

# **BERWICK BANK WIND FARM ONSHORE ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

Chapter 2: Approach to EIA

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## 2. APPROACH TO EIA

### 2.1. INTRODUCTION

1. This chapter sets out the approach that has been taken to produce the Environmental Impact Assessment (EIA) Report for the Berwick Bank Wind Farm Onshore Transmission Works (OnTW) (the Proposed Development). Specifically, this chapter describes the methodology that has been used for the identification, evaluation and assessment of likely significant environmental effects (as defined in the EIA Regulations, 2017) and presents the proposed methodology for the identification, evaluation and assessment of likely significant cumulative and inter-related effects during the construction, operational and maintenance, and decommissioning phases. A systematic and auditable evidence-based approach was followed to identify and evaluate the potential effects on physical, biological, archaeological, climate, and human receptors within the EIA.
2. This chapter is supported by the following appendices:
  - Volume 4, Appendix 2.1: EIA Scoping Report;
  - Volume 4, Appendix 2.2: EIA Scoping Opinion;
  - Volume 4, Appendix 2.3: Consultation; and
  - Volume 4, Appendix 2.4: Cumulative Developments.

### 2.2. REGULATIONS & GUIDANCE

3. The EIA Regulations, 2017 set out when an EIA is required. This may be either where the development is of (a) a type listed in Schedule 1 or (b) a type listed in Schedule 2 likely to have significant effects on the environment by virtue of factors such as its nature, size or location.
4. The Proposed Development is considered to be a Schedule 2 development within the EIA Regulations, 2017. Schedule 3 of the EIA Regulations, 2017 sets out the criteria that should be considered in determining whether a development is likely to have significant environmental effects and hence require an EIA to be undertaken. In consideration of the EIA Regulations, 2017, the Applicant accepts that the Proposed Development falls under the criteria set out in Schedule 3 and therefore the Applicant has voluntarily undertaken an EIA.
5. In addition to the legislative requirements listed above, guidance and best practice documents have been referred to, to assist with the production of a robust and proportionate EIA. Topic specific documents are detailed in Volume 1, Chapters 6-14, while overarching EIA guidance documents are listed below:
  - IEMA Environmental Impact Assessment Guide to Shaping Quality Development (IEMA, 2015);
  - IEMA Environmental Impact Assessment Guide to Delivering Quality Development (IEMA, 2016);
  - Delivering Proportionate EIA, A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice (IEMA, 2017);
  - Planning Advice Note (PAN) 1/2013 Environmental Impact Assessment (Scottish Government, 2017); and
  - A Handbook on Environmental Impact Assessment (Scottish Natural Heritage (SNH)<sup>1</sup>, 2018).

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<sup>1</sup> As of August 2020, rebranded to NatureScot.

## 2.3. CONSULTATION

6. Consultation is a key component of the EIA process. Consultation with statutory and non-statutory consultees has been undertaken by the Applicant since the feasibility stages of the Proposed Development.
7. The Applicant has continually engaged through both formal consultation (such as the request for an EIA Scoping Opinion) and informally with stakeholders via meetings, calls and emails. Details of the consultation undertaken with consultees to date including during EIA Scoping can be found in Volume 4, Appendices 2.1 – 2.3 and within each technical chapter.
8. The Applicant has also consulted with the general public throughout the design of the Proposed Development. A standalone pre-application consultation (PAC) report has been prepared which gives details of the correspondence, public exhibitions and other discussions which have taken place with the communities closest to the Proposed Development site. The report also details findings of that work and illustrates the ways in which community engagement has helped identify potential challenges arising from the Proposed Development and, where appropriate, shape the final proposal which is now the subject of this application.
9. The Applicant is grateful to residents and local representatives for their input into the pre-application community engagement process and for their participation in the discussions and consultation events.
10. All consultation has been considered during the development of the scope of the EIA Report and the design of the Proposed Development where appropriate.

## 2.4. EIA PROCESS

11. The findings of the assessment are presented in this EIA Report, which has been prepared in accordance with the EIA Regulations, 2017.
12. The broad approach which has been followed in undertaking the EIA is presented in this chapter and an overview of the methodology adopted for each technical study is provided within the respective EIA Report technical chapters.

### 2.4.1. SCREENING

13. EIA Screening is the process by which it is determined whether or not an EIA should be conducted for the Proposed Development.
14. A formal Screening Opinion was not sought from East Lothian Council (ELC), as the Applicant considers that an EIA should be undertaken for the Proposed Development (see Section 2.2).

### 2.4.2. SCOPING

15. The EIA Scoping process is undertaken to identify the potential environmental impact pathways and receptors which should be considered when assessing the likely significant effects of the Proposed Development. An EIA Scoping Opinion may be obtained from the planning authority (in the case of the Proposed Development, ELC) which would set out the matters to be considered through the EIA.
16. The Applicant requested an EIA Scoping Opinion from ELC in August 2020 through the submission of an EIA Scoping Report (Volume 4, Appendix 2.1), prepared by the EIA Project Team. This EIA Scoping Report contained details of the environmental baseline and indicative details of the Proposed Development. It also proposed which environmental

effects would be assessed in the EIA, and the assessment methodologies that would be used.

