4 Approach to EIA

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4 Approach to EIA

4.1 Executive Summary

4.1.1 This chapter of the EIA Report sets out the broad approach taken to produce the Environmental Impact Assessment (EIA) for the Proposed Development. It also includes details of the consultation undertaken.

4.2 Introduction

4.2.1 The EIA process assists the consenting authority in its determination of the 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.

4.2.2 This EIA Report supports the following consent applications:

- A planning application to OIC under The Town and Country Planning Act (Scotland) 1997 (as amended) for all works above Mean Low Water Springs (MLWS), i.e. the onshore wind turbines and associated infrastructure above MLWS; and
- Marine Licence applications to Marine Scotland's Licencing Operations Team (MS-LOT), which act on behalf of the Scottish Minsters, for works below Mean High Water Springs (MHWS), i.e. the installation of improved access to Faray via construction of a new extended slipway and landing jetty. Two marine licences are required, one for construction works and one for dredging operations.

4.2.3 It should be noted that parts of the improved access fall both above MLWS and below MHWS (i.e. in the intertidal zone). In such instances, both of the aforementioned consenting processes (paragraph 4.2.2) are applicable.

4.2.4 The structure of the EIA Report follows the requirements of the following EIA regulations relevant to the two consent applications, as well as other relevant good practice guidance:

- Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended) (hereafter referred to as the 'EIA Regulations') (Scottish Government, 2017a), and the associated emergency COVID-19 emergency regulations; The Town and Country Planning (Miscellaneous Temporary Modifications) (Coronavirus) (Scotland) Regulations 2020; and
- Schedule 4 of the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended) (hereafter referred to as the "Marine EIA Regulations) (Scottish Government, 2017b), and the associated emergency COVID-19 emergency regulations, The Marine Works and Marine Licensing (Miscellaneous Temporary Modifications) (Coronavirus) (Scotland) Regulations 2020.

4.2.5 The EIA Report comprises two main components – a Non-Technical Summary (NTS) and the main EIA Report text, figures and technical appendices.

4.2.6 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;

- mitigation measures;
- enhancement; and
- the assumptions made, limitations encountered and uncertainty.

4.2.7 This chapter is linked to the following appendices:

- Appendix 4.1: EIA Scoping Report (March 2019);
- Appendix 4.2: OIC EIA Scoping Opinion (Aril 2019);
- Appendix 4.3: Summary of how the EIA Scoping Opinion has been addressed;
- Appendix 4.4: Additional EIA Consultation Responses;
- Appendix 4.5: Disasters and Accidents;
- Appendix 4.6: Proposal of Application Notice (June 2020); and
- Appendix 4.7: Marine Licensable activities letter to consultees (February 2021).

4.3 Legislation, Policy and Guidelines

4.3.1 During the EIA, a number of legislative and best practice documents have informed the process.

4.3.2 In respect to the EIA Regulations (i.e. for works above MLWS), the Proposed Development meets *Schedule 2, Category (j)* criteria of the EIA Regulations, by nature of it being classed as an '*Installation for harnessing of wind power for energy production (wind farms)'* which has more than 2 turbines and a hub height of over 15 m. The criteria for considering whether a Schedule 2 development requires the preparation of an EIA is set out in Schedule 3 of the EIA Regulations, and the Applicant has voluntarily accepted that an EIA is required. Regulation 4 of the EIA Regulations details the EIA process while Regulations 4, 5 and Schedule 4 of the EIA Regulations provides details of the information to be included within the EIA Report.

4.3.3 In respect to the Marine EIA Regulations (i.e. for works below MHWS), the Proposed Development meets *Schedule 1, 8(2)* criteria of the Marine EIA Regulations as the jetty is classed as a *"trading ports, piers for loading and unloading connected to land and outside ports (excluding ferry piers) which can take vessels of over 1,350 tonnes"*. As such an EIA is mandatory for this aspect of the Proposed Development.

