Chapter 4
Approach to EIA

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4 Approach to EIA

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4 Approach to EIA

4.1 Introduction

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

4.1.2 The EIA process aims to assist Scottish Ministers in their determination of the application by identifying the likely significant effects of the Proposed Development on the environment. This assessment has been carried out in consultation with statutory consultees, interested parties and the general public.

4.1.3 The structure of the EIA Report follows the requirements of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 and relevant good practice guidance. The EIA Report comprises a Non-Technical Summary (NTS), the main EIA Report text, accompanying figures and technical appendices.

4.1.4 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 consultation undertaken; and
- the assumptions, likely limitations and uncertainty.

4.1.5 This chapter is supported by the following technical appendices:

- Appendix 4.1 – Hagshaw Energy Cluster – Western Expansion EIA Scoping Report
- Appendix 4.2 – EIA Scoping Opinion
- Appendix 4.3 –Hagshaw Energy Cluster – Western Expansion EIA Scoping Update
- Appendix 4.4 – EIA Scoping Update Opinion
- Appendix 4.5 – EIA Gatecheck Report
- Appendix 4.6 – Further Consultation

4.2 Legislation, Policy and Guidelines

4.2.1 A number of legislative and best practice documents have informed the preparation of the EIA Report.

4.2.2 The European Commission Directive 2011/92/EU, amended in 2014 by Directive 2014/52/EU, requires that certain projects, both public and private, must be assessed with regards to their impacts on the environment. This is currently implemented in respect of Section 36 consents by the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 ('the EIA Regulations').

4.2.3 The content, process and structure of the EIA Report follow the criteria listed within the EIA Regulations.

4.2.4 The Proposed Development is considered to fall within Schedule 2 of the EIA Regulations, by nature of it being classed as a generating station which requires consent under Section 36 of the Electricity Act. 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. The Applicant has voluntarily accepted that an EIA is required to be undertaken. The information provided within this EIA Report has been prepared in accordance with the Directive and the EIA Regulations.

4.2.5 Paragraph 3(2)(a) of Schedule 9 of the Electricity Act requires Scottish Ministers when considering applications under Section 36 to have regard to the matters mentioned in 3(1)(a) (*i.e*. the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest.) The information required to enable the Scottish Ministers to have regard to such matters is included in the EIA Report.

4.2.6 In addition to the above, the following planning policy and best practice guidance has been taken into account in undertaking the preparation of this EIA Report:

- National Planning Framework 4 (NPF4) (Scottish Government, 2023);
- Planning Advice Note 1/2013: Environmental Impact Assessment (Scottish Government, 2013);
- Planning Circular 1/2017: Environmental Impact Assessment regulations (Scottish Government, 2017);
- Good Practice During Wind Farm Construction 4th Edition (Scottish Government *et al*., 2019);
- Assessing the Cumulative Impact of Onshore Wind Energy Developments (NatureScot, 2021);
- Siting and Designing Wind Farms in the Landscape Version 3a (Scottish Natural Heritage (now NatureScot) (SNH), 2017); and
- Environmental Impact Assessment Handbook Version 5 (SNH, 2018).

4.2.7 Additional topic-specific legislation, policy and guidance documents are noted within the technical assessment chapters of this EIA Report **(Chapters 5 to 15).**

4.3 Legal Framework for the Preparation of the EIA Report

Overall EIA Report Preparation Process

4.3.1 The EIA Report preparation process has been approached as an iterative process throughout the Proposed Development design stage, rather than a single assessment performed once the design is finalised. When used as an iterative process, the findings can be incorporated within the design evolution of the proposal to provide an optimum design with regard to the environment and the Applicant's requirements.

4.3.2 The description of likely significant effects of the Proposed Development on the environment are presented in this EIA Report, which has been prepared in accordance with the EIA Regulations.

4.3.3 The broad approach which has been followed is presented in this chapter and an overview of the methodology adopted for each technical study is provided within the respective technical chapters (**Chapters 5** to **15**)**.**

Screening and Scoping

4.3.4 Screening is the process by which it is determined whether or not an EIA should be conducted for a proposed development. As set out above, the Proposed Development falls within Schedule 2 of the EIA Regulations. Schedule 3 of the EIA Regulations sets out 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.

