Section 3.3.3, the proposed option for alternative technology and fuel, is Heavy Fuel Oil. HFO provides greater flexibility for intermittent operation when compared with coal. It also aligns with ESB's Net Zero Strategy and stated position to cease coal firing by 2025. The other alternatives considered, gas conversion and biomass co-firing, would require a significant amount of additional time and construction works which have the potential of much greater and more complex environmental impacts.

The proposed option is to construct two new HFO tanks. This option offers potential to improve the overall containment of the HFO bunds on site, whilst ensuring minimal reconfiguration of HFO pumping and piping. For the new auxiliary boilers, the proposed option is one 22.7MW distillate boiler and one 22.7MW electric boiler. This option facilitates a reduced start up time, increased starting reliability, ensures the plant can remain in the cold standby state, reduced start-up of a second unit, provide significant redundancy and increased boiler reliability. This option provides lower emissions than the distillate only option and has the added advantage of using low-cost renewables for heating and temperature retention.

The proposed option for ash storage modifications is to increase the capping layer thickness of the ASA from 0.6m to approximately 1.6m, to store the excess FGD by-product produced in the period post 2025. This option prevents the opening of a new repository site and associated environmental risks and long-term management requirements, as well as ensuring the future availability of that area for the Green Atlantic @ Moneypoint project.

For the ash recovery, the proposed option is to reclaim PFA from the ASA and direct injection of reclaimed wet PFA into the FGD absorber. From an environmental perspective, this option provides advantages over other options considered, such as:

- An increase in free lime dosing would increase the use of raw materials;
- The repurchasing of dried ash from cement contractors would not achieve the circularity goal for the system;
- Wet ash injection into the boiler would not achieve required IE Licence conditions; in addition;
- the drying process as part of the options discussed, would be an energy intensive process in comparison with the preferred option.

The preferred option for the decommissioning of the coalyard, is to dismantle vulnerable infrastructure. This includes stacker reclaimers and conveyor belts. Both pieces of equipment are above ground and would be reasonably easy to remove without major environmental issues.

5 Population and Human Health

Chapter 6 of the EIAR, Volume 2, presents an assessment of the likely and significant impacts arising from the proposed development on population and human health. The assessment is based on the proposed development as described in Chapter 4 of Volume 2 of the EIAR.

The Environmental Protection Agency (EPA) Guidelines 2022 and Advice Notes (2015) identify “sensitive receptors” as neighbouring landowners, local communities and other parties which are likely to be directly affected by the proposed development. The impact of proposed development on these sensitive receptors was assessed to identify population and human health impacts. The Health Impact Assessment Guidance published by the Institute of Public Health in 2021, includes an extensive list of health determinants that can be used to identify health risks and health issues in impact assessments. Based on these determinants and the broad categories identified in the EPA Guidelines 2022, an assessment of the following categories has been conducted:

- Land Use
- Population (Demographics and Settlement Patterns)
- Housing
- Employment and Economic Activity
- Tourism and Recreation
- Community Facilities and Amenities
- Human Health

During the construction phase, neutral / imperceptible impacts are predicted on land use, population, housing and tourism and recreation. For employment and economic activity, temporary imperceptible positive impacts are predicted. For community facilities and amenities, temporary imperceptible adverse impacts are likely to occur on emergency response times. The disturbance impacts on human health are expected to be slight during the construction phase.

During operational phase neutral / imperceptible impacts are predicted on land use, population, housing, tourism and recreation, and community facilities and amenities. For employment and economic activity, significant adverse impacts are unlikely. The generation of electricity to meet the demand on the national electricity grid by addressing the risks to security of supply will result in a positive effect for the population. Significant adverse impacts on human health are not likely. The proposed development, as described within Chapter 4 of Volume 2 of the EIAR, will contribute to the security of energy supply in Ireland for five years, until the end of 2029. At the end of this term the site will be remediated and restored in line with any requirements of the planning permission and Industrial Emission licence, unless otherwise authorised.

Significant adverse long-term residual impacts on population and human health are not likely as a result of the proposed development, given the scale and nature of the proposals. A positive effect for the population will be the generation of electricity to meet the demand on the national electricity grid and the security of supply needs.

6 Air

An assessment has been undertaken to determine the impacts of the proposed development on local air quality. The assessment of air quality has been carried out in accordance with best practice guidance and addresses the construction and operational impacts resulting from emissions to air from the proposed development.

Information on existing air quality in Ireland has been obtained from the Environmental Protection Agency to establish the baseline concentrations for use within the assessment.

