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Volume 2:

02

EIA Process and Methodology

2.0 Environmental Impact Assessment Methodology

2.1 Introduction

This chapter describes the methodology used in the preparation of this Environmental Impact Assessment Report (EIAR). The relevant legislation and guidance which has informed the preparation of the EIAR is listed in this chapter. The EIA process, EIAR structure, the methodology for assessment of likely significant effects and mitigation measures are also described.

2.2 EIA Legislation and Guidance

2.2.1 EIA Legislation

This EIAR has been prepared in compliance with Council 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 (the EIA Directive)¹.

The EIA Directive requires that public and private projects that are likely to have significant effects on the environment are subject to an environmental impact assessment prior to development consent being given. The requirements of the EIA Directive have been transposed into Irish law with the enactment of a number of implementing legislative measures, including the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296/2018) (“the EIA Regulations”) with effect from 1 September 2018. The relevant provisions of the Planning and Development Act 2000, as amended (“the Planning Acts”) and the Planning and Development Regulations 2001, as amended (the “Planning Regulations”) have been amended by the EIA Regulations.

Article 5 and Annex IV of the EIA Directive and Schedule 6 of the Planning Regulations specify the information to be contained in an EIAR in relation to this proposed development.

Accordingly, this EIAR contains all of the information prescribed by the relevant provisions of Article 5 of and Annex IV to the EIA Directive, and Schedule 6 of the Planning Regulations. This EIAR has also been prepared with due regard to the guidance set out in Section 2.2.2 below.

¹ Where this EIAR refers to the ‘amended Directive’ this means the codified Directive 2011/92/EU as amended by Directive 2014/52/EU.

2.2.2 EIA Guidance

This EIAR has been prepared with due regard to the following overarching Environmental Protection Agency (EPA) and European Commission guidance on EIAR:

- Environmental Protection Agency (2022) Guidelines on the Information to be contained in Environmental Impact Assessment Reports (May 2022) (EPA 2022 Guidelines).
- Environmental Protection Agency (2003) Advice Notes for Preparing Environmental Impact Statements.
- European Commission (2017) Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (EC 2017 Guidelines).

This EIAR has also been prepared with due regard to the following guidance:

- Department of Housing, Planning, Community and Local Government (2018) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018).
- Department of Housing, Planning, Community and Local Government (2017) Circular PL 1/2017 – Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive): Advice on the Administrative Provisions in Advance of Transposition. (2017).
- Department of Housing, Planning, Community and Local Government (2017) Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licensing Systems.
- Department of Housing, Planning, Community and Local Government (2017) Circular PL 1/2017 – Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive): Advice on the Administrative Provisions in Advance of Transposition.
- European Commission (1999) Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions.

In addition to the applicable EIA legislation and guidance, all relevant provisions of European Union (EU) Directives and national legislation relating to the topic specific areas have also been considered as part of the process and are addressed where necessary in the relevant topic-specific chapters.

All effects are described in accordance with the recommended terminology from the EPA 2022 Guidelines².

2.3 EIA Process

The European Union (EU) Directive 2011/92/EU, amended by EU Directive 2014/52/EU³ on the assessment of the effects of certain public and private projects on the environment (the 'EIA Directive'), requires Member States to ensure that a competent authority carries out an assessment of the likely significant effects of certain types of projects, as listed in Directive prior to development consent being given for the project.

² Other specialist guidelines, where applicable, are identified in the various specialist EIAR chapters.

³ EU Directive 2014/52/EU <https://eur-lex.europa.eu/eli/dir/2014/52/oj#d1e605-1-1>

EIA can be described as a ‘process’ for predicting effects on the environment caused by a proposed project. Where effects would be unacceptable, design or other mitigation measures can be implemented to avoid or reduce the effects to acceptable levels.

Article 1(2)(g) of the amended Directive defines EIA as:

“Environmental impact assessment means a process consisting of:

- (i) the preparation of an environmental impact assessment report by the Applicant, as referred to in Article 5(1) and (2);*
- (ii) the carrying out of consultations as referred to in Article 6 and, where relevant, Article 7;*
- (iii) the examination by the competent authority of the information presented in the environmental impact assessment report and any supplementary information provided, where necessary, by the developer in accordance with Article 5(3), and any relevant information received through the consultations under Articles 6 and 7;*
- (iv) the reasoned conclusion by the competent authority on the significant effects of the project on the environment, taking into account the results of the examination referred to in point (iii) and, where appropriate, its own supplementary examination; and*
- (v) the integration of the competent authority’s reasoned conclusion into any of the decisions referred to in Article 8a.”*

In this case, Nua Bioenergy is the Applicant. The ‘competent authority’ refers to Tipperary County Council or An Bord Pleanála should the appeals process apply.

