Blair Hill Wind Farm

EIA Report

Non-Technical Summary

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1 Introduction

1.1.1 This document is the Non-Technical Summary of the Environmental Impact Assessment (EIA) Report which has been submitted in support of the application to construct and operate Blair Hill Wind Farm (the 'Proposed Development'). This document provides information about the Proposed Development in non-technical language. For further information including full technical details of each of the environmental assessments that have been undertaken, please refer to the EIA Report.

1.1.2 Renewable Energy Systems (RES) Ltd is seeking Section 36 (S36) consent from the Scottish Ministers, in accordance with the Electricity Act 1989, to construct and operate the Blair Hill Wind Farm. The Proposed Development is located approximately 2.7 km north of Newton Stewart (the 'Site'), within the Dumfries and Galloway Council area. The application includes a request for deemed planning permission under the Town and Country Planning (Scotland) Act 1997. The project is part of RES's continued efforts to contribute to the growth of renewable energy in Scotland and support national and international goals for reducing greenhouse gas emissions.

1.1.3 RES, the applicant, is the world's largest independent renewable energy company, with over 40 years of experience in the sector. The company has successfully delivered more than 26 gigawatts (GW) of renewable energy projects globally and manages an operational asset portfolio exceeding 40 GW. In Scotland, RES has been active since 1993, developing and constructing 21 wind farms, with a total generation capacity of 597 megawatts (MW). The Blair Hill Wind Farm project reflects RES's ongoing commitment to providing low-cost, clean energy while fostering meaningful engagement with local communities.

1.1.4 The Blair Hill Wind Farm is proposed to include up to 14 wind turbines, with a total generating capacity of approximately 92.4 MW. This would provide enough electricity to power around 115,700 homes annually with clean, low cost electricity. The Site comprises 681.5 hectares of open moorland and commercial forestry, with elevations ranging from 100 to 404 m. In addition to the turbines, the Proposed Development will comprise supporting infrastructure such as access tracks, crane hardstand areas, underground cabling, and a substation. The electricity generated will be exported to the national grid, helping to meet both renewable energy targets and emission reduction commitments

2 Description of Development

2.1.1 The full description of the Proposed Development, including further details on the wind turbines, supporting infrastructure and environmental considerations, is provided in **Volume 1, Chapter 2** of the EIA Report.

2.1.2 The Proposed Development is located approximately 2.7 kilometres north of Newton Stewart, in the Dumfries and Galloway Council area, covering 681.5 hectares of open moorland and commercial forestry. Refer to **Figure 1.1** for the Site location.

2.1.3 The project consists of 14 wind turbines, with a total generating capacity of approximately 92.4 MW. These turbines will have heights of up to 250 m to tip for 12 turbines and up to 210 m to tip for two turbines.

2.1.4 In addition to the turbines, the Proposed Development will include several permanent infrastructure components, such as transformers, turbine foundations, access tracks, crane hardstand areas, and a substation with control facilities. Temporary infrastructure for the construction phase includes a construction compound, crane pads, and a concrete batching plant. Key environmental features of the Site, such as watercourses, ecology and peat, have been considered to minimise potential impacts during construction. Refer to **Figure 1.2** for the proposed layout.

2.1.5 The wind turbines have been designed to include modern technology to meet air navigation requirements, and several of the turbines will be equipped with aviation lighting. Further measures, such as micrositing, will allow flexibility in precise turbine placement to respond to environmental sensitivities and ground conditions identified during construction.

3 Site Selection and Design Process

3.1.1 The full explanation of the Site selection and design process for the Proposed Development, including constraints analysis and design iterations, is provided in **Volume 1, Chapter 3** of the EIA Report and also in the accompanying Design and Access Statement (DAS).

3.1.2 The Proposed Development followed a rigorous site selection and design process to ensure the optimal location while minimising environmental impacts. Using advanced Geographic Information System (GIS) technology, RES identified the Site as suitable based on factors such as wind speed, distance from residential properties, natural and built heritage constraints, and slope. Issues such as relevant planning policy, Ministry of Defence areas, and proximity to other wind farms, were also considered the Site.

3.1.3 The design process was iterative, incorporating feedback from environmental studies, consultations with statutory bodies, and public input. This process led to series of design iterations, evolving from an initial layout of 29 turbines to the final proposal of 14 turbines. Key environmental and technical constraints, such as the protection of archaeological sites, sensitive habitats, and peatland, were addressed during each design phase. Turbines were strategically relocated to avoid significant impacts on, for example, ecological and heritage receptors.

3.1.4 The design process also explored alternative turbine heights, layouts, and access routes, ensuring that the Proposed Development would meet technical and environmental standards while maximising energy production. Environmental considerations included reducing the visibility of turbines from key viewpoints, avoiding areas close to watercourses, and minimising disruption to sensitive ecological areas. The final layout balances energy production with environmental stewardship, reducing potential impacts on the landscape and local communities.

4 Approach to EIA

4.1.1 The full explanation of the EIA process for the Proposed Development, including statutory guidance and stakeholder engagement, is provided in **Volume 1, Chapter 4** of the EIA Report.

4.1.2 The EIA process for the Blair Hill Wind Farm has informed decision-making by identifying the potential significant environmental effects of the Proposed Development. The EIA has been conducted in accordance with the requirements of the EIA Regulations[1] and relevant best practice guidance.