4.3.5 The Applicant recognised that the Proposed Development would have the potential to have significant environmental effects, and therefore, an EIA would be required. Therefore, rather than undertaking a formal EIA screening process, the Applicant voluntarily elected to undertake an EIA.

4.3.6 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 matters that should be considered through the EIA.

4.3.7 An EIA Scoping Opinion was requested from the Scottish Government Energy Consents Unit (ECU) in September 2022 through the submission of an EIA Scoping Report (**Appendix 4.1**). This EIA Scoping Report contained details of the site's baseline conditions and an indication of the characteristics of the Proposed Development, as was being proposed at that time. It also proposed which environmental topics would be assessed in the EIA, and the assessment methodologies that would be used.

4.3.8 The ECU consulted with statutory and non-statutory consultees before providing an EIA Scoping Opinion in March 2023 (refer to **Appendix 4.2**).

4.3.9 In response to the comments raised within the EIA Scoping Opinion from NatureScot and RPSB, a number of changes to the Proposed Development were made, including a reduction in the spatial area and scale of the Proposed Development, namely to remove development from within the Muirkirk and North Lowther Uplands Special Protection Area (SPA) and the Muirkirk Uplands Special Site of Scientific Interest (SSSI). Therefore, and in consultation with the ECU a Scoping Update was submitted to the ECU in February 2024 (**Appendix 4.3**) to provide consultees with information on these changes. The ECU provided a Scoping Opinion to this update in May 2024 (**Appendix 4.4**). Information from the EIA Scoping Opinion and EIA Scoping Update Opinion has informed the preparation of the Proposed Development's EIA Report.

4.3.10 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 **Appendix 4.6**, and in each technical chapter as appropriate.

4.3.11 A summary of how the Scoping responses received would be addressed in this EIA Report was provided to the ECU within an EIA Gatecheck Report in October 2024, refer to **Appendix 4.5**.

4.4 The EIA Report Preparation Process

4.4.1 The preparation of the EIA Report requires the systematic process of compiling, assessing, presenting and mitigating all the likely significant environmental effects of a proposed development. The assessment that is included in the EIA Report 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.

4.4.2 The main steps in the assessment process that are included in the EIA Report 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.
- Using findings as an iterative process to incorporate within the design evolution of the proposal to provide an optimum design with regard to the environment and renewable energy generation.

- 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 and enhancement, 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 and describing with an assessment of the likely significant effects of the Proposed Development in this EIA Report.

Assessment of Effects

4.4.3 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*. noise from turbines). The level of impact together with the sensitivity of the receiving environment are considered and a judgment as the overall level of effect is made. For the purposes of the EIA Report an effect is found either to be significant or not significant. These terms have been adopted throughout this EIA Report to present a consistent approach to the assessment and evaluation of effects and their significance.

4.4.4 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 & IEMA, 2013). However, this terminology should be considered interchangeable with 'magnitude of impact' and should be regarded as having the same meaning.

4.4.5 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, the cumulative impacts with other relevant developments; and how the environmental baseline is expected to evolve in the absence of the Proposed Development (the do-nothing scenario).

4.4.6 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.

4.4.7 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 4.1** 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 may change between technical assessments (**Chapters 5** to **15**).

Table 4.1 – Guide to the Inter-Relationship between Magnitude of Impact and Sensitivity 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

4.4.8 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 large improvement (or deterioration) to the existing environment;
- **moderate** beneficial or adverse effect – where the Proposed Development would result in a medium 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.

4.4.9 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 in EIA terms, with those of moderate significance or less to be non-significant. If there are deviations from this, these are clearly stated within the individual technical chapters and assessments.

4.4.10 Summary tables are provided at the end of each technical chapter of the EIA Report (**Chapters 5** to **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.

4.4.11 Distinction has also been made between direct and indirect, short and long term, permanent and temporary effects. These are considered as relevant to findings of major/ moderate/ minor/ negligible effects as part of the exercise of professional judgement.

Cumulative Effects

4.4.12 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*".

4.4.13 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 document 'Assessing the Cumulative Impact of Onshore Wind Energy Developments' (NatureScot, 2021). Developments considered in addition to the Proposed Development are existing and other proposals, covering all major developments, including other wind farms.