4.3.4 In addition to the EIA Regulations the Government legislation, regulations and best practice guidance which have been followed to undertake the EIA are referred to below:

- The Town and Country Planning Act (Scotland) 1997;
- The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended), Planning Circular 1/2017 (Scottish Government, 2017c);
- Scottish Planning Policy (Scottish Government, 2020);
- Planning Advice Note (PAN) 1/2013 Environmental Impact Assessment (Scottish Government, 2017d);
- General Pre-Application and Scoping Advice for Onshore Windfarms, (NatureScot, 2020)
- Guidelines for Environmental Impact Assessment, Institute of Environmental Management and Assessment (IEMA, 2006);
- Good Practice during Wind Farm Construction Version 4 (SNH, SEPA, Scottish Renewables, FCS, HES, MSS, 2019);
- A Handbook on Environmental Impact Assessment Version 5 (SNH, 2018);

- Assessing the Cumulative Impact of Onshore Wind Energy Developments, (SNH, 2012);
- Guidance for Marine Licence Applications (Marine Scotland, 2015a); and
- Guidance on Marine Licensable Activities subject to Pre-Application Consultation (Marine Scotland, 2015b).

4.4 The EIA Process

Overall EIA Process

4.4.1 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.

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

4.4.3 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 (Chapters 6 to 17).

Screening

4.4.4 Screening is the process by which it is determined whether or not an EIA should be conducted for the Proposed Development.

The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended)

4.4.5 As set out in paragraph 4.3.2 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. These criteria are:

- the characteristics of the development (e.g. its size, cumulation with other developments, use of natural resources, resultant pollution, waste generated);
- the environmental sensitivity of the location; and
- the characteristics of the potential impacts (including extent, magnitude, probability and duration).

4.4.6 A formal Screening Opinion was not sought, as the Applicant has voluntarily accepted that an EIA is required.

The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended)

4.4.7 As set out in paragraph 4.3.3, the proposed landing jetty falls within Schedule 1 of the Marine EIA Regulations. Thus, a screening opinion for the works below MHWS was not sought from MS-LOT as an EIA for these activities is mandatory.

Scoping

4.4.8 The EIA scoping process is undertaken to identify the potentially significant environmental impacts that should be considered when assessing the potential effects of the Proposed Development. An EIA Scoping Opinion may be obtained from the consenting authority, which sets out the matters that should be considered through the EIA.

The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended)

4.4.9 The Applicant requested an EIA Scoping Opinion from OIC in March 2019 through the submission of an EIA Scoping Report (refer to Appendix 4.1), as prepared by the EIA Project Team. 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.

4.4.10 OIC consulted with a variety of statutory and non-statutory consultees before providing an EIA Scoping Opinion in April 2019 (refer to Appendix 4.2).

4.4.11 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 relevant, and copies of additional consultee correspondence are provided in Appendix 4.4.

The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended)

4.4.12 The scope of works below MHWS was not available in sufficient detail at the time of requesting the Town and Country Planning EIA Scoping Opinion. As such, individual consultation was undertaken to discuss the scope of the assessment of the marine licensable activities, as outlined in Section 4.7.

4.4.13 This included correspondence and discussions with MS-LOT and NatureScot, along with a letter that was issued to all consultees (see Appendix 4.7) and a pre-application consultation session on the 4th of March 2021.

4.4.14 The scope of the assessment of the marine licensable activities, informed by the individual consultations, is provided in Section 4.5.

EIA

4.4.15 EIA is the systematic process of compiling, assessing and presenting 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.

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

- Baseline surveys (where appropriate and where possible) to provide information on the existing environmental character of the proposed site and the surrounding area.
- Consideration given to 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.
- Using the design parameters for the Proposed Development, prediction of the likely environmental effects, including direct effects and any indirect, secondary, short, medium and long-term, permanent and temporary, positive and negative 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 residual effects after mitigation, in relation to the sensitivity of the feature impacted upon and the magnitude of the effect predicted, in line with the methodology identified below (refer to Section 4.7).
- 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.

4.4.17 The EIA process is an iterative process where its findings have informed the design evolution of the project.

Assessment of Effects

4.4.18 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' is defined as the likely change to the characteristics/nature of the receiving environment as a result of the Proposed Development (e.g. noise from turbines), whereas the 'effect' relates to the significance of the impact (e.g. a significant residual noise effect on residential properties). These terms have been adopted throughout this EIA to present a consistent approach to the assessment and evaluation of effects and their significance.

4.4.19 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). However, this terminology should be considered interchangeable with 'magnitude of impact'.

4.4.20 Within the 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).

4.4.21 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.