4.1.3 The purpose of the EIA process is to assess the likely environmental impacts and identify appropriate mitigation measures to avoid, reduce, or offset any significant adverse effects. The assessment has been carried out as part of an iterative design process, which allowed the findings of the EIA to inform the design of the Proposed Development and ensure that environmental considerations were integrated at every stage.

4.1.4 Reporting of the EIA follows a structured format, including this Non-Technical Summary, the main EIA Report text, technical appendices, and accompanying figures. It covers all aspects of the environment that may be affected by the Proposed Development, including

[1] The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended)

but not limited to ecology, hydrology, landscape and visual impacts, traffic, and cultural heritage.

4.1.5 The EIA process has been conducted with input from statutory consultees, other interested organisations, and the public. The Applicant engaged with these stakeholders throughout the EIA Scoping and consultation phases to ensure that key environmental issues were identified and addressed in the EIA Report.

4.1.6 The overall aim of the EIA is to provide Scottish Ministers with the necessary information to make an informed consenting decision about the Proposed Development, ensuring that environmental impacts are appropriately considered alongside the benefits of renewable energy generation.

5 Legislative and Policy Framework

5.1.1 The full details of the legislative and policy background relevant to the Blair Hill Wind Farm development are provided in **Volume 1, Chapter 5** of the EIAR.

5.1.2 The Proposed Development must conform to a range of statutory frameworks and policies at both the national and local levels. These frameworks set out the regulatory requirements and policy objectives for the project, particularly concerning renewable energy, environmental protection, and planning procedures. The Applicant is seeking consent under Section 36 of the Electricity Act 1989, which applies to onshore renewable energy developments with a capacity exceeding 50 MW. The Town and Country Planning (Scotland) Act 1997 also applies, and deemed planning permission is also sought.

5.1.3 In line with national commitments to combat climate change, the Proposed Development supports Scotland's ambition to reach net-zero carbon emissions by 2045. This is outlined in key policy documents such as the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 and the Onshore Wind Policy Statement 2022, both of which highlight the need for large-scale renewable energy developments to reduce greenhouse gas emissions.

5.1.4 National Planning Framework 4 (NPF4), effective from 13 February 2023, embeds climate change mitigation and sustainability at the heart of Scotland's planning system, supporting the goal of net-zero emissions by 2045. It emphasises the importance of renewable energy developments, such as large-scale wind farms, in achieving these targets and highlights the need for a rapid transition to renewable energy infrastructure.

5.1.5 At a local level, the Dumfries and Galloway Local Development Plan 2 (LDP2) and associated guidance, such as the Wind Energy Development: Development Management Considerations, provide detailed policies specific to wind energy proposals. The Proposed Development has been designed to meet these requirements, ensuring considerations such as landscape impact, biodiversity, and socio-economic benefits are adequately addressed. The project is aligned with both the national and local strategies to increase renewable energy production while minimising environmental impacts.

5.1.6 See also the accompanying Planning Statement for more detail.

6 Environmental Impact Assessment

6.1 Overview

6.1.1 The Proposed Development has been carefully designed to integrate environmental, technical, and community considerations. Through public consultations and environmental assessments, the design was refined to reduce potential impacts on local views, cultural

heritage, and landscape. A focus on minimising disruption to the environment while contributing to Scotland's renewable energy goals has shaped the project's evolution. The turbines are strategically placed to balance energy generation with the protection of the surrounding area.

6.1.2 Ecological studies have identified several sensitive species and habitats within the project area, including peatlands, badgers, bats, and bird populations. To mitigate the impacts on these species, a Biodiversity Enhancement Management Plan (BEMP) has been developed, which includes habitat restoration and conservation efforts. Peatland management is also a key consideration, with measures in place to ensure the protection and restoration of these carbon-rich soils, contributing to a positive carbon balance. The project is expected to have a carbon payback period (i.e. an estimate of how long it will take the Proposed Development to offset the greenhouse gases emitted as a result of its construction) of less than a year.

6.1.3 Transport and access have been thoroughly assessed, particularly in terms of managing the delivery of large turbine components. A Construction Traffic Management Plan will ensure minimal disruption to local road networks and communities. While some tree felling will be necessary to make way for infrastructure, compensatory planting schemes will be implemented to offset any forestry losses, ensuring no net reduction in woodland areas in line with Scottish forestry regulations.

6.1.4 Additionally, aviation and radar impacts have been evaluated, and mitigation measures have been put in place to prevent interference with both civilian and military radar systems. Aviation lighting will be installed on some turbines to ensure the safety of low-flying aircraft, particularly within military training zones. The overall development is aligned with Scotland's climate change objectives, delivering renewable energy while implementing strategies to mitigate its environmental impact.

6.2 Landscape and Visual

6.2.1 This chapter considers the potential for significant effects upon landscape and visual receptors associated with the construction, operation and decommissioning of the Proposed Development as described in Chapter 2.

6.2.2 Baseline conditions to inform the design and assessment of the Proposed Development have been established through desk study, site visits and consultation with key consultees.

6.2.3 In terms of landscape character, the site is located partially within Landscape Character Type (LCT) 172 – Upland Fringe – Dumfries & Galloway and LCT 181 – Rugged Uplands with Forest – Dumfries & Galloway two turbines located within LCT 172 – Upland Fringe – Dumfries & Galloway. An area of the Site without wind turbines extends into LCT 180. The site access track passes through LCTs 172, 176 and 181.

