Chapter 1: Introduction



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Chapter 1: Introduction

Contents

1.1	Introduction	1-1
1.2	The Proposed Development	1-1
1.3	The Applicant	1-2
1.4	Legislative Requirements for EIA	1-2
1.5	Supporting Documents	1-3
1.6	Benefits of the Proposed Development	1-3
1.7	Structure of the EIA	1-4
1.8	Statement of Expertise	1-6
1.9	Key Definitions	1-6
1.10	Availability of the EIA Report	1-7
1.11	References	1-7

1 Introduction

1.1 Introduction

- 1.1.1 This Environmental Impact Assessment Report (hereafter referred to as 'EIA Report'), has been prepared by Land Use Consultants (LUC) and supporting specialist consultants on behalf of Appin Wind Farm Ltd (a company wholly owned by Statkraft UK Limited, hereafter referred to as 'the Applicant'). The EIA Report accompanies an application to construct and operate a wind farm comprising nine turbines (with associated ancillary infrastructure) known as the Appin Wind Farm (hereafter referred to as 'the Proposed Development') on land (hereafter referred to as 'the Site') approximately 6.2 km north of Moniaive and 14.8 km east of Carsphairn as shown on Figure 1.1¹. The Site is shown on Figure 1.2 as the area encompassed by the application boundary. The Proposed Development would be located within the Dumfries and Galloway Council (DGC) area (within the Tynron Community Council area), centred on BNG 272887, 597709. A detailed description of the Proposed Development.
- 1.1.2 As the Proposed Development would have a generating capacity in excess of 50 megawatts (MW), the Applicant is submitting an application under Section 36 of the Electricity Act 1989 (hereafter referred to as 'the Act') to the Scottish Government Energy Consents Unit (ECU). As part of this process, deemed planning permission is also sought under Section 57(2) of the Town and Country Planning (Scotland) Act 1997, as amended.
- 1.1.3 The precise route of the grid connection of the Proposed Development has not yet been determined. The grid connection route would require statutory environmental impact assessment and a consent under Section 37 of the Electricity Act 1989, which will be submitted as a separate application and would be progressed by Scottish Power Energy Networks (SPEN).

1.2 The Proposed Development

- 1.2.1 The Proposed Development is described in detail in **Chapter 4: Description of the Proposed Development.** In summary, it will comprise:
 - Up to nine turbines (including internal transformers), each up to a maximum blade tip height of 200 m;
 - Foundations supporting each turbine;
 - Associated crane hardstandings and adjacent laydown areas at each turbine location;
 - A network of on-site access tracks (of which 14.8 km will be upgraded existing track and 13 km will be new track, all with a typical running width of 5 m) with turning heads and passing places;
 - Fifty four watercourse crossings and associated infrastructure (48 upgraded existing crossings and six new crossings);
 - A network of underground cables and cable trenches to connect the turbines to the on-site substation;
 - Vehicle turning heads;
 - On-site passing places (location and size to be determined by the turbine supplier);
 - Site signage;
 - A permanent compound containing the control building and substation; and
 - A Nature Enhancement Management Plan (NEMP).
- 1.2.2 In addition to the above components of the operational Proposed Development, construction of the Proposed Development will also require the following components:
 - One temporary construction compound for the Proposed Development and one temporary construction compound for SPEN;
 - Extraction of stone from three existing borrow pits;
 - A concrete batching (location to be confirmed however this is likely to be in the borrow pit, or construction compound, as identified by the Contractor and agreed in the Construction Environmental Management Plan (CEMP));

¹ All figures are provided in **Volume 2** of the EIA Report.



