# **Chapter 2: EIA Methodology**



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# **Chapter 2: EIA Methodology**

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# 2 EIA Methodology

## 2.1 Introduction

- 2.1.1 Environmental Impact Assessment (EIA) is a process which identifies the environmental effects (both beneficial and adverse) of development proposals to assist the consenting authority in considering and determining an application. Early identification of potentially adverse environmental effects also leads to the identification and incorporation of appropriate mitigation, management and enhancement measures into the project design to avoid, reduce, and if possible, remedy potentially significant adverse environmental effects. This Chapter sets out the broad approach and assessment methodology used in this EIA Report.
- 2.1.2 This EIA Report has been prepared in accordance with the EIA Regulations and provides a clear and concise assessment of the Proposed Development and its likely significant environmental effects, including primary, secondary, direct, indirect and cumulative effects, on the natural, built and human environments. The EIA Report provides the determining authority, in consultation with statutory consultees and the wider community, with sufficient information to make an objective judgement as to the acceptability of the Proposed Development, within the context of national, regional and local planning and environmental policy.

# 2.2 The EIA Process

#### **Requirements of the EIA Regulations**

- 2.2.1 The approach to this EIA has followed the requirements of the EIA Regulations 2017. Regulation 4 of the EIA Regulations defines the process of EIA and highlights the factors and their interactions that should be considered. Regulation 5(1) notes that "an application for an Electricity Act consent for EIA development must be accompanied by an environmental impact assessment report ("EIA Report")". Regulation 5 (2) then sets out the minimum requirements of an EIA Report:
  - a description of the development comprising information on the site, design, size and other relevant features of the development;
  - a description of the likely significant effects of the development on the environment;
  - 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;
  - 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;
  - a non-technical summary (NTS) of the information; and
  - any other information specified in Schedule 4 of the EIA Regulations relevant to the specific characteristics of the development and to the environmental features likely to be affected.

#### **EIA Methodology**

- 2.2.2 The methods followed in this EIA Report have drawn on current good practice from the Institute of Environmental Management and Assessment (IEMA)<sup>1</sup> and the Scottish Government<sup>2</sup> to ensure a robust assessment. The EIA Report preparation process adopted for the Proposed Development can be summarised as follows, and is described further below:
  - scoping and consultation with statutory consultees, non-statutory consultees and the local community to identify the key issues on which the EIA should focus;
  - establishing baseline environmental conditions through desktop research and site surveys;
  - determining how effects could be avoided or reduced through design evolution;
  - identifying the potential effects of the Proposed Development and any proposed mitigation;
  - assessing the significance of residual environmental effects on the identified receptors against recognised or defined criteria following mitigation; and
  - describing how likely significant effects would be monitored (e.g. through conditions attached to a consent).

<sup>&</sup>lt;sup>2</sup> Scottish Government, 2013, Planning Advice Note 1/2013: Environmental Impact Assessment, Available [online] at: https://www.gov.scot/publications/planning-advice-note-1-2013-environmental-impact-assessment/documents/



<sup>&</sup>lt;sup>1</sup> Institute of Environmental Management and Assessment (2017), Delivering Proportionate EIA: A collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice, Available [online] at: <u>https://www.iema.net/policy/ia/proportionate-eia-guidance-2017.pdf</u>

# 2.3 EIA Scope and Consultation

#### EIA Scoping

- 2.3.1 The scope of the EIA Report has been established through a combination of consultation with various stakeholders, and the EIA scoping process. Consultation has formed an integral part of the EIA process and both the EIA team and the Applicant have contacted statutory and non-statutory consultees to determine their views on the Proposed Development, to collect baseline information and refine survey methodologies.
- 2.3.2 An EIA Scoping Report<sup>3</sup> for the Proposed Development setting out the proposed scope of the EIA Report was submitted to the Energy Consents Unit (ECU) in March 2022 with a request for a formal Scoping Opinion. A Scoping Opinion<sup>4</sup> was subsequently issued by the ECU in June 2022, advising on the scope of the EIA Report. **Technical Appendix 2.1** details the Scoping Opinion responses and how these have been addressed within the EIA Report.