6.2.4 The Proposed Development is located to the east of the River Cree, across a series of low hills directly south west of the larger Minnigaff Hills. At present, the site and wider landscape is used for a mixture of commercial forestry and pasture. The town of Newton Stewart, and the adjacent village of Minnigaff, lie approximately 2.7 km south of the closest proposed turbine on the River Cree.

6.2.5 The site is located within the Galloway Forest Regional Scenic Area. It is also adjacent to the Galloway Dark Sky Park and 4.7 km south of the Merrick Wild Land Area.

6.2.6 The assessment indicates that there would be significant effects on parts of the following landscape and visual receptors (there would be no significant nighttime effects):

- Daytime effects
  - LCT172 Upland Fringe – Dumfries and Galloway;
  - LCT 181 – Rugged Uplands with Forest – Dumfries & Galloway;

- LCT 180 – Rugged Uplands - Dumfries & Galloway;
- Moor of Barclye between the Lamachan Hill/Curleywee group of hills, Penkiln Burn and the River Cree visual receptor group;
- South and west facing slopes of the Lamachan Hill/Curleywee group of hills visual receptor group;
- River Cree and Penkiln Burn valleys, including Newton Stewart and the road corridors of the A75 and A714 visual receptor group; and
- Galloway Hills Regional Scenic Area.

• Daytime cumulative effects
- LCT172 Upland Fringe – Dumfries and Galloway;
- LCT 181 – Rugged Uplands with Forest – Dumfries & Galloway;
- LCT 180 – Rugged Uplands - Dumfries & Galloway;
- LCT 174 - Plateau Moorland with Forest - Dumfries & Galloway;
- LCT 160 - Narrow Wooded River Valley – Dumfries & Galloway;
- LCT 180 - Rugged Uplands - Dumfries & Galloway - 9.4km, north east;
- Moor of Barclye between the Lamachan Hill/Curleywee group of hills, Penkiln Burn and the River Cree visual receptor group;
- Lamachan Hill/Curleywee group of hills visual receptor group;
- River Cree and Penkiln Burn valleys, including Newton Stewart and the road corridors of the A75 and A714 visual receptor group;
- Roads, residents and recreational landscapes within the moorland landscapes west of the site from the A714 to 20km from the closest proposed wind turbine visual receptor group;
- Southern Upland Way within 7.5km of the Proposed Development; and
- Galloway Hills Regional Scenic Area.

6.3 Cultural Heritage

6.3.1 The full assessment of the potential effects on cultural heritage is provided in **Volume 1, Chapter 7** of the EIA Report. Reference numbers for heritage assets are included in this section to assist the reader should they wish to find out more about heritage assets in the area, either within the EIA Report or elsewhere.

6.3.2 Cultural Heritage and Archaeology refers to assets which contribute to the historic environment. The cultural heritage and archaeological assessment is completed in two parts; direct physical impacts upon non-designated heritage assets and direct impacts upon designated heritage assets' setting.

6.3.3 A Study Area of 1 km from the Site boundary was used to procure non-designated cultural heritage data and 10 km for designated cultural heritage assets. The assessment used a desk-based approach to review known and potential archaeology within the Site and designated heritage assets coupled with data obtained during a site-wide archaeological walkover and subsequent setting assessments.

6.3.4 As shown on **Figures 7.1** and **7.2**, there are 29 heritage assets of national importance within 10 km of the Site boundary and 76 assets of regional importance within 5 km. In agreement with consultees, eight designated heritage assets were identified for further assessment within the EIA. All others were excluded as they are not visible from the Site and therefore the Proposed Development would have no impacts on them.

6.3.5 Part of the Coldstream Archaeologically Sensitive Area covers the north western part of the site. While no known archaeological assets are currently identified within this part of the ASA, its presence indicates a higher potential for unknown buried archaeological remains. Nearby, six recorded prehistoric heritage assets, including cairns and standing stones, are located within 1 km of the Site. These features, such as Dalvaird Cairn and the

Napper's Cottage Chambered Cairn, form a loose cluster of monuments indicative of prehistoric activity in the area, as shown in **Figure 7.2**.

6.3.6 The overall archaeological potential for the Site is low, with low potential for prehistoric and post-medieval remains, and moderate potential for medieval remains.

6.3.7 There is no evidence of prehistoric activity within the Site itself, though there is evidence of prehistoric ceremonial activity within 1 km west of the Site, characterised by a number of cairns, as well as standing stones and the remains of a stone circle.

6.3.8 No medieval heritage assets are recorded within the Site . However a section of Deil's Dyke (SLR66) is recorded within the centre of the Site and exists on both sides of the Site boundary (within and outside). This was observed during the Site visit. A number of assets within the study area are recorded as being medieval to post-medieval in date, which are primarily of an agricultural nature.

6.3.9 There are a relatively high number of post-medieval heritage assets within the Site, also primarily agricultural in nature, consisting of sheepfolds, clearance cairns, field boundaries, corn drying kilns and field systems, many of which are recorded on historic maps. As assets of this date are relatively well recorded, there is a low potential for unknown assets from this period.