The EPA 2022 Guidelines note that “EIA contributes to the environmental basis for the decision-making process. It is integrated into consent processes. This helps to ensure that the environmental consequences of the project are understood before a consent decision is reached”. Figure 2.1 (page 10) of the EPA 2022 Guidelines (replicated in Figure 2.1 below) illustrates how “EIA is a systematic analysis of the proposed project in relation to the existing environment during a consent process.”

EIA screening is usually carried out at the project design stage where it is decided whether EIA is required or not. In the case of the proposed development, EIA is mandatory, therefore EIA screening is not required (See Section 2.5 below). If EIA is required, then the scope of the EIAR is established (scoping), after which the EIAR is prepared as part of the consent application. Refer to Section 2.4 below in relation to scoping).

As noted in EPA 2022 Guidelines, the consent decision is a key milestone which generally marks the end of the formal EIA process. The implementation of mitigation measures and any monitoring measures contained in the EIAR, and consent decision continues after the formal EIA process is complete. This can happen prior to or during the construction, operation and, where relevant, the decommissioning stages of a project.

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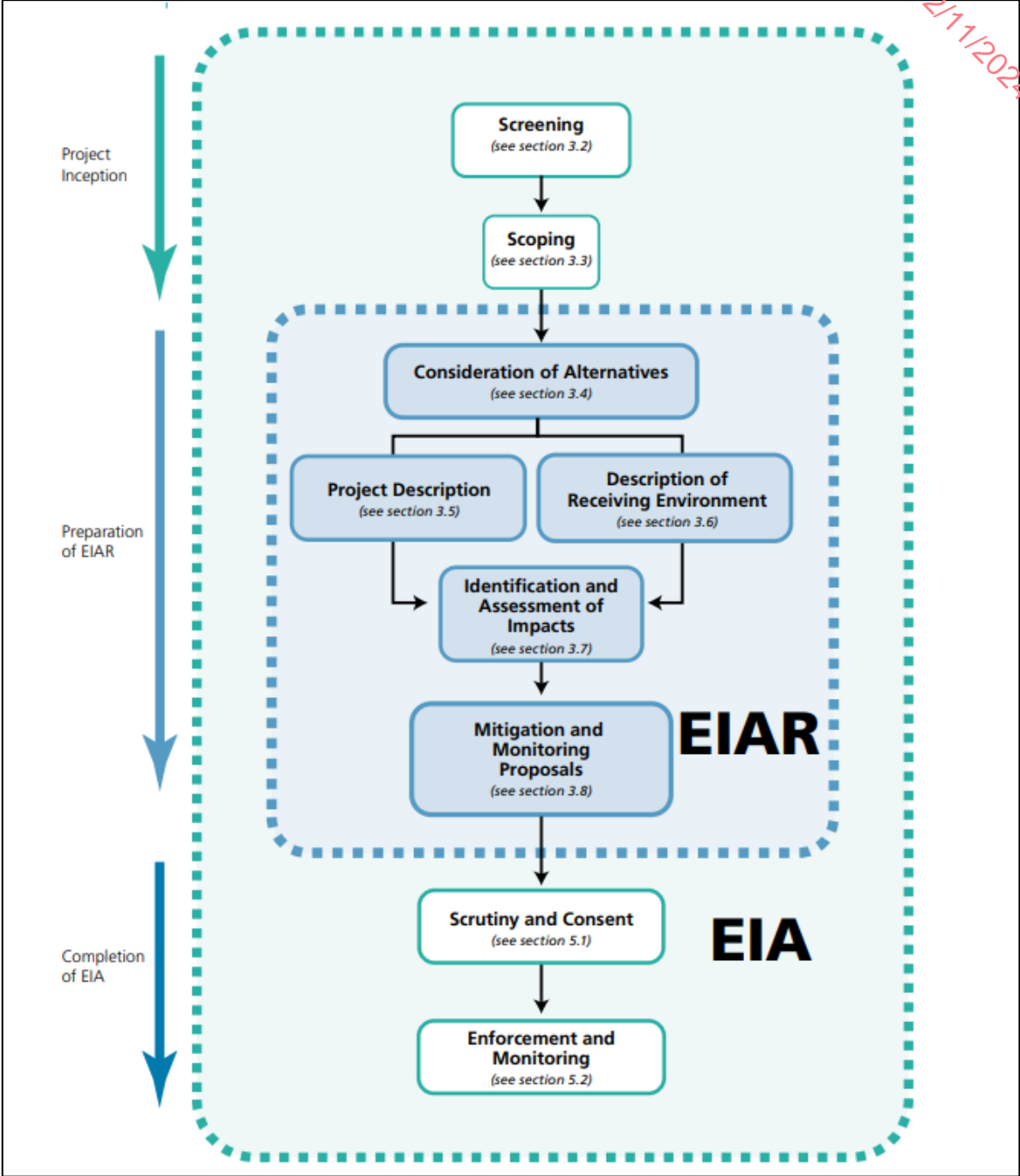


