AQUIND Limited

PEIR CHAPTER 4

EIA Methodology

CONTENTS

TABLES

4 EIA METHODOLOGY

4.1 INTRODUCTION

4.1.1.1 The approach to the assessment of the Proposed Development to identify the preliminary environmental information presented in this PEIR is outlined in this chapter.

4.1.1.2 This preliminary assessment of environmental impacts has been conducted in accordance with relevant best practice guidance (see 4.1.1.3 below). The following key stages form the basis of the assessment process:

- Consultation with statutory and non–statutory bodies and relevant stakeholders;
- Establishing a robust environmental baseline through desk-based assessment and surveys and identifying any future trends;
- Assessment of the environmental impacts (their significance, including any indirect, secondary and cumulative impacts);
- Development of mitigation measures and enhancement measures (where necessary); and
- Identification of residual environmental impacts.

4.1.1.3 The assessment has been carried out in accordance with the requirements of the EIA Regulations. In addition, the approach to the EIA and production of the PEIR has had regard to the guidance and advice provided within the following:

- National Infrastructure Advice Notes in relation to the PA 2008 process;
- Overarching National Policy Statement for Energy (EN-1) (Department of Energy and Climate Change, 2011);
- Relevant guidance issued by other government and non-governmental organisations;
- Environmental topic specific guidance documents for example Chartered Institute of Ecology and Environmental Management ('CIEEM') Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal (CIEEM, 2016);
- Guidelines for Environmental Impact Assessment (IEMA, 2004);
- Special Report – The State of Environmental Impact Assessment in the UK – (IEMA, 2011);
- Delivering Proportionate EIA: A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice (IEMA, 2017); and
- Environmental Impact Assessment Guide to: Delivering Quality Development (IEMA, 2015).

4.1.1.4 This PEIR reports preliminary information on the likely significant environmental effects that have the potential to result as a consequence of the construction, operation and decommissioning of the Proposed Development. The final assessment conclusion on likely significant effects will be reported in the ES to be submitted in support of the application for development consent for the Proposed Development. The EIA process is iterative, as the assessment assists to inform the design evolution and thereby reduce adverse environmental effects.

4.1.1.5 Mitigation measures to prevent or reduce effects (either through scheme design or adoption of certain installation methodologies) are proposed where adverse impacts are identified.

4.2 FORMAT OF THE PEIR CHAPTERS

4.2.1.1 The environmental topics considered as part of this PEIR are included in Chapters 6 to 27. This comprises both onshore and marine environmental topics.

4.2.1.2 The reporting of preliminary environmental information within each chapter, where practicable, follows a standard structure as outlined below:

- Scope of the assessments;
- Legislation, policy and guidance;
- Scoping opinion and consultations;
- Methods of assessment;
- Baseline environment;
- Predicted impacts;
- Proposed mitigation;
- Likely residual effects;
- Summary and Conclusions; and
- Assessments and surveys still to be undertaken.

4.3 BASELINE INFORMATION

4.3.1.1 For each of the topics being assessed, the environmental baseline of the relevant study areas has been established. This has been achieved through consultation with relevant authorities and organisations, a desktop review of available data including that generated from consultations, and interpretation of specialist field surveys.

4.3.1.2 Baseline surveys have been and continue to be carried out by specialist consultants in a number of different study areas, in line with the methodologies outlined in the PEIR topic chapters. These surveys will gather sufficient data to form a comprehensive baseline of the environment surrounding the Proposed Development, filling in any gaps in existing data. They will enable the assessment of the potential effects of Proposed Development upon the environment.

4.3.1.3 The methodologies for individual topic assessments and the extent of study areas for those topics are being developed in consultation with statutory bodies and individual stakeholders to ensure the most appropriate techniques. The baseline studies and surveys are coordinated to ensure that, where they study separate elements of interacting systems, the methodologies and extent are compatible with one another and provide common data that allow the description and understanding of those systems. This then allows the prediction of indirect effects as well as direct effects of the development on sensitive receptors.

4.4 ASSESSMENT OF THE PROPOSED DEVELOPMENT

4.4.1.1 This PEIR outlines the assessment of the Proposed Development that has been undertaken to date and what assessment is in progress at the time of consultation. The completed assessments will be included in the ES. For the PEIR, the level of assessment undertaken per technical discipline varies depending on the level of baseline information collected to date and also level of design detail available at this stage.