4.4.22 Effects that are considered to be significant, prior to mitigation but following the implementation of best practice, are identified within the EIA Report. The significance attributed to the resultant effect is informed by professional judgement, as to 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.Table 4.1 below is used as a guide to the relationship between the sensitivity of the identified receptor and the anticipated magnitude of an impact/change. Professional judgement is however equally important in establishing the suitability of this guiding 'formula' to the assessment of the significance of each individual effect.

Table 4.1 - 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/Change	**High**	major	moderate to major	minor to moderate	negligible
	Medium	moderate to major	moderate	minor	negligible

		Sensitivity of Receptor / Receiving Environment to Change			
		High	**Medium**	**Low**	**Negligible**
	Low	minor to moderate	minor	negligible to minor	negligible
	Negligible	negligible	negligible	negligible	negligible

4.4.23 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.

4.4.24 This is a well-tested and well-established methodology and means of describing the level of effects.

4.4.25 Using professional judgement and with reference to the Guidelines for Environmental Impact Assessment (IEMA, 2004), the majority of the assessments within this EIA Report consider effects of moderate and greater significance to be significant. Those of minor significance and less are considered to be non-significant. If there are deviations from this these will be clearly stated within the individual technical chapters.

4.4.26 Synergistic/in-combination effects are carried forward into the full assessment where appropriate (i.e. where multiple significant residual effects have been identified for individual receptors).

4.4.27 Summary tables that outline the predicted effects associated with an environmental issue, the appropriate mitigation measures required to address these effects, and subsequent overall residual effects are provided at the end of each technical chapter of the EIA Report. Distinction has also been made between direct and indirect, short and long term, permanent and temporary, beneficial and adverse effects.

Cumulative Effects

4.4.28 Part 5 of Schedule 4 of The EIA Regulations sets out the matters that require to 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 development, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources".*

4.4.29 Cumulative effects are those which result from incremental changes caused by past, present or reasonably foreseeable future actions 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 provided by SNH in the document "Assessing the Cumulative Impact of Onshore Wind Energy Developments" (2012). Developments considered in addition to the Proposed Development are existing and other proposals, covering all developments, including other wind farms (SNH, 2012).

4.4.30 Table 4.2 and Figure 6.11 show application stage, consented and operational wind farm developments of over 50 m within a 40 km radius of the Proposed Development.

Table 4.2 - Cumulative Wind Energy Developments

Name	Status	Number of turbines	Blade tip height in m	Distance in km / Direction
Sandy Banks	Operational	1	77	4.34 / S
Spurness Point	Operational	5	100	6.93 / SE
Newark	Operational	1	59.7	7.46 / NNW
Kingarly Hill	Operational	1	67	11.41 / SW
Gallowhill	Operational	1	67	12.47 / NW
Westray Dev. Trust	Operational	1	77	12.72 / NW
Stronsay Dev. Trust	Operational	1	67	16.41 / SSE
Howe, Shapinsay	Operational	1	67	19.00 / S
Hammars Hill	Operational	5	67	19.50 / SW
Burgar Hill	Operational	6	Up to 116	20.99 / SW
Crowness Business Park	Operational	1	67	24.91 / SSW
Rennibister	Operational	1	67	26.50 / SSW
Holodykes	Operational	1	80	25.37 / SW
Upper Stove, Deerness	Operational	1	67	28.56 / SSE
Barnes of Ayre	Operational	3	67	32.16 / SSE
Northfield, Burray	Operational	1	70	37.82 / S
Work Farm	Consented	2	67	23.57 / S
Akla	Consented	1	67	33.72 / SSW
Costa Head	Consented	4	125	23.04 / WSW
Hammars Hill Extension	Application	2	150	20.11 / SW
Orkney's Community Wind Farm Project – Quanterness	Application	6	149.9	24.28 / SSW

4.4.31 In terms of marine licensable activities, due to the localised nature of the works, none of the windfarm developments shown in Table 4.2 have the potential to result in cumulative impacts. A search on Marine Scotland's marine licence application database (Marine Scotland, 2021a) has been undertaken, Table 4.3 outlines applications within 10 km of the Proposed Development. Given the

distances and localised nature of the marine licensable activities, cumulative impacts as a result of the installation and operation of the new extended slipway and landing jetty are not considered likely.

