Chapter 2 EIA Process & Methodology

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2 EIA Process & Methodology

2.1 Introduction

2.1.1 This chapter of the EIA Report sets out the approach taken to produce the Environmental Impact Assessment (EIA) for the Proposed Development.

2.1.2 The EIA process assists Shetland Islands Council (SIC) in their determination of the planning application by identifying where significant environmental effects are predicted. This assessment has been completed in conjunction with consultation with statutory consultees, interested parties and the general public.

2.1.3 The structure of the EIA Report follows the requirements of the EIA Regulations and relevant good practice guidance. The EIA Report comprises a Non-Technical Summary (NTS), the main EIA Report text, accompanying figures and appendices.

2.1.4 This chapter is structured as follows:

- overview of the relevant legislation, policy and guidance;
- an outline of the EIA process utilised;
- the scope of the assessment completed;
- details of the assessment of potential effects;
- the consultations undertaken; and
- the assumptions, likely limitations and uncertainty.

2.1.5 This chapter is supported by the following appendices:

- **Appendix 2.1** –EIA Scoping Report; and
- **Appendix 2.2** –SIC EIA Scoping Opinion.

2.2 Legislation, Policy and Guidelines

2.2.1 A number of legislative and best practice documents have informed the EIA process. In respect to the EIA Regulations the Proposed Development meets Schedule 2, Part 3 (a) of the EIA Regulations as it relates to '*industrial installations for the production of electricity, steam and hot water*' with a development area exceeding 0.5 ha.

2.2.2 The criteria for considering whether a Schedule 2 development requires the preparation of an EIA are set out in Schedule 3 of the EIA Regulations. Reference to Schedule 3 suggests that on the basis of the scale and location of the Development, an EIA is likely to be required. This was confirmed by SIC though an EIA Screening process, described below.

2.2.3 Regulation 4 of the EIA Regulations details the EIA process while Schedule 4 confirms the information to be included within an EIA Report.

2.2.4 The EIA process and structure of the EIA Report follow the criteria listed within the EIA Regulations.

2.2.5 In addition to the above, the regulations and best practice guidance of core relevance to the EIA process and which have been taken into account in undertaking this assessment are as follows:

- The Town and Country Planning Act (Scotland) 1997;
- Planning Advice Note 1/2013: Environmental Impact Assessment (Scottish Government, 2013);

- Planning Circular 1/2017: Environmental Impact Assessment regulations (Scottish Government, 2017);
- Guidelines for Environmental Impact Assessment, Institute of Environmental Management and Assessment (IEMA, 2006);
- Good Practice During Wind Farm Construction 4th Edition (Scottish Government et al., 2019);
- Assessing the Cumulative Impact of Onshore Wind Energy Developments (NatureScot (formerly Scottish Natural Heritage (SNH), 2018);
- Siting and Designing Wind Farms in the Landscape Version 3a (SNH, 2017); and
- Environmental Impact Assessment Handbook Version 5 (SNH, 2018).

2.2.6 The National Planning Framework 4 (NPF4) was published in February 2023. It replaces both National Planning Framework 3 (NPF3) and Scottish Planning Policy (SPP). In addition to also being part of the statutory Development Plan, NPF4 will directly influence planning decisions and confirms in Policy 1 that significant weight will now be given to the global climate and nature crises when considering all development proposals. Policy 11 within NPF4 further reinforces this commitment and is supportive of all forms of renewable energy developments. Part (a) of Policy 11 specifically notes that the technologies that will be supported include (i) wind farms and (iii) battery storage, and Policy 11 overall provides a comprehensive framework for assessing the impact of renewable energy proposals.

2.2.7 NPF4 also indicates that existing strong policy support for onshore wind farm development is likely to grow even stronger in response to the declared Climate Emergency and the drive to attain net zero emissions.