- Junction widening at the point of access with the C35s; and
- Felling of approximately 62.52 hectares (ha) of forestry to facilitate access during construction.
- 1.2.3 For the purposes of the EIA, the height of the proposed turbines has been assessed as up to 200 m to blade tip. It is expected that each turbine would be rated at approximately 7.2 MW giving a total installed capacity of approximately 64.8 MW. This equates to enough power for over 82,600 average Scottish households², which would be a considerable contribution to the green energy requirements of households in the DGC area. However, it is likely that turbines with a rating greater than 7.2 MW would be available at the time of procurement and construction given the rapidly evolving onshore wind technology.
- 1.2.4 The expected operational life of the Proposed Development is 50 years from the date of commissioning. Up to 18 months are required for construction (an indicative construction programme can be found in **Chapter 4: Description of the Proposed Development**). It is anticipated that construction of the Proposed Development will commence in 2029. Following the 50 year operational period, the Proposed Development will be fully decommissioned, unless a consent is obtained to extend the operational life of the Proposed Development or to replace the turbines. Decommissioning will last approximately 12-18 months. This will involve the removal of the turbines, hardstandings, electrical equipment and control building after which point the Site will be restored. A method statement will be prepared and agreed with the relevant statutory consultees prior to decommissioning of the Proposed Development.

1.3 The Applicant

- 1.3.1 The application will be made by Appin Wind Farm Limited, a wholly owned subsidiary of Statkraft UK Limited (Statkraft).
- 1.3.2 Statkraft is a leading company in hydropower internationally and Europe's largest generator of renewable energy. The Group produces hydropower, wind power, solar power and supplies district heating. Statkraft is a global company in energy market operations and has over 7,000 employees in over 20 countries Statkraft produces hydropower, wind power, solar power and supplies district heating, generating 66 TWh of renewable power.
- 1.3.3 Statkraft is at the heart of the UK's energy transition. Since 2006, Statkraft has gone from strength to strength in the UK, building experience across wind, solar, hydro, storage, grid stability, EV charging, green hydrogen and a thriving markets business. Statkraft has invested over £1.4 billion into the UK's renewable energy infrastructure and facilitated over 4.5 GW of new-build renewable energy generation through Power Purchase Agreements (PPA). Statkraft develops, constructs, owns and operates renewable facilities across the UK and employs over 550 people in offices across Scotland, England and Wales.
- 1.3.4 Further information about Statkraft can be found at <u>www.statkraft.co.uk</u>.

1.4 Legislative Requirements for EIA

- 1.4.1 The EIA has been undertaken in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations).
- 1.4.2 Where a development falls within one of the descriptions in Schedule 2 of the EIA Regulations 2017, and is considered likely to have significant effects on the environment, then an EIA is required to be submitted with the application for consent. The Proposed Development falls within Schedule 2 as:

"a generating station, the construction of which (or operation of which) will require a section 36 consent but which is not a Schedule 1 development."

- 1.4.3 Schedule 3 of the EIA Regulations 2017 lists the 'selection criteria' which must be taken into account by Scottish Ministers in determining whether a Schedule 2 development is an EIA development. These selection criteria relate to the nature, scale and location of a proposed development and consequently, whether the project is likely to have to have significant effects on the environment.
- 1.4.4 For those developments listed under Schedule 2, the requirement for an EIA can be determined via a screening request made to Scottish Ministers. In this case, a screening request to Scottish Ministers was not sought since it was acknowledged at an early stage given consideration of the site its nature, location and the characteristics of the intended Proposed Development that an EIA would be required.

² Based on a 64.8 MW installed capacity, average Scottish domestic consumption of 3,078 Kwh per year (BEIS December 2022) and the average load factor detailed in the CfD Allocation Round 6: Standard Terms Notice (Department for Energy Security & Net Zero, 6th March 2024) which states a load factor for new build projects (for delivery years 2026-2029) of 44.8% for onshore wind (>5MW) (<u>https://assets.publishing.service.gov.uk/media/65e85ee662ff48001a87b243/cfd-ar6-standard-terms-notice.pdf</u>).