17. ELC consulted with statutory and a variety of non-statutory consultees before providing an EIA Scoping Opinion in October 2020 (Volume 4, Appendix 2.2). This information has been used to inform the design of the Proposed Development and the EIA Report is based on the EIA Scoping Opinion.
18. Direct consultation has also been undertaken with consultees, to confirm and agree the approach and scope of technical surveys and assessments on a topic-by-topic basis. Details of relevant consultations are included in each technical chapter and are detailed in Volume 4, Appendix 2.3 along with a summary of how comments received at Scoping have been addressed within the EIA.

### 2.4.3. ENVIRONMENTAL IMPACT ASSESSMENT

19. The preparation of the EIA Report is the systematic process of compiling, assessing and presenting all the likely significant environmental effects of a proposed development. The assessment is designed to inform the decision-making process by way of setting out the likely environmental profile of a project. Identification of potentially significant adverse environmental impacts informs the design of appropriate mitigation measures to be incorporated into both the design of the scheme and the way in which it is constructed and operated or monitored.
20. The main steps in the EIA Report assessment process for the Proposed Development have been as follows:
  - baseline surveys (where appropriate and possible) to provide information on the existing environmental characteristics of the relevant topic study area, covering the proposed site and/or the surrounding area, as appropriate for the relevant receptor and technical assessment;
  - consideration of the possible interactions between the Proposed Development and the existing and predicted future site conditions. These interactions or effects are assessed using stated criteria based on accepted guidance and best practice (Section 2.4.6);
  - using the available design parameters for the Proposed Development (detailed in Volume 1, Chapter 5), prediction of the likely environmental effects, including direct effects and any indirect, secondary, short, medium and long-term, permanent and temporary, beneficial and adverse effects;
  - identification of mitigation measures designed to avoid, reduce or offset adverse effects as well as enhancement measures that could result in beneficial effects. Assessment of alterations to the design and the reassessment of previously proposed mitigation to establish suitable mitigation for the Proposed Development;
  - assessment of the significance of any likely residual effects after mitigation, in relation to the sensitivity of the feature impacted upon and the magnitude of the impact predicted.
  - identification of any uncertainties inherent in the methods used, the predictions made, and the conclusions drawn during the course of the assessment process; and
  - reporting of the results of the EIA in this EIA Report.
21. EIA is an iterative process and through the identification of environmental receptors and the assessment of likely significant effects, it influences the design of the Proposed Development. It can also influence the proposed construction, operation and decommissioning methodologies to ensure the environmental impacts of the Proposed Development are removed or reduced, where reasonably practicable.
22. To achieve this, and to ensure a proportionate EIA, mitigation is classified into three types, as per IEMA's Guidance (2016):
  - primary – inherent mitigation which is part of the proposed development's design;

- secondary – foreseeable mitigation which requires further activity, identified through the EIA process, e.g. implementation of traffic management measures or planning conditions; and
- tertiary – inexorable mitigation which will be implemented regardless of the design process and the EIA, e.g. contractor standard industry practices which manage potential nuisance activities or compliance with statutory requirements.

23. All mitigation has been designed to be plainly and easily achievable. Further details on the types of mitigation are provided in Sections 2.4.5, 2.4.7, and 2.4.8.

#### 2.4.4. CHARACTERISATION OF THE ENVIRONMENTAL RECEPTORS (THE BASELINE)

24. The baseline environmental receptors for each technical topic were determined through consultation and a range of desk-based research and site surveys.
25. Following the identification of the environmental receptors their sensitivity was identified. The methodology for determining sensitivity differs between technical topics and is based on a number of factors which may include (depending on the topic):
- statutory or non-statutory designation;
  - prevalence;
  - vulnerability; and
  - usage.
26. An overview of the methodology adopted for each technical study is provided within the respective EIA Report technical chapters.

#### 2.4.5. IDENTIFICATION OF TERTIARY MITIGATION

27. To ensure a proportionate EIA, this EIA Report assumes that a range of mitigation measures will be embedded as part of the Proposed Development (tertiary mitigation). These mitigation measures will be undertaken by the Applicant and are therefore part of the Proposed Development, rather than in addition to the Proposed Development.
28. Volume 4, Appendix 15.1 provides the Schedule of Mitigation. This details the tertiary mitigation measures and any additional topic-specific mitigation measures which have been developed following the assessment within the EIA (secondary mitigation).

#### 2.4.6. ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

29. Throughout the assessment a distinction is made between the term ‘impact’ and ‘effect’. The EIA Regulations, 2017 refer to the requirement to describe the “*likely significant effects on the environment*”. An impact is defined as the likely change to the characteristics/nature of the receiving environment (the ‘receptor’), whereas the ‘effect’ relates to the significance of the impact. The level of significance of effect is determined by considering both the value of the receptor (its ‘sensitivity’) and the magnitude of the impact. These terms have been adopted throughout this EIA Report to present a consistent approach to the assessment and evaluation of effects and their significance.
30. One exception to this is the Landscape and Visual Impact Assessment in Volume 1, Chapter 6 which classifies the level of physical and perceptual change to the receiving environment as the ‘magnitude of change’ in line with the recommendations of the Guidelines for Landscape and Visual Impact Assessment third edition (GLVIA3) (Landscape Institute, 2013). However, this terminology should be considered interchangeable with “magnitude of impact”.
31. Within this EIA Report, the assessment of effects for each environmental topic takes into account the environmental impacts of both the construction/decommissioning and



operational phases of the Proposed Development and the environmental impacts should the Proposed Development not be consented (the do-nothing scenario). The technical chapters have considered the maximum design scenario for each phase as relevant to each individual technical assessment.

