



# Chapter 1

## Introduction

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# Chapter 1

## Introduction

### 1.1 Introduction

1. ScottishPower Renewables (UK) Ltd (SPR) is applying to the Scottish Government's Energy Consents Unit (ECU) under *Section 36 of the Electricity Act 1989 (as amended)*, seeking consent and deemed planning permission to construct and operate an extension to the Operational Kilgallioch Windfarm (hereinafter referred to as the 'proposed Development'). The proposed Development is located at a site centred on British National Grid (BNG) reference BNG (223950, 570150) as shown on **Figure 1.1**. This Environmental Impact Assessment (EIA) Report has been prepared in support of the application to the ECU.
2. This chapter provides an introduction to the proposed Development and the background behind the proposal, as well as providing an overview of the purpose of the EIA Report, its structure and the team behind it.

### 1.2 The Applicant

3. SPR is part of the Iberdrola Group, one of the world's largest integrated utility companies and a world leader in wind energy. SPR now only produce 100% green electricity - their focus is on wind energy, smart grids and driving the change to a cleaner, electric future. They are investing over £4m every working day to make this happen. They are committed to speeding up the transition to cleaner electric transport, improving air quality and over time, driving down bills. To deliver a better future quicker, for everyone.
4. SPR is at the forefront of the development of the renewables industry through pioneering ideas, forward thinking and outstanding innovation. Their ambitious growth plans include offshore windfarms in East Anglia with teams also leading the Group's international offshore development in Germany, France and the USA. With over 40 operational windfarms, SPR manage all of their sites through their world leading Control Centre at Whitelee Windfarm, near Glasgow.
5. SPR currently have five operational windfarms within the local area of the proposed Development; Kilgallioch, Arecleoch, Wether Hill, Harestanes and Ewe Hill.

### 1.3 Background and Site Description

#### 1.3.1 Site Description

6. The proposed Development Site is located within the Dumfries and Galloway Council (DGC) area, with the exception of approximately 10.8 km of the access track corridor, which is located in the South Ayrshire Council (SAC) area. It forms an extension to the Operational Kilgallioch Windfarm, north west of Eldrig Fell (226 m AOD), which has been operational since 2017 and has a capacity of up to 239 megawatts (MW). The proposed Development is located on land approximately 9.5 kilometres (km) north west of Kirkcowan and covers an area of

approximately 752.8 hectares (ha). **Figure 1.2(a and b)** and **Figure 1.3(a and b)** detail the proposed application boundary as well as the terrain and land use of the Site and immediate surrounding area.

7. The development area of the Site is mainly comprised of a mixture of peat bog and grassland, reflecting the patchy distribution of peat soils across the Site, and current land use by humans is limited to low-density sheep and cattle grazing. Derelict farm buildings and steadings, at High Eldrig, are located within the eastern extent of the Site. The northern boundary of the Site is adjacent to the Kirkcowan Flow Special Area of Conservation/ Site of Special Scientific Interest SAC/SSSI and a scheduled monument, Wood Cairn, is located on the summit of Eldrig Fell, in the south east of the Site. The Tarf Water, which is part of the River Bladnoch SAC (designated principally for its populations of Atlantic Salmon) flows south and east along the western and southern boundaries of the Site.
8. The proposed cable route and access track to the north of the main development area extends into blocks of coniferous forestry plantation which is part of the National Forest Estate, owned by Forestry and Land Scotland (FLS). The access track corridor then follows the existing Operational Kilgallioch Windfarm access route north until it meets with the A714.
9. Currently, access to the Site is limited to a single track leading north from the C22W track to the derelict farm steadings at High Eldrig.

#### 1.3.2 The Proposed Development

10. The proposed Development would comprise up to 11 wind turbines, with a blade tip height of up to 180 m when vertical, and associated infrastructure. Each turbine will be around 5.6 megawatts (MW) in power rating, giving a combined generating capacity of around 62 MW. The proposed Development will also include around 20 MW of co-located solar energy development. Based on a calculated capacity factor<sup>1</sup>, the annual indicative total power output for the Site would be approximately 165.24 gigawatt (GW) hours per annum, indicating the proposed Development would generate enough electricity to power over 44,000 average UK households (based on average electricity consumption per household in the UK quoted by the Department of Business, Energy and Industrial Strategy (BEIS), of 3,729 kWh per year). The proposed Development would contribute towards international and national targets for the generation of renewable energy and reduction in greenhouse gas emissions (further information is provided in **Chapter 14: Other Issues**). The proposed Development is fully described in **Chapter 4: Development Description** and is shown on **Figure 4.1**.