4.4.14 There are no other relevant large solar or BESS developments in planning, consented/under construction, and operational within close proximity of the Proposed Development at the time of assessment (March 2025). The closest relevant development is Carlisle Road Battery Energy Storage System, a 200 MW BESS development, located approximately 9.8 km east of the site boundary. Due to this development's distance from the Proposed Development, with the Hagshaw Energy Cluster and large areas of forestry located between, it is not considered that it could give rise to any significant cumulative effects, and it is therefore not considered in the cumulative assessments for any of the technical topics.

4.4.15 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 residual effects included in in **Chapter 17**.

4.5 Scope of the EIA Report

Technical Scope

4.5.1 The technical scope of the assessment will cover all the impacts mentioned in **Table 4.2** below, with the following exceptions relating to technical topics where these have been scoped out of the EIA.

Planning Policy and Context

4.5.2 A standalone Planning Statement will be submitted with the Section 36 application therefore there will be no Planning Policy and Context assessment within the EIA Report.

Socio Economics, Recreation and Tourism

4.5.3 In line with the Sector Deal agreed in 2023, a Socio Economic Impact Assessment is not provided within the EIA Report itself; instead a Economic and Community Impact Report will be submitted as a standalone document, as part of the application submission.

Telecommunications

4.5.4 As outlined in the Scoping Report, consultation was undertaken with the telecommunications link operators, detailed in **Appendix 4.6**, and as no impacts were identified through this consultation telecommunication impacts are scoped out of further assessment.

Utilities

4.5.5 Utility searches were undertaken along the B743 and across the southern development area to inform the layout of the Proposed Development. Prior to construction, standard pre-construction utilities surveys will be carried out to identify any new or changes to underground services, including water, electrical and gas infrastructure, so as to avoid disruption. Further assessment of effects on utilities has therefore been scoped out of the EIA.

Air Quality

4.5.6 Local air quality during construction (dust and vehicle emissions) will be appropriately controlled through good practice in construction as outlined in **Chapter 3**. This will also be set out in a Construction Environmental Management Plan (CEMP). An outline CEMP is provided in **Appendix 3.1**. These effects are therefore not considered likely to be significant and assessment of effects on local air quality during construction has been scoped out of the EIA. No significant atmospheric emissions are likely to arise as a result of the operation of the Proposed Development, and assessment of effects on local air quality during operation has therefore also been scoped out.

Major Accidents and Disasters

4.5.7 The Proposed Development is not located within an area with a history of natural disasters such as extreme weather events, and the construction and operation of the Proposed Development would be managed within the requirements of a number of health and safety regulations. It is considered there is a minimal risk of major accidents and / or disasters occurring as a result of the Proposed Development and this has therefore been scoped out of further assessment within the EIA.

Health and Safety, Human Health and Population

4.5.8 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 during construction and adherence to relevant legislation and guidance. Infrastructure including roads and properties have been appropriately buffered and are sufficiently separated from the proposed turbine locations to limit any potential health and safety concerns. Therefore, further assessment of health and safety effects has been scoped out of the EIA.

4.5.9 Potential effects on human health and population are appropriately considered within relevant technical assessments as reported in various EIA Report chapters, as summarised below.

- Visual impacts are considered in **Chapter 5**.
- Potential effects on private water supplies are considered in **Chapter 8**.
- Noise effects are considered in **Chapter 9**.
- Traffic and transport effects are considered in **Chapter 11**.
- Shadow flicker effects from the proposed wind turbines are considered in **Chapter 14**.
- Glint and glare effects from the proposed solar development are considered in **Chapter 15**.

4.5.10 Therefore, no separate, dedicated EIA Report chapter is included specifically for assessment of effects on human health and population.

Spatial Scope

4.5.11 The spatial scope of the EIA, i.e. the geographical coverage of the assessment undertaken, has taken account of a number of factors, in particular:

- the extent of the Proposed Development, as defined by the application boundary (refer to **Figure 1.1**);
- 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 the proposed physical works.

4.5.12 The relevant 'Study Area' and spatial scope of assessment for each technical topic is set out in the respective technical chapters of this EIA Report (**Chapters 5** to **15**).

Temporal Scope

4.5.13 The baseline years used for the assessment of environmental effects are 2022 to 2025, as this is the period in which the baseline environmental surveys were undertaken.

4.5.14 For the purposes of the EIA, if approved, construction is expected to last for 24 months. The proposed operational life for the Proposed Development is 40 years, after which time it will be decommissioned.