32. To determine whether or not the potential effects of the Proposed Development are likely to be 'significant' a number of criteria are used to inform the receptor sensitivity and magnitude of impact, which feed into the conclusion of significance. The criteria vary between topics but generally include the following considerations:
- international, national and local designations or standards;
  - relationship with planning policy;
  - sensitivity of the receiving environment;
  - whether the impact is direct or indirect / secondary;
  - spatial and temporal extent of the impact;
  - reversibility and duration of the impact; and
  - cumulative impacts.
33. Effects that are considered to be significant, prior to secondary mitigation but following the implementation of standard industry practice (tertiary mitigation), are identified within this EIA Report. The significance attributed to the resultant effect is informed by professional judgement, with consideration of the sensitivity of the affected receptor(s) and the nature and magnitude of the predicted changes/impacts. For example, a major adverse change/impact on a feature or site of low importance will have an effect of lesser significance than the same impact on a feature or site of high importance.
34. Table 2.1 is used as a guide to the relationship between the sensitivity of the identified receptor and the anticipated magnitude of an impact/change.

**Table 2.1 Matrix Used for the Assessment of the Significance of the Effect**

		Magnitude of Impact			
		Negligible	Low	Medium	High
Sensitivity of Receptor	Negligible	Negligible	Negligible to Minor	Negligible to Minor	Minor
	Low	Negligible to Minor	Negligible to Minor	Minor	Minor to Moderate
	Medium	Negligible to Minor	Minor	Moderate	Moderate to Major
	High	Minor	Minor to Moderate	Moderate to Major	Major
	Very High	Minor	Moderate to Major	Major	Major

35. Table 2.1 varies slightly from the corresponding table presented in the EIA Scoping Report (refer to Table 6.1 in Volume 4, Appendix 2.1). An additional level of sensitivity of 'very high' has been included to align with the methodology of the offshore EIA, allowing the assessments in the intertidal area to follow the same significance of effects methodology. The significance of effect for negligible to high sensitivity receptors remains as presented in the EIA Scoping Report. This addition was agreed in consultation with ELC in October 2021.
36. The following terms are used in the EIA Report, unless otherwise stated, to determine the level of effects predicted to occur:
- major beneficial or adverse effect – where the Proposed Development would result in a significant improvement (or deterioration) to the existing environment;
  - moderate beneficial or adverse effect – where the Proposed Development would result in a noticeable improvement (or deterioration) to the existing environment;

- minor beneficial or adverse effect – where the Proposed Development would result in a small improvement (or deterioration) to the existing environment; and
- negligible – where the Proposed Development would result in no discernible improvement (or deterioration) to the existing environment

37. Using professional judgement and with reference to the Guidance for Environmental Impact Assessment (IEMA, 2004), for the purposes of this assessment, a level of significance of effect of moderate or more will be considered to be 'significant' in terms of the EIA Regulations, 2017. A level of significance of effect of minor or less will be considered to be non-significant in terms of the EIA Regulations, 2017. Professional judgement will be used to determine whether an effect of minor-moderate significance is considered significant or non-significant in EIA terms. Any deviations from this approach are clearly stated within the individual technical chapters.
38. Summary tables that outline the predicted effects associated with an environmental topic, are provided at the end of each technical chapter of this EIA Report.

#### Maximum Design Values

39. The Project Design Envelope (PDE) approach (also known as the Rochdale Envelope approach) has been adopted for the assessment of the Proposed Development, in accordance with current best practice. This requires the assessment of likely significant effects of the realistic 'worst case' parameters of the Proposed Development, referred to as Maximum Design Values.
40. Volume 1, Chapter 5 sets out the PDE parameters and identifies the range of potential design values for relevant components of the Proposed Development. This approach enables the Proposed Development to be robustly assessed in accordance with legislative requirements and guidelines. For each of the topic chapters within this onshore EIA Report and for each effect assessed, the PDE considered will be the scenario which would give rise to the greatest potential effect (the Maximum Design Scenario). As detailed in Volume 1, Chapter 5, a micro-siting allowance of 50 m is being applied for and has been considered within the assessment of the PDE.

#### 2.4.7. IDENTIFICATION OF PRIMARY MITIGATION

41. Primary mitigation alters the design of the Proposed Development, or associated construction, operation or decommissioning methodologies in order to reduce or remove the potential significant effects. Primary mitigation is an intrinsic part of the design of the Proposed Development and as such is reported within Volume 1, Chapter 5.

#### 2.4.8. IDENTIFICATION OF SECONDARY MITIGATION

42. Where significant effects have been identified which cannot be mitigated through the implementation of the primary or tertiary mitigation, secondary mitigation has been identified to further remove/reduce the significant adverse effects.
43. This secondary mitigation, along with the tertiary mitigation have been compiled within a Schedule of Mitigation within Volume 4, Appendix 15.1 and the Applicant commits to implementing these mitigation measures.

#### 2.4.9. ASSESSMENT OF RESIDUAL EFFECTS

44. Following the identification of secondary mitigation measures, the assessment of effects has been reassessed to determine the residual effects using the same methodology as the assessment of the likely significant effects, but assuming the implementation of all proposed secondary mitigation.