4.4.1.2 The assessment considers effects at the construction, operation and decommissioning stages. The definitions of these are presented below:

- **Construction (Site Preparation and Installation):** Site preparation includes work required to prepare for construction including seabed preparation for marine works and demolition, earthworks, remediation (if required) and any archaeological excavation for onshore works. The construction stage includes all works associated with construction. It is known that the construction of the Proposed Development will extend over a number of years. Therefore, where feasible and where sufficient information exists, construction effects identified will be time bound and location specific;
- **Operation:** This relates to effects once the Proposed Development is installed and in use; and
- **Decommissioning:** This relates to effects at the end of operation as the Proposed Development is shut down.

4.4.1.3 Information relating to phasing will not be applicable to the assessment process for all technical disciplines. At this stage design details are still emerging, including the phasing programme for the construction of the Proposed Development. Details of the phasing programme for the construction of the Proposed Development will be included within the ES, including when it is anticipated construction of the Proposed Development will complete.

4.4.2 DETERMINING THE SIGNIFICANCE OF EFFECTS

4.4.2.1 Several criteria are used to determine the significance of the potential effects of the Proposed Development and whether or not they are 'significant'. The effects will be assessed quantitatively wherever possible.

4.4.2.2 The significance rating for an effect will take account of the following criteria:

- Likelihood of occurrence;
- Geographical extent;
- Adherence of the proposals to legislation and planning policy;
- Adherence of the proposals to international, national and local standards;
- Sensitivity of the receiving environment or other receptor;
- Value of the affected resource;
- Whether the effect is temporary or permanent;
- Whether the effect is short, medium, or long-term in duration;
- Whether the effect is reversible or irreversible; and
- Inter-relationship between effects (cumulatively, transboundary and in terms of potential effect interactions).

4.4.2.3 In determining the significance of a potential effect, the magnitude of impact arising from the Proposed Development is correlated with the sensitivity of the particular environmental attribute under consideration.

4.4.3 MAGNITUDE

4.4.3.1 The magnitude relates to the level at which the receptor will be impacted, using the duration of the impact, timing, scale, size and frequency to determine the magnitude of the impact to each receptor. Magnitude of impact is evaluated in accordance with the definitions set out in Table 4.1 below. The definitions of magnitude in Table 4.1 are generic and may be more specific for some receptors (e.g. marine mammals). Any deviations from these definitions have been included in the assessment chapters where relevant.

Table 4.1 - Definitions of 'magnitude' of impact

Magnitude of Impact	Definition
High	Total loss or major alteration to key elements/features of the baseline (i.e. pre-development) conditions.
Medium	Partial loss or alteration to one or more key elements/features of the baseline (i.e. pre-development) conditions.
Low	Minor shift away from baseline (i.e. pre-development) conditions.
Negligible	Very slight change from baseline (i.e. pre-development) conditions.

4.4.4 SENSITIVITY

Value/Sensitivity

4.4.4.1 The value/sensitivity is a means to measure how sensitive a receptor is to change. The sensitivity is assigned at the receptor level, and as such details will be provided within the receptor specific assessments presented in the PEIR. This may be defined in terms of quality, value, rarity or importance, and be classed as negligible, low, medium, or high. For certain assessment areas, guidance can be taken from value attributed to elements through designation or protection under law, e.g. ecological resources given various levels of protection under law.

4.4.5 SIGNIFICANCE

4.4.5.1 For the assessments, the correlation of the magnitude of change to the environment against the sensitivity of the particular receptor determines a qualitative expression for the significance of the effect, which determines the relevance of the effects to the terms that are used in this PEIR to assess significance.

4.4.5.2 The significance of effect has, save where stated otherwise in individual topic chapters, been determined using the matrix below in Table 4.2.

Table 4.2 – Matrix for classifying the significance of effects

		Sensitivity of receptor/receiving environment to change			
		High	Medium	Low	Negligible
Magnitude of Change	High	Major	Major to Moderate	Moderate	Negligible
	Medium	Major to Moderate	Moderate	Minor to Moderate	Negligible
	Low	Moderate	Minor to Moderate	Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

4.4.5.3 The significance of the effect has been qualified where appropriate with respect to the international, national, regional or local scale over which it may be felt. The significance of an effect may also be affected by its duration (e.g. the length of the installation period) and by its reversibility, i.e. the degree to which a site could be returned to its baseline conditions following decommissioning.

4.4.5.4 The significance of effects reflects judgements as to the importance or sensitivity of the affected receptor(s) and the nature and magnitude of the predicted changes.