- 1.4.5 Establishing which aspects of the environment and associated issues are relevant for a particular project is captured in the EIA Scoping process. Scoping is the process of identifying those aspects of the environment and associated issues which may be significantly affected by any proposed development and therefore should be subject to detailed assessment and reported in an EIA Report. An EIA Scoping Report³ for the Proposed Development setting out the proposed scope of the EIA Report was submitted to the ECU in March 2022 with a request for a formal Scoping Opinion. A Scoping Opinion⁴ was subsequently issued by the ECU in June 2022. The Scoping exercise for the Proposed Development is detailed in **Chapter 2: EIA Methodology**.
- 1.4.6 Regulation 3 of the EIA Regulations prohibits the Scottish Ministers from granting Section 36 consent for EIA development unless they have first taken the environmental information provided in the EIA Report and in responses to the application by consultees and the public into consideration.
- 1.4.7 This EIA Report presents the findings of the EIA process by describing the Proposed Development, the current conditions at the site, consideration of reasonable alternatives, design evolution, predicted future change in the absence of the Proposed Development and the likely impacts which may result from the construction, operation and decommissioning of the Proposed Development. The potential for any cumulative effects with other developments in the vicinity of the Site that are operational, under construction, or in the planning system is also assessed.
- 1.4.8 Where appropriate, mitigation and enhancement measures are proposed, and any residual impacts are reported including where beneficial effects on biodiversity can be achieved in line with National Planning Framework 4 (NPF4). Further details on the requirements for, and the approach to, undertaking the EIA are set out in **Chapter 2: EIA Methodology**.

1.5 Supporting Documents

Planning Statement

1.5.1 A separate Planning Statement has been prepared by David Bell Planning. The purpose of this is to appraise the Proposed Development in the context of the relevant Development Plan and other material considerations to determine its compliance with local and national policy. There is no legislative requirement for the submission of a Planning Statement, although it is regarded as good practice. The Planning Statement does not form part of the EIA Report.

Pre-Application Consultation Report

1.5.2 A Pre-Application Consultation (PAC) Report has been produced by Smithyhouse. Although not required for applications submitted under the Act, pre-application consultation is required for major and national developments under the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013 (as amended). The PAC has therefore been prepared as good practice and presents a summary of the public consultation that was undertaken for this application, including examples of material provided and feedback given.

Socio-Economic Benefits Report

1.5.3 A Socio-Economic Benefits Report has been prepared by the Applicant. This report outlines how both Statkraft UK Limited and the Applicant are maximising the socio-economic benefits from the companies both locally and nationally and how they are contributing to the socio-economic commitments of the NPF4 and Onshore Wind Sector Deal. This report is not part of the EIA Report.

Standard Onshore Wind Farm Conditions

1.5.4 The Applicant has also submitted an amended version of the ECU Standard Onshore Wind Farm Conditions as part of the application documents detailing which conditions the Applicant proposes be applied to the consent of the Proposed Development⁵.

1.6 Benefits of the Proposed Development

Carbon Emissions Offset

1.6.1 The principal atmospheric pollutants produced by burning fossil fuels are CO₂, sulphur dioxide (SO₂), and oxides of nitrogen (NOx). In contrast, the harnessing of wind energy is non-consumptive and produces no gases or other by-products. The key environmental benefit of the Proposed Development will be the generation of electricity from a renewable energy source that will reduce or avoid the use of

⁵ <u>https://www.gov.scot/publications/standard-onshore-wind-conditions-section-36-consent-and-deemed-planning-permission-form-and-guidance/</u>



³ ECU reference ECU00003447 <u>Scottish Government - Energy Consents Unit - Application Search</u>

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

fossil fuels through the displacement of electricity generated from other sources of energy, or add to renewable electrical capacity which can contribute to decarbonisation in other sectors such as transport and heat.

- 1.6.2 The purpose of the Proposed Development is to generate electricity from a renewable source of energy, offsetting the need for power generation from the combustion of fossil fuels in a range of sectors. Consequently, the electricity that will be produced by the Proposed Development results in a saving in emissions of CO₂ with associated environmental benefit. The 'payback time' is defined as the length of time (in months) required for the Proposed Development to be considered a net avoider of emissions rather than a net emitter. The calculation of payback time includes a consideration of emissions resulting from the construction and operational phases, and the quantification of the carbon storage loss as a result of loss of peat within the Site (expressed as CO₂ emissions).
- 1.6.3 Use of the Scottish Government's latest carbon calculator with best estimate values, based on available information and assuming that fossil fuel electricity generation will be replaced, indicates that the Proposed Development will pay back the carbon emissions associated with its construction and operation in approximately 1.8 years and overall will save approximately 64,000 tonnes of CO2e⁶ per year over its operational lifetime by displacing fossil fuel use. Further details are provided in **Technical Appendix 4.7**.