A qualitative dust assessment has been undertaken to assess the impacts from the proposed development during construction, operation and maintenance. Dust monitoring has been undertaken at the application site since 1995 and demonstrates that existing dust control measures are effective. Following the appropriate implementation of the mitigation measures, such as those presented in Section 7.7 of Volume 2 of the EIAR, the air quality impacts associated with dust during construction, operation and maintenance activities, are predicted to be not significant.

A comparison of the annual mass emissions from coal firing and Heavy Fuel Oil (HFO) for the existing boilers and diesel firing for the auxiliary boiler, has been undertaken. The annual mass emissions have been calculated based on existing IE licence maximum hourly normalised volumetric flow rates and the existing licenced emission limits for coal and the annual Best Available Techniques (BAT) associated emission levels (BAT-AEL) for HFO. The annual mass emissions for the proposed development will be up to 50% lower than those for the existing operation with coal, when accounting for emission limits specified in the existing Industrial Emission licence. Similarly, annual mass emission will be up to 40% lower when applying the updated coal BAT-AELs which would be applicable in the future, without the transition to HFO as the primary fuel. The change of fuel therefore represents an improvement over the current operation of Moneypoint Generating Station.

Atmospheric dispersion modelling has been undertaken to assess the operational impacts from the proposed development. The assessment has considered the impact of the proposed development in isolation and the cumulative impact of the proposed development with the Tarbert Emergency Generation Plant. The assessment has taken a conservative approach by assuming worst-case conditions for factors such as emission characteristics, operating envelope and meteorological conditions.

No exceedances of the AIR Quality Standards (AQS) are predicted as a result of the operation of the proposed development, both when operating in isolation and cumulatively. The increases in pollutant concentrations as a result of the proposed development are also small (less than 10% of the respective NO₂ AQSs, 16% of the SO₂ AQSs and 1% of the PM₁₀ AQSs) and less than the existing licenced operation. Therefore, the impact of the proposed development at nearby human health and offsite receptors, is considered not significant. At ecological receptors, the impact of NO_x on critical levels and critical loads at nearby Special Areas of Conservation (SAC), Special Protection Areas (SPA), Natural Heritage Areas (NHA) and proposed Natural Heritage Areas (pNHA) is also considered to be not significant.

The impacts of the proposed development on air quality associated with construction (including partial dismantling of the coalyard), and operation and maintenance are therefore considered to be not significant, and the proposed development represents an improvement over the current operation of Moneypoint Generating Station.

7 Climate

Greenhouse gas (GHG) emissions add to global climate change. This assessment estimates the likely GHG emissions from the proposed development at Moneypoint Generating Station.

The proposed development is the site of an existing coal fired electricity generation facility and the proposed development will change the primary fuel used, from coal to HFO, entail the construction of two new HFO storage tanks to double storage on site, reinstate the auxiliary steam system to improve reliability and reduce start-up times, decommission the coalyard, and change the FGD by-product storage arrangements to utilise the excess capacity available in the existing Ash Storage Area.

The proposed development will lead to GHG emissions during construction (through use of building materials, construction machinery, and transport of materials), operation (through use of fuel in the power station), and demolition (through materials transport, waste disposal, and demolition machinery). Most GHG emissions will be generated when the proposed development is operating, through combustion of HFO.

There is international and domestic climate change legislation and policy which has established GHG emissions reductions targets by 2030 and 2050, with a long-term priority to move to net-zero emissions by 2050. The proposed development will continue to use fossil fuels and does not directly support the National Development Plan energy sector strategy of achieving a 51% reduction in GHG emissions against 2021 emissions by 2030 through developing more renewable energy.

Although the proposed development is still based on the use of fossil fuels, replacing coal with HFO will reduce the CO_{2e} emissions by 29% when the plant is operating. This project is temporary with limited running hours and will cease generation by the end of 2029 (before the 2030 emissions reduction target). The proposed development will act as an out of market generator of last resort and will operate only when required by the Transmission System Operator (EirGrid) for security of supply reasons. At the national level, one of the most relevant frameworks is the Climate Action Plan 2024, which plans to phase out the use of coal and peat in electricity generation. As the proposed development replaces existing coal-fired generation capability, it does align with an objective of the Climate Action Plan 2024, which states an aim to phase out and end the use of coal and peat in electricity generation.