2.3 Legal Framework for the EIA

Overall EIA Process

2.3.1 In order for the EIA process to be as effective as possible it should be used as an iterative process throughout the design stage, rather than a single assessment performed once the design is finalised. When used as an iterative process, the findings of the EIA can be incorporated within the design of the proposal to provide an optimum design with regard to the Applicant's requirements and the environment.

2.3.2 The findings of the EIA are presented in this EIA Report, which has been prepared in accordance with the EIA Regulations.

2.3.3 The general 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, where it differs from the approach described below, is provided within the respective technical chapters (**Chapters 5 to 12**).

Screening & Scoping

2.3.4 Screening is the process by which it is determined whether or not an EIA should be conducted for a proposed development.

2.3.5 As set out in paragraph 2.2.2, the Proposed Development falls within Schedule 2 of the EIA Regulations. Schedule 3 of the EIA Regulations sets out the criteria that should be considered in determining whether a Schedule 2 development is likely to have significant environmental effects and hence require a formal EIA.

2.3.6 The Applicant submitted an Environmental Impact Assessment Screening Request (2020/229/SCR) to SIC in October 2020, in respect of a proposed two-turbine development at the Site and received

a response from SIC in November 2020 advising that the Proposed Development will require to be subject to a formal EIA. Although the Proposed Development design later changed to comprise only one turbine plus BESS, the Applicant has acknowledged that SIC would likely still consider that an EIA is required and has therefore voluntarily undertaken an EIA.

2.3.7 The EIA Scoping process is undertaken to identify the potentially significant environmental issues which should be considered when assessing the potential effects of the Proposed Development, and those effects that are not likely to be significant (which can be 'scoped out'). An EIA Scoping Opinion may be obtained from the consenting authority, which sets out the matter that should be considered through the EIA.

2.3.8 An EIA Scoping Opinion was requested from SIC in January 2021 through the submission of an EIA Scoping Report (refer to **Appendix 2.1**). This EIA Scoping Report contained details of the Site baseline and the Proposed Development. It also proposed which environmental impacts would be assessed in the EIA, and the assessment methodologies that would be used.

2.3.9 SIC consulted with a variety of statutory and non-statutory consultees before providing an EIA Scoping Opinion in March 2021. This information has informed the Proposed Development EIA. The following EIA Report is based on the Scoping Opinion received as included in **Appendix 2.2.**

2.3.10 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 as appropriate.

2.4 The EIA Process

2.4.1 EIA is the systematic process of compiling, assessing, presenting and mitigating all the 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 effects then leads to the design and incorporation of appropriate mitigation measures into both the design of the scheme and the way in which it is constructed.

2.4.2 The main steps in the EIA assessment process for the Proposed Development have been:

- Baseline surveys (where appropriate) to provide information on the existing environmental character of the Proposed Development Site and the surrounding area.
- Consideration of the possible interactions between the Proposed Development and the existing and predicted future site conditions. These interactions or effects are assessed using criteria based on accepted guidance and best practice.
- Using the outline design parameters for the Proposed Development, prediction of the environmental effects, including direct, indirect, cumulative, short, medium and long-term, permanent and temporary, beneficial and adverse effects.
- Identification of mitigation measures designed to avoid, reduce or offset adverse effects and enhance beneficial effects.
- Assessment of the significance of any residual effects after mitigation in relation to the sensitivity of the feature impacted upon and the magnitude of the impact predicted, in line with the methodology identified below.
- Identification of any uncertainties inherent in the methods used, the predictions made, and the conclusions drawn during the course of the assessment process.
- Reporting of the results of the EIA in this EIA Report.

2.5 Assessment of Effects

2.5.1 Throughout the assessment, a distinction has been made between the term 'impact' and 'effect'. The EIA Regulations refer to the requirement to report the significance of 'effects'. An impact has been defined as the physical change of the characteristics of the receiving environment as a result of the Proposed Development (e.g., shadow flicker from turbines), whereas an effect refers to the significance of this impact (e.g., a significant residual shadow flicker effect on residential properties). These terms have been adopted throughout this EIA Report to present a consistent approach to the assessment and evaluation of effects and their significance.