Table 4.3 – Cumulative marine developments

Name	Description	Status	Distance in km / Direction
Orbital | O2.2 Tidal Turbine	Installation, operation and decommissioning of a commercial demonstrator tidal turbine, the O2.2, at Berth 6 at the EMEC Fall of Warness tidal test site in Eday, Orkney.	Application	5 / S
Scottish Sea Farms Ltd Marine Farm	Fish farm deposit licence renewal at Eday Sound, Orkney.	Consented	7 / SE
Magallanes ATIR	Construction and operation of tidal energy convertor at EMEC, Fall of Warness, Orkney.	Consented	7.5 / S
Cooke Aquaculture Scotland Ltd Marine Farm	Fish farm deposit licence renewal at Bay of Ham, Orkney.	Consented	9 / W
Scottish Sea Farms Ltd Marine Farm	Discharge of Treatment Agents from a Wellboat at Eday, Orkney.	Application	7 / SE

4.4.32 Further detailed discussion on the approach to cumulative assessment is presented in each technical assessment chapter as relevant.

Mitigation and Monitoring Measures

4.4.33 The EIA Regulations require the EIA to present a description of the measures proposed to avoid, reduce and, if possible, offset significant adverse effects. Wherever reasonably practicable, mitigation measures are proposed for each significant environmental effect predicted, and can take various forms including:

- changes to the scheme design;
- physical measures applied on site; and
- measures to control particular aspects of the construction or operation of the scheme.

4.4.34 Where none of the above are deemed practicable, the detailed Proposed Development design will be required to include measures to offset any significant adverse effects. Monitoring measures are designed to examine the mitigation measures to ensure that they have the desired outcomes.

4.4.35 Mitigation measures and monitoring requirements are presented as commitments in order to ensure a level of certainty as to the environmental effects of the Proposed Development. There are various ways in which a level of certainty can be ensured, such as through the use of planning conditions. Therefore, notwithstanding any statutory mechanisms to ensure implementation, the Applicant and therefore the Contractors will be committed to implementing all mitigation measures

and monitoring requirements identified in this EIA Report relating to construction of the Proposed Development.

4.4.36 A schedule of all of the mitigation measures and monitoring requirements proposed in this EIA Report is presented in Chapter 18.

Enhancement

4.4.37 Similar to the reporting of mitigation measures, where opportunities for environmental enhancement are proposed, these have been included in the summary of environmental commitments reported at the end of each technical chapter, and in Chapter 18.

4.5 Scope of the EIA

Technical Scope

4.5.1 The technical scope of the assessment will cover all the impacts agreed through the EIA Scoping and consultation process.

4.5.2 As discussed in paragraph 4.4.12, the scope of works below MHWS was not available in sufficient detail at the time of requesting the EIA Scoping Opinion from OIC. As such, individual consultation was undertaken to inform the scope of the assessment of the marine licensable activities.

4.5.3 Detailed discussions were held with MS-LOT and NatureScot on the scope of the assessment (see Appendix 4.4). In addition, a letter was issued to the following consultees for comment on the 24th of February 2021. A copy of the letter is provided in Appendix 4.7, with responses detailed in Appendix 4.4:

- Shipping and Navigation: OIC Marine Services, Orkney Ferries, Maritime and Coastguard Agency (MCA), Northern Lighthouse Board (NLB).
- Fishing: Scottish Fisheries Federation (SFF), Orkney Fisheries
- Cultural Heritage: Historic Environment Scotland (HES)
- Ecology and Ornithology: NatureScot

4.5.4 As part of the letter, all consultees were invited to the marine licence pre-application public consultation event on the 4th of March 2021. Feedback from the event on the scope of the EIA has been accounted for in the EIA (see Appendix 4.4). Full details of the consultation event are provided in the Marine Licence Pre-Application Consultation (PAC) report which will accompany the marine licence applications.

4.5.5 Due to the ongoing cyberattack issues at the time of writing, SEPA were not available for consultation with respect to marine licensable activities.

4.5.6 Based on all consultation feedback, detailed assessments of the impacts associated with underwater noise and dredging have been undertaken, these are provided in Chapter 16 and 17 respectively. No significant effects are envisaged for the following topics and as such detailed assessments were not undertaken: benthos, coastal processes, navigation and commercial fisheries. Further details on these topics are provided in Chapter 18: Other Issues.