8 Noise and Vibration

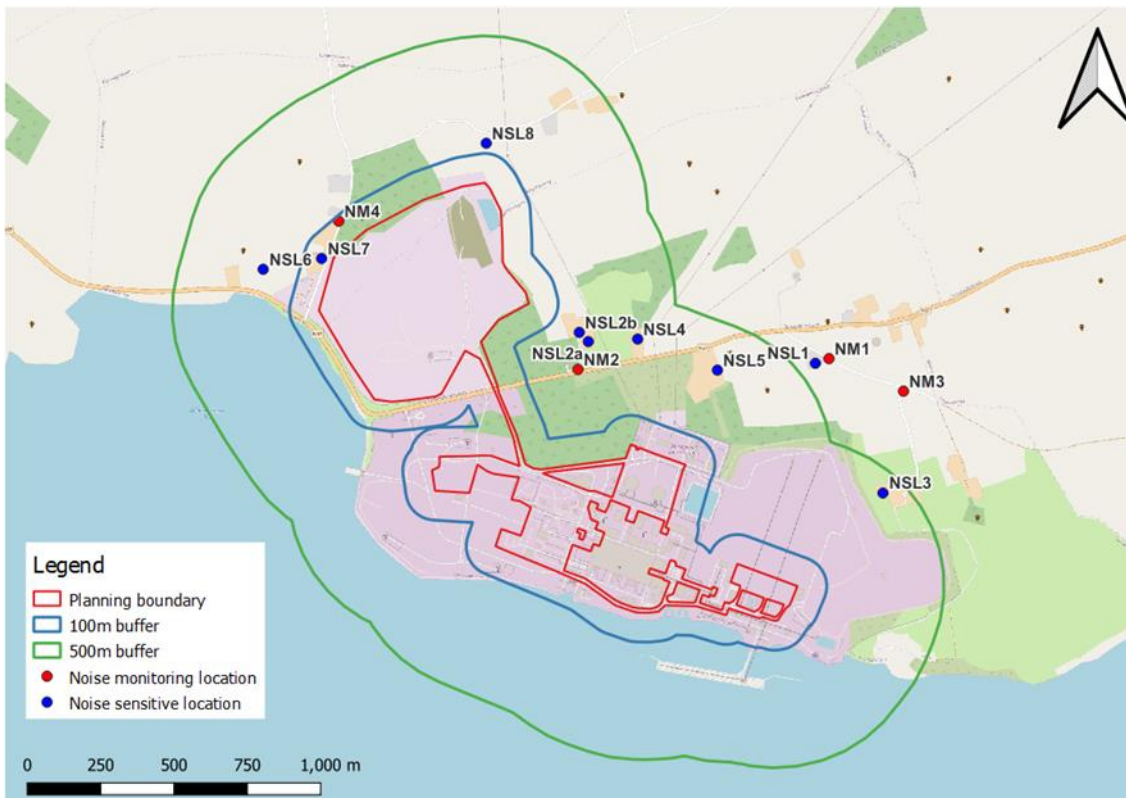
The proposed development is expected to generate noise during both the construction and operational stages, and vibration during construction. Specific details on decommissioning are not available at this stage of the project. Impacts during decommissioning from airborne noise and ground-borne vibration due to dismantling activities are expected to be of a similar magnitude to those during construction but generally of shorter duration. Therefore, it is concluded that the noise and vibration impacts due to decommissioning are Not Significant.

The assessment considered the likelihood of significant effects based on predictions of noise where the noise emissions of construction and operational plant have been assumed.

The impact of additional construction traffic noise on N67 and N68 roads have been assessed based on the baseline traffic data provided by Transport Infrastructure Ireland. The corresponding temporary changes in daily average road traffic noise are small.

The noise or vibration sources of proposed development is located at least 300m from the nearest dwellings as shown in Figure 8.1. As a result, the distance between site and noise sensitive locations is relatively long. It is concluded that the significance of effect due to construction and operational phase impacts is concluded as Not Significant.

Figure 8.1: Noise sensitive locations and noise monitoring locations



Source: Mott MacDonald and © OpenStreetMap contributors

9 Biodiversity

The Biodiversity Chapter has provided an assessment of the likely and significant impacts on biodiversity arising from the proposed development. The assessment was undertaken through a desktop assessment, review of previous ecological surveys, consultations and a site visit.

The field survey was conducted within the application site boundary to identify significant ecological features such as protected flora and fauna, invasive species, and habitat features with significant ecological value. Moneypoint Generating Station is located adjacent to the Lower Shannon Estuary, a site of international importance.