Habitat Restoration and Enhancement

1.6.4 As part of the Proposed Development, there will be a NEMP (**Technical Appendix 7.5**). Proposals include improvements to the peat resource restoration on the Site by infilling of the eroded areas of peat and drain blocking, planting of broad-leaved trees, riparian tree planting and creation of a pond in borrow pit 3, following construction.

Socio-economic Benefits

- 1.6.5 Should the Proposed Development gain consent, a Community Benefit Fund would be made available to the community. This is offered on the basis of a payment per MW of installed capacity at the Scottish Government recommended rate at the time of commissioning the Proposed Development. At present the recommended rate is £5,000 per MW (Scottish Government, 2019a) (index linked from the first payment) of installed electricity generating capacity. It is estimated that, depending on the type of investment selected, the community benefit fund alone would accrue benefits to local groups and organisations of approximately £16.2 million over the 50-year life of the Proposed Development.
- 1.6.6 The Proposed Development will also provide a Science, Technology, Engineering and Mathematics (STEM) fund for the locally community of £10,000 per annum during the operational period of the Proposed Development.
- 1.6.7 Full details of the above and other socio-economics benefits from the Proposed Development can be found in the Appin Wind Farm Statement on Socio-economic Benefits Report which accompanies the planning application.

Energy Security Benefits

1.6.8 There is a drive to reduce the UK's reliance on fossil fuels and boost the sources of homegrown energy for better energy security in the long-term as set out within the British Energy Security Strategy (2022). This states that "*Onshore wind is one of the cheapest forms of renewable power.*" The Proposed Development will make a notable contribution to the home grown electricity within Scotland, with the potential to power over 82,600 homes⁷.

1.7 Structure of the EIA

- 1.7.1 This EIA Report presents the findings of the assessment of the likely significant environmental effects of the Proposed Development during construction, operation and decommissioning. The general methodology for the EIA Report is detailed in **Chapter 2: EIA Methodology**, and the EIA process has also been used to inform the iterative design process for the Proposed Development (see **Chapter 3: Site Description and Design Evolution**).
- 1.7.2 The EIA Report is presented in four volumes as follows:

⁷ Based on a 64.8 MW installed capacity, average Scottish domestic consumption of 3,078 Kwh per year (BEIS December 2022) and the average load factor detailed in the CfD Allocation Round 6: Standard Terms Notice (Department for Energy Security & Net Zero, 6th March 2024) which states a load factor for new build projects (for delivery years 2026-2029) of 44.8% for onshore wind (>5MW) (<u>https://assets.publishing.service.gov.uk/media/65e85ee662ff48001a87b243/cfd-ar6-standard-terms-notice.pdf</u>).



 $^{^{6}}$ GHG emissions are measured in tonnes of carbon dioxide equivalents (tCO₂e) which is a quantity that describes, for a given mixture and amount of GHG, the amount of carbon dioxide (CO2) that would have the same global warming potential (GWP), when measured over a 100-year timescale. These units therefore enable comparison of different GHGs emitted, or saved, at different project stages.

- Volume 1: Written Text;
- Volume 2: Figures;
- Volume 3: Landscape and Visual Impact Assessment (LVIA) and Cultural Heritage Assessment Visualisations;
- Volume 4: Technical Appendices;
- Volume 5: Confidential Appendices.
- 1.7.3 A Non-Technical Summary (NTS) is provided as a stand-alone document to the EIA Report. The NTS provides a non-technical overview of the EIA Report and is intended for review by the general public. It includes a description of the Proposed Development and a summary of the predicted environmental effects.
- 1.7.4 **Chapters 1-4** of **Volume 1** of the EIA Report are considered to be introductory chapters and comprise the following:
 - **Chapter 1: Introduction** (this Chapter) provides a brief introduction to the Proposed Development, the legislative requirements and outlines the structure of the EIA Report.
 - Chapter 2: EIA Methodology provides more details on the EIA process including consultation, and summaries the legislative and policy background relevant to the Proposed Development.
 - Chapter 3: Site Description and Design Evolution summarises the reason for selection of the location of the Proposed Development. The approach to the design strategy and information on how the layout has evolved through the EIA process is also detailed.
 - Chapter 4: Proposed Development Description provides a detailed description of the Proposed Development.
- 1.7.5 **Chapters 5-11** of **Volume 1** describe the likely significant effects of the Proposed Development on a topic-by-topic basis as set out in **Table 1.1**. Further information is provided below on the structure of each chapter. The assessment section of each topic chapter is structured in a way that is more logical for that particular topic area, and whilst maintaining the general structure identified below, may include other sections specific to that particular topic.
- 1.7.6 Finally, **Chapter 12: Summary of Significant Effects** provides a consolidated summary of all likely significant effects of the Proposed Development identified through the EIA Process.
- 1.7.7 The EIA Report has been compiled by LUC on behalf of the Applicant. Whilst LUC has overall responsibility for the EIA Report, sub-consultants prepared specialist chapters and provided input as outlined in **Table 1.1** below.