Figure 2.1: The Position of an EIAR within the EIA Process. Source EPA Guidance, 2022.

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The EIA process can be summarised as follows:

- **Screening:** The process of determining whether a proposed project should be subject to EIA.
- **Scoping:** The process of identifying the environmental factors and topics that should be addressed in the EIAR and the relevant assessment methods.
- **Description of the receiving environment:** This stage establishes a robust baseline (a description of the environmental characteristics of the receiving environment plus any relevant trends).
- **Impact assessment:** The primary purpose of the EIAR is to identify, describe and present an assessment of the likely significant direct and/or indirect effects of a proposed project on the environment.
- **Mitigation:** Where appropriate, mitigation measures are identified to avoid, prevent, reduce or offset any likely significant negative effects identified; as well as any proposed monitoring measures, if required.
- **Consultation:** With statutory bodies, the public and other stakeholders, as appropriate.
- **Decision:** The competent authority decides, in the context of other considerations (including the outcomes of the consultation process), whether planning permission should be granted.
- **Implementation / enforcement of conditions of development consent:** Assuming the proposed project receives planning permission, the environmental commitments (including any relevant mitigation and monitoring measures) then need to be implemented during either the construction and/or operation stages.

2.4 EIA Screening

Screening is the term used to describe the process of determining whether a Proposed Development requires an EIA, by reference to mandatory legislative threshold requirements or by reference to the type and scale of the Proposed Development and the significance or the environmental sensitivity of the receiving baseline environment.

Annex I to 'EIA Directive' 2014/52/EU, as amended, requires as mandatory the preparation of an EIA for all developments listed therein. Projects listed in Annex II to the Directive are not automatically subjected to EIA, however Member States can decide to subject such developments to an assessment on a case-by-case basis or according to thresholds and/or criteria, for example size, location and potential impact.

In Ireland, Schedule 5 (Part 1 and Part 2) of the Planning and Development Regulations 2001, as amended, transposes Annex I and Annex II to the 'EIA Directive' 2014/52/EU, as amended.

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In the context of the Proposed Development, the most relevant project type in Schedule 5 of the Planning and Development Regulations 2001-2019, as amended, is identified in Part 2, Class 11 (b) Other Projects:

(b) Installations for the disposal of waste with an annual intake greater than 25,000 tonnes not included in Part 1 of this Schedule.

It is therefore concluded that there is a mandatory requirement to undertake an EIA of the Proposed Development. Accordingly, an EIA of the Proposed Development is required to be conducted by the Competent Authority, prior to deciding on development consent.

2.5 Scoping

“Scoping” is a process of deciding what information should be contained in an EIAR and what methods should be used to gather and assess that information. The EPA 2022 Guidelines state that the scoping process should focus effort and resources on key significant issues that are guided by the following criteria:

- Use of likelihood and significance as the principal criteria for determining what environmental aspects need to be considered and addressed in the EIAR.
- Consider precedence to ensure any EIARs for similar projects on similar sites are used to develop an appropriate technical scope and robust assessment; and
- Recognise potential direct and indirect interactions that may magnify effects and/or give rise to cumulative significant effects (from multiple non-significant effects).

The legislation provides for developers to formally request the opinion of the competent authority on the scope of an EIAR. Formal scoping was not carried out for the proposed development. However informal EIAR scoping was carried out at an early stage of the EIAR preparation in consultation with the Planning Authority during pre-application discussions.