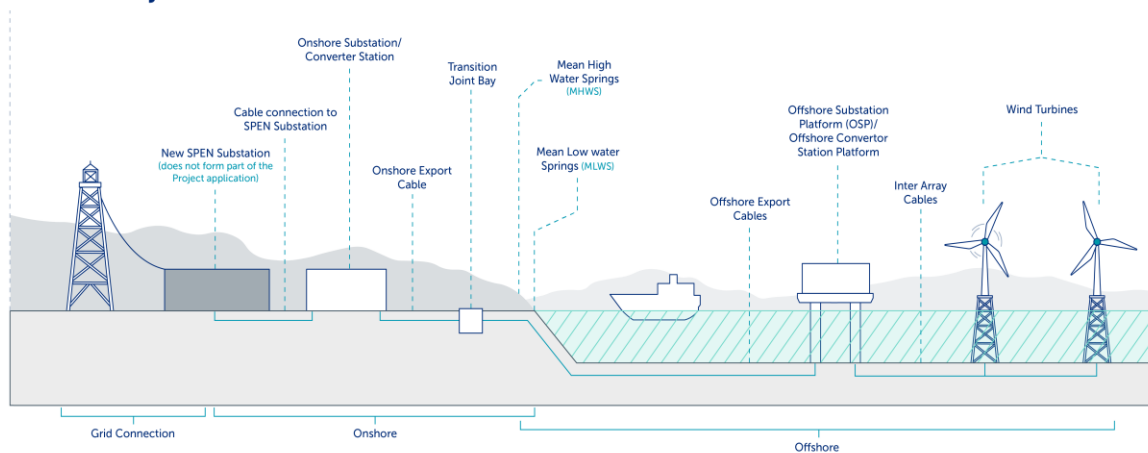
45. The output of the assessment of residual effects identifies the likely significance of effects in EIA terms.

#### 2.4.10. INTERTIDAL IMPACTS

46. The onshore consenting authority for the Proposed Development (ELC) has regulatory jurisdiction down to Mean Low Water Springs (MLWS) and the offshore consenting authority for the offshore components of the Project (Marine Scotland) has regulatory jurisdiction up to Mean High Water Springs (MHWS), therefore, there is an overlap in regulatory jurisdiction between MLWS and MHWS ('the intertidal area') (refer to Volume 2, Figure 2.1). Thus, there is an overlap in the study areas of certain onshore and offshore topics (refer to Diagram 2.1 below).

**Diagram 2.1 Intertidal Overlap in Onshore and Offshore EIA Report Topics**

#### Indicative Project Overview



Onshore EIA Report		Offshore EIA Report	
Physical Environment	Geology, Hydrology, Soils and Flood Risk	Physical Processes	
	Effects on Climate and Climate Vulnerability	Water Quality	
Biological Environment	Ecology	Effects on Climate and Climate Vulnerability	
	Ornithology	Benthic Subtidal and Intertidal Ecology	
Human Environment	Traffic and Transportation	Fish and Shellfish Ecology	
	Landscape and Visual	Marine Mammals	
	Cultural Heritage	Offshore and Intertidal Ornithology	
	Land Use, Tourism and Recreation	Commercial Fisheries	
	Socio-economics	Shipping and Navigation	
	Noise	Aviation, Military and Communications	
	Accidents and Disasters (considered in relevant onshore chapters)	Seascape, Landscape and Visual Resources	
		Cultural Heritage	
	Infrastructure and Other Users		
	Socio-Economics and Tourism		
	Noise (addressed in offshore biological environment topics)		
	Major Accidents and Disasters		

47. To avoid duplication of assessment within the intertidal area across the Onshore and Offshore EIA Reports, the Project EIA Teams have assessed and presented the impacts of the infrastructure within the intertidal area within either the Onshore or Offshore EIA Report on a topic-by-topic basis, with cross reference and a summary of any residual effects added to the corresponding chapter within the other EIA Report.

48. Impacts of onshore infrastructure landward of MHWS on receptors within the intertidal area have been assessed within the Onshore EIA Report.
49. This approach was agreed in consultation with ELC and Marine Scotland (refer to Volume 4, Appendix 2.3). Table 2.2 below sets out which EIA Report contains the detailed assessment of intertidal effects for each topic.

**Table 2.2 Location of Assessment of Intertidal Area**

	Onshore Topic	Offshore Topic	Location of Detailed Assessment
Physical Environment	Geology, Hydrology, Soils and Flood Risk	Physical Processes Water Quality	Within the Offshore EIA Report
	Climate Change	Climate Change	N/A – single Project wide assessment
Biological Environment	Ecology and Ornithology	Benthic Subtidal and Intertidal Ecology Fish and Shellfish Ecology Marine Mammals Ornithology	Within the Offshore EIA Report
Human Environment	Traffic and Transport	Commercial Fisheries Shipping & Navigation Aviation, Military and Communications	N/A – No intertidal overlap in impacts
	Cultural Heritage	Cultural Heritage Settings	Within the Onshore EIA Report
	Landscape and Visual	Seascape and Visual Resources	N/A – No intertidal overlap as there is no visible infrastructure within the intertidal area, therefore no impacts
	Land Use, Tourism and Recreation	Infrastructure and Other Users	N/A – No intertidal overlap in impacts
	Socio-economic	Socio-economic and Tourism	N/A – No intertidal overlap in impacts
	Noise	Addressed in the offshore biological environment topics	N/A
	Addressed in the onshore physical environment topics	Major Accidents and Disasters	N/A