4.4.5.5 A standard outline methodology has been adopted, wherever possible, in order to identify the significance of potential effects. This methodology can be refined to be topic specific for individual assessments according to best practice and guidance for certain technical disciplines. This section therefore offers a broad outline of the methodology and further detail is provided in the individual PEIR topic chapters where appropriate.

4.4.5.6 Best practice and guidance requires that certain technical disciplines are required to follow topic-specific criteria for determining significance. Where this is the case, the criteria to be used has been presented clearly in the EIA methodology section of the specific topic chapters within the PEIR or where appropriate within technical assessments.

4.4.5.7 In accordance with the matrix provided at Table 4.2, the following terms have been used in the PEIR, unless otherwise stated within individual chapters, to determine describe the significance of effects:

- **Major positive or negative effect** – where the Proposed Development would cause a large improvement (or deterioration) to the existing environment which will likely (but not exclusively) feature nationally or internationally important assets;
- **Major/Moderate positive or negative effect** – where the Proposed Development would cause a noticeable improvement or deterioration to the existing environment at a national or regional scale;
- **Moderate positive or negative effect** – where the Proposed Development would cause a noticeable improvement (or deterioration) to the existing environment at a regional or local scale;
- **Minor positive or negative effect** – where the Proposed Development would cause a small improvement (or deterioration) to the existing environment; and
- **Negligible** – no discernible improvement or deterioration to the existing environment as a result of the Proposed Development will occur.

4.4.5.8 Effects deemed to be significant for the purpose of assessment are those which are described as '**major**' and '**moderate/major**'. In addition, '**moderate**' effects can also be deemed as significant. Whether they do so shall be determined by a qualitative analysis of the specific impact to the environment that is identified. How significance has been determined has been detailed within each technical assessment of the PEIR, as appropriate.

4.4.5.9 Residual effects are those effects that remain from the predicted impacts of the Proposed Development once mitigation and any enhancements have been implemented.

4.5 PROPOSED MITIGATION

4.5.1.1 The principle adopted during the identification of mitigation measures is one of avoidance if possible, reduction where avoidance cannot be achieved, or compensation where reduction cannot be achieved or would not achieve practicable levels of mitigation.

4.5.1.2 Where possible to do so, mitigation that is inherent to the design has been identified and is distinct from mitigation that is in addition to the original proposals. The PEIR will discuss potential enhancement and mitigation measures being considered for the Proposed Development. The ES will go into further detail on this aspect, confirming the mitigation required.

4.5.1.3 The PEIR references both embedded mitigation and potential mitigation of resulting effects (to be secured through DCO Requirements), as identified at this stage of assessment, as defined below.

4.5.1.4 Embedded Mitigation is inherent within the design of the Proposed Development, provided as routine or as a standard requirement for a development. Where possible, baseline data, including environmental surveys, and preliminary assessment work has fed into the optioneering and design process, in order to optimise the Proposed Development, where practicable. At this stage, further surveys are still required which will continue to influence design as the Onshore Cable Route is further refined and micro-sited, as necessary. For example, the Proposed Development will be designed to alleviate rainwater run-off to a rate that is acceptable to the Environment Agency and this will be incorporated within the design regardless of any assessment identifying whether it is necessary to do so to mitigate the effects of the Proposed Development.

4.5.1.5 Mitigation of resulting effects differs from embedded mitigation insofar that it is defined in this assessment as being required as a result of the location and characteristics of the Proposed Development, and is subsequently not inherent within the design of the Proposed Development. A visual screening bund is a form of mitigation in so far that it would only be employed in specific locations and never as a matter of course. Mitigation measures may be expressed as ‘commitments’ and will be binding obligations enforceable pursuant to management documents, imposed by requirements within the DCO.

4.5.1.6 The mitigation strategy comprises steps identified in Table 4.3.

Table 4.3 – Mitigation Strategy

Avoidance	Where viable, the Proposed Development will be redesigned to avoid impacts. This will also be considered during the assessment of alternative sites/routes.
Reduction	Reduction will be considered when all options for the avoidance of impacts have been exhausted or deemed impractical.
Compensation	Where the potential for avoiding and reducing impacts has been exhausted, consideration will be given to compensating for residual impacts to make the proposal more environmentally acceptable.
Remediation	Where adverse effects are unavoidable, consideration will be given to limiting the level of impact by undertaking remedial work.