2.6 Structure of the EIAR

The information to be provided by the applicant within the EIAR must, at least, address the matters detailed in Article 5(1)(a) to (f) of the ‘EIA Directive’, as amended, outlined below:

- a) A description of the project comprising information on the site, design, size and any other relevant features of the project;
- b) A description of the likely significant effects of the project on the environment;
- c) A description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;

- d) A description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;
- e) A non-technical summary of the information referred to in points (a) to (d)
- f) Any additional information specified in Annex IV of the Directive/Schedule 6 to the 2001 Regulations, as amended, relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.

This EIAR has been prepared in 3 volumes as follows:

Volume 1 contains the non-technical summary which summarises the findings and conclusions of the EIAR in a clear, understandable manner in non-technical language with relevant figures. The non-technical summary is presented with an overview of the proposed development, the existing environment and any likely significant effects, mitigation measures and relevant aspects of the EIAR in a way which can be easily understood.

Volume 2 contains the main body of the Environmental Impact Assessment Report (EIAR), the main body provides a comprehensive and detailed assessment of the proposed development, structured into chapters that cover each environmental topic in depth. Table 2.1 below sets out the Chapters forming Volume 2 and the Consultant responsible for their preparation.

Volume 3 – Appendices: contains all relevant surveys, reports, analysis undertaken in association with the specialist Chapters contained in Volume 2.

The EIAR structure is presented in Table 2.1.

EIAR Chapter	Description
Volume 1: Non – Technical Summary	
Non-Technical Summary	Summary of the EIAR in non-technical language.
Volume 2: Main Body	
Chapter 1	Introduction
Chapter 2	EIA Process and Methodology
Chapter 3	Site Location and Context
Chapter 4	Legal and Policy Framework
Chapter 5	Consideration of Reasonable Alternatives
Chapter 6	Description of Proposed Development
Chapter 7	Population and Human Health
Chapter 8	Biodiversity
Chapter 9	Land, Soils and Geology
Chapter 10	Hydrology and Hydrogeology
Chapter 11	Air Quality (including Odour)
Chapter 12	Climate
Chapter 13	Noise and Vibration
Chapter 14	Traffic and Transportation

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Chapter 15	Material Assets: Waste
Chapter 16	Material Assets: Utilities
Chapter 17	Archaeology and Cultural Heritage
Chapter 18	Landscape and Visual
Chapter 19	Major Accidents and Disasters
Chapter 20	Inter-related Effects
Chapter 21	Cumulative Effects
Chapter 22	Schedule of Mitigation and Monitoring Proposals
Volume 3: Appendices	
Appendix 1.1	List of Competent Experts
Appendix 3.1	Planning History of the Site
Appendix 9.1	GI report and OCM report
Appendix 9.2	Mine Closure – Aftercare and Management
Appendix 10.1	GI report and OCM report
Appendix 11.1	Description of the AERMOD Model
Appendix 11.2	Meteorological Data – AERMET
Appendix 13.1	RAW Unattended Measurement Results
Appendix 14.1	Transport Assessment
Appendix 14.2	Traffic Survey Results
Appendix 14.3	Mobility Management Plan
Appendix 17.1	SMR/RMP Sites within study area
Appendix 17.2	Legislation Protecting the Archaeological Resource
Appendix 17.3	Legislation Protecting the Architectural Resource
Appendix 17.4	Impact Assessment and the Cultural Heritage Resource
Appendix 17.5	Mitigation Measures and Cultural Heritage Resource
Appendix 18.1	Verified Photomontages and CGIs
Appendix 21.1	Long list of “other existing and/or approved projects” which are potentially relevant

Table 2.1: EIAR Structure.

2.6.1 Chapter Structure

Generally, the structure of the chapters in Volume 2 of this EIAR align with both the EC 2017 Guidance and EPA 2022 Guidelines and include the following headings:

