

1 Introduction

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- 1.1.1 Renewable Energy Systems Ltd (RES) is applying for consent to Scottish Ministers under section 36 of the Electricity Act 1989 (as amended), seeking consent and deemed planning permission to construct and operate the proposed Longcroft Wind Farm (hereinafter referred to as the proposed development). This Environmental Impact Assessment (EIA) Report has been prepared in support of this application for consent.
- 1.1.2 This chapter introduces the proposed development and the need for the development, as well as providing an overview of the purpose of the EIA Report, its structure and the technical experts who prepared it. It also identifies where copies of this EIA Report can be viewed and obtained if required.
- 1.1.3 This EIA Report has been prepared by SLR Consulting Ltd (SLR) on behalf of RES (hereinafter referred to as 'the applicant') to accompany an application for consent to construct and operate the proposed development.

Need for Development

- 1.1.4 The UK and Scotland's current climate change ambitions are amongst the highest in Europe. The Scottish Government declared a climate emergency in May 2019. At the end of March 2020, the Scottish Government brought into force the measures in the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 passed by the Scottish Parliament in September 2019.
- 1.1.5 The UK government set a net zero CO₂ emissions target by 2050. In Scotland, The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 was passed in September 2019 which sets out a net zero target by 2045 and further interim targets of reductions in CO₂ emissions of 56% by 2020, 75% by 2030 and 90% by 2040. These targets build on the Scottish Energy Strategy's (Scottish Government 2017) target of 50% of all energy (including transport, heat and electricity) being supplied from renewables by 2030.

- 1.1.6 In its advice to the UK and Scottish Governments on achieving the net-zero target, the UK Committee on Climate Change stated that renewable electricity generation “*must quadruple*” and that the Scottish Government should make “*use of planning powers to drive decarbonisation.*” Significant deployment of additional renewable energy capacity, well in excess of historical deployment levels, is therefore needed to achieve our climate change commitments.
- 1.1.7 In August 2019, Scottish Borders Council (SBC) committed to implementing the UN Sustainable development goals which was followed by a Climate Emergency being declared in September 2020. SBC released a Climate Change Route Map in June 2021 which sets out their path to Net Zero by 2045. The Route Map sets out the Main Themes and steps that are required to be undertaken across the region by 2045 which is inline with the UK Government and The Scottish Climate Change Act 2019.
- 1.1.8 The annual generation from the proposed wind turbines, based on an anticipated 46.4% capacity factor, is estimated at approximately 509¹ gigawatt-hours (GWh). The proposed wind turbines will therefore supply renewable electricity equivalent to the approximate annual domestic needs of up to 145,256 average UK households². Each unit of renewable electricity transmitted will displace a unit of conventionally generated electricity, therefore displacing carbon dioxide (CO₂) emissions. It is estimated that the proposed wind turbines will displace approximately 215,151³ tonnes of CO₂ emissions per year, or 10,757,550 tonnes over the anticipated 50-year lifespan of the proposed development.
- 1.1.9 RES has undertaken an assessment of this carbon balance using the Scottish Government Carbon Calculator tool specifically designed for wind energy development. Further details, the methodology used, and the results of the carbon balance assessment are presented in Section 14.5 of **Chapter 14: Aviation, Radar & Other Issues**. In summary, the proposed development is expected to take around 12 months (1.0 years) to repay the carbon exchange to the atmosphere (the CO₂ debt) through construction and manufacture. Beyond this period the proposed development would then be contributing to CO₂ reduction and progress toward the related national targets.

¹ For example, using a 46.4% capacity factor, figures are derived as follows: 125.4MW × 8,760 hours/year × 0.464 (capacity factor) = 509,705MWh.

² Calculated using the most recent statistics from the Department of Business, Energy and Industrial Strategy (BEIS) showing that annual GB average domestic household consumption is 3,509kWh (as of December 2022, updated annually).

³ Based on the current grid-mix of the UK electricity grid.

- 1.1.10 As well as making a positive contribution towards action on climate change and renewable energy targets, the proposed development would provide opportunities for community investment and create further employment opportunities in the local area.
- 1.1.11 Further information on the need for and benefits of the proposed development are provided in **Chapter 13: Socio-economics, Tourism and Recreation**, and the **Planning Statement** which accompanies this application.
- 1.1.12 The applicant is at the forefront of the operation and development of renewables in the UK and fully supports the fight against climate change with this proposed development. This would be a fully integrated renewable energy solution in direct response to meeting national and international climate change targets. The proposed development would be able to regulate output and provide clean power to people's homes when they need it most and would represent a state-of-the-art development for the Scottish Borders. As well as contributing to targets for renewable energy, the proposed development would provide opportunities for community investment and create further economic benefits, including employment opportunities, in the local area.