4.5.7 Finally, the following technical areas have been scoped out of the EIA (further details are provided in Appendices 4.4 and 4.7):

Television

4.5.8 Due to the low risk of interference with television reception (Chapter 18), a detailed assessment of potential effects has been scoped out of the EIA.

Health and Safety

4.5.9 No significant health and safety effects have been identified with respect to construction and operation of the Proposed Development, which would not be appropriately mitigated through good practice in construction and adherence to relevant legislation and guidance, as noted in Sections 3.5

and 3.6 of this EIA Report. There are no properties located on the island. Therefore, further assessment of health and safety effects has been scoped out of the EIA.

Fish Surveys

4.5.10 There is an absence of major watercourses on the site, and as such, no dedicated freshwater fish or macroinvertebrate surveys were undertaken.

4.5.11 Given the localised area of impact associated with the installation of the new extended slipway and landing jetty, significant impacts to fish species are not anticipated and have been scoped out of the EIA.

Accidents and Disasters

4.5.12 An assessment of accidents and disasters has been scoped out as detailed in Appendix 4.5.

Air Quality

4.5.13 There would be emissions from the construction vessels used for the installation of the new extended slipway and landing jetty. This would be localised and temporary and all vessels would be MARPOL compliant. As such, atmospheric emissions from marine activities are not considered to present a significant impact and have been scoped out of the EIA.

Marine Archaeology and Cultural Heritage

4.5.14 In terms of marine archaeology, there are no recorded wrecks, including Historic Marine Protected Areas (HMPAs) within the area (PastMap, 2020). In addition, the area of slipway and jetty construction works, including dredging, is very small in comparison to the surrounding available seabed. As such, the Proposed Development is not considered to present a significant impact to marine archaeology and has been scoped out of the EIA. This was confirmed by Historic Environment Scotland (HES) via their response to the consultee letter (see Appendix 4.4).

Defence

4.5.15 There are no known Ministry of Defence (MoD) exercise or disposal areas near the site (Marine Scotland, 2021b). In addition, the site is out with historic areas, such as World War II training sites (ORDEK, 2020), thus the risk of unexploded ordnance (UXO) is low. As such, significant impacts to defence from marine activities are not expected and it has been scoped out of the EIA.

Spatial Scope

4.5.16 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 (refer to 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

4.5.17 The baseline years used for the assessment of environmental effects are 2019 and 2021 as these are the years in which the assessment work was undertaken. The relevant baseline year (s) will be noted in each technical assessment.

4.5.18 For the purposes of the EIA, construction is anticipated to commence in c.2025 and expected to last for a period of 24 months. For construction effects, the assessment also takes into account the time of day that works are likely to be undertaken, for example if any night-time working is required to minimise disruption to road users.

4.5.19 No decommissioning date is anticipated for the Proposed Development, consent in perpetuity is being applied for. However, if the Proposed Development is decommissioned in the future then it is anticipated that the decommissioning effects will be similar to or less than the construction effects.

4.6 EIA Report

4.6.1 The information provided in this EIA Report has been prepared in line with the specific requirements of the relevant EIA Regulations, specifically Regulations 4 and 5 and Schedule 4 of the EIA Regulations and Regulations 5 and 6 and Schedule 4 of the Marine EIA Regulations, as summarised in Table 4.4.

Table 4.4 – Information Required in the EIA Report

EIA Regulations / Marine EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
Regulation 4 of the EIA Regulations / Regulation 5 of Marine EIA Regulations	(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 6 -18).
	(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, socio-economics, recreation, tourism, traffic, noise and shadow flicker. Biodiversity is covered in the terrestrial ecology, underwater noise, ornithology chapters and other impacts chapter. Impacts on the water environment are covered in the geology, hydrology and hydrogeology and

EIA Regulations / Marine EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
		chapter and the marine water and sediment quality chapter. Material assets are addressed through the assessment of cultural heritage effects and other chapters as appropriate.
	(4) The effects to be identified, described and assessed under paragraph (2) include the expected effects deriving from the vulnerability of the development/works to risks, so far as relevant to the development, of major accidents and disasters.	Appendix 4.5 assesses the vulnerability of the Proposed Development to major accidents and disasters.
Regulation 5 of the EIA Regulations / Regulations 6 of the Marine EIA Regulations	(2) An EIA report is a report prepared in accordance with this regulation by the developer/applicant which includes (at least)— (a) a description of the development/works 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/works on the environment; (c) a description of the features of the development/works 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/applicant, which are relevant to the development and its specific characteristics, and an indication of the main reasons for the option chosen,	Chapter 3 of the EIA Report contains a description of the Proposed Development. Chapters 6-18 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. Chapter 2 contains a description of the reasonable alternatives studied by the Applicant. A Non-Technical Summary has been included with the application.