The following potential impacts associated with the works were identified:

Construction Phase

- **Habitat loss, Fragmentation and Disturbance:** The proposed development will result in the permanent loss of habitat.
- **Loss of resting, breeding and nesting sites:** There will be a loss of resting, breeding, and nesting features for species through permanent habitat removal or temporary use of an area in a way that renders such features unsuitable.
- **Noise and vibration disturbance:** There will be a temporary increase in noise and vibration due to the proposed development. Construction noise and vibration, especially associated with any piling works required, could affect birds, bats and marine and terrestrial mammal species. Birds, both terrestrial and shoreline, might be affected up to 253m of the site. Otters and badgers might be affected up to 150m from the site. Foraging Bats might be affected up to 6km from the site, and roosting bats may be affected if the roost occurs within 422m of the site.
- **Discharges (other than an oil spill at sea) to water:** There is a small potential for localised spills, e.g., of diesel fuel, engine oil, cement and other construction related chemicals and substances on site. With the existing drainage and bunding system, combined with current responses plans for such eventualities already in place, as well as new ones proposed, there is very little chance of impacts to the water quality of the estuary and its associated habitats
- **Dust deposition:** Dust produced by the dismantling of structures in the coal yard, modification of the ash storage area, construction of the new auxiliary boiler building, the two new HFO tanks and ancillary buildings, as well as during movement of vehicles related to this work, may affect vegetation. Dust can impact vegetation by blocking the stomata of leaves and inhibiting transpiration and photosynthesis.
- **Light disturbance:** Local increases in light levels during the construction phase may impact habitat use and suitability for a number of sensitive receptors, such as otter, bats and badger, within the relevant Zones of Influence.
- **Visual disturbance:** Due to the temporary increase in personnel and machinery presence during construction phase of the proposed development, there may be disturbance to more sensitive receptor species, such as badger and otter.
- **Spread of invasive species:** There is potential for the introduction and/or spread of invasive species due to construction phase activities.

Operation and Maintenance Phase

Habitat loss and Disturbance: There is potential for the operational phase of the proposed development to result in the temporary and permanent loss of Dry Humid grassland (GS3), Dry Meadows and Grassy Verges (GS2) and Scrub (WS1) within the ASA due to stripping, filling, ash reclamation and reinstatement works to be carried out as part of the proposed changes to

landfilling arrangements and HFO plant operation. Although, it is noted that this removal is allowed under permitted development (Ref.14/373) for the site.

- **Loss of resting, breeding and nesting sites:** Loss of resting, breeding, and nesting features for species may occur through habitat (see above) removal or disturbance during ongoing actions to be carried out within the grassland habitats in the ASA described above.
- **Generation of Air pollutants:** Nitrogen and Acid deposition may have a significant impact on plant communities and water quality both adjacent to and away from the Generating Station. Detailed analysis, presented in Chapter 7 Air of the EIAR demonstrates, however, there would be no adverse effects on designated habitat sites.
- **Noise disturbance:** Operational phase noise at the proposed development will not change from the pre-existing levels. Ship delivery numbers are proposed to remain similar in frequency to firing at baseload with coal at up to 24 ships per year. However, HFO ships are generally much smaller with an average payload of ca. 27,000 tonnes, or just over one full tank. This compares with an average ship payload of ca.180,000 tonnes for a coal ship. The existing jetty is designed to cater for ships with a payload of up to 200,000 tonnes. It takes 2-4 days to unload a HFO ship compared with 2-3 weeks to unload a coal ship. Underwater noise will be reduced as a result of the proposed development as the coal shipments are eliminated. In terms of operational noise, noise levels are modelled as being well below 55dB (ca. 30-40dB) – this is a low noise level effect (Cutts et al., 2013) and is not likely to have a significant effect on water birds.
- Discharges to water:
 - There is a notable, but remote, risk of accidental oil spillage, each with the potential to have potentially significant effects to the habitats and species within Shannon Estuary and waterbodies up to 120km away from the site. Oil spill might occur under any one of three key circumstances, namely,
 - In the estuary on approach to Moneypoint and because of collision, grounding or leakage of and from oil vessels
 - Accidental spillage of oil at the jetty during HFO tank filling operations, and
 - Potential leakages of oil from tanks and pipes on site during operation of the generation station.
 - There is a small potential for localised spills / discharge, e.g., of chemicals, hydrocarbons and sediment on site. With the existing drainage and bunding system, combined with current responses plans for such eventualities already in place, as well as new ones proposed, there is very little chance of impacts to the water quality of the estuary and its associated habitats.
 - Process wastewater discharges will not change, and the existing emission limit value will continue to be complied with.
- **Dust deposition:** as a result of movements of FGD to the ASA, as well as necessary work in the management of the ASA, there is potential for the creation of dust and for this to affect vegetation, whereby dust particles block the stomata of leaves and inhibit transpiration and photosynthesis.
- **Light disturbance:** Changes to and increases from the existing light levels are proposed following installation of additional lights within the proposed development that will run during the operation of the proposed development.
- **Noise and visual disturbance:** There is potential for a temporary increase in personnel and machinery presence during HFO delivery events which may disturb species, however these events will be brief and infrequent (ca. 2 events per year).
- **Spread of invasive species:** There is potential for the introduction and/or spread of invasive marine species via HFO delivery vessels, as a result of biofouling on ship hulls.