2.5.2 The exception to this is the Landscape and Visual Impact Assessment 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 & EMA, 2013). However, this terminology should be considered interchangeable with "magnitude of impact".

2.5.3 Within this EIA Report, the assessment of effects for each environmental topic takes into account the environmental impacts of the construction, operational and decommissioning phases of the Proposed Development; and how the environmental baseline is expected to evolve in the absence of the Proposed Development (the do-nothing scenario).

2.5.4 In order to determine whether or not the potential effects of the Proposed Development are likely to be 'significant' a number of criteria are used. These significance criteria vary between topics but generally include:

- international, national and local designations or standards;
- relationship with planning policy;
- sensitivity of the receiving environment;
- magnitude of impact;
- reversibility and duration of the effect; and
- inter-relationship between effects.

2.5.5 Effects that are considered to be significant are identified within the EIA Report. The significance of the resultant effect is informed by professional judgement as to the importance or sensitivity of the affected receptor(s) and the nature and magnitude of the predicted changes. For example, a high magnitude of impact on a low sensitivity receptor will have an effect of lesser significance than the same impact on a high sensitivity receptor. **Table 2.1** is used as a guide to demonstrate the relationship between the sensitivity of the identified receptor and the anticipated magnitude of an impact. Professional judgement is, however, equally important in verifying the suitability of this guiding 'formula' to the assessment of the significance of each individual effect. Therefore, the table below may change between technical assessments.

Table 2.1 Guide to the Inter-Relationship between Magnitude of Impact and Sensitivity of Receptor

		Sensitivity of Receptor / Receiving Environment to Change			
		High	Medium	Low	Negligible
Magnitude of Impact	High	Major	Moderate to Major	Minor to Moderate	Negligible
	Medium	Moderate to Major	Moderate	Minor	Negligible
	Low	Minor to Moderate	Minor	Negligible to Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

2.5.6 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 effects – where the Proposed Development would result in a significant improvement (or deterioration) to the existing environment;
- **Moderate** beneficial or adverse effects – where the Proposed Development would result in a noticeable improvement (or deterioration) to the existing environment;
- **Minor** beneficial or adverse effects – 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.

2.5.7 Using professional judgement and with reference to relevant guidance, the majority of the assessments within this EIA Report consider effects of moderate or greater significance to be significant, with those of minor significance or less to be non-significant. If there are deviations from this these are clearly stated within the individual technical chapters.

2.5.8 Summary tables are provided at the end of each technical chapter of the EIA Report and within **Chapters 14 and 15** that outline:

- The predicted effects associated with an environmental issue;
- The appropriate mitigation measures required to address these effects; and
- The subsequent overall residual effects.

2.5.9 Distinction has also been made between direct and indirect, short and long term, permanent and temporary effects.

Cumulative Effects

2.5.10 Paragraph 5 of Schedule 4 of the EIA Regulations sets out the matters that must be incorporated within EIA Reports. The EIA Regulations state that EIA reports should include an assessment of "the cumulation of effects with other existing and/or approved developments, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected".

2.5.11 Cumulative effects are those which result from incremental changes caused by past, present or reasonably foreseeable future reactions resulting from the introduction of the Proposed Development. These cumulative effects cover the combined effect of individual impacts from the Proposed Development and combined impacts of several developments, as noted within the guidance document "Assessing the Cumulative Impact of Onshore Wind Energy Developments" (NatureScot, 2018). Developments considered in addition to the Proposed Development are existing and other proposals, covering all major developments, including other wind farms.

2.5.12 Within this EIA Report, cumulative effects for each technical discipline are covered as required on a chapter by chapter basis with a summary of overall effects included in the residual effects, **Chapter 14**.