4.5.15 For construction effects, the assessment 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.

4.6 EIA Report

4.6.1 Regulations 4 and 5 and Schedule 4 of the EIA Regulations specifies the '*information for inclusion in Environmental Impact Assessment Reports*'. **Table 4.2** below details where the information has been provided within the EIA Report.

Table 4.2 – 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 **15**).
	(3) The factors are— population and human health; 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, land, soil, water, air and climate; and material assets, cultural heritage and the landscape.	The receptors potentially affected by the Proposed Development are detailed within each of the technical chapters (**Chapters 5** to **15**). Effects on population and human health are assessed in relation to visual impacts (**Chapter 5**), water environment (**Chapter 8**), noise (**Chapter 9**), traffic (**Chapter 11**), shadow flicker (**Chapter 14**), and glint and glare (**Chapter 15**). Biodiversity is covered in the ecology and ornithology chapters (**Chapters 6 and 7**). Impacts on soils and water are covered in the geology, peat, hydrology and hydrogeology chapter (**Chapter 8**). Detailed assessment of air quality has been scoped out as discussed in **Section 4.5**. Climate effects, including consideration of carbon savings, are assessed as reported in **Technical Appendix 8.7**. Material assets are addressed through the assessment of cultural heritage effects (**Chapter 10**) and other chapters as appropriate. Landscape effects are considered in **Chapter 5**.

EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
	(4) The effects to be identified, described and assessed under paragraph (2) include the expected effects deriving from the vulnerability of the development to risks, so far as relevant to the development, of major accidents and disasters.	An assessment of major accidents and/or disasters has been scoped out as detailed in **Section 4.5.**
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; (e) a non-technical summary of the information referred to in subparagraphs (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.	**Chapter 3** of the EIA Report contains a description of the Proposed Development. **Chapters 5 to 15** 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.
	(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.	This EIA Report is based on the Scoping Opinion (**Appendices 4.2** and **4.4**). 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 **Appendix 4.6**.
	(5) In order to ensure the completeness and quality of the EIA report—	**Chapter 1** contains details of the expertise and qualifications of the competent experts who prepared the EIA Report.

EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
	the developer/applicant must ensure that the EIA report is prepared by competent experts; and the EIA report must be accompanied by a statement from the developer/applicant outlining the relevant expertise or qualifications of such experts.	
Schedule 4	1. A description of the development, including in particular a description of the location of the development; 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; a description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used; 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 location and characteristics of the Proposed Development are described in **Chapter 3**, 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 3**. Expected residues and emissions are addressed, where relevant, in the appropriate technical chapters of this EIA Report (**Chapters 5** to **15**).
	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 2** of the EIA Report describes the design iteration process and details how the Proposed Development site was chosen, and the environmental constraints and opportunities taken into consideration in determining the final layout which is the subject of the application.
	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.

EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
	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, 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, as outlined in reference to Regulation 4(3) above.
	5. A description of the likely significant effects of the development on the environment resulting from, inter alia: the construction and existence of the development, including, where relevant, demolition works; the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources; the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste; the risks to human health, cultural heritage or the environment (for example due to accidents or disasters); 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; 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; 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	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 (**Chapters 5** to **15**). 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 the EIA Report. Prediction methods are discussed in detail within each relevant technical chapter of the EIA Report. Each technical chapter (**Chapters 5** to **15**) includes an assessment of cumulative effects, taking account of other existing and/or approved projects as relevant. Climate effects, including consideration of greenhouse gas emissions and savings from the Proposed Development, are assessed as reported in **Technical Appendix 8.7**.

EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
	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.	
	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 (**Chapters 5** to **15**).
	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 16.**
	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 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.	An assessment of major accidents and/or disasters has been scoped out as detailed in **Section 4.5**.

EIA Regulations	Required Information (EIA Regulations)	Relevant Reference within this EIA Report
	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.
	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.

4.7 Consultation

Regulatory Consultation

4.7.1 Consultation is a key component of the EIA process. In order to inform the EIA, there has been ongoing consultation with statutory consultees, engagement through correspondence and meetings, as required.