With implementation of appropriate mitigation measures, as described in Section 10.8.1 of Volume 2 of the EIAR, at construction, operation and decommissioning phases are considered to be localised, short term in duration and of slight significance.

10 Surface Water Resources and Flooding

Chapter 11 of Volume 2 of the EIAR presents an assessment of the likely and significant impacts arising from the proposed development on surface water resources and flooding.

The study area for the assessment reflects the distance over which significant changes to the water environment are likely to occur. The Moneypoint Generating Station is located adjacent to the Lower Shannon Estuary, a transitional water body, and is located within the Shannon Estuary North catchment (WFD Catchment 27). There are a total of 14 no. existing licensed emissions which may discharge to the Lower Shannon Estuary from Moneypoint Generating Station.

The impacts on surface water resources and flooding, associated with the following, are assessed:

- Impacts to surface water quality from sediment runoff, spillages, discharge to receiving waters
- Impacts on water supply and drainage infrastructure
- Impacts on flood risk

Mitigation measures are proposed for construction, operation and decommissioning phases of the development. The implementation of these measures will ensure that the impact of the proposed development on surface water resources will be imperceptible.

A Flood Risk Assessment (FRA) has been prepared (refer to Appendix H.2 of Volume 3 of the EIAR), and has concluded that there is no significant fluvial, groundwater or pluvial flood risk at the site. There is a residual risk of the blockage of a culvert (diverted Molougha river) to the immediate east of the Ash Storage Area. However, if such an event was to occur, it would not pose a risk to any infrastructure inside or outside the site application boundary, due to local topography, as potential floodwaters would be restricted to low-lying fields. The culvert has no history of blockages and is subject to an inspection and maintenance regime. It is important to note that there are no proposed works to the culvert to facilitate the proposed development.

Due to the existing topography at the Moneypoint Generating Station complex, there are no construction areas which will be impacted in the event that High End Future Scenario coastal flood levels occurred.

The impact of construction and operation and maintenance on all types of flooding is deemed to be imperceptible.

Provided that appropriate mitigation is used, the impacts of the decommissioning phase should be, as a worst-case scenario, similar to those at construction phase.

11 Land, Soils and Hydrogeology

The characteristics of the development and embedded mitigation have been described, alongside the anticipated construction phase, operational phase, and decommissioning phase. The likely significant impacts of the proposed development have been assessed and, where significant uncertainties or risks remain, requirements for additional mitigation and monitoring measures have been stated.

Taking into account the embedded mitigation and standard good practice measures, residual effects to land and land use, soils and hydrogeology from both construction and operational phase activities, are assessed as:

- Slight adverse (associated with the generation and removal of excavated material to waste);
- Slight beneficial (associated with requirements to manage and treat encountered ground contamination); and
- Imperceptible (associated with all other impacts).

No significant effects have been identified.

The proposed development will not result in a change in status of Water Framework Directive (WFD) groundwater body quantitative or chemical elements, nor prevent groundwater bodies from reaching good status in the future.

Decommissioning the plant, post 2029, will require the removal of existing infrastructure. Once these sources of potential contamination have been removed, it is anticipated that there will be limited potential impacts arising from contamination sources, however, this should be confirmed during a site investigation. Any decommissioning required will be subject to the conditions set out in the operating licence issued by the EPA.

12 Architecture, Archaeology and Cultural Heritage

Chapter 13 of Volume 2 of the EIAR, prepared by Rubicon Heritage Services Ltd., details the archaeological, architectural and cultural heritage issues that need to be addressed in respect of the development as described in Chapter 4 of Volume 2 of the EIAR.

The proposed development site is located in an already developed and industrialised setting with no sites with statutory protections located within the application site. Whilst the construction phase of the proposed development will not impact directly on any sites included in the Record of Monuments and Places, and archaeological testing and monitoring of recent past developments in the vicinity of the current site have not uncovered sub-surface archaeological remains, it is possible that sub-surface archaeological features or finds may underly the Ash Storage Area (ASA).

Any potential direct impacts to the cultural heritage landscape within the application site boundary is greatly limited by the fact that much of the application area comprises an existing industrialised landscape that has been developed through the second half of the 20th century. The southeastern portions of the proposed development site comprise an existing coal-fired power station, and the footprint of the proposed development is entirely within the extent of the existing power station and associated industrialised lands. As the site is already developed, no requirement for archaeological monitoring is recommended at this location.