#### **Topic Areas Scoped out of Detailed Assessment**

2.3.3 Planning Advice Note 1/2013 (PAN 1/2013) Environmental Impact Assessment (2013) (amended in 2017) provides advice on the general requirements relating to the preparation and content of an EIA Report<sup>5</sup> and states:

"Whilst every ES should provide a full factual description of the development, the emphasis of Schedule 4 is on the 'significant' environmental effects to which a development is likely to give rise. Some effects may be of little value or no significance for the particular development in question. They will therefore need only very brief treatment to indicate that their possible relevance has been considered."

- 2.3.4 Furthermore, PAN 1/2013 (as amended) notes that Scoping forms a key part of the EIA process, and that its purpose is to:
  - identify the key issues to be considered;
  - identify those matters which can either be scoped out or which need not be addressed in detail;
  - discuss and agree appropriate methods of impact assessment, including survey methodology where relevant; and
  - identify any other project level assessment or survey obligations which may apply.
- 2.3.5 In line with the above guidance, where effects have been identified (whether at Scoping or during detailed assessment) as being not significant to warrant further assessment, these have been 'scoped out' and given only brief treatment in the relevant topic chapters. Effects scoped out of the EIA are detailed in **Chapters 5 to 11**. Whole topics which are scoped out of detailed EIA are detailed below.

#### Population and Human Health

2.3.6 IEMA guidance states that an EIA Report chapter for human health is required where:

"Either other EIA technical topics have been scoped in to assess likely and potentially significant effects to human receptors, community amenities or services, and there are likely and potential significant population health implications from such assessments;

Or there is likely to be a change to the project in a wider determinant of health not covered by other EIA technical topics, and this change is potentially significant for population."

2.3.7 In reviewing the potential for human health effects, consideration has been given to the significance of primary effects identified throughout the EIA Report to determine if there could be 'secondary effects' on human health. Where primary effects are not predicted to be significant, e.g. operational and cumulative noise, then there is not considered to be a potential health effect.

#### Private Water Supplies

2.3.8 The effects on private water supplies (PWS) have been considered in **Chapter 6: Geology, Hydrology and Peat** as there are ten supplies which are within 1 km of the Site. However, effects on these PWS have been scoped out in **Chapter 6: Geology, Hydrology and Peat** and therefore there will be no secondary effects on human health as a result of water quantity/ water quality deterioration.

<sup>&</sup>lt;sup>5</sup> Formerly Environmental Statement (ES).



<sup>&</sup>lt;sup>3</sup> ECU reference ECU00003447: <u>Scottish Government - Energy Consents Unit - Application Search</u>

<sup>&</sup>lt;sup>4</sup> The full scoping opinion can be read on the ECU website here: <u>Scottish Government - Energy Consents Unit - Application</u> <u>Details</u>

#### Noise and Traffic

2.3.9 Health effects arising from construction and operational noise, and construction traffic accidents, have been scoped out as no significant residual noise or traffic effects were identified (refer to **Chapter 10: Noise and Vibration** and **Chapter 11: Access, Traffic and Transport**).

Dust

- 2.3.10 With respect to dust effects during construction and operation of the Proposed Development, the Design Manual for Roads and Bridges (DMRB) states that the locations of 'sensitive receptors' within 200 m of construction areas should be identified and mitigation measures to reduce dust effects be applied. The Applicant will commit to adopting good practice dust management during construction and will implement these through the Construction Environmental Management Plan (CEMP), thereby controlling and reducing any potential effects that dust generation may have on health. An Outline CEMP is provided in **Technical Appendix 4.2**, and will be a requirement of consent (see Standard Conditions). No significant effects relating to dust are therefore predicted and so there will be no secondary effects on health. During operation of the Proposed Development, there will be limited dust raising maintenance activities and vehicular movements to and from the Site will also be limited.
- 2.3.11 It is not considered that there will be a change to any wider determinants of health as a result of the Proposed Development. As such, potential effects on population and human health have been scoped out of detailed assessment.