#### 1.3.3 Need for Development

11. The Scottish Government has committed, through the *Climate Change (Scotland) Act 2009* (Scottish Government, 2009), to reduce greenhouse gas emissions, and in support of this objective, to generate the equivalent of 100% national electricity needs from renewable energy development by 2020. In order to reduce greenhouse gas emissions, the Climate Change (Scotland) Act set targets of an 80% reduction by 2050 with an interim target for 2020 of at least a 42% reduction. The Scottish Government has amended the 2009 Act through the provision of the *Climate Change (Emissions Reduction Targets) (Scotland) Act 2019* to change the target to net-zero by 2045: balancing the amount of emitted greenhouse gases with the equivalent emissions that are either offset or sequestered, thus underlining the need for more ambitious and timely action to address the climate crisis. This is discussed further in the Planning Statement which is included as part of the application to Scottish Government.
12. The Development pioneers established and new renewable technologies and provides a fully integrated renewable energy development solution that would make a valuable and tangible contribution to emission reduction and renewable energy targets, while playing a positive role in the diversification of the UK's energy mix. It also maximises the grid infrastructure already in place for the Operational Kilgallioch Windfarm. SPR is also committed to ensuring all renewable energy developments promote and foster environmental sustainability for the social and economic well-being of the local communities.

<sup>1</sup> The load factor is calculated by RenewableUK as a rolling average of the past five years using data from the Digest of UK Energy Statistics published by the Department of Business, Energy and Industrial Strategy in August 2019.

## 1.4 Purpose of the EIA Report

13. This EIA Report has been prepared in accordance with *Section 36 of the Electricity Act and The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017* ('the EIA Regulations'). The EIA process is the systematic process of identifying, predicting and evaluating the environmental impacts of a proposed development. The EIA process is reported in this EIA Report, which identifies the methodologies used to assess the environmental effects predicted to result from the construction and operation the proposed Development. Where appropriate, it also sets out mitigation measures designed to prevent, reduce and, if possible, offset potential significant adverse environmental effects. An assessment of residual effects, those expected to remain following implementation of mitigation measures, is also presented.
14. The main findings and conclusions of the EIA are summarised in a Non-Technical Summary (NTS), as required by the EIA Regulations. The NTS is a stand-alone document, summarising the key findings of the EIA in easily accessible, non-technical language, ensuring everyone with an interest in the proposed Development can understand and access information on its predicted environmental effects.
15. This EIA Report and NTS, comprise documentation in support of an application for consent under the terms of *Section 36 of the Electricity Act 1989 (as amended)* and for a direction for planning permission under *Section 57 of the Town and Country Planning (Scotland) Act 1997*, submitted to the ECU.

## 1.5 Structure of the EIA Report

16. The EIA Report is split into four volumes, with the NTS forming a separate document. **Volume 1** of the EIA Report is structured as follows:
  - **Chapter 1 Introduction** introduces the proposed Development and the EIA Report;
  - **Chapter 2 EIA Process and Methodology** sets out the methodology for the EIA, including its scope, justification for topics scoped out and details the consultation process taken;
  - **Chapter 3 Site Selection & Design** provides a description of the existing Site, the need for the development, a description of the design iteration process and the consideration of alternatives;
  - **Chapter 4 Development Description** details the proposed Development, including the construction and operational processes;
  - **Chapter 5 Scoping and Consultation** outlines the responses from Scoping and the consultation undertaken to date;
  - **Chapter 6 Landscape and Visual**;
  - **Chapter 7 Hydrology, Hydrogeology, Geology and Soils**;
  - **Chapter 8 Ecology and Biodiversity**;
  - **Chapter 9 Ornithology**;
  - **Chapter 10 Noise**;
  - **Chapter 11 Archaeology and Cultural Heritage**;
  - **Chapter 12 Access Traffic and Transportation**;
  - **Chapter 13 Socio-economics, Tourism, and Recreation**;
  - **Chapter 14 Other Issues** (Aviation and Radar, Telecommunications, Glint and Glare, Land Use, Climate and Carbon, Population and Human Health.);
  - **Chapter 15 Schedule of Environmental Commitments** provides a summary of this EIA Report setting out all mitigation measures presented; and
  - **Chapter 16 Summary of Residual Effects**.
17. **Volume 2** contains the EIA Report figures except for the Landscape and Visual figures.
18. **Volume 3** contains supporting information and appendices for each of these technical chapters, and additional studies that have been prepared to inform relevant assessments as reported in the EIA Report.