In the northwestern portion of the proposed development site, in the area currently used for ash storage, there are a number of cultural heritage (CH) sites identified from early cartographic sources that are associated with the vernacular landscape (CH022; CH026-CH030), as well as a coastal Area of Archaeological Potential (CH024). These sites have no statutory protections and now underly the present Ash Storage Area. The potential for their survival under a significant depth of ash is unclear, and any potential impact to these CH sites is also limited by the potential for them having been already entirely removed prior to the establishment of the Ash Storage Area.

Given the impractical circumstances for safely undertaking any remote archaeological prospection or test-trenching at the locations of CH022, CH024 and CH026-CH030, the following mitigation measures are recommended:

- Although no excavations are proposed within the ASA, should this occur, a suitably qualified archaeological consultant will monitor groundworks under license to the National Monuments Service Section of the Department of Housing, Local Government and Heritage, in the event that excavation areas are deeper than the earliest ash deposits at the Ash Storage Area. Should any archaeological material be encountered, works will cease, and the County Archaeologist and National Monuments Service shall be notified. A strategy will be proposed to the County Archaeologist and National Monuments Service to suitably record any archaeological material identified, and preserve any archaeological material in situ, where possible. Where preservation in situ cannot be achieved, either in whole or in part, then a programme of archaeological excavation will be proposed, to ensure the preservation by record of the area of the development that will be directly impacted upon. Further work will then only be carried out following consultations with the County Archaeologist and the National Monuments Service.

Given the sub-surface nature of potential archaeology, the potential to excavate this site through the operational phase will provide data to the archaeological community from the

potential subsurface sites. The potential to gain knowledge outweighs the negative impact. Furthermore, the implementation of mitigation measures for the proposed development will ensure that the cumulative effect is neutral and not significant.

Subject to the implementation of the appropriate archaeological mitigation measures during the operational phase of the development, no residual cumulative impacts on archaeological, architectural and cultural heritage are predicted.

Given that the proposed development site already comprises a heavily industrialised landscape, no direct impacts are predicted during the decommissioning phase of the proposed development including any dismantling works. On cessation of activities the plant will be decommissioned, and the site remediated and restored in line with any requirements of the planning permission and IE licences, unless otherwise authorised.

13 The Landscape

The Landscape and Visual Impact Assessment (LVIA) is a comprehensive evaluation that considers both landscape and visual aspects separately, aiming to provide a thorough understanding of the potential impacts of the proposed development on the surrounding environment. The assessment considers the existing landscape context and analyses how the development may alter or affect various elements and views in the area.

The production of the LVIA involved several vital stages:

- **Desktop Study:** This phase established the study area, identified relevant landscape and visual designations in the County Development Plan, and identified other sensitive visual receptors. It also included a Zone of Theoretical Visibility (ZTV) analysis to select potential viewpoints for studying the proposed development's effects.
- **Fieldwork:** This stage involved on-site investigations to establish the landscape character of the receiving environment. It helped confirm and refine the viewpoints selected during the desktop study for the visual assessment stage.
- **Assessment of Landscape Impact:** The significance of the landscape impact was assessed by considering landscape sensitivity and weighing it against the magnitude of the landscape impact.
- **Assessment of Visual Impact:** The significance of the visual impact was assessed by considering visual receptor sensitivity and weighing it against the magnitude of the visual impact. Photomontages prepared with respect to selected viewpoints supported this aspect of the assessment.
- **Mitigation Measures:** The LVIA incorporated mitigation measures aimed at reducing potential impacts. Additionally, the identification of the residual effects was carried out after the implementation of mitigation measures.

This comprehensive approach, combining desktop studies, fieldwork, and impact assessments, along with adherence to established guidelines, contributes to a robust evaluation of the proposed development's potential landscape and visual impacts. It reflects a systematic and thorough process to understand, evaluate, and address the possible effects on the surrounding environment.

A study area with a radius of 2km was chosen, concentrating the assessment on the region where potential impacts are anticipated. This occurs in County Clare. The baseline study included relevant information from the Clare County Development Plan.

The landscape under consideration encompasses natural and built elements, such as topography, water bodies, vegetation, wildlife habitats, open spaces, buildings, and structures. Sensitivities assessed include statutory and non-statutory landscape designations, natural features, landscape character areas, deciduous trees, amenities, and historic landscapes. The study area, situated north of the Shannon Estuary southeast of Kilrush, features undulating topography, with slightly elevated portions near the settlement of Killimer. Watercourses flow southward, with the notable "Tonavoher" passing through Killimer.