#### Major Accidents and Disasters

- 2.3.12 In accordance with the latest IEMA guidance, a proportionate approach has been adopted for this assessment, given that many events which could be classified as 'major accidents and disasters', and which could cause significant effects on the environment, are not relevant to the Proposed Development or its location. The Proposed Development is not located in an area with a history of natural disasters such as extreme weather events, and its construction and operation will be managed within the requirements of a number of health and safety related Regulations, including the Construction (Design and Management) Regulations 2015 and the Health and safety Work etc. Act 1974.
- 2.3.13 Effects which could be deemed to cause a major accident or disaster have been assessed in the EIA. These relate primarily to potential peat slide risk events which have been assessed as part of the peat landslide hazard risk assessment (PLHRA) to understand the risk of peat instability during construction and the receptors which this could affect – see **Technical Appendix 6.4**.
- 2.3.14 The guidance is clear that major accidents and disasters can also be scoped out where proposed design measures or compliance with legislation and best practice will minimise the likelihood of a major accident or disaster occurring. Specific to the Proposed Development, this relates to a failure of the structural integrity of a turbines(s) or a mechanical fault. Modern turbines are fitted with sensors which detect if wind speeds are too high to operate safely, resulting in their shut down. This prevents excessive wear and damage to the gearbox and reduces the risk of turbines catching fire, the occurrence of blade failure or even a failure of the structural integrity of the turbine itself. Turbines will also be constructed to very high design standards specified by the manufacturer and will be maintained on a regular basis to ensure that they are structurally sound.
- 2.3.15 The Construction (Design and Management) Regulations 2015 have formed an integral part of the conceptual design of the Proposed Development. Any health and safety risks have been taken account of and their consideration reflected in the design. Surveys and investigations have been undertaken throughout the pre-consent phase to, as far as reasonably practicable, identify, manage and if possible, avoid any potential risks during construction.
- 2.3.16 All construction activities will be managed within the requirements of the Regulations and will also comply with the requirements of the Health and Safety at Work etc. Act 1974 as noted above. To further reduce possible health and safety risks, a Health and Safety Plan for the project will also be drawn up. All staff and contractors working on the construction will be required to comply with the safety procedures and work instructions outlined in the Plan at all times.
- 2.3.17 To ensure that hazards are appropriately managed, risk assessments will be undertaken for all major construction activities, with measures put in place to manage any hazards identified.

#### Fire and Lightning Strikes

2.3.18 The occurrence of turbines catching fire from suspected lightning strikes is very rare, and there is no evidence that human life has been at risk from such events occurring in the past; assisted by turbine designs that include an embedded lightning protection system.

#### Turbine Icing

2.3.19 With respect to turbine icing, the Scottish Government web-based renewables advice for onshore turbines states that:

"The build-up of ice on turbine blades is unlikely to present problems on the majority of sites. When icing occurs, the turbines' own vibration sensors are likely to detect the imbalance and inhibit the operation of the machines".

2.3.20 In addition, the Applicant will implement measures to ensure the safety of workers and the general public in relation to ice throw and ice fall, including notices throughout the Site alerting members of the public of the possible risk of ice throw and ice fall under certain conditions.

#### **Telecommunications**

2.3.21 Consultation with telecoms providers at the EIA Scoping stage did not reveal any telecommunications receptors which could be effected as a result of the construction and operation of the Proposed Development.

#### Shadow Flicker

- 2.3.22 Under certain combinations of geographical position and time of day, when the sun passes behind the rotors of a turbine and casts a shadow over neighbouring properties, as the blades rotate, the shadow may appear to flick on and off, when viewed through a narrow aperture such as a window. The phenomenon occurs only within buildings where shadows are cast across a window aperture, and the effects are typically considered to occur up to a maximum distance of 10 times the rotor diameter from each turbine. This effect is known as shadow flicker.
- 2.3.23 Shadow flicker effects are only possible during the operational phase of a wind farm development when the blades are rotating and the sun is shining. A computer model ReSoft has been used to calculate when residential properties surrounding the Proposed Development may experience shadow flicker from the turbines. Two properties were identified within the shadow flicker study area (see Appendix 2.3, Figure 2.3.1). Based on the maximum scenario, the property at Benbuie will not experience any shadow flicker effects from the Proposed Development. The property at Blairoch is predicted to experience shadow flicker effects of a theoretical maximum 0.13 hours per day. As the maximum theoretical minutes per day threshold is 30 minutes or 30 hours per annum, the shadow flicker effects experience and therefore, are not significant.
- 2.3.24 Although shadow flicker levels are likely to fall to below the 30-hour per annum significance threshold based on the average sunshine hours expected at the Site, the Applicant is nonetheless committed to promptly investigating any complaints of shadow flicker and taking appropriate action as required.
- 2.3.25 The Applicant proposes that prior to the operation of the first turbine, a Wind Farm Shadow Flicker Protocol would be submitted to and approved by Dumfries and Galloway Council (DGC). This would set out the protocol to be followed should a shadow flicker complaint be received from a receptor within the study area, and potential mitigation measures. Should a complaint be received these mitigation measures would include using the turbine's shadow flicker control module to be programmed to minimise impacts at the receptor(s). Operation of the Proposed Development would be undertaken in accordance with the Wind Farm Shadow Flicker Protocol.
- 2.3.26 Full details of the shadow flicker assessment, results and proposed mitigation measures can be found in **Technical Appendix 2.3**.