- **Introduction:** Provides an overview of the aims and objectives of the specific chapter in assessing the proposed development and outlines the scope of the assessment.
- **Methodology:** Describes the forecasting methods and evidence used to identify and assess the significant impacts on the environment.
- **Baseline Environment:** The baseline refers to the current state of environmental characteristics. It involves the collection and analysis of information on the condition, sensitivity and significance of relevant environmental topics which are likely to be significantly impacted by the proposed development.
- **Characteristics of the proposed development:** This section describes the key features/parameters of the proposed development which are of relevance to the environmental topic in terms of potential to cause likely significant effects.
- **Potential Effects:** This section provides a description of the likely significant effects in accordance with the EIA Directive and EPA 2022 Guidelines and other topic specific guidelines where appropriate. The Do-Nothing scenario is also described. Direct, indirect and inter-related effects are considered. Construction, operational and decommissioning phases are all addressed.
- **Mitigation and Monitoring Measures:** This section sets out measures envisaged to avoid, prevent, reduce or, if possible, offset any identified likely significant adverse effects on the environment and, where appropriate, identifies any proposed mitigation and monitoring arrangements.
- **Residual Effects:** Any likely significant effects that are predicted to remain after all mitigation measures have been implemented are referred to as 'Residual Effects'. These are the remaining environmental effects of the proposed development that could not be reasonably avoided.
- **Interactions:** Describes significant environmental effects of the development, including interactions between factors and any impacts on the environment, if relevant.
- **Cumulative Effects:** Describes the likely significant effects of the proposed development in combination with other existing and/ or approved projects; and
- **Reference list:** Lists the sources used for the descriptions and assessments included in the report.

2.7 Assessment of Effects

The environmental topic assessment chapters evaluate the construction, operation, and decommissioning (where relevant) phases of the proposed development, with the likelihood, extent, magnitude, duration, and significance of effects described.

The 'Potential Effects' section of each assessment chapter considers the potential direct, indirect and interaction effects as well as the 'do-nothing effect' scenario for each project phase. For all environmental topics, any residual likely significant effects are assessed and presented.

The interactions of effects between different environmental aspects and the potential for cumulative impacts to arise are also assessed and presented as a summary in Volume 2: Chapter 20: Inter-related Effects. Cumulative effects are also assessed in each specialist chapter and presented as a summary in Volume 2, Chapter 21: Cumulative Effects.

The EIAR has used a receptor-based approach and considered the proposed development as a whole. The assessment of effects is based on the source-pathway-receptor model. The EPA's 2022 Guidelines provide the following definitions with respect to these terms at 'Appendix I – Glossary of Terms':

- **'Source':** The activity or place from which an effect originates'.
- **'Pathway':** The route by which an effect is conveyed between a source and a receptor'.
- **'Receptor':** Any element in the environment which is subject to impacts'.

The assessment criteria used generally follow the EC 2017 Guidance and EPA 2022 Guidelines. As per the EPA 2022 guidance, the EIAR focuses on likely significant effects, i.e. those that are probable or likely to occur. As noted in Section 3.7.3 of the EPA guidance, the significance of effects is usually understood to mean *"the importance of the outcome of the effects (the consequences of the change). Significance is determined by a combination of (objective) scientific and subjective (social) concerns"*.

In addition, the EPA 2022 guidance notes that *"while guidelines and standards help ensure consistency, the professional judgement of competent experts can play an important role in the determination of significance. These experts may place different emphases on the factors involved. As this can lead to differences of opinion, the EIAR sets out the basis of these judgements so that the varying degrees of significance attributed to different factors can be understood"*.

Each of the assessment chapters sets out how significance is determined for that particular environmental topic, following topic-specific methodology and based on applicable standards and approaches, with consideration given the EPA 2022 Guidelines. The assessment chapters also highlight where alternative guidance to the EPA guidance and professional judgement have been used. The assessment chapters highlight where varying degrees of significance have been assigned for different factors. It is noted that the EPA 2022 guidance uses the terms effects and impacts interchangeably.

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The description of the likely significant effects in each of the assessment chapters generally follows Table 3.4 of the EPA 2022 guidance unless otherwise stated and described. In general, “significant”, “very significant” and “profound” effects are interpreted as “likely significant effects” in EIA terms. “Moderate” effects may or may not be considered “likely significant effects” in EIA terms, it will be up to the competent expert to determine what is appropriate for that particular assessment.

Table 3.4 of the EPA 2022 guidance has been as reproduced in Table 2.2 of this chapter below. The EPA 2022 guidance notes that all categories of terms do not need to be used for every effect.

Figure 3.4 of the EPA 2022 guidance (replicated as Image 2.2 below) shows how combining the character of the predicted impact with the sensitivity of the receiving environment can determine the significance of the effect. The guidance notes that the depiction of significance classification is indicative and should not be relied on as being definitive. It is provided for general guidance purposes.