#### 2.4.11. INTER-RELATED EFFECTS

50. Within the EIA Report, consideration has been given to the inter-relationship of effects between topics (e.g., effects which are inter-related for an ecology and hydrology receptor). The assessment of potential inter-related effects has considered two levels of effects:
- Proposed Development lifetime: effects within a topic occurring throughout the lifetime of the Proposed Development, across more than one phase (construction, operation and decommissioning); and
  - receptor led: cross topic effects that interact spatially and/or temporally resulting in greater effects upon a single receptor than when considered in isolation.
51. Identified inter-related effects are detailed within Volume 4, Appendix 15.2.

## 2.4.12. CUMULATIVE EFFECTS ASSESSMENTS

52. A cumulative effects assessment (CEA) is a requirement under the EIA Regulations, 2017. A CEA provides consideration of the impacts arising from the Proposed Development alone and cumulatively with other relevant developments. Cumulative effects are therefore the combined effect of the Proposed Development in combination with the effects from a number of different projects, on the same receptor or resource.
53. Each technical chapter within the EIA Report has undertaken a CEA. Potential developments within the technical assessment study areas were screened to determine whether there is potential for overlap of environmental effects with the Proposed Development, and therefore a potential for a cumulative effect to occur. Where there is potential for cumulative effects to occur, each environmental receptor was screened, based on the technical expertise of the assessment team. If the receptor was screened in, the CEA consisted of two tiers:
- Tier 1: A CEA of the effects to onshore receptors from both onshore and offshore infrastructure of the Project.
  - Tier 2: A CEA of the Project in combination with other proposed (in planning) and consented developments in the onshore environment.
54. As per Scottish Planning Policy (Scottish Government, 2014) only developments which are submitted to planning, consented or under construction were considered within the CEA.
55. Volume 4, Appendix 2.4 provides a list of all identified cumulative developments to be considered within the CEA. This list was “frozen” at the end of September 2022, three months prior to the submission of the application as agreed with ELC, to allow assessments to be made and reported within the EIA Report.

### Tier 1: CEA with Offshore Infrastructure

56. The CEA of onshore and offshore infrastructure identified and assessed whether there is the potential for receptors to be impacted by both the onshore and offshore infrastructure of the Project and what that cumulative effect was anticipated to be.
57. For some receptors there is no cumulative impact from the onshore and offshore infrastructure, they will only be affected by one or the other. Where this is the case, CEA with offshore infrastructure has been scoped out of the assessment as detailed within the relevant technical chapter.
58. However, where there is potential for the receptor to be impacted by both the onshore and offshore infrastructure (e.g. a viewpoint) the CEA has considered both impacts and determined the likely significance of the cumulative effect.

### Tier 2: CEA with Other Onshore Developments

59. Following the CEA with offshore infrastructure, a CEA of the Project (onshore and offshore infrastructure) with other projects within the onshore environment was undertaken.

## 2.5. SCOPE OF THE EIA

60. The technical scope of the assessment has covered all the impacts agreed with ELC through the EIA Scoping and consultation process. As agreed through the EIA Scoping Process (refer to Volume 4, Appendix 2.1 and Appendix 2.2 for the EIA Scoping Report and subsequent Scoping Opinion), the following technical areas have been scoped out of the EIA:
- Landscape and Visual

- Cumulative landscape and visual impacts of cable landfall and onshore cable route: the relatively small scale of construction and limited residual effects of buried cables during the operational stage, limit the potential for significant cumulative effects to arise.
  - Landscape and visual impacts of onshore substation outwith 5 km buffer study area: Based on a combination of Zone of Theoretical Visibility (ZTV) and professional judgement, a 5 km radius defines the limit beyond which it is considered unlikely that significant effects would arise.
  - Landscape and visual impacts of cable landfall and onshore cable route outwith 1 km buffer study area: Based on a combination of Zone of Theoretical Visibility (ZTV) and professional judgement, a 1 km radius defines the limit beyond which it is considered unlikely that significant effects would arise.
- Ecology
    - Habitats: Arable and aquatic habitats have been scoped out of the assessment due to no likelihood of significant effects occurring with implementation of tertiary mitigation measures. Volume 1, Chapter 7 provides further details on those receptors scoped out. Volume 4, Appendix 15.1 provides further details on tertiary mitigation measures.
  - Air Quality
    - In line with the Institute of Air Quality Management (IAQM) Land Use Planning and Development Control: Planning for Air Quality Guidance (IAQM, 2017), air quality has been scoped out of the EIA at an early stage through the Applicant's commitment to tertiary mitigation removing the likelihood for significant impacts. During construction of the Proposed Development, potential effects could occur as a result of generation of dust and particulates, or exhaust emissions from construction traffic and plant, impacting sensitive ecological or human receptors. It is considered that any potential effects would be reduced to non-significant through implementation of identified tertiary mitigation measures, particularly the implementation of a Dust & Air Quality Management Plan including, but not limited to, the following measures:
      - dust suppression measures;
      - screening of dust producing equipment;
      - compliance with engine emission regulations;
      - communication plan; and
      - regular site inspections.
    - Further details of mitigation measures are provided in Volume 4, Appendix 15.1.
  - Cultural Heritage
    - Effects on the settings of heritage assets beyond 5 km due to no likelihood of significant effects occurring beyond this distance<sup>2</sup>.
  - Socio-economics
    - Impact on economic activity of other, non-agricultural, commercial users due to no likelihood of significant effects occurring.
    - Impacts on local accommodation provision: it is expected that the level of direct employment resulting from the construction and operation and decommissioning phases is not anticipated to require the relocation of labour at a level that will materially impact on local accommodation provision.