#### Aviation

- 2.3.27 Turbines have the ability to interfere with the radar navigation systems of airports as well as being a physical barrier to low flying aircraft. The Applicant has consulted with the aviation consultees including the Ministry of Defence (MOD) as safeguarded by the Defence Infrastructure Organisation (DIO), National Air Traffic Services En Route Ltd (NERL) and national airports.
- 2.3.28 The Applicant proposes a lighting scheme of both infrared and visible lighting on the turbines to mitigate potential impacts. In addition, the Applicant will agree appropriate radar mitigation measures with NERL and Prestwick Airport as required. Full details of the potential aviation impacts and how they will be addressed can be found in **Technical Appendix 2.2**.

#### <u>Tourism</u>

2.3.29 The relationship between wind farm development and tourism has been the subject of several studies. A 2021 study by Biggar Economics<sup>6</sup> found *"no relationship between tourism employment and wind farm development, at the level of the Scottish economy, across local authority areas or in the locality of wind farm sites"*. A socio-economic impact appraisal undertaken in 2022 for Twyn Hywel energy park showed that the project could make a positive contribution to over 80% of the well-being indicators of Wales<sup>7</sup>. Furthermore, within the report, tourism at comparable sites were looked at, which included Stirling

https://twynhywelenergypark.wales/wpcontent/ uploads/15.1\_Twyn-Hywel\_Socio-Economic-Impact-Appraisal.pdf



 <sup>&</sup>lt;sup>6</sup> BiGGAR Economics (2021) Wind Farms and Tourism Trends in Scotland: Evidence from 44 Wind Farms [pdf]. Available at: <u>https://biggareconomics.co.uk/wp-content/uploads/2021/11/BiGGAR-Economics-Wind-Farms-and-Tourism-2021.pdf</u>.
 <sup>7</sup> BiGGAR Economics (2022) Twyn Hywel Energy Park Socio Economic Impact Appraisal [pdf]. Available at:

Castle in Scotland. Braes of Doune Wind Farm has a significant visual impact on Stirling Castle and is regularly discussed in the media around the potential impact of onshore wind and tourism. According to the Association of Leading Visitor Attractions (ALVA) figures in 2019 there were over 600,000 visitors to Stirling Castle<sup>8</sup>, which is over 60% more than the figures from 2005 when the construction of the wind farm began. This suggests that the presence of the wind farm hasn't caused tourists to stop visiting the castle.

2.3.30 Given the evidence above which demonstrates that wind farms do not adversely affect tourism, potential effects on tourism associated with the Proposed Development have been scoped out of detailed assessment.

#### **Consultation with Statutory and Non-Statutory Consultees**

2.3.31 In addition to the formal EIA Scoping process, further consultation was also undertaken on specific issues by technical leads. Each technical discipline chapter of the EIA Report provides a summary of the consultation undertaken, in conjunction with an explanation as to how this has been considered in the assessment.

#### **Public Consultation**

- 2.3.32 In relation to the EIA, engagement with the local community has been undertaken through a number of methods:
  - In December 2022, a project website was launched providing opportunity to comment on proposals: https://projects.statkraft.co.uk/appin/
  - The first round of public information events were held online between 29 August and 19 September 2022 and in-person on 07 and 08 September 2022 in Moniaive and Tynron respectively.
  - The second round of public information events were held online between 17 February and 21 March 2025 and in-person on 26 February 2025 in Moniaive and 27 February 2025 in Carsphairn and Tynron.
- 2.3.33 In addition, correspondence and meetings with the local community took place from December 2022, to discuss the progress of the Proposed Development.
- 2.3.34 Full details of the public consultation undertaken and the public responses received are contained within the **Pre-Application Consultation (PAC) Report** submitted in support of this application.