Assessment Criteria	
Quality of Effects	
It is important to inform the non-specialist reader whether an effect is positive, negative or neutral	Positive Effects A change which improves the quality of the environment (for example, by increasing species diversity, or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
	Neutral Effects No effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
	Negative/Adverse Effects A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance).
Significance of Effects	
‘Significance’ is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful (also see Figure 2.2 below).	Imperceptible An effect capable of measurement but without significant consequences.
	Not Significant An effect which causes noticeable changes in the character of the environment but without significant consequences.
	Slight Effects An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
	Moderate Effects An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.

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Assessment Criteria	
	Significant Effects An effect which, by its chapter, magnitude, duration or intensity, alters a sensitive aspect of the environment.
	Very Significant An effect which, by its chapter, magnitude, duration or intensity, significantly alters a sensitive aspect of the environment.
	Profound Effects An effect which obliterates sensitive characteristics.
Extent and Context of Effects	
Context can affect the perception of significance. It is important to establish if the effect is unique or, perhaps, commonly or increasingly experienced.	Extent Describe the size of the area, the number of sites and the proportion of a population affected by an effect.
	Context Describe whether the extent, duration or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)
Probability of Effects	
Descriptions of effects should establish how likely it is that the predicted effects will occur so that the CA can take a view of the balance of risk over advantage when making a decision.	Likely Effects The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
	Unlikely Effects The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Duration and Frequency of Effects	
‘Duration’ is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful.	Temporary Effects Effects lasting less than a year.
	Short-term Effects Effects lasting one to seven years.
	Medium-term Effects Effects lasting seven to fifteen years.
	Long-term Effects Effects lasting fifteen to sixty years.
	Permanent Effects Effects lasting over sixty years.

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Assessment Criteria	
	Reversible Effects Effects that can be undone, for example through remediation or restoration.
	Frequency of Effects Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually).
Types of Effects	
	Indirect Effects (aka Secondary or Off-site Effects) Effects on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.
	Cumulative Effects The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects.
	‘Do-nothing Effects’ The environment as it would be in the future should the subject project not be carried out.
	‘Worst-case’ Effects The effects arising from a project in the case where mitigation measures substantially fail.
	Indeterminable Effects When the fully consequences of a change in the environment cannot be described.
	Irreversible Effects When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.
	Residual Effects The degree of environmental change that will occur after the proposed mitigation measures have taken effect.
	Synergistic Effects Where the resultant effect is of greater significance than the sum of its constituents (e.g. combination of Sox and NOx to produce smog).

Table 2.2: Description of Effects (Source: Table 3.4 of the 2022EPA Guidelines)

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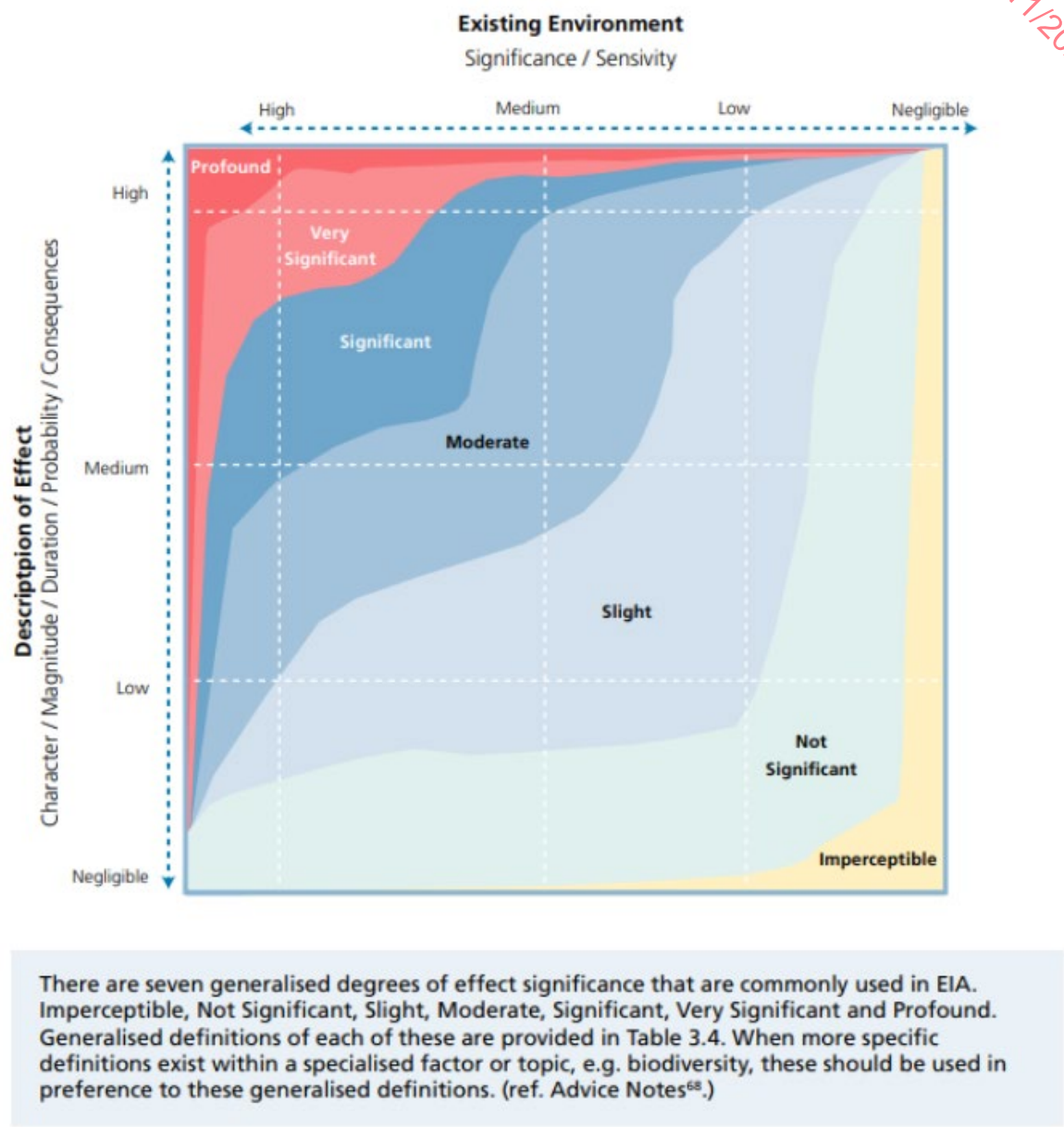