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<sup>2</sup> A study area extending 5km from the proposed onshore substation will be used for the identification of cultural heritage assets, consistent with that in the Landscape and Visual Assessment.



- Impact on economic activity dependent on key transport routes i.e. A1 trunk road and East Coast Main Line (ECML) railway. Trenchless techniques will install cables underneath these key transport routes, therefore any economic disruption during construction will be minimal, and there will be no adverse socio-economic effects as a result. No impact is anticipated during the operation or decommissioning phases.
- Electric and Magnetic Fields (EMFs)
  - It is considered that EMFs from the Proposed Development will not be significant to cause any impacts to potential physical, biological, or human environment receptors and as such potential effects from EMFs have been scoped out.
- Major Accidents and Disasters
  - There is no standalone assessment of major accidents and disasters within the EIA, it is considered within the flood risk assessment and climate assessment, otherwise there will be no significant risk given the industry standard mitigation which will be utilised on the Proposed Development through construction and operation.

## 2.6. EIA REPORT

61. The EIA Regulations, 2017, Regulations 4 and 5 and Schedule 4 sets out the information required to be included within the EIA Report, as summarised in Table 2.3.

**Table 2.3 Information Required in the EIA Report**

Required Information (EIA Regulations, 2017)	Relevant Reference within this EIA Report
<b>Regulation 4</b>	
(2) The environmental impact assessment must identify, describe and assess in an appropriate manner, in light of the circumstances relating to the proposed development, the direct and indirect significant effects of the proposed development (including, where the proposed development will have operational effects, such operational effects) on the factors specified in paragraph (3) and the interaction between those factors.	The EIA Report includes an assessment of the direct and indirect effects of the Proposed Development during construction, operation and decommissioning (refer to Volume1, Chapters 6-14).
3) The factors are—	The receptors potentially affected by the Proposed Development are detailed within each of the technical chapters.
(a) population and human health;	Effects on population and human health are assessed in relation to landscape and visual (Volume 1, Chapter 6), noise (Volume 1, Chapter 9), socio-economics (Volume 1, Chapter 13), and tourism and recreation (Volume 1, Chapter 14). Although scoped out of detailed assessment, the potential for changes in air quality to effect population and human health is considered in the implementation of identified tertiary mitigation measures (Volume 4, Appendix 15.1).
(b) biodiversity, and in particular species and habitats protected under any law that implemented Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora and Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds;	Biodiversity is covered in the ecology and ornithology chapters (Volume 1, Chapters 7-8).
(c) land, soil, water, air and climate; and	Impacts on land, soil and the water environment are covered in Volume 1, Chapter 11. Impacts on climate are assessed within Volume 4, Appendix 5.2.
(d) material assets, cultural heritage and the landscape.	Impacts on Material assets are covered in Volume 1, Chapter 12-14.

Required Information (EIA Regulations, 2017)	Relevant Reference within this EIA Report
(4) The effects to be identified, described and assessed under paragraph (2) include the expected effects deriving from the vulnerability of the development to risks, so far as relevant to the development, of major accidents and disasters.	Effects on cultural heritage in terms of architecture and archaeology are discussed in Volume 1, Chapter 10. Effects on landscape character are covered in Volume 1, Chapter 6.  Each technical assessment has considered the predicted significant effects of the Proposed Development after implementation of relevant tertiary mitigation measures, as detailed within Volume 4, Appendix 15.1, including industry standard practice to protect against major accidents and disasters through the Proposed Development lifespan. Volume 4, Appendix 5.2 provides an assessment of the impacts of climate including the Proposed Development's vulnerability to climate change.
<b>Regulation 5</b>	
(2) An EIA report is a report prepared in accordance with this regulation by the developer which includes (at least) —	Volume 1, Chapter 5 of the EIA Report contains a description of the Proposed Development.
(a) a description of the development comprising information on the site, design, size and other relevant features of the development;	Volume 1, Chapters 6 - 14 of the EIA Report contain a description of the likely significant effects of the development and the measures envisaged in order to avoid, prevent, reduce or offset significant adverse effects.
(b) a description of the likely significant effects of the development on the environment;	
(c) a description of the features of the development and any 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 development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment;	
(e) a non-technical summary of the information referred to in sub-paragraphs (a) to (d); and	A Non-Technical Summary has been included within Volume 6.
(f) any other information specified in schedule 4 relevant to the specific characteristics of the development and to the environmental features likely to be affected.	Further details of the information required under Schedule 4 is provided below.
(3) Where a scoping opinion (or scoping direction) is issued, the EIA report must be based on that scoping opinion (or scoping direction, as the case may be), and include the information that may reasonably be required for reaching a reasoned conclusion on the significant effects of the development on the environment, taking into account current knowledge and methods of assessment.	The EIA Report is based on the EIA Scoping opinion and includes the information reasonably required for reaching a reasoned conclusion on the likely significant effects of the Proposed Development on the environment, taking into account current knowledge and methods of assessment. Volume 4, Appendix 2.2 contains the EIA Scoping Opinion. Volume 4, Appendix 2.3 provides an overview of where the matters raised within the EIA Scoping Opinion are addressed within the EIA Report.
(5) In order to ensure the completeness and quality of the EIA report—	Volume 1, Chapter 1 contains details of the expertise and qualifications of the competent experts that have prepared the EIA Report.
(a) the developer must ensure that the EIA report is prepared by competent experts; and	
(b) the EIA report must be accompanied by a statement from the developer outlining the relevant expertise or qualifications of such experts.	
<b>Regulation 25</b>	
(1) Where an EIA report is submitted in relation to an application for planning permission, the developer must ensure that a reasonable number of copies of the EIA report are available for inspection at any place named (by virtue of regulation 21(2)(c)) in the notice published under regulation 21(1) as a place at which copies of the EIA report may be inspected.	Volume 1, Chapter 1 provides details of the availability of copies of the EIA Report.