4.7.2 Consultation with organisations who were contacted either directly by the Applicant or by the ECU through the formal EIA scoping process, is described as appropriate in each technical chapter of this EIA Report and included within **Appendix 4.6.**

Public Consultation

4.7.3 A stand-alone Pre-Application Consultation (PAC) Report has been prepared which gives details of the correspondence, online and the three rounds of in-person public consultations and other discussions which have taken place with the communities closest to the Proposed Development site. The PAC Report also details findings of that work and illustrates the ways in which community engagement has helped identify potential issues arising from the emerging development proposal, and where appropriate, shape the final proposal which is now the subject of an application for Section 36 consent.

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

4.8 Consideration of Alternatives

4.8.1 Paragraph 5(2)(d) and Schedule 4 of the EIA Regulations requires the consideration of alternatives and an indication of the reasons for selecting the site, except where limited by constraints of commercial confidentiality.

4.8.2 The Applicant is a local landowner and developer that has an ongoing search process for potential renewable energy opportunities. Given the Applicant's location and experience of delivering renewable energy projects within the Hagshaw Development Cluster to the east of the site, the Proposed Development site provided an opportunity to develop a further project that could build upon the successes of the Hagshaw Energy Cluster Development Framework as well continue with the existing pattern of renewable energy development. The Proposed Development site area has evolved substantially from its initial proposals with each iteration taking into consideration feedback from landowners, consultees, local communities and the advice provided by the technical environmental specialists. This process was supported by a project specific Geographical Information System (GIS) database to identify and record constraints and opportunities across the site area in order to focus the development area. Some of the different areas (outwith the site) previously considered but not deemed suitable for development are not disclosed for commercial reasons and in accordance with PAN 1/2013.

4.8.3 The Applicant considered over 50 alternative layouts and different scales of development across a period of four years for the Proposed Development, to arrive at the design for which consent is sought. A full description of the iterative design process is provided in **Chapter 2** of this EIA Report.

4.9 Assumptions, Limitations and Uncertainty

4.9.1 The EIA Report process is designed to provide sufficient environmental information to enable informed decision making based on the best available information about the potential environmental effects 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.

4.9.2 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, except where there are 'live' applications for major developments (e.g. other major renewable developments), which are appropriately considered in the cumulative assessment process as noted below.
- Current operational, consented and under construction wind energy projects, and solar and BESS projects as appropriate, 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.

4.9.3 Further to this, more specific assumptions have been made with regard to the individual technical aspects and are detailed within each technical 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 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;
- micro-siting of the turbines and associated infrastructure which may be required due to investigation findings or implementation of mitigation measures; and

4.9.6 Additionally, as detailed in **Chapter 3**, the final confirmed selection of short-duration BESS and substation has not yet been made, therefore two prospective locations have been considered and assessed, although only one will be built out.

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

4.9.8 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 appointed to construct the Proposed Development, and may differ from those used in this assessment. Any such uncertainty is stated in the EIA Report, and any changes to these methods will remain within the maximum design envelope.

4.10 Summary

4.10.1 This chapter has detailed the methodology used to prepare 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 Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended). Following this, the EIA Report preparation process and the scope of the assessment are detailed. General assumptions, limitations and uncertainties are also stated.

4.11 References

European Commission (2011). Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (Text with EEA relevance). Available at: http://data.europa.eu/eli/dir/2011/92/oj

European Commission (2014). Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (Text with EEA relevance). Available at: http://data.europa.eu/eli/dir/2014/52/oj

Landscape Institute and IEMA (2013). Guidelines for Landscape and Visual Impact Assessment (GLVIA3). Available at: Guidelines for Landscape and Visual Impact Assessment (GLVIA3) - Landscape Institute

NatureScot (2021). Assessing the Cumulative Impact of Onshore Wind Energy Developments. Available at: Guidance - Assessing the cumulative landscape and visual impact of onshore wind energy developments | NatureScot

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

Scottish Government (2017). The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. Available at: http://www.legislation.gov.uk/ssi/2017/101/contents/made

Scottish Government (2017). Planning Circular 1/2017: Environmental Impact Assessment regulations. Available at: Planning Circular 1/2017: Environmental Impact Assessment regulations - gov.scot (www.gov.scot)

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 Government (2023). National Planning Framework 4. Available at https://www.gov.scot/publications/national-planning-framework-4/

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: Environmental Impact Assessment Handbook version 5 - 2018 | NatureScot

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