### 2.4 Approach and Methods

#### General Approach to the EIA

- 2.4.1 The assessments that have been undertaken as part of the EIA have been based upon the Site as shown within the red line boundary on **Figure 1.2**, and study areas which vary between assessments and which are defined in the EIA Report assessment **Chapters 5-11**.
- 2.4.2 Assessments have been undertaken using a 'reasonable worst-case' approach. This assumes that the Proposed Development would produce the maximum anticipated impact on the surrounding environment from the range of possible effects projected on the assumption that 'embedded' mitigation and good practice is in place, as detailed further below.
- 2.4.3 The EIA has been undertaken based on a fixed location for turbines and infrastructure as shown on **Figure 4.1**, subject to the 100 m micrositing allowance.
- 2.4.4 Each chapter identifies the sensitivity of the baseline receptors and then considers the range and nature of the impacts associated with the Proposed Development. The assessment then determines the level of the effect significance before ("potential") and after ("residual") the implementation of the mitigation. The level of residual effect determines whether or not an effect will be considered to be significant in the context of the EIA Regulations.
- 2.4.5 The EIA Regulations require a description of the likely significant effects on the environment, with these covering "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." (Paragraph 5, Schedule 4, EIA Regulations 2017).
- 2.4.6 Assessment criteria have been used to evaluate environmental effects. Significance of the effect is generally determined through a combination of the sensitivity of a receptor to an effect and the magnitude of the impact. This process is outlined as follows:
  - Identification of baseline conditions of the Site and its environs, including sensitivity of receptors which may be affected by changes in the baseline conditions.
  - Consideration of the magnitude of potential changes to the environmental baseline.

<sup>&</sup>lt;sup>8</sup> Association of Leading Visitor Attractions (ALVA) (2020) 2019 Visitor Figures [online]. Available at https://www.alva.org.uk/details.cfm?p=610



- Assessment of the significance of effect taking into account sensitivity of receptors and magnitude of impact.
- Identification of appropriate mitigation measures.
- Assessment of significance of residual effects taking account of any mitigation measures.
- 2.4.7 Where significant environmental effects are predicted in the EIA process, then the EIA Report sets out mitigation measures which would be employed to eliminate or ameliorate the impact to acceptable levels where practicable. Mitigation measures can be in the form of changes to construction, operational or decommissioning practice, or changes/additions/enhancement to the design. Where impacts cannot be mitigated residual effects are discussed.
- 2.4.8 The above approach does not, however, apply to all disciplines addressed in the EIA Report, and alternative approaches are therefore developed as appropriate. These are described and justified in the relevant EIA Report chapter.

## 2.5 Baseline Conditions

- 2.5.1 A fundamental aspect of the EIA is to determine the baseline environmental conditions at the Site. The baseline conditions have been determined by a number of different methods, including desktop studies, site surveys, use of analytical models and the acquisition of data from third parties.
- 2.5.2 Making predictions about how parameters such as land use, landscape, views and other environmental characteristics may change in the future relies on assumptions about future development and environmental trends. For this reason, the assessment of each environmental parameter was undertaken in comparison to baseline conditions. The baseline conditions section in each chapter describes the existing environmental conditions at the Site (and in the wider area as pertinent to the particular environmental parameter).
- 2.5.3 As natural processes and/or human activities can affect the baseline, it is important to establish future baseline scenario in the absence of the Proposed Development, i.e. the likely environmental conditions that would exist should the Proposed Development not be constructed, or the 'do nothing' scenario. Establishing the future baseline scenario requires transparent decision making as to what natural process changes and/or changes as a result of human activity should be included or excluded from the future baseline scenario. Each assessment chapter considers the future baseline in the absence of the Proposed Development.
- 2.5.4 Relevant operational and under construction (if likely to be completed by the Proposed Development construction year) wind farms are considered to be part of the baseline environment for the purposes of this EIA Report, unless specifically stated otherwise within relevant topic chapters. It is accepted that the baseline conditions will gradually alter through time as a result of climate change which has the potential to alter the landscape and species of flora and fauna which are currently prolific within and around the Site. The implications of climate change for the baseline conditions are considered in the relevant topic chapters.