**Required Information (EIA Regulations, 2017) Relevant Reference within this EIA Report**

(2) The developer must provide copies of the EIA report in accordance with the terms of the notice published under regulation 21(1) and where that notice includes an address at which copies of the EIA report may be obtained the developer must ensure that a reasonable number of copies of the EIA report are available at that address.

(3) A reasonable charge reflecting printing and distribution costs may be made to a member of the public for a copy of an EIA report provided in accordance with paragraph (2).

**Schedule 4**

1. A description of the development, including in particular:  
 (a) a description of the location of the development;  
 (b) a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases;  
 (c) a description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used;

The Proposed Development is described in Volume 1, Chapter 5 of the EIA Report, including its location and physical characteristics and consideration of anticipated construction methods and the main characteristics of the operation of the Proposed Development. The land use requirements during construction and operational phases are also described in Volume 1, Chapter 5 and impacts on land use are assessed within Volume 1, Chapter 14.

(d) an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation) and quantities and types of waste produced during the construction and operation phases.

Expected residues and emissions, and quantities and types of waste produced are addressed, where relevant, in the appropriate technical chapters of this EIA Report. Site Waste Management will be detailed within a Construction Environment Management Plan prior to construction

2. A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.

Volume 1, Chapter 4 of the EIA Report describes the consideration of reasonable alternatives studied by the developer which are relevant to the proposed project and its specific characteristics and details the main reasons the Proposed Development site was chosen, including a comparison of the environmental effects.

3. 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 development 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.

A description of the existing (baseline) and future baseline environment is provided within each technical chapter.

4. A description of the factors specified in regulation 4(3) likely to be significantly affected by the development:

The receptors potentially affected by the Proposed Development are detailed within each of the technical chapters..

population, human health, air,

Effects on population and human health are assessed in relation to landscape and visual (Volume 1, Chapter 6), noise (Volume 1, Chapter 9), socio-economics (Volume 1, Chapter 13), and tourism and recreation (Volume 1, Chapter 14). Air quality factors have been scoped out of the assessment, following the Applicant's commitment to the implementation of identified tertiary mitigation measures (Volume 4, Appendix 15.1).

biodiversity (for example fauna and flora),

Biodiversity is covered in the ecology and ornithology chapters (Volume 1, Chapters 7-8).

land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality),

Effects on land, soil and the water environment are covered in Volume 1, Chapter 11.

Required Information (EIA Regulations, 2017)	Relevant Reference within this EIA Report
climate (for example greenhouse gas emissions, impacts relevant to adaptation),	Effects of the Proposed Development on the climate and its vulnerability to climate change is covered in Volume 4, Appendix 5.2.
material assets,	Effects on material assets are covered in Volume 1, Chapter 12-14.
cultural heritage, including architectural and archaeological aspects, and landscape.	Effects on cultural heritage in terms of architecture and archaeology are discussed in Volume 1, Chapter 10.
5. A description of the likely significant effects of the development on the environment resulting from, inter alia:	Effects on landscape character are covered in Volume 1, Chapter 6
(a) the construction and existence of the development, including, where relevant, demolition works;	The predicted likely significant effects of the Proposed Development are reported after mitigation measures have been applied to an identified effect, in each of the technical chapters of the EIA Report. Effects have been predicted in relation to the construction, operation and decommissioning phases of the Proposed Development. The assessments have considered the nature of these effects and their duration.
(b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;	The effects on natural resources in relation to land, soil and water are considered within Volume 1, Chapter 11. Effects on biodiversity in relation to ecology and ornithology are considered within Volume 1, Chapter 7 & 8. These chapters consider, as far as possible, the sustainable availability of resources.
(c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;	Effects of emissions in relation to noise and vibration are considered within Volume 1, Chapter 9. The effects of light emissions are considered where relevant in Volume 1, Chapter 6. Other emissions are considered within use of industry practice mitigation, including implementation of a CEMP (Volume 4, Appendix 5.1).
(d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);	Effects resulting in the risk to human health, including the potential for changes in air quality or risk of accidents, are considered to be negligible with the implementation of identified tertiary mitigation measures (Volume 4, Appendix 15.1) and are considered where they fall under the technical topics of noise, traffic and transport, and landscape and visual. Effects on cultural heritage in terms of architecture and archaeology are discussed in Volume 1, Chapter 10. Effects on the environment are considered where relevant within the various technical chapters.
(e) 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;	Each technical chapter has considered the cumulative effects of the Proposed Development with other relevant existing and/or approved developments, taking into account any existing environmental problems, where relevant.
(f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;	Impacts of the Proposed Development on the climate and its vulnerability to climate change is covered in Volume 4, Appendix 5.2.
(g) the technologies and the substances used.	The predicted likely significant effects of the Proposed Development are reported after mitigation measures have been applied to an identified effect, in each of the technical chapters of the EIA Report. Effects have been predicted in relation to the technologies and substances anticipated to be used.
The description of the likely significant effects on the factors specified in regulation 4(3) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development. This description should take into account the environmental protection objectives established at Union (as they had effect immediately before 31 December 2020) or United Kingdom level which are relevant to the project,	The overall approach and methods used in the assessment of environmental impacts are discussed in Section 2.3 of this EIA Report. There are considered to be no potential for likely transboundary effects (defined here as effects where development within Scotland is likely to have significant effects on the environment of a European Economic Area state) related to the Proposed Development given the location and scale.