Figure 2.2: Chart Showing Typical Classifications of the Significance of Effects [Source: Figure 3.4 of the EPA’s 2022 Guidelines]

2.8 Baseline Assessment

Annex IV(3) of the 'EIA Directive', as amended, requires 'a description of the relevant aspects of the current state of the environment, referred to as the 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'.

The Baseline Assessment is an assessment of the current state of the environment and how this is likely to evolve without the proposed project but having regard to existing and approved projects and likely significant cumulative effects – in other words the 'do nothing' scenario.

Within each technical chapter, the standard recognised methodology used in establishing the baseline scenario is documented in detail to enable replicable monitoring in the future, so that the future assessment results can be appropriately compared.

2.9 Identification of Potential Receptors

A receptor is defined in the EPA Guidelines 2022 as "*any element in the environment which is subject to impacts*". The environmental impact will depend on the relationship between the source, the available pathway and the sensitivity of the receptor identified. Topic specific receptors have been identified in each technical chapter.

2.10 Mitigation and Monitoring

Annex IV(7) of the EIA Directive, as amended, requires that the EIAR should include a description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced, or offset, and should cover both the construction and operational phases.

The magnitude of impact and significance of the likely environmental effects are evaluated and where required appropriate measures to mitigate potential adverse effects are proposed. This involves an iterative approach in which a feedback loop is used to initially assess a significant adverse effect, followed by incorporation of mitigation measures to avoid impacts or to reduce impacts to acceptable levels in order to reduce the magnitude of the impact. This process is repeated until the effect is no longer significant. This iterative approach to the impact assessment process has been used as a means of informing the design of the proposed development.

Embedded mitigation measures are those that are identified and adopted as part of the evolution of the proposed development's design and operation of the project. Such measures are considered in the significance of effect assessment (i.e. they are assumed to form part of the design of the proposed development prior to any

assessment). Embedded measures also include industry best practice that would be incorporated into most offshore wind farm developments.

Additional mitigation measures are those that are identified during the impact assessment process specifically to reduce or eliminate any predicted significant adverse effects. Additional mitigation measures are therefore subsequently adopted for the proposed development as a project commitment. The assessment of residual effects includes incorporation of additional mitigation measures.

A summary schedule of all proposed mitigation and monitoring measures is included in Volume 2: **Chapter 22**.

2.11 Residual Impacts

The residual impacts are the final predicted or intended effects which occur after the proposed mitigation measures have been implemented. Residual impacts that remain once additional mitigation has been implemented are discussed in each technical chapter within this EIAR.