6.3.10 Six of the recorded assets within the Site have been identified as being susceptible to direct impacts during the construction phase of the Proposed Development: a clearance cairn (SLR97), a sheep fold (SLR49), 'Threave Cairn' structure (SLR16), Named Cairn (SLR78), a boundary bank (SLR52) and Glenmalloch Hill Enclosure ('old fence') (SLR41).

6.3.11 Where potential direct impacts have been identified (e.g. SLR49 and SLR16), fencing off has been incorporated as a mitigation measure. SLR78 and SLR52 have been recorded photographically and an archaeological watching brief is proposed for all ground breaking works outwith forested areas.

6.3.12 The completion of an archaeological mitigation programme, including a watching brief during ground breaking works, would offset direct adverse impacts upon archaeological remains. Any harm caused to buried remains as a result of ground disturbance during construction would be offset to some degree by the benefits provided through the information gained during the archaeological investigation and reporting process. Any significant impacts identified in relation to buried archaeological remains should be considered in this context.

6.3.13 Careful design has reduced or prevented impacts on the Archaeologically Sensitive Area which had been initially included within the Site boundary. Proposed turbines were removed from this area as a result of pre-application consultation with Historic Environment Scotland (HES).

6.3.14 In addition, careful design has reduced or prevented impacts to important landscape features which contribute to the setting of heritage assets. Following consultation with HES, several changes were made to the turbine layout, including the removal of and realignment of various turbines. Turbines were removed to avoid impacting on the setting and likely alignment of the chambered cairn near Napper's Cottage Cairn (SM5676). Another turbine was removed to avoid impacting on the setting of Garlies Castle (SM7916) in the south of the Site.

6.3.15 After further consultation with HES, two turbines were moved to reduce the impact on the setting of Napper's Cottage Cairn (SM5676).

6.3.16 Enhancement opportunities were also identified and incorporated for the Thieves Standing Stone (SM1044/SLR60), Drumfern, Stone Circle and Cairn (SM1019/SLR178), Napper's Cottage Chambered Cairn (SM5676/SLR59), and Dalvaird Cairn (SM1015/SLR62). Each of these heritage assets will be included in a heritage trail which will improve public access

to local archaeological and historical sites, enhancing opportunities for education and engagement with the area's rich cultural history.

6.3.17 With these mitigation and enhancement measures incorporated alongside the embedded design measures outlined above, no effect greater than moderate significance was identified for these heritage assets.

6.4 Ecology

6.4.1 The full assessment of potential effects on flora and fauna is provided in **Volume 1**, **Chapter 8** of the EIA Report.

6.4.2 The ecology chapter considers the potential for significant effects upon important ecological features (IEFs) associated with the construction, operation and decommissioning of the Proposed Development.

6.4.3 Baseline conditions to inform the design and assessment of the Proposed Development have been established through desk study, ecological field surveys in accordance with industry standard guidance, and consultation with nature conservation bodies.

6.4.4 The Site does not form part of any statutory designated site for nature conservation with ecological qualifying interests. There is a small area of ancient woodland within the Site, present along the existing access track to be upgraded, however no mature or semi-mature trees are expected to be lost here as a result of the Proposed Development, as shown in **Figure 8.1**.

6.4.5 Baseline studies have established the Site is used by badgers, bats, otters, reptiles and trout. The risk to all species, including high collision risk bat species, is considered to be low based on the levels and distribution of species activity recorded. The main and most extensive habitats present within the Site are commercial conifer plantation and marshy grassland, with several other habitat types making up the remainder of the Site, including areas of bracken, blanket bog, wet modified bog, wet heath and a range of grassland types, shown in **Figure 8.3**.

6.4.6 The Proposed Development has been designed to minimise impacts on important habitats and protected species as far as practicable. Sensitive scheme design, good practice measures, and pre-construction checks (as directed by an appointed suitably qualified Ecological Clerk of Works (ECoW)) will ensure the protection of protected species during construction works associated with the Proposed Development.

6.4.7 The most tangible effect during the construction phase of the Proposed Development will be direct habitat loss due to the construction of new infrastructure. However, effects upon blanket bog and wet modified bog have been assessed and no significant effects are predicted.

6.4.8 No significant effects are predicted to any protected species.

6.4.9 In addition to habitat reinstatement following the cessation of construction works, the Proposed Development also provides an opportunity to deliver long-term beneficial enhancement measures for habitats and species, including specific management for peatland restoration and enhancement, bracken control for acid grassland restoration, broadleaved woodland planting along watercourses, replacement of conifers with native broadleaved woodland, and green roof creation. These proposals form the basis of the Outline Biodiversity Enhancement Management Plan (OBEMP) which will deliver significant biodiversity enhancement at the Site. A Biodiversity Net Gain (BNG) assessment and metric indicates measures proposed in the OBEMP would deliver 29% biodiversity net gain, shown in **Figure 8.16**.

6.4.10 Residual effects upon any IEFs are predicted to be not significant as a result of the Proposed Development alone, or cumulatively, with any other wind farm development.

6.5 Ornithology

6.5.1 The full assessment of potential effects on birds is provided in **Volume 1, Chapter 9** of the EIA Report.

6.5.2 The ornithology assessment considers the potential for significant effects upon Important Ornithological Features (IOFs) associated with the construction, operation and decommissioning of the Proposed Development.