2.5.13 The key cumulative wind farm developments considered are shown within **Chapter 4, Figure 4.2**.

2.6 Scope of the EIA

Technical Scope

2.6.1 The technical scope of the assessment covers all the impacts mentioned in **Table 2.2**, with the following exceptions relating to technical topics where these have been scoped out of the EIA. The Scoping Report submitted to SIC in January 2021 set out justification for scoping out the topics noted below from assessment as part of the EIA. The SIC Scoping Opinion (March 2021) did not raise any concerns or queries, noting, "The Scoping Report is considered to be an appropriate basis to inform the preparation of an Environmental Report."

2.6.2 All other technical topic areas identified have been assessed as part of the EIA process and are reported in the relevant sections of this EIA Report.

2.6.3 Each issue has been considered to the appropriate level of detail in the EIA Report, using the information collated during consultations. For each impact the baseline condition has been described, with the receptor sensitivity identified. The potential effects have been predicted and assessed for their significance. Where possible and applicable, mitigation measures have been identified and any potential residual environmental effects assessed.

Shadow Flicker

2.6.4 Shadow flicker can occur when the blades of a wind turbine cover the sun for brief moments as they rotate. For an observer viewing this phenomenon through a narrow opening (such as a window from within the affected area) it can create a rapid change in luminance, appearing as if the light is being 'flicked' on and off each time a blade passes in front of the sun.

2.6.5 The affected area is constrained in size and shape by astronomic and geometric parameters, such as the trajectory of the sun and the position and dimensions of the wind turbine. For a fixed observer, the occurrence of shadow flicker from a given wind turbine is generally limited to certain parts of the year and certain times of the affected days. It is possible to predict when, where and for how long shadow flicker could theoretically occur using commercially available computer programs.

2.6.6 There are at present no formal guidelines available on what exposure would be acceptable in relation to shadow flicker. There is no standard for the assessment of shadow flicker. The advice sheet from Scottish Government, Onshore Wind Turbines, a web-based guide (Scottish Government, 2014) sets out the potential geographic area which may fall under assessment: "Where this (shadow flicker) could be a problem, Applicants should provide calculations to quantify effect. In most cases, however, where separation is provided between wind turbines and nearby dwellings (as a general rule ten rotor diameters), 'shadow flicker' should not be a problem."

2.6.7 Published research by the Department of Energy and Climate Change (DECC), Update of UK Shadow Flicker Evidence Base (DECC, un-dated), evaluates the current international understanding of shadow flicker and confirms an acceptable study area for assessment is ten rotor diameters from each turbine and within 130 degrees either side of north.

2.6.8 The maximum rotor diameter of the proposed turbine would not exceed 136 m, so the area where shadow flicker could be a problem extends to a maximum of 1.36 km.

2.6.9 With there being no residential properties within 1.36 km, shadow flicker is scoped out of the EIA. This matches the conclusion of the 2011 assessment for the previous permission.

Socio-economic, Recreation and Tourism

2.6.10 The 2011 Environmental Statement (ES) identified no adverse effects on tourism or recreation from the permitted scheme. It is considered that the Proposed Development will similarly have no adverse effects on tourism or recreation.

2.6.11 There are a number of beneficial socio-economic effects anticipated to result from the construction and operation of the Proposed Development. Based on a principle of £5,000 per installed MW per year, the Applicant anticipates a Community Benefit payment of approximately £25,000 per year

arising from the Proposed Development, once operational. The Applicant is exploring options to route the Community Benefit payment into schemes such as Hjaltland Housing Association's existing Fuel Vouchers scheme, to provide a contribution to reducing fuel poverty for householders in areas known to have higher social deprivation, e.g., Lerwick North.