4.6 ASSESSMENTS AND SURVEYS STILL TO BE UNDERTAKEN

4.6.1.1 Where further survey data is to be collated, or further assessment remains to be undertaken as part of the ES, this is identified at the end of each PEIR chapter. The PEIR reports the assessment of the Proposed Development that has been undertaken to date. The ES will report on the final assessment and conclusions.

4.7 ASSESSMENT OF POTENTIAL CUMULATIVE AND TRANSBOUNDARY IMPACTS

4.7.1.1 The EIA Regulations require the likely significant environmental effects of a development to be considered cumulatively, including the interaction of different effects on individual receptors and also the effects of the Proposed Development in combination with effects as a consequence other approved or foreseeable projects.

4.7.1.2 While a single effect may in isolation not result in a significant impact, it may, when combined with other impacts to the same receptor group (significant or insignificant) that are occurring at the same time, result in a cumulative impact that is significant.

4.7.1.3 Consideration is given to the identification of reasonably foreseeable cumulative impacts from the Proposed Development and other committed developments in the vicinity. Impacts can arise either from cumulative effects (the same effect from several sources) which will include synergistic effects (combined effects that lead to an increased effect greater than the individual effects), additive effects (where the magnitude of combined effects equal the sum of individual effects, or from in-combination effects (interaction or inter-relationship of different effects from different sources) or transboundary effects (where impacts are not limited to national jurisdictions).

4.7.1.4 The Cumulative Effects Assessment, to be undertaken at the ES stage, will consider each technical assessment for each topic and the potential for cumulative or in-combination effects (at receptor level). Cumulative effects will be considered in terms of:

- **Intra-project effects**: The interaction and combination of environmental effects, and indirect effects of the Proposed Development affecting the same receptor, either within the Site or in the local area; and
- **Inter-project effects**: The interaction and combination of environmental effects of the Proposed Development with committed projects and activities affecting the same receptor. Committed development is defined as development for which planning consent has been granted or in some instances may include foreseeable development currently under planning determination.

4.7.1.5 PINS Advice Note seventeen (Planning Inspectorate, 2015) provides guidance on how to undertake a cumulative impact assessment ('CIA') and outlines that the following types of projects should be considered:

- Tier One – permitted projects under construction; permitted projects but not yet implemented; submitted applications not yet determined.
- Tier Two – Projects on PINs Programme of Projects which have submitted a scoping report.
- Tier Three – Projects on PINs Programme of Projects which have not yet submitted a scoping report; development identified in Development Plans and emerging Development Plans; development identified within plans and programmes which are reasonably likely to be brought forward.

4.7.1.6 PINS Advice Note seventeen also identifies a four-stage process to assess Cumulative Effects. The advice note advises the following staged approach:

- **Stage 1:** Establishment of the Proposed Development's Zone of Influence and production of a list of third-party developments that qualify for consideration under the three tiers outlined above;
- **Stage 2:** Refinement of a shortlist of appropriate third-party developments that have the potential for a significant environmental effect thorough cumulative interacting with the Proposed Development;
- **Stage 3:** Relevant and available information on the third-party developments identified in Stage 2 will be gathered.
- **Stage 4:** Assessment will be undertaken of the effect interactions that may occur between the different environmental topics between the Proposed Development and third-party developments.

4.7.1.7 The cumulative assessment will be undertaken in accordance with the guidance where appropriate and will be considered on a topic by topic basis (e.g. to establish zones of influence).

4.7.1.8 A short list of third-party developments that have the potential for significant cumulative environmental effects (analogous to Stage 2 in Advice Note 17) have been identified for each chapter as part of this PEIR and information regarding cumulative effects is provided in Chapter 28 Cumulative Effects of this PEIR. For certain chapters within the PEIR an assessment of the potential significance effects has been undertaken. Full reporting on the significant cumulative effects of the Proposed Development will be presented in the ES.

4.7.2 TRANSBOUNDARY EFFECTS

4.7.2.1 The EIA Regulations require a description to be provided of any transboundary impacts that will be experienced as a consequence of the Proposed Development. The assessment of transboundary effects will be of effects experienced in other European Economic Area ('EEA') States as a consequence of the Proposed Development and will not consider any effects experienced in other EEA States as a consequence of the parts of the Project located within France in isolation.

4.7.2.2 Assessment of transboundary effects will include any effects experienced in other EEA states that arise in combination with cumulative projects in France.

4.7.2.3 The potential for transboundary effects will be considered more fully on a topic by topic basis in the technical chapters of this PEIR and the ES.

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