Chapter Number	Title	Organisation Responsible
Chapter 1	Introduction	LUC / Statkraft
Chapter 2	EIA Methodology	LUC / Statkraft
Chapter 3	Site Description and Design Evolution	LUC / Statkraft
Chapter 4	Proposed Development Description	LUC / Statkraft
Chapter 5	Landscape and Visual Amenity	LUC
Chapter 6	Geology, Hydrology and Peat	Kaya / OWC Ltd
Chapter 7	Ecology	Avian
Chapter 8	Ornithology	Avian
Chapter 9	Cultural Heritage	LUC
Chapter 10	Noise and Vibration	TNEI
Chapter 11	Access, Traffic and Transport	Pell Frischmann
Chapter 12	Summary of Significant Effects	LUC

Table 1.1 - Structure of the EIA Report and Responsibilities

Structure of the EIA Report Assessment Chapters

- 1.7.8 The general structure of each topic-specific chapter is as follows:
 - Introduction: provides an introduction to the chapter.
 - Legislation, Policy and Guidance: summarises the key legislation, policy and guidance that has been followed during the assessment of effects.
 - **Consultation:** summarises the key aspects of consultation; which bodies were consulted, what information was provided and any responses to the consultation.
 - Assessment Methodology: summarises the key methods used in the assessment (desk-based study, field survey and consideration of significance of effect, including criteria used).



- **Baseline Conditions:** summarises the baseline situation, including field survey results where appropriate, and the way in which the baseline may alter as a result of climate change.
- **The 'Do Nothing' Scenario:** describes the predicted environmental conditions and proposed or likely changes likely to occur in the absence of the Proposed Development.
- **Embedded Mitigation:** describes the constraints taken account of in designing the layout and any modifications to the layout as part of the iterative design process.
- **Good Practice Mitigation:** details the measures assumed to be in place during construction of the Proposed Development or integral to the design prior to the assessment being undertaken. These measures are considered to be 'embedded' mitigation, and are assumed to be in place for the purposes of the assessment.
- **Micrositing Allowance:** provides details of the way in which effects may change as a result of implementing a 100 m micrositing allowance on all infrastructure.
- Scope of the Assessment: details key issues, appropriate to the topic, that the assessment has addressed.
- Assessment of Effects: provides an overview of the type of effects considered in the assessment:
 - Construction Effects: describes the predicted effects, proposed additional mitigation and residual effects associated with construction of the Proposed Development.
 - Operational Effects: describes the predicted effects, proposed additional mitigation and residual effects associated with operation of the Proposed Development.
 - Cumulative Effects: describes the incremental construction/operational effects associated with adding the Proposed Development to the other wind farms being considered in the cumulative assessment. Proposed additional mitigation measures and residual cumulative effects are also described.
- Interrelationship between Effects: describes the indirect and secondary effects resulting from the interaction of separate direct effects arising both within a topic area and interrelated with other topics areas.
- Further Survey Requirements and Monitoring: describes any additional survey work or monitoring proposed, including that to monitor the effectiveness of proposed mitigation.
- Summary of Significant Effects: includes a table summarising any identified significant effects including mitigation measures and residual effects.