2.6.12 During the construction phase, the local area is poised to benefit socio-economically in several ways. This includes the creation of supply chain opportunities aimed at maximising local involvement. The engagement of local labour will be essential for civil engineering activities, with a preference for employing local contractors. The installation of turbine components will require specialised teams, including personnel from outside Shetland, necessitating provisions such as accommodation, food and machine hire for visiting contractors. Additionally, the use of specialised haulage firms is anticipated, again with a preference for local options. Furthermore, local companies will play a role in tasks such as component offload, storage and transport from the base to the construction site. However, the manufacturing of wind turbine tower, blades and internal components is expected to occur outside Shetland, within the broader UK and Europe, due to limited manufacturing capabilities within the region.

2.6.13 During the operational phase of the Proposed Development, the local area is anticipated to benefit with the direct full-time employment of management and engineering teams by the Applicant, dedicated to supporting the ongoing operation and maintenance of the Proposed Development throughout its lifespan of 25 years. This phase will generate new job opportunities, providing individuals with both income and skills, resulting in indirect benefits to the local area through increased spending. Furthermore, an expanded number of training opportunities will be made available to local residents.

2.6.14 The operational phase will also distribute land rental payments to landowners and crofters in the affected area, contributing to local economic support. Additionally, the local economy stands to benefit from business rates and engineering supply chain opportunities, showcasing a holistic approach to fostering socio-economic development during the operational life of the Proposed Development.

2.6.15 The socio-economic, recreation and tourism benefits of the Proposed Development are further addressed in the accompanying Planning Statement, with any potential impacts assessed where appropriate within the various technical chapters of the EIA (e.g. LVIA and Archaeology & Cultural Heritage).

2.6.16 It is therefore considered that socio-economic, recreation and tourism does not warrant its own chapter within the EIA Report and has been scoped out of detailed assessment.

Television

2.6.17 The closest television transmitters are the Bressay and Scalloway transmitters. The Bressay Transmitter is located approximately 7 km south-east of the Site, and the Scalloway Transmitter is located approximately 7.7 km south-west of the Site. These transmitters have switched to digital transmission only. Currently, there is no widely accepted method of determining the potential effects of wind turbines on digital television reception. However, digital television signals are better at coping with signal reflections and do not suffer from the 'ghosting' effect that may have occurred with the now obsolete analogue signals.

2.6.18 To date, there are very few cases of wind turbine interference with digital television reception post-digital switchover. Given the strength of the digital signal in the area and the inherently resilient nature of digital television reception, there is considered to be a low risk of any interference from a wind energy development at this location on domestic television reception.

2.6.19 Due to the low risk of interference with television reception, the requirement to address any reception issues once the Proposed Development is operational could be conditioned in any consent granted. For the above reasons, it is not proposed to carry out a detailed assessment of potential effects on television reception, and this topic, therefore, has been scoped out of the EIA.

Forestry & Land Use

2.6.20 There is no tree coverage on the Site; consequently, no tree felling will be required.

2.6.21 The current land use of the Site is largely rough grazing by sheep which is unimpeded by the operational turbine. The Proposed Development will have a negligible impact on the existing land use as it will be largely unchanged.

2.6.22 Therefore, assessment of forestry and land use is scoped out of the EIA.

Air Quality & Human Health

2.6.23 The air quality of the Site is expected to be good due to the rural location, with few pollution sources.

2.6.24 During the construction of the wind farm, the movement of vehicles and the on-site plant would generate exhaust emissions. Given the short-term nature of the construction period and the limited area to be developed, effects on air quality are likely to be negligible.

2.6.25 Construction activities have the potential to generate dust during dry spells, which may adversely affect local air quality. Given the scale and nature of construction activities and the distance between construction areas and the nearest residential properties, it is considered that dust from construction is unlikely to cause a nuisance.

2.6.26 An operational wind farm produces no notable atmospheric emissions. The operation of the wind farm would therefore have no discernible adverse effects on local or national air quality.

2.6.27 Relevant mitigation measures for air quality and pollution control will be captured within the site-specific Construction Environmental Management Plan (CEMP).

2.6.28 The assessment of potential human health effects has been undertaken in the context of residential amenity (i.e., visual impact and noise).