# 2.6 Avoidance of Effects through the Design Process

- 2.6.1 The EIA was treated as an iterative process, rather than a one-off, post design environmental appraisal. This has allowed the findings from the EIA to be fed into the design process, to avoid, reduce and where practicable, mitigate environmental effects. Where potentially adverse environmental effects were identified through preliminary investigations as part of feasibility work, or later in the detailed EIA, consideration was given as to how the Proposed Development design could be modified to 'design out' adverse environmental effects, or where this was not practicable, to identify appropriate mitigation.
- 2.6.2 This iterative design process is explained further in **Chapter 3: Site Description and Design Evolution**, and in the subsequent assessment chapters (**Chapters 5-11**).

# 2.7 Assessment of Effects

- 2.7.1 The assessment of likely significant effects, using a range of appropriate methodologies, takes into account the construction, operation and decommissioning of the Proposed Development in relation to the Site and environs. Methodologies for predicting the nature and magnitude of any potential environmental impacts vary according to the technical subject area. Numerical or quantitative methods of assessment are used to predict values which can be compared against published thresholds and indicative criteria contained in relevant guidance and standards.
- 2.7.2 Not all technical subject areas are capable of being assessed numerically or quantitatively, and thus qualitative assessments are used in certain cases. Such assessments rely on previous experience of similar projects, baseline information interpretation and professional judgement to determine the significance of effects.
- 2.7.3 The significance of an effect is derived from an analysis of:



- The **sensitivity** of the receiving receptor to change, including its capacity to accommodate the kinds of changes the Proposed Development may bring about. Criteria for the determination of sensitivity (e.g. 'high', 'medium', or 'low') or of importance (e.g. 'international', 'national', 'regional' or 'authority area') of receptors have been established based on prescribed guidance, legislation, statutory designation and/or professional judgement.
- The amount and type of impact, often referred to as the impact **magnitude** which includes the timing, frequency, scale, size and duration of the impact.
- The likelihood of the impact occurring which may range from certainty to a remote possibility.
- Expressing the **significance** of the effects of the Proposed Development, usually in relative terms, based on the principle that the more sensitive the receptor, the more likely and the greater the magnitude of the impact (compared with the baseline) and the greater the resulting significance of the effect.
- 2.7.4 As the significance of effects will differ depending on the context and the 'receptors' affected by the Proposed Development, there is no general definition of what constitutes a significant effect. In EIA, the term significance reflects both its literal meaning of 'importance' and its statistical meaning where there is an element of quantification. This combination of judgemental/subjective and quantifiable/objective tests has become the standard approach to understanding and applying the test of 'significance'.
- 2.7.5 Significant effects are defined in each of the topic specific chapters and refer to both potential effects (prior to any additional mitigation) and residual effects (after additional mitigation has been applied). Unless stated otherwise in methodologies set out in the individual assessment chapters, 'Major' or 'Moderate' effects are considered to be 'significant' in the context of the EIA Regulations.
- 2.7.6 Any effects associated with the Proposed Development are considered to be adverse unless otherwise stated. It is worth noting that an effect assessed to be significant does not necessarily mean it is unacceptable. This is supported by Policy 11 of NPF4 where it is noted that it is recognised that significant landscape and visual impacts *"are to be expected for some forms of renewable energy. Where impacts are localised and/ or appropriate design mitigation has been applied, they will generally be considered to be acceptable".*

#### Assessment of Cumulative Effects

- 2.7.7 In accordance with the EIA Regulations, this EIA Report has assessed 'cumulative effects'. By definition, these are effects that result from incremental changes caused by past, present or reasonably foreseeable projects, together with the Proposed Development. Likely cumulative effects have been defined as the likely effects that the Proposed Development may have with other wind farm developments in the local area which are consented or at application stage in addition to the operational and under construction developments which form part of the baseline environment (i.e. the incremental effects resulting from the Proposed Development if all other developments are assumed to be constructed/operated). The extent to which the potential cumulative effects through that co-existence of developments is assessed and described as appropriate throughout **Chapters 5-11** of this EIA Report.
- 2.7.8 Wind farms within 60 km and 45 km are shown on **Figure 5.7a and b** respectively. This includes all known sites which are operational, under construction, consented and at application stage<sup>9</sup>. The cut-off date for the cumulative assessment was 28 March 2025. Changes to the cumulative baseline have not been included after this date to allow time for the assessment to be prepared. Therefore, cumulative assessments undertaken are considered to reflect the latest cumulative situation as far as possible. DGC and NatureScot were issued with the cumulative plan and informed of the proposed approach to the assessment.
- 2.7.9 It should be noted that the specific wind farms which are included within the cumulative effect assessment varies from one technical chapter to another according to the particular effects which are under consideration, for example all of the developments within a 20 km radius are included within **Chapter 5: Landscape and Visual Amenity**, however this approach is not appropriate for **Chapter 7: Ecology** due to the potential receptors being much more localised. The rationale for the wind farms included in the cumulative assessments is explained within each chapter.