6.5.3 Baseline conditions to inform the design and assessment of the Proposed Development have been established through desk study, ornithological field surveys in accordance with industry standard guidance and consultation with nature conservation bodies and specialist species recording groups.

6.5.4 The Site does not form part of any statutory designated site for nature conservation with qualifying ornithological interests or lie within potential connectivity distances for any Special Protection Area (SPA), as shown in Figure 9.2.

6.5.5 Baseline studies have established the Site, and adjacent habitats are used by breeding black grouse and foraging red kite, hen harrier, goshawk, merlin and peregrine falcon. Barn owl and red kite were identified to be breeding in the wider area. An assemblage of breeding ground nesting waders has also been recorded, typical of the locale and habitats present. Pink-footed goose, greylag goose and herring gull were infrequently recorded, however the Site and immediate area were not identified as being important for migratory waterfowl or gulls, as shown in **Figure 9.1**.

6.5.6 Collision mortality risks have been estimated for curlew, golden plover, greylag goose, hen harrier, herring gull, lapwing, merlin, peregrine falcon, pink-footed goose and red kite using the NatureScot Collision Risk Model. Collision mortality risks are predicted as being low or negligible for all species.

6.5.7 Sensitive scheme design, good practice measures, and pre-construction checks (as directed by an appointed suitably qualified Ecological Clerk of Works (ECoW)) will protect breeding birds during construction works.

6.5.8 In addition to habitat reinstatement following the cessation of construction works, the Proposed Development also provides a clear opportunity to deliver long-term beneficial habitat enhancement measures for bird species, away from operational infrastructure, including specific management for breeding black grouse, as shown in **Figure 9.8**.

6.5.9 Residual effects upon any IOFs are predicted to be not significant as a result of the Proposed Development alone, or cumulatively with any other wind farm developments.

6.6 Geology, Hydrology and Hydrogeology

6.6.1 The full assessment of the potential effects on important geological, hydrological and hydrogeological features associated with the Site is provided in **Volume 1, Chapter 10** of the EIA Report. The assessment is supported by a Peat Landslide Hazard and Risk Assessment, a Peat Management Plan, a Groundwater Dependent Terrestrial Ecosystem (GWDTE) Risk Assessment, a Schedule of Watercourse Crossings, and a Private Water Supply Risk Assessment. Relevant features are shown in Figures 10.2 and 10.5.

6.6.2 The Site is located within the catchments of the River Cree, Penkiln Burn and Palnure Burn. SEPA records an overall status of ‘Good’ at these watercourses. They each drain to the

Bladnoch and Cree Estuary which also has an overall status of 'Good', as indicated in **Figure 10.2**.

6.6.3 The on-site Cordorcan Burn and Coldstream Burn drain to the east to the designated Galloway Oakwoods Special Area of Conservation (SAC) and Wood of Cree Site of Special Scientific Interest (SSSI). The on-site tributaries which drain to the River Cree are also hydrologically connected to the downstream Lower River Cree SSSI and Cree Estuary SSSI.

6.6.4 Seven private water supply (PWS) sources have been assessed and, following implementation of guidance and best practice measures, four PWS are considered to require additional mitigation. Additional mitigation and monitoring proposed to reduce any risk from the Proposed Development includes a Water Quality Monitoring Plan (WQMP), as detailed in **Figure 10.9**.

Following a hydrological walkover and desk-based assessment, potential groundwater dependent terrestrial ecosystems (GWDTEs) identified were found to be of low groundwater dependency, as shown in Figure 10.10.

6.6.5 The bedrock beneath the Site mostly consists of sedimentary rocks of the Shinnel Formation, comprising of wacke sandstone and siltstone succession. Superficial deposits where present comprise alluvium located along watercourses, till present at lower topography, and isolated pockets of deep peat, illustrated in **Figure 10.6** and **Figure 10.3**. The peatland is identified as Class 1, 2, 3, and 5 peatland according to the Carbon and Peatlands Map 2016, as shown in **Figure 10.4**.

6.6.6 Extensive peat probing surveys found highly localised peat deposits across the Site, which have been largely avoided through layout design iterations of the Proposed Development. The results are mapped in **Figure 10.5**.

6.6.7 The mitigation measures to address potential impacts to geology, peat, hydrology and hydrogeology receptors will be included within a Construction Environmental Management Plan (CEMP) prior to commencement of construction activities. These mitigation measures will be robust and implementable and will sufficiently reduce the potential impacts on watercourses and groundwater. A programme of water quality monitoring would also be implemented.

6.6.8 The significance of residual effects on geology, peat, hydrology and hydrogeology receptors following the implementation of these mitigation measures are considered to be minor to negligible significance and therefore not significant.

6.7 Traffic and Transport

6.7.1 The full assessment of the potential effects on traffic and transport is provided in **Volume 1, Chapter 11** of the EIA Report.

6.7.2 An assessment of traffic and transport effects on the public road network associated with the Proposed Development has been undertaken.

6.7.3 The assessment considers the impacts during the construction phase of the Proposed Development, when volumes of traffic generation are anticipated to be at their greatest due to the delivery of equipment and construction materials. In line with Institute Environmental Management and Assessment (IEMA) guidelines, severance, driver delay, pedestrian delay, pedestrian amenity, fear and intimidation as well as accidents and safety have been evaluated. Relevant transport links are shown in **Figure 11.1**.