2.6.29 Therefore, an assessment of air quality & human health is scoped out of the EIA.

Major Accidents & Disasters

2.6.30 Given the nature of the Proposed Development, and its remote location, the risk of a major accident or disaster is considered to be extremely low. The Principal Designer would need to ensure a Design Risk Assessment process is followed during the design phase to ensure designers fully assess risks and mitigate to a level deemed as low as reasonably practicable during the design stage as part of the requirements of the Construction (Design and Management) Regulations (2015).

2.6.31 During the operational phase of the Proposed Development, routine maintenance inspections would be completed in order to ensure the safe and compliant operation of all built infrastructure.

2.6.32 Therefore, an assessment of the risk of major accidents and/or disasters is scoped out of the EIA.

Spatial Scope

2.6.33 The spatial scope of the EIA, in other words, the geographical coverage of the assessment undertaken, has taken account of a number of factors, in particular:

- The extent of the Proposed Development (**Figure 1.2**);
- The nature of the baseline environment, sensitive receptors and the likely impacts that could arise; and
- The distance over which predicted effects are likely to remain significant and in particular the existence of pathways which could result in the transfer of effects to a wider geographical area than the extent of proposed physical works.

Temporal Scope

2.6.34 The baseline years used for the assessment of environmental effects are 2020 to 2022, as this is the period in which the baseline environmental surveys were undertaken.

2.6.35 For the purposes of the EIA, if approved, construction is assumed to commence in 2025 and is expected to last for 12 months. The proposed operational life for the Proposed Development is 25 years, after which time it has been assumed for EIA purposes that it will be decommissioned.

2.6.36 For construction effects, the assessment takes into account the time of day that works are likely to be undertaken, or example if any night-time working is required to minimise disruption to road users.

2.7 EIA Report

2.7.1 Regulations 4 and 5 and Schedule 4 of the EIA Regulations specify the 'information for inclusion in Environmental Impact Assessment Reports'. **Table 2.2** below details where the information has been provided within the EIA Report.

Table 2.2 Information Included in the EIA Report

EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
Regulation 4	(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 and operation (refer to **Chapters 5 to 12**).
Regulation 4	(3) The factors are— (a)population and human health; (b)biodiversity, and in particular species and habitats protected under Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora(1) and Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds(2); (c)land, soil, water, air and climate; and (d)material assets, cultural heritage and the landscape	The receptors potentially affected by the Proposed Development are detailed within each of the technical chapters. Effects on population and human health are assessed in relation to visual impacts (**Chapter 5**), traffic (**Chapter 10**) and noise (**Chapter 9**). Biodiversity is covered in **Chapter 6 & 7** (Ecology and Ornithology) and biodiversity enhancement is provided in a Biodiversity Enhancement Plan

EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
		(provided in outline as **Appendix 6.4** to the EIA Report). Impacts on soils and water are covered in **Chapter 11**. Material assets are addressed through the assessment of cultural heritage and landscape **Chapter 8** and **5**.
Regulation 4	(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	An assessment of major accidents and/or disasters has been scoped out as detailed in **Section 2.6**.
Regulation 5	(2) An EIA report is a report prepared in accordance with this regulation by the developer which includes (at least)— (a) a description of the development comprising information on the site, design, size and other relevant features of the development;(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;	**Chapter 3** contains a description of the reasonable alternatives studied by the Applicant. **Chapter 4** of the EIA Report contains a description of the Proposed Development. **Chapters 5 to 12** of the EIA Report contain a description of the likely significant effects and the measures envisaged in order to avoid, prevent, reduce or offset significant adverse effects. A Non-Technical Summary has been included with the application.

EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
	(e) a non-technical summary of the information referred to in sub-paragraphs (a) to (d); and (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.	
Regulation 5	(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 and EIA Report is based on the Scoping Opinion. Where changes to the scope of any surveys or assessments were considered to be reasonable, this was discussed and agreed with the relevant technical consultees. Details of relevant consultations are included in each technical chapter.
Regulation 5	(5) In order to ensure the completeness and quality of the EIA report—(a) the developer/applicant 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/applicant outlining the relevant expertise or qualifications of such experts.	**Chapter 1** contains details of the expertise and qualifications of the competent experts.
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	The Proposed Development is described in **Chapter 4** of the EIA Report, including consideration of anticipated construction methods and the operation of the Proposed Development. The land use requirements during construction and operational phases are also described in **Chapter 4**. Expected residues and emissions are addressed, where relevant, in

EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
	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; (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.	the appropriate technical chapters of this EIA Report.
Schedule 4	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.	**Chapter 3** of the EIA Report describes the design iteration process and details how the Proposed Development Site was chosen, and the environmental constraints taken into consideration in determining the final layout which is the subject of the Application.
Schedule 4	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 environment and how it is expected to evolve in the absence of the Proposed Development is provided within each technical chapter.
Schedule 4	4. A description of the factors specified in regulation 4(3) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions,	The receptors potentially affected by the Proposed Development are detailed within each of the technical chapters. Effects on population and human health are assessed in relation to visual impacts, traffic, noise. Biodiversity is covered in the ecology and ornithology chapters.

EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
	impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.	Impacts on soils and water are covered in the hydrology, geology, hydrogeology and peat chapter. Material assets are addressed through the assessment of cultural heritage effects and other chapters as appropriate.
Schedule 4	5. A description of the likely significant effects of the development on the environment resulting from, inter alia: (a) the construction and existence of the development, including, where relevant, demolition works; (b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources; (c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste; (d)the risks to human health, cultural heritage or the environment (for example due to accidents or disasters); (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; (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; (g)the technologies and the substances used. The description of the likely significant effects on the factors specified in regulation4(3) should cover the direct effects and any indirect,	The predicted significant effects of the Proposed Development are reported after relevant 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 both the construction / decommissioning and operational phases of the Proposed Development, including the nature of these effects and their duration. The overall approach and methods used in the assessment of environmental impacts are discussed within this chapter of this EIA Report. Prediction methods are discussed in detail within each relevant technical chapter of the EIA Report.

EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
	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 or Member State level which are relevant to the project, including in particular those established under Council Directive 92/43/EEC3 and Directive 2009/147/EC.	
Schedule 4	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 this chapter while the individual technical chapters provide details of each technical assessment (**Chapter 5 to 12**).
Schedule 4	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.	Specific mitigation measures and where appropriate monitoring arrangements are reported in each relevant technical section of the EIA Report and in the schedule of committed mitigation measures presented in **Chapter 14**.
Schedule 4	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	An assessment of major accidents and/or disasters has been scoped out as detailed in **Section 2.6**.

EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
	through risk assessments pursuant to EU legislation such as Directive 2012/18/EU(3) of the European Parliament and of the Council or Council Directive 2009/71/Euratom(4) or UK environmental assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.	
Schedule 4	9. A non-technical summary of the information provided under paragraphs 1 to 8.	A Non-Technical Summary is presented as a stand-alone document.
Schedule 4	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.

2.8 Consultation

2.8.1 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.

2.8.2 The Applicant has continually engaged through both formal consultation (such as the request for an EIA Scoping Opinion) and informally through meetings, calls and emails. Details of the additional consultation undertaken outwith the EIA Scoping process with consultees can be found within each technical chapter.

Consideration of Alternatives

2.8.3 EIA legislation requires the consideration of alternatives and an indication of the reasons for selecting the Site advanced, except, as noted in Planning Advice Note (PAN) 8, where limited by constraints of commercial confidentiality.