**Required Information (EIA Regulations, 2017) Relevant Reference within this EIA Report**

including in particular those established under Council Directive 92/43/EEC3 and Directive 2009/147/EC.	
6. A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.	An overview of the methodology of the assessment is provided within Volume 1, Chapter 2 while the individual technical chapters provide details of each technical assessment and any technical difficulties or uncertainties. Prediction methods are discussed in detail within each relevant technical chapter of the EIA Report.
7. 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 overall approach to mitigation is discussed in Volume 1, Chapter 2, Section 2.3 of this EIA Report. Specific mitigation measures and the extent of their impact on the conclusion of significance of effects are reported in each relevant technical section of the EIA Report and in the Schedule of Mitigation presented in Volume 4, Appendix 15.1.
8. A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to retained EU law such as any law that implemented Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or relevant assessments may be used for this purpose provided that the requirements of any law that implemented the Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.	The predicted likely significant effects of the Proposed Development are reported after relevant mitigation measures have been applied to an identified impact, in each of the technical chapters of the EIA Report. These have, where relevant, considered the vulnerability of the Proposed Development to risks of major accidents and/or disasters and included good practice mitigation measures to prevent such events. Effects of the Proposed Development on the climate and its vulnerability to climate change is covered in Volume 4, Appendix 5.2. A Flood Risk Assessment is included within Volume 4, Appendix 11.1 and considers the potential flood risk to the Proposed Development and the impact of the Proposed Development on flooding elsewhere.
9. A non-technical summary of the information provided under paragraphs 1 to 8.	A Non-Technical Summary is presented within Volume 6.
10. A reference list detailing the sources used for the descriptions and assessments included in the EIA report.	References are provided at the end of each chapter of the EIA Report.

62. The EIA Report is split into six volumes:

- Volume 1 of this EIA Report contains the introductory, concluding and technical chapters.
- Volume 2 contains the figures that accompany the chapters.
- Volume 3 contains the landscape and visual figures and visualisations.
- Volume 4 contains supporting information and appendices for each of these technical chapters, and additional studies that have been prepared to inform the relevant assessments as reported in the EIA Report.
- Volume 5 contains confidential technical appendices, further details of which are provided in Volume 1, Chapter 1.
- Volume 6 contains an NTS.

**2.7. ASSUMPTIONS, LIMITATIONS AND UNCERTAINTIES**

63. The EIA process is designed to enable informed decision making based on the available information about the environmental implications of a proposed development. However, there will always be some uncertainty inherent in the scale and nature of the predicted

environmental effects due to the level of detailed information available at the time of assessment, and / or the limitations of the prediction processes.

64. The following assumptions were made during the EIA process:
- Given the long term historic land use of the area, and the prevalence of agriculture within East Lothian, the principal land use adjacent and around the site are likely to remain unchanged during the Proposed Development's lifetime, subject to development of projects identified within the cumulative assessment.
  - Information provided by third parties (including publicly available information and databases) is correct at time of submission.
65. Further to this, more specific assumptions may be made with regards to the individual technical aspects and are detailed within each chapter.
66. Whilst baseline conditions are accurate at the time of surveying, due to the dynamic nature of the environment, there may be unforeseen changes to those conditions during site preparation, construction and operation.
67. Information on the construction of the Proposed Development has been developed by the EIA Project Team based on professional judgement and outline design works, on the most likely methods of construction, plant, access routes, and working areas etc. for the purposes of the EIA. The final choice of optimum construction methods will rest with the Contractors and may differ from those used in this assessment. Any such uncertainty has been accounted for within the maximum design scenario.

## **2.8. SUMMARY**

68. This chapter has detailed the methodology which has been used to conduct the assessment and produce the EIA Report for the Proposed Development. An overview of the EIA process and the scope of the assessment has been provided. General assumptions, limitations and uncertainties are also delineated.

## 2.9. REFERENCES

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