The primary land use is industrial around Moneypoint Generating Station, with mixed land cover including farmed fields, industrial zones, commercial forestry, and residential clusters. The local population consists mainly of dispersed one-off houses along local roads. The N67 national secondary road is a significant transport route, and the Shannon Estuary is crucial to Moneypoint Generating Station. While no notable landscape-related heritage amenities exist,

the Wild Atlantic Way tourist route passes through the study area and the planning application boundary.

The built-up nature of the application site and adjoining areas identify more readily as industrial, rather than as a typical rural typology, and a key consideration is that the central study area is already strongly influenced by the existing Moneypoint Generating Station and adjacent Ash Storage Area; thus, the landscape sensitivity to the proposed development is deemed to be low. In the context of this site, visual receptors are considered to be of no greater than medium-low sensitivity.

Given the relatively small scale of the development in this industrial context, the development is not expected to significantly impact the landscape or the area's established agricultural and industrial features during the construction phase. The landscape impacts are Negative, Imperceptible and Long-term. Visual impacts are deemed to be Negative, Imperceptible and Permanent.

Impacts during the operational and decommissioning phases and the cumulative impacts are anticipated to be similar or less than during the construction phase.

There are no specific landscape or visual mitigation measures proposed during the construction or operational phases, hence no residual impacts as described in the assessment.

14 Traffic and Transport

This chapter of the EIAR presents an assessment of the likely traffic and transport effects on public roads impacted by the proposed development of Moneypoint Generating Station. The study area for traffic and transport comprises traffic routes local to the development likely to be utilised for the movement of vehicles attributed to the proposed development.

Integral to the assessment process, it was necessary to look at existing conditions (traffic and pedestrian activity levels as well as road conditions and their capacities), in order to establish a study area baseline.

The assessment focused on the construction phase. This is because there is unlikely to be a significant difference between the number of personnel working during the operational phase of the proposed development and the number of personnel who work on the current Moneypoint Generating Station. Therefore, there will be no impact on the surrounding road network as a result of the development. Should future decommissioning occur, whether in part or whole, then it is likely that the associated traffic generation will be, at worst, similar to traffic that would be generated during the construction phase.

Construction of the proposed development is expected to take ca. 21 months from September 2024, subject to grant of planning permission. During this period, using professional judgement (led by good practice guidance), the impact on public roads on all route sections utilised by construction traffic, is deemed to be 'not significant'.

Where baseline traffic flows are high, those flows relating to construction traffic would then be relatively low. These flows are low enough to have no impact on the existing road network in its operation.

Traffic flows will remain much lower than the capacity of the road, even where construction traffic flows increase; as such, the road network continues to function well.

Traffic management and monitoring measures detailed within the TMP (Appendix C.2 of Volume 3 of the EIAR) will be implemented and monitored by the appointed contractor during the construction period.

Measures proposed within the Workplace Travel Plan (WTP) will be implemented and monitored by the appointed Travel Plan Co-ordinator (TPC) during the operational period.

15 Material Assets and Waste Management

The assessment of the construction, operation and maintenance, and decommissioning of the proposed development has been undertaken in line with the EPA guidelines 2022, in conjunction with the Institute of Environmental Management and Assessment (IEMA) guidance for EIA in materials assets and waste management.

The assessment of effects on material assets and waste generation will encompass effects arising during construction, operation, and decommissioning phases of the proposed development. The construction phase includes excavation and demolition activities as part of site preparation works, and partial dismantling of the coalyard after coal burning ceases.

The quantities of material assets available at the time of submission for the proposed development has been used to estimate the types of materials and quantities required for the construction of the proposed development. The majority of raw materials required are aggregate based materials, for fill activities. Based on Ireland's annual production of sand and gravel and crushed rock for the year 2021 (latest publicly available information), sufficient minerals are available within Ireland. Prior to any mitigation measures, the sensitivity is Low, and magnitude of effects is Negligible and therefore the environmental effects for material assets use for construction phase is Not Significant.

Waste generation has been estimated, based on likely waste arisings from the construction phase, including site preparation, and construction work, and partial dismantling of the coalyard. It is anticipated that inert waste and non-hazardous waste will arise from the proposed development. Prior to any mitigation measures, the sensitivity is Medium, and magnitude of effects is Low and, therefore, the environmental effects for waste generation for construction phase is Not Significant.

Materials assets are not anticipated to be required in large quantities during the operational phase. From the end of 2025 it is proposed to cease coal firing fully and fuel the plant solely using HFO with distillate (diesel) and propane used for start-up and shut down, whereas cement is anticipated to be required in small quantities for the capping layers. Prior to any mitigation measures, the sensitivity and magnitude of effects are Low and No change, respectively. Therefore, the environmental effects for material assets for the operational phase are Not Significant.