6.7.4 No cumulative assessment has been undertaken, as the construction of any identified consented wind farm developments would be assumed to be underway before the Proposed Development's construction programme begins. Dumfries and Galloway Council and

Transport Scotland were invited to request the inclusion of any relevant cumulative developments but neither stakeholder identified any relevant developments.

6.7.5 The total volumes of traffic and heavy goods vehicle movements are anticipated to increase by less than 10% along the A75(T) during construction. On the A712, the total volume of traffic is expected to increase by 23%, and heavy goods vehicle movements by 43%, triggering the requirement for a full assessment of effects on the public road network. Following this assessment, it has been deemed that the operational phase of the Proposed Development would not have any significant impacts on the public road network as a result of the low levels of traffic that are forecast.

6.7.6 The total volumes of traffic and heavy goods vehicle movements are anticipated to increase by less than 10% along the A75(T) during construction. On the A712, the total volume of traffic is expected to increase by 23%, and heavy goods vehicle movements by 43%, triggering the requirement for a full assessment of effects on the relevant public road network. Following this assessment, it has been deemed that the construction phase of the Proposed Development would result in manageable impacts on the public road network, with appropriate mitigation measures in place to minimize disruptions.

6.7.7 All abnormal loads (turbine blades, nacelle) would originate from King George V Docks in Glasgow and would be expected to travel via the M8, M74 and M6 then travel westbound along the A75(T) to the A712 and then private access tracks (and a 150m section of Old Edinburgh Road) to access the Site. Other construction related vehicles would also arrive to the Site via the A712, but may travel either westbound (from Gretna and Dumfries) or eastbound (from Stranraer) along the A75(T).

6.7.8 Traffic volumes as a result of construction activities are likely to increase on the public roads approaching the Site. The anticipated total traffic volumes are projected to be well within the capacity of the roads in question and the environmental effect would not be significant. Although not required, good practice measures such as a comprehensive Construction Traffic Management Plan (CTMP) would be implemented.

6.7.9 The operational phase of the Proposed Development would not have any significant impacts on the public road network as a result of the low levels of traffic that are forecast during this phase. Traffic volumes are expected to remain minimal, with no further mitigation required.

6.8 Acoustic

6.8.1 The full assessment of the potential effects of noise and vibration is provided in **Volume 1, Chapter 12** of the EIA Report.

6.8.2 An assessment of the acoustic impact of the proposed Blair Hill Wind Farm in terms of operational impacts has been undertaken and the potential impacts associated with construction and decommissioning have been discussed taking into account the nearest identified residential properties.

6.8.3 The operational noise impact was assessed according to the guidance described in the '*The Assessment and Rating of Noise from Wind Farms*', referred to as 'ETSU-R-97', as recommended for use in relevant planning policy. ETSU-R-97 makes clear that any noise restrictions placed on a wind farm must balance the environmental impact of the wind farm against the national and global benefits that would arise through the development of renewable energy sources. The assessment also adopts the latest recommendations of the Institute of Acoustics *'Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise'*.

6.8.4 Representative baseline conditions (the "background noise level") at nearby residential properties were established via an appropriate background noise survey. The measured

levels were used to infer the background noise levels at other nearby residential properties as the ETSU-R-97 document recommends. As background noise levels depend upon wind speed, as do wind turbine noise emissions, the measurement of background noise levels at the survey locations were made concurrent with measurements of the wind speed and wind direction at the development site.

6.8.5 The relevant noise limits were determined through analysis of baseline conditions and the criteria specified by the ETSU-R-97 guidelines. The general principle regarding the setting of noise criteria is that limits should be set relative to existing background noise levels, except in the case of relatively low levels, in which case fixed lower limits apply. This approach has the advantage that the limits can directly reflect the existing noise environment at the nearest residential properties and the relative impact that the wind farm may have on this environment. Different limits are applicable depending upon the time of day, with daytime limits intended to preserve outdoor amenity and night-time limits intended to prevent sleep disturbance.

6.8.6 A sound propagation model was used to predict the noise levels due to the proposed wind farm at nearby residential properties over a range of wind speeds, taking into account the position of the proposed wind turbines, the nearest residential properties, the candidate wind turbine type and the consideration of potential cumulative operational impacts from other potential wind farm development in the area. The model employed (which considered downwind conditions at all times) took account of attenuation due to geometric spreading, atmospheric absorption, ground effects and topographical barriers.

6.8.7 The predicted operational noise levels are within noise limits at nearby residential properties at all considered wind speeds in both isolative and cumulative terms. The Proposed Development therefore complies with the relevant guidance on wind farm noise and the impact on the amenity of all nearby properties would be regarded as **Not Significant** in EIA terms.

6.8.8 Sound associated with construction and decommissioning activities are discussed with reference to BS 5228 and it has been determined that on-site construction noise levels are highly unlikely to exceed typical limiting noise criteria at nearby properties, although appropriate mitigation measures will be adopted as a matter of due course. The impact can be considered as **Not Significant** in EIA terms.

6.9 Climate Balance

6.9.1 The full assessment of the potential effects on climate is provided in **Volume 1, Chapter 13** of the EIA Report.

6.9.2 The Climate Change Impact Assessment for the Proposed Development evaluates the project's contribution to reducing greenhouse gas emissions by displacing traditional fossil fuel-based power generation. While the construction and operation of the wind farm will involve some carbon emissions due to the manufacturing and installation of turbines, the project will lead to significant carbon savings. The wind farm is expected to generate substantial renewable energy, reducing reliance on fossil fuels and supporting the UK's and Scotland's climate change and renewable energy goals.