EIA Regulations / Marine EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
	taking into account the effects of the development/works on the environment; (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/works and to the environmental features likely to be affected.	
	(3) Where a scoping opinion (or scoping direction) is issued/adopted, the EIA report must be based on that scoping opinion (or scoping direction, as the case may be), and must include the information that may reasonably be required for reaching a reasoned conclusion on the significant effects of the development/works 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, and copies of additional consultee correspondence are provided in Appendix 4.4.
	(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 of the EIA Regulations / Schedule 4 of the	1. A description of the development/works, including in particular: (a) a description of the location of the development/works; (b) a description of the physical characteristics of the whole development/works, including, where	The Proposed Development is described in Chapter 3 of the EIA Report, including consideration of anticipated construction methods and the operation of the Proposed Development.

EIA Regulations / Marine EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
Marine EIA Regulations	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/works (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; (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 land use requirements during construction and operational phases are also described in Chapter 3. Expected residues and emissions are addressed, where relevant, in the appropriate technical chapters of this EIA Report.
	2. A description of the reasonable alternatives (for example in terms of development/project design, technology, location, size and scale) studied by the developer/applicant, which are relevant to the proposed development/works and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.	Chapter 2 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.
	3. A description of the relevant aspects of the current state of the environment (the "baseline scenario") and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of relevant information and scientific knowledge.	A description of the existing (baseline) environment is provided within each technical chapter.

EIA Regulations / Marine EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
	4. A description of the factors specified in regulation 4(3)/5(3) likely to be significantly affected by the development/works: 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, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and 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, socio-economics, recreation, tourism, traffic, noise and shadow flicker. Biodiversity is covered in the ecology, ornithology chapters and other issues chapter. Impacts on the water environment are covered in the geology, hydrology and hydrogeology chapter and the marine water and sediment quality chapter. Material assets are addressed through the assessment of cultural heritage effects and other chapters as appropriate.
Schedule 4 of the EIA Regulations	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;	The predicted significant effects of the Proposed Development are reported after best-practice 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 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 in this chapter of the EIA Report. Prediction methods are discussed in

EIA Regulations / Marine EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
	(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 development, 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 development on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the development to climate change; (g) the technologies and the substances 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 or Member State level which are relevant to the development including in particular those established under Council Directive 92/43/EEC3 and Directive 2009/147/EC.	detail within each relevant technical chapter of the EIA Report.
Schedule 4 of the Marine EIA Regulations	5. As per Schedule 4(5)(a) to (g) of the EIA Regulations.	
	6. The description of the likely significant effects on the factors specified in regulation 5(3) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term,	

EIA Regulations / Marine EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
	medium-term and long-term, permanent and temporary, positive and negative effects of the works. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the works including in particular those established 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).	
Schedule 4 of the EIA Regulations	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 Chapter 4 while the individual technical chapters provide details of each technical assessment.
Schedule 4 of the Marine EIA Regulations	7. As per Schedule 4(6) of the EIA Regulations (with development referred to as works)	
Schedule 4 of the EIA Regulations	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	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 19.

EIA Regulations / Marine EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
	cover both the construction and operational phases.	
Schedule 4 of the Marine EIA Regulations	8. As per Schedule 4(7) of the EIA Regulations (with development referred to as works)	
Schedule 4 of the EIA Regulations	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 legislation of the European Union such as 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 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.	An assessment of major accidents and/or disasters has been scoped out as detailed in Appendix 4.5.
Schedule 4 of the Marine EIA Regulations	9. As per Schedule 4(8) of the EIA Regulations (with development referred to as works)	
Schedule 4 of the EIA Regulations	9. A non-technical summary of the information provided under points 1 to 8.	A Non-Technical Summary is presented as a stand-alone document.