1.2 The Proposed Development

- 1.2.1 The proposed development is located north-east of the A697, approximately 8.5km⁴ north-north-east of Lauder in the Scottish Borders. The site is within the administrative boundary of Scottish Borders Council. **Figure 1.1** presents a general context for the location of the site within the Scottish Borders and **Figure 1.2** presents the extents of the site.
- 1.2.2 The site is located to the southwest of the operational Fallago Rig Wind Farm, which comprises 48 wind turbines up to 125m in height. Fallago Rig Wind Farm became fully operational in May 2013.
- 1.2.3 The proposed development comprises 19 wind turbines at 220m in height.
- 1.2.4 The proposed development and associated infrastructure are presented in **Figure 1.3** and described in detail in **Chapter 3: Proposed Development Description** of this EIA Report.

⁴ This distance is given to the approximate centre point of the site.

1.3 The Applicant

- 1.3.1 RES is the world's largest independent renewable energy company active in onshore and offshore wind, solar, energy storage and transmission and distribution. At the forefront of the industry for over 40 years, RES has delivered more than 23GW of renewable energy projects across the globe and supports an operational asset portfolio of 10GW worldwide for a large client base. RES employs more than 2,500 people and is active in 14 countries working across onshore and offshore wind, solar, energy storage, green hydrogen and transmission and distribution
- 1.3.2 From its Glasgow office RES has been developing, constructing and operating wind farms in Scotland since 1993. RES has developed and/or built 21 wind farms in Scotland with a total generation capacity of 597MW and has recently finished constructing Blary Hill Wind Farm in Argyll and Bute. The applicant has the necessary knowledge and experience in renewable energy to develop the proposed development.

Table 1.1: Applicant Details

Applicant	
Renewable Energy Systems Ltd	Third Floor, STV, Pacific Quay, Glasgow, G51 1PQ

1.4 Structure of the EIA Report

- 1.4.1 The EIA Report has been prepared in accordance with the EIA Regulations (2017)⁵ and follows the structure presented in **Table 1.2**. Where relevant each EIA Report chapter considers the baseline environment, the likely significant effects for each phase of the proposed development and cumulative impacts.
- 1.4.2 The EIA Report is presented in volumes as follows:
- Volume 1: EIA Report.
- 1.4.3 The EIA Report written text is structured as follows:
- Chapter 1: Introduction;
 - Chapter 2: Design Evolution & Alternatives;
 - Chapter 3: Proposed Development Description;
 - Chapter 4: Climate Change, Energy & Planning Policy;
 - Chapter 5: Approach to EIA;

⁵ The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the 'EIA Regulations')

- Chapter 6: Landscape and Visual Impact;
- Chapter 7: Cultural Heritage & Archaeology;
- Chapter 8: Terrestrial Ecology;
- Chapter 9: Ornithology;
- Chapter 10: Hydrology, Hydrogeology and Geology;
- Chapter 11: Traffic and Transport;
- Chapter 12: Acoustic Assessment;
- Chapter 13: Socio-economics, Tourism & Recreation;
- Chapter 14: Aviation, Radar & Other Issues; and
- Chapter 15: Schedule of Mitigation.

1.4.4 The rest of the EIA Report is structured as follows:

- Volume 2a - 2b: EIA Report Figures and Visualisations; and
- Volume 3: EIA Report Technical Appendices.
- Volume 4: Non-Technical Summary (NTS).

1.4.5 The technical appendices that are referred to in each chapter of the EIA Report are compiled separately in Volume 3. They are numbered sequentially for each chapter in which they are principally referred to.

1.4.6 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.

1.5 EIA Report Project Team

1.5.1 This EIA has been led by SLR Consulting Limited (SLR) with assistance from other specialist technical and environmental consultants.

1.5.2 SLR is a large multi-disciplinary environmental and advisory consultancy. Within the energy sector, SLR provides a wide range of planning, environmental and technical services relating to the design and development of wind farms and other renewable energy developments. The company undertakes all aspects of development support, from initial concept design, through planning and permitting to supporting detailed design, construction management and closure stages with a focus on environmental assessment and management.