1.8 Statement of Expertise

1.8.1 Regulation 5(5) (a-b) of the EIA Regulations states:

"In order to ensure the completeness and quality of the EIA Report—

(a) the developer must ensure that the EIA Report is prepared by competent experts; and

(b) the EIA Report must be accompanied by a statement from the developer outlining the relevant expertise or qualifications of such experts".

- 1.8.2 The EIA process has been led by LUC. LUC is a Registrant of Institute of Environmental Management and Assessment (IEMA) and holder of the IEMA EIA Quality Mark which allows organisations that lead the co-ordination of statutory EIAs in the UK to make a commitment to excellence in EIA activities, and to have this commitment independently reviewed on a regular basis. Further information on LUC can be found at <u>www.landuse.co.uk</u>.
- 1.8.3 Details have been provided in **Technical Appendix 1.1** of the professional expertise and qualifications of each of the lead topic authors listed in **Table 1.1** above.

1.9 Key Definitions

- 1.9.1 To ensure clarity in the EIA Report, the following terms are used:
 - The Site: An area delineated by the red line application boundary as shown in Figure 1.1.
 - The Proposed Development: Shown as the components within the red line application boundary for which planning permission is being sought. Details of the components of the Proposed Development are provided in **Chapter 4** and shown in **Figure 4.3-4.11**.
 - The Study Area: The area(s) included in desk or field studies for individual topic area assessments. The Study Area varies depending on the geographical extent of receptors considered and the

nature of the potential effects within each discipline, as informed by professional guidance and EIA best practice. The Study Areas are therefore explained within the approach and methods section within **Chapters 5-11** of this EIA Report

1.10 Availability of the EIA Report

- 1.10.1 The EIA Report will be published in accordance with Part 5 of the EIA Regulations and Part 4 of the Electricity (Applications for Consent) Regulations 1990 (as amended).
- 1.10.2 A notice will be published as follows:
 - on the project website https://projects.statkraft.co.uk/appin/:
 - once in the Edinburgh Gazette;
 - once in the Herald; and
 - in the Dumfries and Galloway Standard for two successive weeks.
- 1.10.3 In addition to the statutory requirements for publicising the EIA Report, the Applicant has advised the following local Community Councils that the EIA Report is available:
 - Tynron Community Council;
 - Glencairn Community Council;
 - Keir Community Council;
 - Carsphairn Community Council; and
 - Penpont Community Council.
- 1.10.4 Hard copies of the EIA Report can be viewed at the following locations during their opening hours:
 - Dumfries and Galloway Council, Kirkbank House, English Street, Dumfries, DG1 2HS; and
 - Glencairn Memorial Institute, 3 Chapel Street, Moniaive, Thornhill, DG3 4EJ
- 1.10.5 A copy of the EIA Report Volumes will be made available for download from the project website at: https://projects.statkraft.co.uk/appin/.
- 1.10.6 Paper copies of the NTS are available free of charge from:
 - Write: Appin Wind Farm Limited, c/o Statkraft UK Limited, The Garment Factory, 10 Montrose Street, Glasgow, G1 1RE
 - Telephone: 0800 772 0668
 - Email: UKProjects@statkraft.com
- 1.10.7 Paper copies of the EIA Report may be purchased by arrangement from the above address for £2,500 per copy, or £15 per disk/USB memory stick copy. The price of the paper copy reflects the cost of producing the Landscape and Visual photographs at the recommended size. As such, a CD/USB memory stick version is recommended.

1.11 References

HM Government (1989). The Electricity Act 1989. Available at: <u>https://www.legislation.gov.uk/ukpga/1989/29/contents</u>. Accessed on 25 March 2024.

HM Government (1990). The Electricity (Applications for Consent) Regulations 1990. Available at: <u>https://www.legislation.gov.uk/uksi/1990/455/made</u>. Accessed on 25 March 2024.

Scottish Executive (1997). Town and Country Planning (Scotland) Act 1997 (as amended). Available at: <u>https://www.legislation.gov.uk/ukpga/1997/8/contents</u>. Accessed on 25 March 2024.

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Scottish Government (2022), National Planning Framework 4. Available at: <u>https://www.gov.scot/publications/national-planning-framework-4/</u>. Accessed on 12 June 2024.

