



Table of Contents

Environmental Impact Assessment Report

Chapter 1	Introduction
Chapter 2	Site Description & Design Evolution
Chapter 3	Proposed Development Description
Chapter 4	Approach to EIA
Chapter 5	Landscape & Visual
Chapter 6	Archaeology & Cultural Heritage
Chapter 7	Ecology
Chapter 8	Ornithology
Chapter 9	Geology, Hydrology & Hydrogeology
Chapter 10	Transport & Access
Chapter 11	Acoustic & Vibration Assessment
Chapter 12	Aviation & Other Issues
Chapter 13	Schedule of Mitigation

1 Introduction

1.1 Introduction

- 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 Clune Wind Farm (hereinafter referred to as the Proposed Development), on the basis of the anticipated generational capacity of the Proposed Development. The Proposed Development will be located on land approximately 27km south-east of Inverness and approximately 13km north-west of Aviemore (the Site). The Proposed Development is within the administrative boundary of The Highland Council (THC) near the village of Tomatin on the Clune Estate, Scottish Highlands.
- 1.1.2 This Environmental Impact Assessment (EIA) Report has been prepared in support of this application for consent.
- 1.1.3 In addition to the application for consent in terms of section 36 of the Electricity Act, a request will also be made that a direction be issued under section 57(2) of the Town and Country Planning (Scotland) Act that planning permission be deemed to be granted.
- 1.1.4 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.
- 1.1.5 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.

1.2 The Proposed Development

- 1.2.1 The Proposed Development is located to the south-west of the A9, approximately 27km south-east of Inverness and 13km north-west of Aviemore. The Site is entirely within the administrative boundary of The Highland Council. **Figure 1.1** presents a general context for the location of the Site within the Scottish Highlands and **Figure 1.2** presents the extents of the Site. A small area as shown on **Figure 1.2**, is excluded from the Site as per agreement with the landowner.

- 1.2.2 The Site is located approximately 5km to the south-east of the operational Glen Kyllachy Wind Farm, which comprises 20 wind turbines up to 110m in blade tip height. Glen Kyllachy Wind Farm became fully operational in January 2022.
- 1.2.3 The Proposed Development comprises 26 wind turbines up to 200m in height, and a battery energy storage system (BESS), rated at 100MW.
- 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.

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 26GW of renewable energy projects across the globe and supports an operational asset portfolio of 41GW worldwide for a large client base. RES employs more than 4,500 people and is active in 24 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 most recently obtained consent for Aberarder Wind Farm in the Highlands in 2017. The applicant has the necessary knowledge and experience in renewable energy to develop the Proposed Development.
- 1.3.3 RES's registered name and address are provided in Table 1.1.

Table 1.1: Applicant Details

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

1.4 Need for Development

- 1.4.1 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.
- 1.4.2 The UK government set a net zero CO₂ emissions target by 2050. In September 2019, Scotland passed The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, establishing a net zero by 2045, alongside interim goals of reducing CO₂ emissions by 56% by 2020, 75% by 2030, and 90% by 2040. These targets complement the Scottish Energy Strategy's aim set by the Scottish Government in 2017, of deriving 50% of all energy (including transport, heat, and electricity) from renewable 2030. However, in April 2024, the Scottish Government removed the interim targets for 2030 and 2040, deeming them unattainable. This underscores the need to expedite developments contributing to these goals to ensure alignment with the Government's enduring commitment to achieving net zero by 2045.
- 1.4.3 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.*" To meet our climate change commitments, there is a need to significantly increase the deployment of renewable energy capacity, far beyond historical levels.
- 1.4.4 The annual generation from the proposed wind turbines, based on an anticipated 42.6% capacity factor, is estimated at approximately 699¹ gigawatt-hours (GWh). The proposed wind turbines will therefore supply renewable electricity equivalent to the approximate annual domestic needs of approximately 215,500 average 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 144,607³ tonnes of CO₂ emissions per year, or 5,784,280 tonnes over the anticipated 40-year lifespan of the Proposed Development.

- 1.4.5 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 12.5 of **Chapter 12, Aviation and Other Issues**
- 1.4.6 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) generated during construction and manufacture. Beyond this period the Proposed Development would then be contributing to CO₂ reduction and progress toward the related national targets.
- 1.4.7 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.
- 1.4.8 Further information on the need for and benefits of the Proposed Development are provided in **Socioeconomic Benefits Report** and the **Planning Statement**, which accompany this application.
- 1.4.9 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 (see Chapter 3 for detail on the proposed Battery Energy Storage System) and would represent a state-of-the-art development for the Highlands.