Waste generated during the operational phase will be stored within the proposed development in the Flue Gas Desulphurisation (FGD) Landfill Area A and, once this area is full, the ASA is proposed to continue storing the FGD by-products. Therefore, it is not anticipated that the proposed development will have an impact on the landfills void capacities. Prior to any mitigation measures, the sensitivity and magnitude of effects are Negligible and No change, respectively. Therefore, the environmental effects for waste generation for the operational phase are Not Significant.

Mitigation measures will include the implementation of Resource and Waste Management Plan (RWMP) provided in Appendix C.1 of Volume 3 of the EIAR, waste hierarchy and circular economy principles to reduce the requirement of material assets and minimise the waste generated and disposed of to landfills.

After implementing mitigation measures in the proposed development, the residual effects from the construction phase will remain unchanged and are anticipated to be Not Significant. The residual effect from the operational phase is anticipated to be Imperceptible.

Prior to any mitigation measures, it is anticipated that the decommissioning phase of the proposed development would have a direct and permanent effect. Based on the IEMA's guidelines, the sensitivity of effect would be Low, and the magnitude of effect would be Negligible. The equivalent sensitivity and magnitude of effect to the EPA Guidelines 2022 are expected to be Low and Negligible, respectively. According to IEMA, the effect threshold would be Slight, and the environment effect would be Not Significant. The predicted significance of effect, in accordance with the EPA Guidelines 2022 would be Not Significant.

16 Major Accidents and/or Disasters

Chapter 17 of Volume 2 of the EIAR presents an assessment of the likely and significant impacts arising from the proposed development on major accidents and disasters.

The assessment of Major Accidents and Disasters was undertaken using the IEMA document Major Accidents and Disasters in EIA: A Primer (September 2020). The Control of Major Accident Hazards (COMAH) Technical Land Use Planning Report is provided in Appendix D of this EIAR.

Likely significant impacts for major accidents and disasters were assessed for flooding, fire, extreme temperature (e.g. heatwave, cold snap) high winds storm, electricity failure, exposure to high voltage, major road traffic accident, earthquake, biological hazard, malicious attacks/cyberattack, contaminated land/groundwater and spillage or seepage of pollutants into watercourse/ground.

Significant adverse effects as a result of the proposed development on the environment deriving from the vulnerability of the proposed development to risks of major accidents and/or disasters are not considered likely.

17 Interactions of Effects

The nature of the environment is such that interactions between all environmental topics are potentially possible and / or may occur to a certain extent for most projects. These interactions may result in direct, indirect impacts and may be positive or negative. Key environmental interactions that have been identified are summarised in the matrix overleaf.

Interaction of Effects between the Factors	Population and Human Health	Air Quality	Climate	Noise and Vibration	Biodiversity	Surface Water Resources and Flooding	Land, Soils and Hydrogeology	Archaeology, Architectural and Cultural Heritage	The Landscape	Traffic and Transport	Material Assets and Waste Management	Major Accidents and/or Disasters
Population and Human Health	■	■	■	■	■	■	■	■	■	■	■	■
Air Quality	■	■	■	■	■	■	■	■	■	■	■	■
Climate	■	■	■	■	■	■	■	■	■	■	■	■
Noise and Vibration	■	■	■	■	■	■	■	■	■	■	■	■
Biodiversity	■	■	■	■	■	■	■	■	■	■	■	■
Surface Water Resources and Flooding	■	■	■	■	■	■	■	■	■	■	■	■
Land, Soils and Hydrogeology	■	■	■	■	■	■	■	■	■	■	■	■
Archaeology, Architectural and Cultural Heritage	■	■	■	■	■	■	■	■	■	■	■	■
The Landscape	■	■	■	■	■	■	■	■	■	■	■	■
Traffic and Transport	■	■	■	■	■	■	■	■	■	■	■	■
Material Assets and Waste Management	■	■	■	■	■	■	■	■	■	■	■	■
Major Accidents and/or Disasters	■	■	■	■	■	■	■	■	■	■	■	■

18 Mitigation and Monitoring

Each environmental technical chapter of the EIAR lists the mitigation controls and monitoring that is required to minimise identified impacts and identifies the measures by which these will be secured. All mitigation and monitoring measures have been collated into a single table for ease of reference within Chapter 19 of the EIAR (Volume 2). These measures cover all stages of the proposed development; those specific to the construction stage have been incorporated into the Construction Environmental Management Plan (CEMP) which is included in Appendix C of Volume 3 of the EIAR.

A contractual obligation will be included within the tendering processes and implemented on appointment of the Contractor, to ensure that the proposed works are developed in compliance with the requirements of the CEMP.