19. **Volume 4** contains the Landscape and Visual impact assessment visualisations that inform **Chapter 6: Landscape and Visual**.
20. Additional supporting documents which form part of the Section 36 Consent application submission include a Planning Statement and a Pre-Application Consultation (PAC) Report.

## 1.6 EIA Project Team & Competency

21. The assessment was undertaken and coordinated by the ITP Energised (ITPE) environmental team supported by external consultants as shown in **Table 1.1** below.
22. ITPE are an environmental and energy consultancy, founded in 2013, who focus on renewable energy development and have significant experience on windfarm and other renewable energy technology applications across Scotland.

Organisation	Project Role	Technical Lead	Competency
ITPEnergised Ltd	EIA Project Management	Anna Hudson Lindsay Smith	BA Hons and MSc, PIEMA. 9 years as an EIA practitioner. BSc Hons, PIEMA, 8 years as an EIA Practitioner
ITPEnergised Ltd	Geology, Hydrogeology, Hydrology and Soils.	Jenny Hazzard	BSc, MSc, Practitioner member of IEMA. 18 years experience.
ITPEnergised Ltd	Ecology and Biodiversity	Dr Mikael Forup	BSc Hons, PhD, CEnv, CIEEM, 13 years experience.
Natural Research (Projects) Ltd	Ornithology	Fiona Leckie	BSc Hons, 25 years experience.
BiGGAR Economics	Socio-economics, Tourism and Recreation	Graeme Blackett	Ba Hons, Member of IED, Member of EDAS, 25 years experience.
CFA Archaeology	Archaeology and Cultural Heritage	George Mudie	MA Hons, MCIfA, FSA Scotland, 15 years experience.
Hayes McKenzie	Noise and Vibration	Andy McKenzie	BSc Hons, PhD, Fellow of IoA, Member of UK Env Law Association Noise Working Party, 28 years experience.
Optimised Environments Ltd	Landscape and Visual	James Welch Stuart Cargill	BA Hons, FLI, 32 years experience BA Hons, MLA, CMLI, 13 years experience.
Pell Frischmann	Access, Traffic and Transportation	Gordon Buchan	BEng Hons, MSc, CMILT, MCIHT, 23 years experience.
PagerPower	Glint and Glare	Kai Frolic	Mphys Physics, 10 years experience.
Cyrrus Ltd	Aviation and Radar	Simon McPherson	5 years experience
ITPEnergised Ltd	Other Issues Chapter	Lindsay Smith	BSc Hons, PIEMA, 8 eight years as EIA Practitioner
SSG Projects	Engineering Design	Andrew Pringle	BEng Hons, Chartered Civil Engineer, 19 years experience.

Table 1.1: EIA Team - Competent Experts

## 1.7 Availability of the EIA Report

23. In accordance with the EIA Regulations Section 18, copies of the EIA Report will be available for inspection by the public, notice of which will be published on the application website, in the Edinburgh Gazette, and in a relevant newspaper within the locality of the proposed Development.