1.5.3 SLR is a holder of the Institute of Environmental Management and Assessment (IEMA) EIA Quality Mark. The IEMA Quality Mark is awarded to companies that have achieved the required standards in EIA following regular independent review of EIA work by IEMA. SLR has significant experience in the preparation of planning applications and undertaking EIA for a wide variety of projects, including renewable energy, minerals, waste and infrastructure developments.

1.5.4 Further information on SLR can be found on its corporate website at www.slrconsulting.com

1.5.5 For the proposed development, SLR is responsible for co-ordinating the production of the EIA Report and preparing the Cultural Heritage & Archaeology, Ecology and Socioeconomics, Tourism, Land Use and Recreation assessments.

1.5.6 **Table 1.2** lists the consultancies responsible for each technical discipline covered in this EIA Report.

1.5.7 SLR confirms on behalf of the applicant that the technical experts that have carried out the EIA and produced the EIA Report have the skills and relevant competency, expertise and qualifications to undertake EIA for the proposed development.

Table 1.2: EIA Team Details

Technical Discipline	Consultant	Qualifications	Experience	Address
Landscape and Visual Impact	Ruth Knight, LDA Design	BA (Hons) Landscape Design and Town Planning PGDipLA MA Planning Policy and Practice Chartered Member of the Landscape Institute (CMLI)	Ruth is a Chartered Landscape Architect with over 20 years' experience and expertise in landscape and environmental planning, including landscape and visual impact, and advising on EIA development. Project examples include LVIAs for renewable energy projects, including preparation of proofs of evidence for a number of wind farm appeals; large scale residential and commercial development; and DCO nuclear power stations.	17 Minster Precincts, Peterborough PE1 1XX
	Sam Hammersley, LDA Design	BSc (Hons) Landscape Architecture with Ecology MLA Landscape Architecture Chartered Member of the Landscape Institute (CMLI)	Sam is a recently Chartered Member of the Landscape Institute, whose portfolio of work includes input on landscape and visual matters to a number of EIAs in relation to onshore wind farms, electricity infrastructure, airports and nuclear power.	

Technical Discipline	Consultant	Qualifications	Experience	Address	Technical Discipline	Consultant	Qualifications	Experience	Address
Hydrology Hydrogeology, Geology and Soils Climate Impact Assessment	David Nisbet, ITPE	BSc (Hons) Geology and Fellow of the Geological Society (FGS)	David is Head of Geology, Peat and Hydrology at ITP Energised, with over 10 years' experience in environmental consultancy. David has led geology and peat assessments on many renewable and electrical transmission projects across the United Kingdom and Ireland, including PLHRA, peat management, engineering geological assessment and carbon balance calculations.	4 th Floor, Centrum House, 108-114 Dundas Street, Edinburgh, EH3 5D				has worked throughout Scotland, including sites in similar settings to the proposed development, as well as working on Solwaybank Wind Farm (2019). She is supported by a senior team with experience in expert witness testimony for renewable projects.	
	Joanna Cassidy, ITPE	BSc (Hons) Geology and Member of the Chartered Institution of Water and Environmental Management (MCIWEM)	Joanna is a Senior Hydrologist at ITP Energised with experience in hydrology, hydrogeology and geology assessments for renewable and transmission developments. This includes EIA assessment and accompanying GWDTE and PWS Risk Assessments.		Ecology	Nicola Tyrell, SLR Consulting	BSc(hons) MSc MCIEEM CEnv	Nicola Tyrell has practiced as a consultant Ecologist and Environmental Advisor since 2005. In her role as Technical Director in the Ecology and Biodiversity Team, Nicola leads SLRs Scottish and NE England ecology teams and sits on the Ecology Management Team. Nicola is widely engaged in raising professional standards across the industry acting in a number of roles with CIEEM, including past Convener of the CIEEM Scottish Geographic Section, the Advisory Board, co-authoring/delivering ECoW and Environmental Advisory professional training and continuing to act as a Degree Accreditation Assessor to drive forwards standards in degree pathways to prepare graduates for a number of ecology professions.	7 Wornal Park, Menmarsh Road, Worminghall, Aylesbury, HP18 9PH
Planning	Fraser Blackwood	BA (Hons) Environmental Planning MSc Real Estate Management and Development Chartered Member of the Royal Town Planning Institute (RTPI)	Fraser is a Chartered Town Planner with a strong track record of managing energy consents from early feasibility through to delivery. He has significant knowledge of planning policy and energy strategy which drives decision-making in this sector. Fraser has extensive experience of energy consenting across the through Town and Country Planning Act(s) and the Electricity Act. He has achieved consents for battery storage, solar and onshore wind schemes across the UK. As well as a successful consenting track-record, Fraser has acted as Expert Witness at Land Tribunal and has led a number of planning appeals.	Jones Lang LaSalle Ltd 7 Exchange Crescent Edinburgh EH3 8LL	Ornithology	Steve Percival, Ecology Consulting	BSc (hons) Biological Sciences PhD Zoology Member of the Chartered Institute for Ecology and Environmental Management (CIEEM), the British Ecological Society and the British Ornithologists' Union	Has been involved in over 400 renewable energy projects, including carrying out ecological assessments, preparation of ecological material for environmental statements and giving evidence at public inquiries, in the UK and internationally.	Swallow Ridge Barn, Old Cassop, Durham, DH6 4QB
Archaeology and Cultural Heritage	Beth Gray, SLR	MA (hons) ACIfA	Beth is an Associate Heritage Consultant and has more than seven years' experience assessing renewable energy projects and onshore wind projects and specifically their potential effects on cultural significance of heritage assets. She is based in Edinburgh and	7 Wornal Park, Menmarsh Road, Worminghall, Aylesbury, HP18 9PH					