EIA Regulations / Marine EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
Schedule 4 of the Marine EIA Regulations	10. As per Schedule 4(9) of the EIA Regulations (with development referred to as works)	
Schedule 4 of the EIA Regulations	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.
Schedule 4 of the Marine EIA Regulations	11. As per Schedule 4(10) of the EIA Regulations (with development referred to as works)	

4.6.2 The EIA Report is split into five volumes, with the NTS forming a separate document. Volume 1 of this EIA Report contains the introductory, concluding and technical chapters. Volume 2 contains the figures that inform the EIA Report. Volume 3 contains the landscape and visual figures and visualisations and cultural heritage 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.

4.7 Consultation

4.7.1 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.

4.7.2 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 EIA Scoping with consultees can be found in Appendix 4.4 and within each technical chapter.

4.7.3 The Applicant has also consulted with the general public throughout the development of the Proposed Development. The Applicant submitted a Proposal of Application Notice (PAN) in June 2020 (refer to Appendix 4.6). In line with good practice for the consenting stage of major development projects as set out within the Planning Circular 3/2013 'Development Management Procedures', a programme of pre-application community engagement has been undertaken by the Applicant.

4.7.4 Stand-alone Pre-Application Consultation (PAC) Reports have been prepared to support the planning and marine licence applications. Both reports provide details of the pre-application consultation which has taken place with the communities closest to the Proposed Development site. The Reports also summarise the technical consultation undertaken as part of the EIA.

4.7.5 The Applicant is grateful to residents and local representatives for their input into the pre-application community engagement process.

4.7.6 The scope of the EIA and the design of the Proposed Development has been influenced by all consultation, as described in the PAC Report.

4.8 Consideration of Alternatives

4.8.1 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) 58, where limited by constraints of commercial confidentiality.

4.8.2 The Proposed Development site has been demonstrated to be a viable and a productive site for wind energy generation. The Proposed Development is one of three sites under development by the Applicant under Orkney's Community Wind Farm Project. The Proposed Development is likely to be essential in meeting the conditions set down by Ofgem to justify and trigger a transmission connection from Orkney to the Scottish mainland.

4.8.3 The Applicant considered a number of alternative layouts and different scales of turbine for the Proposed Development, to arrive at the design for which consent is sought. A full description of the site identification and design iteration process is given in Chapter 2.

4.9 Assumptions, Limitations and Uncertainty

4.9.1 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, data reliability or uncertainty, the potential for minor alterations to the Proposed Development following completion of the EIA Report and/or the limitations of the prediction processes.

4.9.2 A number of assumptions were made during the EIA process and are described below:

- The principal land uses adjacent to the site remain unchanged during the course of the Proposed Development's lifetime (with the exception of proposed and consented wind energy projects which are discussed as part of cumulative impact assessments described in each technical chapter).
- Information provided by third parties, including publicly available information and databases are correct at the time of submission.

4.9.3 Specific assumptions may also be made with regards to the individual technical disciplines, which are detailed within each chapter.

4.9.4 The main limitation to the assessment has been that while the 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.

4.9.5 There is also the potential for a degree of uncertainty as certain aspects of the Proposed Development may be subject to change until a detailed design has been finalised. This uncertainty can come in the forms of:

- turbine selection;
- foundation and infrastructure design; and
- micro-siting of the turbines and infrastructure which may change due to investigation findings or implementation of mitigation measures.

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

4.9.7 Figures for land take and habitat loss should be considered as approximate and could vary slightly once the detailed design is developed.

4.9.8 Information on the Proposed Development construction has been developed by the project team based on professional judgement and outline design works, on the most likely methods of construction, plant, access and working areas etc. for the purposes of the EIA. The final choice on construction methods will rest with the contractors and may differ from those used in this assessment.

4.10 Summary

4.10.1 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 (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended) and the associated Town and Country Planning (Miscellaneous Temporary Modifications) (Coronavirus) (Scotland) Regulations 2020. Following this, the EIA process and the scope of the assessment are detailed. General assumptions, limitations and uncertainties are also stated.

4.11 References

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SNH, SEPA, Scottish Renewables, FCS, HES, MSS (2019) Good Practice during Wind Farm Construction Version 4. Available at: https://www.nature.scot/guidance-good-practice-during-wind-farm-construction

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