24. Copies of the EIA Report are available by request from:

Kilgallioch Windfarm Extension Project Team  
ScottishPower Renewables,  
9th Floor ScottishPower House,  
320 St Vincent Street,  
Glasgow  
G2 5AD

Email: [kilgalliochextension@scottishpower.com](mailto:kilgalliochextension@scottishpower.com)

Website: [https://www.scottishpowerrenewables.com/pages/kilgallioch\\_windfarm\\_extension.aspx](https://www.scottishpowerrenewables.com/pages/kilgallioch_windfarm_extension.aspx)

25. Electronic copies of the EIA Report can be accessed at <http://www.energyconsents.scot/>.

26. Hard copies of the Non Technical Summary (NTS) are available free of charge from the Applicant. The cost of a hard copy of the EIA Report Volumes 1 to 4 is £1,000. In addition, all documents are available (as a PDF for screen viewing) on a DVD for £15. The price of the hard copy reflects the cost of producing all of the Landscape and Visual photographs at the recommended size. As such, a DVD version is recommended.

27. Hard copies of the EIA Report will be available to view during opening hours at the following locations:

- Scottish Government Library, Victoria Quay, Edinburgh, EH6 6QQ
- Dumfries and Galloway Council, Kirkbank House, English Street, Dumfries, DG1 2HS
- South Ayrshire Council, Burns House, Burns Statue Square, Ayr, KA7 1UT
- Kirkcowan Community Council, Kirkcowan Post Office, 34 Main Street, Kirkcowan, Newton Stewart, Wigtownshire, DG8 0HG

### 1.7.1 Representations to the Application

28. Any representations to the application should be made directly to the Scottish Government at:

Energy Consents Unit,  
5 Atlantic Quay,  
150 Broomielaw,  
Glasgow  
G2 8LU

Email: [representations@gov.scot](mailto:representations@gov.scot)

## 1.8 References

Department of Business, Energy and Industrial Strategy (July 2019). *Digest of UK Energy Statistics*. Available at: <https://www.gov.uk/government/statistics/digest-of-uk-energy-statistics-dukes-2019>

UK Government (1989). *Electricity Act 1989 (as amended)*. Available at: <https://www.legislation.gov.uk/ukpga/1989/29/introduction?view=extent>

Scottish Government (1997). *Town and Country Planning (Scotland) Act 1997*. Available at: <https://www.legislation.gov.uk/ukpga/1997/8/contents>

Scottish Government (2009). *Climate Change (Scotland) Act 2009*. Available at: [http://www.legislation.gov.uk/asp/2009/12/pdfs/asp\\_20090012\\_en.pdf](http://www.legislation.gov.uk/asp/2009/12/pdfs/asp_20090012_en.pdf)

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

Scottish Government (2019). *Climate Change (Emissions Reduction Targets) (Scotland) Act 2019*. Available at: <http://www.legislation.gov.uk/asp/2019/15/enacted>

## 1.9 Key Terms and Acronyms

29. To ensure clarity throughout the EIA Report, the following terms are used:

- **proposed Development** - The proposed Kilgallioch Windfarm Extension, an extension to Kilgallioch Windfarm, as assessed and reported within this EIA Report, comprising 11 wind turbines of up to 180 m in height to blade tip, with an installed capacity of around 62 MW, together with associated infrastructure and around 20 MW of installed co-located solar energy development.
- **Operational Kilgallioch Windfarm** - The existing Kilgallioch Windfarm, as consented in 2013 and operational since 2017. The Operational Kilgallioch Windfarm consists of 96 turbines with an operating capacity of up to 236 MW.
- **the Site** - The area within the application boundary within which the proposed Development lies.
- **main development area** – The area where the proposed new infrastructure will be located within the application boundary.
- **study area** - The Site plus any additional area over which desk based or field assessments have been extended. The study area varies depending on the nature of the potential effects for each environmental parameter as informed by professional guidance and best practice regarding EIA. The study area is therefore explained within the approach and method section of the relevant technical chapters
- **the Applicant** – ScottishPower Renewables (UK) Ltd.