#### Mitigation

- 2.7.10 Part 7 of Schedule 4 of the Regulations states that an EIA Report should include "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".
- 2.7.11 Mitigation is considered an integral part of the overall design strategy for the Proposed Development, including 'embedded' mitigation through design as detailed in paragraph 2.4.2 above (e.g. altering and

<sup>&</sup>lt;sup>9</sup> Scoping schemes are not included in the cumulative assessments due to the uncertainty associated with schemes at such an early development stage.



refining the Proposed Development's design to reduce landscape and visual impact, watercourse crossings or avoid sensitive species and habitats).

2.7.12 It is important to note a number of measures are good practice and an integral part of the construction process and have been taken into account prior to assessing the likely effects of the Proposed Development. Where relevant, these embedded mitigation and good practice measures are described in the topic chapters and are detailed in **Technical Appendix 4.3**. Any mitigation measures identified over and above the standard embedded or good practice measures are also identified, and are termed 'additional mitigation measures'

#### Enhancement

2.7.13 Opportunities for environmental enhancement measures within the Site have been given due consideration throughout the design evolution process. Enhancement refers to measures to be implemented which don't form mitigation by avoiding, reducing or offsetting effects; but instead provide an opportunity to improve the characteristics, features, land use or habitats on-site to make them into a better state than are currently present prior to the Proposed Development being constructed. There is, therefore, a net or new benefit to the environment.

#### Monitoring

2.7.14 The EIA Report sets out details of any post-consent monitoring which is proposed. This includes, where appropriate, proposals to measure the effectiveness of the identified mitigation measures.

#### Assumptions, Limitation and Technical Difficulties

- 2.7.15 Part 6 of Schedule 4 of the Regulations requires that EIA Reports provide "details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved".
- 2.7.16 Whilst any assessment limitations are discussed in **Chapters 5 to 11**, it is considered that this EIA Report contains adequate information to enable the ECU, DGC and consultees to review and form a reasoned conclusion on the likely significant effects of the Proposed Development on the environment. Each topic chapter also lists the relevant assumptions that have been made when completing the assessment. Again, it is not considered that these assumptions present limitations to understanding potential significant effects.
- 2.7.17 It is not considered that any matter has prevented the accurate assessment of likely significant environmental effects or the identification of appropriate mitigation measures. The environmental effects reported in this EIA Report, and the level of mitigation described, effectively set the minimum standard which will be achieved by the construction and operation and maintenance and decommissioning of the Proposed Development. The Applicant has a commitment to ensuring that, where details of the Proposed Development differ from those assessed in the EIA, the Proposed Development will not have any adverse environmental effects which are significantly worse than those which have been assessed in the EIA and reported in this EIA Report.

#### **Residential Properties**

2.7.18 A number of properties have been identified in the area surrounding the Proposed Development. Whether these are included or excluded from the relevant assessments of the EIA (i.e. residential visual amenity (RVA), noise sensitive receptors, shadow flicker and private water supply) has been determined according to the relevant topic and based on their status as confirmed by the owner and from the DGC property records. Cairnhead has been confirmed as a "bothy" in DGC records but has been included in the RVA and noise assessment.

#### Micrositing

2.7.19 During the construction of the Proposed Development, there may be a requirement to microsite elements of the Proposed Development infrastructure. This is an important measure which allows for further minimisation of environmental effects, under the supervision of the ECoW who is responsible for overseeing and managing the implementation of environmental policies and procedures on a construction site, and for ensuring that the construction activities comply with relevant environmental legislation, regulations, and best practices. It is proposed that a 100 m micrositing tolerance of turbines and all other infrastructure would be applied to the Proposed Development (so long as infrastructure does not move into the watercourse buffers or other environmental constraints identified on-site and remains within the Site boundary. Each topic chapter has considered this micrositing allowance within their assessments.

## 2.8 References

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