Technical Discipline	Consultant	Qualifications	Experience	Address
Traffic & Transport	Gordon Buchan, Pell Frischmann	BSc (hons) MSc CMLT FCIHT	Has over 25 years of undertaking the transport assessments associated with new developments and has worked on renewable energy and energy distribution projects across the UK, Ireland and Northern Europe	5th Floor, 85 Strand London WC2R 0DW
Acoustics	Artem Khodov, RES	Member of the Institute of Acoustics (MIOA) MSc Acoustical Engineering, University of Southampton BEng Mechanical Engineering, VIA University College BEng Automation Engineering, Håme University of Applied Sciences	Six years' experience in acoustics	Third Floor, STV, Pacific Quay, Glasgow, G51 1PQ
Socio- Economics	Anne Dugdale, SLR Consulting	BSc MA MRTPI	Anne is a chartered town planner and joined SLR in 2015 from the renewable energy industry, since when she has undertaken a number of socio-economic assessments within the energy, minerals and waste sectors, and major residential-led mixed use developments.	
Aviation & Radar	Sam Johnson, RES	MMath Mathematics	Over 20 years working in radar, including over 15 working specifically with aviation and radar in the wind industry	Third Floor, STV, Pacific Quay, Glasgow, G51 1PQ
Shadow Flicker & Telecommunications	Stefanos Kolydas, RES	BSc in Physics (Hons) MSc in Renewable Energy Engineering MSc in Environmental Physics.	8+ years of experience in energy yield assessments and 4+ years of experience in wind farm development technical work.	Third Floor, STV, Pacific Quay, Glasgow, G51 1PQ

1.6 Publicity of the EIA Report

1.6.1 Printed copies of the NTS and EIA Report (including figures and appendices) may be obtained from:

Third Floor,

STV,

Pacific Quay,

Glasgow,

G51 1PQ

Email: sam.mayes@res-group.com

1.6.2 Hard copies of the NTS and EIA Report will be available for viewing in the following locations:

- Lauder Public Hall, Lauder, TD2 6SR
- Oxtou War Memorial Hall, Oxtou, TD2 6PL

1.6.3 The Non-Technical Summary is available free of charge, and a limited number of hard copies of the EIA Report is available for £1,500 per copy. The price of the hard copy reflects the costs of producing the landscape and visual impact visualisations.

1.6.4 Alternatively, a DVD or USB memory stick containing PDF files of the EIA Report are available for £15 per CD. These PDF files can also be downloaded for free from the Longcroft Wind Farm website at:

<https://longcroft-windfarm.co.uk/>

1.7 Representations to the Application

1.7.1 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 Online: www.energyconsents.scot

1.8 References

- The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019
- The Electricity Act 1989.
- The Scottish Energy Strategy 2017.