6.9.3 Peatlands on the Site present a unique challenge, as their disturbance during construction can release stored carbon. To address this, a detailed Peat Management Plan has been developed, minimising peat excavation and promoting habitat restoration post-construction. Restoration efforts are expected to enhance carbon sequestration throughout the wind farm’s lifetime. The carbon payback period for the project, measuring the time it will take to offset the emissions produced during its construction and operation, is estimated to be less than one year.

6.9.4 The Scottish Government's Carbon Calculator tool was used to estimate the total greenhouse gas emissions and savings. The project is projected to save approximately 161,198 tonnes of carbon dioxide (CO_2) per year, amounting to over 8 million tonnes over its 50-year operational life. These savings demonstrate the project's positive long-term impact on reducing Scotland's carbon footprint.

6.10 Forestry

6.10.1 The full assessment of the potential effects on forestry is provided in **Volume 1, Chapter 14** of the EIA Report.

6.10.2 The Forestry assessment considers the potential effects of the Proposed Development on forestry crops present within the Site. It outlines the effect that the Proposed Development will have on the existing forestry resource and identifies mitigation measures to minimise the impact of the loss of tree cover.

6.10.3 The assessment was carried out in accordance with the principles contained within the following legislation and policy guidance:

- The Forestry and Land Management (Scotland) Act 2018;
- The UK Forestry Standard 2017;
- Scotland's Forestry Strategy 2019;
- The Scottish Government's Policy on Control of Woodland Removal 2009; and
- Scottish Government's Policy on Control of Woodland Removal: Implementation Guidance 2019.

6.10.4 The Proposed Development is located on the western edge of a large commercial forestry complex lying 2.7 km northeast of Newton Stewart.

6.10.5 The Site includes sections of Drannandow, Lamachan and Queensway Forests which are all under active management guided by formal Long Term Forest Plans. Further felling and replanting is scheduled before the intended construction date for the Proposed Development in 2029 at which time the projected composition of the forestry crops within the Site will be as illustrated in Table 1, below.

Table 1 Summary of Forest Crops within the Site in 2029.

	Forest Crop Composition by Area (ha)			
Forest Property	**Broadleaves**	**Conifers**	**Open Ground**	**Total**
Drannandow	12.14	234.32	40.81	287.27
Lamachan	5.35	15.02	6.50	26.87
Queensway	6.61	13.94	7.60	28.15
Total	**24.10**	**263.28**	**54.91**	**342.29**

6.10.6 Construction of parts of the permanent infrastructure required for the Proposed Development would require the removal of trees from the three forest properties and for most of these areas to be subsequently maintained free of trees to ensure access for operation and maintenance during the lifetime of the Proposed Development. In total 42.24 ha of crops would be removed which equates to only 14.7% of the stocked crops within the Site.

6.10.7 The areas to be removed for infrastructure include 1.30 ha of land designated as native woodland. The designation boundaries are approximate as the ground includes both an existing forest road and areas of open ground. Additionally stocking densities in areas which are woodland are generally low. Overall, only up to 0.95 ha of native tree crops would be removed.

6.10.8 Some crops adjoining the areas to be felled for infrastructure construction will require further tree clearance due to the predicted instability of these adjacent crops. It is anticipated that windblow damage would develop in some cut faces left in these areas and therefore it would be safer and more productive to clear these surrounding trees to wind-firm edges along existing roads, rides and drains at the same time that trees are cut to facilitate infrastructure construction. The areas proposed as management felling for windblow mitigation extend to 20.23 ha It is proposed that trees removed from the management felling zones, cleared to create wind-firm boundaries in crops adjoining the infrastructure construction areas, will be restocked immediately in the same location (with possible minor adjustments to improve landscape design if required). The re-stocking design would reflect the species design approved in the Long Term Forest Plans.

6.10.9 Under the Control of Woodland Removal Policy, any tree crops permanently removed for the Proposed Development would require to be replanted on a like-for-like area basis either within the Site or at a suitable substitute location.

6.10.10 42.24 ha of crops will be permanently removed for infrastructure construction and will be replaced by an appropriately designed new planting scheme on a substitute site in order to satisfy the policy requirements.

6.10.11 The proposed on-site restocking of management felling areas combined with the intended new planting on a substitute site to compensate for crops lost to infrastructure construction would ensure that the total woodland area would be maintained.

6.10.12 There will be no net loss of forestry resource as a result of the construction of the Proposed Development. The areas of management felling required to create windfirm edges (totalling 20.23 ha) will be replanted post-construction within the Site and the areas of trees removed for infrastructure construction (extending to 42.15 ha) will be replicated by an off-site compensatory planting scheme in full compliance of the Control of Woodland Removal Policy. Overall, a residual effect of negligible significance is predicted.

6.11 Aviation, Radar and Defence

6.11.1 An assessment of the potential for effects of the Proposed Development on aviation, radar and defence interests has been carried out. The full assessment of the potential effects on aviation is provided in **Volume 1, Chapter 15** of the EIA Report.