2.8.4 The Proposed Development Site has been demonstrated to be a viable and a productive site for wind energy generation. The Applicant considered a number of alternative layouts and different scales of turbine for the Proposed Development, to arrive at the design for which planning permission is sought. A full description of the Site identification and design iteration process is given in **Chapter 3.**

2.9 Assumptions, Limitations and Uncertainty

2.9.1 The EIA process is designed to enable informed decision making based on the best 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 as a result of the level of detailed information available at the time of assessment, the potential for minor alterations to the Proposed Development following completion of the EIA Report and / or the limitations of the prediction processes.

2.9.2 A number of assumptions were made during the EIA process and are detailed below.

- The principal land uses adjacent to the Site remain unchanged during the course of the Proposed Development's lifetime.
- Current applications for wind energy projects are included within the assessment of cumulative effects for each technical aspect.
- Information provided by third parties (including publicly available information and databases) is correct at time of submission.

2.9.3 Further to this, specific assumptions may also be made with regard to the individual technical disciplines. As applicable, these are detailed within each chapter.

2.9.4 Whilst baseline conditions have been assumed to be accurate at the time of surveying, due to the dynamic nature of the environment, these conditions may change during site preparation, construction and operation.

2.9.5 Any limitations to the EIA are summarised in each technical chapter, where relevant, together with the means proposed to mitigate these.

2.9.6 There is also the potential for a degree of necessary flexibility as certain aspects of the Proposed Development may be subject to change until a detailed design has been finalised. The maximum design envelope has been considered to ensure a robust assessment and any design flexibility will not exceed these. This flexibility can come in the forms of:

- turbine selection;
- foundation and infrastructure design;
- Battery Energy Storage System (BESS) manufacturer; and
- micro-siting of the turbine and associated infrastructure which may change due to investigation findings or implementation of mitigation measures.

2.9.7 Information on the construction of the Proposed Development has been developed by the 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 Contractor and may differ from those used in this assessment, with any such uncertainty stated in the EIA Report. Any changes to these methods will remain within the maximum design envelope.

2.10 Summary

2.10.1 This chapter has detailed the methodology used to conduct the EIA and produce the EIA Report for the Proposed Development. An overview of the relevant legislation and guidance documents has been provided with the main legislative document being the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. Following this, the EIA process and scope of the assessment are detailed. General assumptions, limitations and uncertainties are also stated.

2.11 References

IEMA (2006). Guidelines for Environmental Impact Assessment, Institute of Environmental Management and Assessment.

Landscape Institute & IEMA (2013). Guidelines for Landscape and Visual Impact Assessment. Third Edition

NatureScot (2021). Assessing the Cumulative Impact of Onshore Wind Energy Developments. Available at: https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments

Scottish Government (2013). Planning Advice Note 1/2013: Environmental Impact Assessment. Available at: https://www.gov.scot/publications/planning-advice-note-1-2013-environmental-impactassessment/

Scottish Government (2014). Onshore wind turbines: planning advice. Available at: https://www.gov.scot/publications/onshore-wind-turbines-planning-advice/#page-top

Scottish Government (2017). Planning Circular 1/2017: Environmental Impact Assessment regulations. Available at: https://www.gov.scot/publications/planning-circular-1-2017-environmental-impact-assessment-regulations-2017/

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Scottish Government, Scottish Renewables, Scottish Natural Heritage, Scottish Environment Protection Agency, Forestry Commission Scotland, Historic Environment Scotland, Marine Scotland Science, and AEECoW (2019). Good Practice during Wind Farm Construction (4th Edition). Available at: https://www.nature.scot/guidance-good-practice-during-wind-farm-construction

Scottish Natural Heritage (2017). Siting and Designing Wind Farms in the Landscape (Version 3a). Available at: https://www.nature.scot/siting-and-designing-wind-farms-landscape-version-3a

Scottish Natural Heritage (2018). Environmental Impact Assessment Handbook (Version 5). Available at: https://www.nature.scot/handbook-environmental-impact-assessment-guidance-competentauthorities-consultees-and-others