1.5 Structure of the EIA Report

- 1.5.1 The EIA Report has been prepared in accordance with the EIA Regulations (2017)⁴ and follows the structure presented below. Where relevant each EIA Report chapter considers the baseline environment, the likely significant effects for each phase of the Proposed Development, and cumulative impacts.
- 1.5.2 The EIA Report is presented in volumes as follows:
- Volume 1: EIA Report;
 - Volume 2a - 2c: EIA Report Figures and Visualisations;

¹ Using a 42.6% capacity factor, figures are derived as follows: 187.2MW × 8,760 hours/year × 0.426 (capacity factor) = 698,585MWh.

² Calculated using the most recent statistics from the Department of Energy Security and Net Zero Strategy (DESNZ) showing that annual GB average domestic household consumption is 3,239kWh (as of January 2024, updated annually).

³ Based on the current grid-mix of the UK electricity grid of 162gCO₂/KWh, <https://www.carbonintensity.org.uk/> [accessed 10th October 2024].

⁴ The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the 'EIA Regulations')

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

1.5.3 The EIA Report written text is structured as follows within Volume 1:

- Chapter 1: Introduction;
- Chapter 2: Site Description and Design Evolution;
- Chapter 3: Proposed Development Description;
- Chapter 4: Approach to EIA;
- Chapter 5: Landscape and Visual;
- Chapter 6: Cultural Heritage;
- Chapter 7: Ecology;
- Chapter 8: Ornithology;
- Chapter 9: Geology, Hydrology and Hydrogeology;
- Chapter 10: Transport and Access;
- Chapter 11: Acoustic and Vibration Assessment;
- Chapter 12: Aviation and Other Issues;
- Chapter 13: Schedule of Mitigation.

1.5.4 The technical appendices for each chapter of the EIA Report are compiled separately in Volume 3. They are numbered sequentially based on the written chapters within Volume 1 where they are referenced.

1.5.5 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.

1.5.6 The EIA will be supported by the following documents:

- Planning Statement
- Design and Access Statement
- Socioeconomic Benefits Report
- Pre-Application Consultation Report

1.6 EIA Report Project Team

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

1.6.2 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.

1.6.3 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.

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

1.6.5 For the Proposed Development, SLR is responsible for coordinating the production of the EIA Report and preparing the Cultural Heritage & Archaeology, Hydrology and Geology assessments. OPEN is also part of the SLR group and is preparing the landscape and visual impact assessment.

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

1.6.7 On behalf of the applicant, SLR confirms that the technical experts who conducted the EIA and produced the EIA Report have the necessary skills, expertise, and qualifications for the Proposed Development.

Table 1.2: EIA Team Details

Technical Discipline	Consultant	Qualifications	Experience	Address
Landscape and Visual Impact	Angus Elder, OPEN	BSc (Hons) MSc TMLI PIEMA	Angus is a Senior Landscape Consultant at OPEN, part of SLR. He has worked on the design and assessment of onshore wind farm developments for over a decade, including a number of s.36 applications in the Highland region. His experience also encompasses other sites, such as the consented Creag Dhubh Wind Farm, which are located close to National Parks in Scotland.	OPEN (Optimised Environments Limited), Quartermile Two, 2nd Floor, 2 Lister Square, Edinburgh, United Kingdom, EH3 9GL

Technical Discipline	Consultant	Qualifications	Experience	Address
	James Welch, OpEn	BA Hons LArch	James is a Director at OPEN, part of SLR, and a Fellow of the Landscape Institute in 2013. During the past 25 years he has become extensively involved in onshore wind energy, advising on in excess of 200 wind farms. Much of his work has been concentrated in the Highlands. He has given expert evidence on L&V matters at 60 wind farm public inquiries and appeals. He leads OPEN's Environmental Planning Team.	
Hydrology Hydrogeology, Geology and Soils	Gordon Robb, SLR Consulting	MSc Waste Management and Environmental Management	Gordon is a Technical Director with SLR and is responsible for undertaking and managing many different types of hydrological and hydrogeological assessments. Gordon has over 25 years' experience and specialises in the renewables and energy transmission sector.	1 Bartholomew Lane, London, United Kingdom, EC2N 2AX
	Alan Huntridge, SLR Consulting	BSc Environmental Management and Technology	Alan is a Technical Director within SLR's Land Quality team with 14 years' experience within the land quality sector. This experience has been gained undertaking and managing site investigations, risk assessments as well as design and implementation of remedial strategies for a wide variety of sites. Alan has been involved with a wide variety of projects from small urban Brownfield development projects through to large scale wind farm projects.	
Planning	Simon Herriot, Savills	BSc (Hons) MRTPI	Simon has over 20 years' experience working on renewable energy projects including onshore wind. He has contributed to and managed numerous EIA Reports for wind energy projects and has acted as an expert witness on wind farm appeals and public inquiries.	Savills, 163 West George Street, Glasgow, G2 2JJ
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 has worked throughout	1 Bartholomew Lane, London, United Kingdom, EC2N 2AX