30. The following acronyms and abbreviations are used throughout the EIA Report:

• AGLV	Area of Great Landscape Value
• BCT	Bat Conservation Trust
• BAP	Biodiversity Action Plan
• Birds Directive	Council Directive 2009/147/EC on the Conservation of Wild Birds
• BoCC	Birds of Conservation Concern
• BGS	British Geological Survey
• BNG	British National Grid
• BPP	Bird Protection Plan
• CAR	The Water Environment (Controlled Activities) (Scotland) Regulations 2011(as amended)
• CLVIA	Cumulative Landscape and Visual Assessment
• CEMP	Construction and Environmental Management Plan
• CMS	Construction Method Statement
• CRM	Collision Risk Model
• D&GC	Dumfries and Galloway Council
• DEFRA	Department for Environment, Food and Rural Affairs
• DMRB	Design Manual for Roads and Bridges
• DfT	Department of Transport
• DTM	Digital Terrain Model
• EC	European Commission
• EclA	Ecological Impact Assessment
• ECoW	Ecological Clerk of Works

• ECU	Energy Consents Unit	• SPR	ScottishPower Renewables (UK) Ltd
• EIA	Environmental Impact Assessment	• SEPA	Scottish Environmental Protection Agency
• EPA	Environmental Protection Act 1990	• SHEP	Scottish Historic Environment Policy
• ER	Environmental Report	• SLA	Special Landscape Areas
• ETSU Guidance	The Assessment and Rating of Noise from Wind Farms ETSU 1997	• SMR	Sites and Monuments Record
• EU	European Union	• SNH	Scottish Natural Heritage
• FEH	Flood Estimation Handbook	• SPA	Special Protection Area
• FLS	Forest and Land Scotland	• SPP	Scottish Planning Policy
• GDL	Gardens and Designed Landscapes	• SSSI	Site of Special Scientific Interest
• GPS	Geographical Positioning System	• SuDS	Sustainable Urban Drainage Systems
• GVP	Generic Vantage Points	• SW	Scottish Water
• GWDTE	Ground Water Dependant Terrestrial Ecosystems	• SWT	Scottish Wildlife Trust
• GW	Gigawatt	• The EIA Regs	Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
• GWh	Gigawatt Hour	• TOC	Total Organic Carbon
• ha	Hectares	• UFM	Unpredictable Flight Method
• Habitats Directive	Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna	• UK BAP	UK Biodiversity Action Plan
• Habitats Regulations	The Conservation (Natural Habitats &c.) Regulations 1994 as amended	• VER	Valued Ecological Receptors
• HMP	Habitat Management Plan	• VOR	Valued Ornithological Receptors
• HES	Historic Environment Scotland	• VP	Vantage Point
• IEMA	Institute of Environmental Management and Assessment	• WFD	Water Framework Directive
• IEEM	Institute of Ecology and Environmental Management	• WCA	The Wildlife and Countryside Act 1981 (as amended)
• IPCC	Intergovernmental Panel on Climate Change	• WHO	World Health Organisation
• IUCN	International Union for Conservation of Nature	• ZTV	Zone of Theoretical Visibility
• ITPE	ITPEnergised		
• JNCC	Joint Nature Conservation Committee		
• km	Kilometres		
• LBAP	Local Biodiversity Action Plan		
• LCA	Landscape Character Assessment		
• LCT	Landscape Character Type		
• LVIA	Landscape and Visual Impact Assessment		
• MOD	Ministry of Defence		
• MtC	Metric Tonnes of Carbon		
• MW	Megawatt		
• MWh	Megawatt Hour		
• NATS	National Air Traffic Services		
• NCA	The Nature Conservation (Scotland) Act 2004		
• NCR	National Cycle Routes		
• NERL	National Air Traffic Services (NATS) (en route) Limited		
• NHZ	National Heritage Zone		
• NMRS	National Monuments Record of Scotland		
• NNR	National Nature Reserve		
• NPF2	National Planning Framework for Scotland 2		
• NSA	National Scenic Area		
• NTS	Non Technical Summary		
• NVC	National Vegetation Classification		
• OS	Ordnance Survey		
• PAC	Pre Application Consultation		
• PFM	Predictable Flight Method		
• PPG	Pollution Prevention Guidelines		
• RoW	Right of Way		
• RSA	Regional Scenic Areas		
• RSH	Rotor Swept Height		
• RSPB	Royal Society for the Protection of Birds		
• RCAHMS	Royal Commission on the Ancient and Historical Monuments of Scotland		
• SAC	Special Areas of Conservation		
• SAM	Scheduled Ancient Monument		

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