2.12 Cumulative Effects

The consideration of potential cumulative effects is an important stage in the EIA process. Although the proposed development may not result in significant residual effects in isolation, when the proposed development is considered cumulatively with other existing and/or approved projects, significant residual effects may occur.

Annex IV of the EIA Directive (2011/92/EU as amended by 2014/52/EU) requires that an EIAR provides a

“description of the likely significant effects of the project on the environment resulting from...the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources.” Further, the EPA 2022 Guidelines define cumulative effects as: ‘The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects.’

As required by Article 3 of the EIA Directive, an assessment of environmental interactions, which are reactions between impacts, whether between the impacts of the proposed development or between the impacts of other projects, is to be undertaken.

A long list of “other existing and/or approved projects” which were deemed to be potentially relevant to be included in the cumulative impact assessment was compiled.

A screening exercise of the “long list” was carried out in order to determine whether each of those other projects have the potential to give rise to likely significant cumulative effects for each of the environmental topics in

combination with the proposed development. Many of the other projects were screened out for a number of reasons including the location, scale and nature of the project as described in the individual chapters. Those projects which were “screened in” were carried forward and assessed in the cumulative assessment. Cumulative effects are assessed and discussed within each technical chapter in this EIAR.

2.13 Inter-related Effects (or interactions)

The inter-related (or interactions) between different environmental effects have been considered the throughout the individual assessment chapters, refer to the section titled ‘Potential Effects’ in the chapter. The ‘Potential Effects’ section describes all direct, indirect and inter-related effects for the construction, operation and decommissioning phase as relevant throughout the EIAR as per Section 3.7.6 of the EPA 2022 guidelines EPA EIA guidance (2022), which states:

“The interactions between effects on different environmental factors should be addressed as relevant throughout the EIAR. For example, where it is established in the Hydrology section that there will be an increase in suspended solids in discharged surface waters during construction, then the Biodiversity section should assess the effect of that on sensitive aquatic receptors. Close coordination and management within the EIA team is needed to ensure that interactions are adequately addressed throughout an EIAR”.

The interactive effects were identified by each EIA competent expert based on their knowledge of the topic and after extensive communication and information sharing between all EIA competent experts and the EIA management team to ensure the interactions have been adequately addressed throughout the EIAR. Such interactions are assessed and are presented in **Chapter 20**.

2.14 Major Accidents and Disasters

Article 3 of the amended Directive requires that an EIAR shall include “...the expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned”.

The purpose of this requirement is to ensure that relevant safety and precautionary measures are identified so as to protect the proposed project in the event of a major accidents and/or disasters (MADs) and that appropriate mitigation measures are incorporated to the protect the environment, if such an event were to occur.

The Institute of Environmental Management and Assessment’s (IEMA) document, ‘Major Accidents and Disasters in EIA: A Primer’, dated September 2020, provides helpful guidance in terms of scoping a MAD into an EIAR:

“A major accidents and/or disasters assessment will be relevant to some developments more than others, and for many developments it is likely to be scoped out of the assessment”.

The EIAR addresses these requirements comprehensively in Chapter 19, which is supported by a detailed Land Use Assessment. This assessment considers the specific risks associated with the project's vulnerability to major accidents and disasters, ensuring relevant safety measures and environmental protections are integrated.

2.15 Appropriate Assessment

Whilst not part of the EIA process, an Appropriate Assessment shall be carried out by the competent authority for the proposed development pursuant to Article 6 of the Habitats Directive (council directive 92/43/EEC). The AA process is carried out to allow the competent authority to assess whether a proposed development, plan or programme is likely to have significant effects on European Sites which are designated for their nature conservation objectives.

A Screening for Appropriate Assessment and a Natura Impact Statement (NIS) has been prepared by the Applicant to accompany this application to Tipperary County Council. This document(s) contains the necessary information required for the competent authority to undertake the AA of the proposed development. Whilst there is the potential for some repletion between these two documents and the EIAR, they do not form part of the EIA process. Both the EIA process and AA process are independent of each other and are therefore these two documents are only mentioned or discussed in the EIAR where additional context is required to be provided. Designated sites are considered within each of the relevant EIAR technical chapters where necessary.

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2.16 References

- Department of Housing, Planning, Community and Local Government (2018) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment.
- Department of Housing, Planning, Community and Local Government (2017) Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licensing Systems.
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