Technical Discipline	Consultant	Qualifications	Experience	Address
			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.	
Ecology	Emilie Michael, Atmos Consulting	BSc Environmental Science	10+ years experience in ecology and ornithology, including both undertaking and managing ecology surveys (habitat, protected species, bats) in support of a wide variety of developments, including wind farms.	Unit 6/7 Bridgend Business Park Dingwall Ross-shire IV15 9SL
	Jonathan Easton, Atmos Consulting	MSc CEnv MIEEnvSc	10+ years' experience in ecology and ornithology, including both undertaking and managing ecology surveys (habitat, protected species, bats) in support of a wide variety of developments, including wind farms.	
Ornithology	James Wilson, Atmos Consulting	MSc BSc	More than 20 years' experience respectively in ecology and ornithology, including both undertaking and managing ornithology surveys in support of predominantly mineral and wind farm developments. James has undertaken a number of impact assessments and produced EIA chapters for wind farms and other development types.	Unit 6/7 Bridgend Business Park Dingwall Ross-shire IV15 9SL
Traffic & Transport	Gordon Buchan, Pell Frischmann	BSc (hons) MSc CMILT 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	Stuart Hill, RES	B.Eng. Electronics Engineering M.Sc. Radiation Physics	10+ years' experience in acoustic impact assessments including technical support for wind farm developments.	Third Floor, STV, Pacific Quay, Glasgow, G51 1PQ
Socio- Economics	Simon Cleary, BiGGAR Economics	MA (Hons) Economics & Mathematics, University of Aberdeen	Since joining BiGGAR Economics in 2011, Simon has become a respected expert in assessing the socio-economic impacts of over 60 UK wind farm developments. Simon designed the economic models used for individual projects and the model used as part of BiGGAR Economics work for DECC and RenewableUK on the economic contribution of the onshore wind energy sector to the UK economy. In 2023, Simon was appointed Energy Transition Director, reflecting his expertise and focus on renewable	BiGGAR Economics, Shandwick House, 67 Shandwick Place, Edinburgh, EH2 4SD

Technical Discipline	Consultant	Qualifications	Experience	Address
			energy generation and interest in maximising the benefits and opportunities associated with the energy transition.	
	Graeme Blackett, BiGGAR Economics	BA (Hons) Economics, University of Strathclyde	Graeme is an applied economist with more than 30-years of experience in consultancy. Graeme co-founded BiGGAR Economics in 2002 and was previously manager of Deloitte's economic consulting practice in Scotland and Northern Ireland. Graeme has led BiGGAR Economics work in the renewable energy sector, which means that he has been involved in assessing the economic and tourism impacts of more than 100 renewable energy proposals. His understanding of renewable energy projects and his experience of community, social and economic development, have been complimented by wider commissions that have considered the opportunities and requirements of the renewable energy industry.	
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. Sam is a member of the Renewable UK Aviation Working Group and is Chair of Aviation Investment Fund Company Limited (AIFCL)	Third Floor, STV, Pacific Quay, Glasgow, G51 1PQ
Shadow Flicker & Telecommunications	Judith Homann, RES	BSc in Physics (Hons) MSc in Renewable Energy Engineering MSc in Environmental Physics.	8+ years of experience in energy yield assessments and 3+ years of experience in wind farm development technical work.	Third Floor, STV, Pacific Quay, Glasgow, G51 1PQ

G51 1PQ

Email: ewan.hogg@res-group.com

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

- The Strathearn Hub, Tomatin, IV13 7YN

1.7.3 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.

1.7.4 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 Clune Wind Farm website at:

www.clune-windfarm.co.uk

1.8 Representations to the Application

1.8.1 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

1.9 References

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

1.7 Publicity of the EIA Report

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

Third Floor,

STV,

Pacific Quay,

Glasgow,