6.11.2 The Proposed Development is within a military Tactical Training Area 20T and so the Ministry of Defence (MOD) will require an infrared lighting scheme, which will be agreed prior to turbine erection. The tip height of the turbines in the Proposed Development is above 150 metres and therefore it is subject to Air Navigation Order Article 222 Section 6 and, therefore, a reduced aviation lighting scheme has been agreed with the Civil Aviation Authority (CAA), as detailed in Figure 15.1. The implementation of a lighting scheme approved by the MOD and CAA will safeguard against effects on aviation as a physical obstruction.

6.11.3 Some of the turbines in the Proposed Development would impact the NATS En Route Limited (NERL) radars at Lowther Hill and Great Dun Fell. NERL has identified a radar mitigation solution, which will be finalised prior to construction. The implementation of a suitable radar mitigation scheme will safeguard against effects on the NERL surveillance provision.

6.12 Other Issues

6.12.1 The full assessment of the potential effects on shadow flicker and telecommunications is provided in **Volume 1, Chapter 16** of the EIA Report.

Telecommunications

6.12.2 An assessment of potential effects on television, telecommunications and fixed links associated with the Proposed Development was undertaken. A desktop study was undertaken to identify whether any fixed telecommunication links were present within or adjacent to the Site.

6.12.3 Telecommunications and broadcasting network operators were consulted during the scoping exercise.

6.12.4 The findings of the desktop study and consultation with telecommunications providers revealed that the Proposed Development would not directly affect fixed telecommunications links.

6.12.5 The potential effect of the Proposed Development is considered to be not significant with respect to other television or radio communication networks.

Shadow Flicker

6.12.6 Analysis was performed on all properties within ten rotor diameters of any turbine, taking the proposed micrositing allowance into account. This analysis took into account the motion of the Earth around the Sun, the local topography and the turbine locations and dimensions. The analysis was performed using the Final Layout, a layout of 14 turbines, each with maximum tip heights of 250 m. While two of the wind turbines will have a maximum height of 210 m, a worst-case scenario of 250 m to tip was used for all wind turbines considered in the shadow flicker assessment.

6.12.7 One property, Glenshalloch, falls within the shadow flicker study area. However, this does not necessarily mean that this property will experience shadow flicker, as this phenomenon requires several conditions to occur. The assumptions made for the shadow flicker assessment represent a worst-case scenario because:

- The analysis assumes that the wind turbines' rotors are always turning (in reality this only occurs when there is sufficient wind to turn the rotor blades and the wind turbines are not undergoing maintenance);
- The analysis assumes that the orientation of the wind turbines is always aligned so as to cast a sufficient shadow towards the property (in reality the wind turbines automatically turn to face the prevailing wind which may, or may not, create this condition)
- The analysis assumes that sunshine is always of sufficient intensity to cause shadow flicker (in cloudy skies it is unlikely to do so);
- The analysis assumes that all receptors have relevantly orientated windows (in reality this may not be true); and
- The analysis assumes that no trees or walls obscure the view of the wind turbines and hence block any potential shadow flicker.

6.12.8 Mitigation measures can be incorporated into the operation of the Proposed Development to reduce the instance of shadow flicker. Mitigation measures include planting tree belts between the affected dwelling and the responsible turbine(s), and shutting down individual turbines during periods when shadow flicker could theoretically occur.

6.13 Benefits of the Proposed Development

Contribution to Renewable Energy Targets

6.13.1 The proposed Blair Hill Wind Farm development is expected to contribute significantly to renewable energy generation in the region, with an installed capacity of approximately 92.4 MW. This capacity would be enough to power around 115,700 homes annually, supporting national and regional renewable energy targets and contributing to the UK's net-zero ambitions.

Economic Impact

6.13.2 The Applicant is committed to ensuring that, wherever reasonably practicable, local contractors and employees are used in all aspects of wind farm development. The major opportunities arise during the construction phase when suitably qualified local firms are invited to bid for different aspects of construction, such as foundation laying and electrical works.

6.13.3 Construction materials are normally sourced locally (i.e. within the county) and local transport and plant hire companies used wherever possible.

6.13.4 Expenditure in the local economy during the development, construction and operation of wind farms varies from project to project due to various factors including project size, project duration, and the availability of local suppliers.

6.13.5 The Blair Hill Wind Farm, if consented, could generate the following during the development and construction phase:

- £12 million Gross Value Add (GVA) and support c.128 job years in Dumfries and Galloway, and
- £33 million GVA and c.360 job years across Scotland (with peak employment of 183 jobs).

6.13.6 The expenditure required for the operations and maintenance of the Proposed Development could generate each year:

- £1.1 million GVA and support c.6 jobs in Dumfries and Galloway; and
- £2.4 million GVA and c.19 jobs across Scotland.

6.13.7 For further detail on expected socio-economic impacts of the Proposed Development, refer to the Economic and Community Impact Report of Blair Hill Wind Farm, a standalone report to be submitted alongside this EIA Report as part of the application for Section 36 consent.

Community Benefits

Community Benefits Package

6.13.8 If consented, the Proposed Development will deliver a tailored community benefits package worth £5,000 per MW (or equivalent) of installed capacity per annum, that is aligned with the priorities of the community. This process has involved feedback from the community and community groups who have engaged with the Applicant during the pre-application consultation process. Based on a total installed capacity of 92.4 MW, the Proposed Development could generate up to £462,000 per annum towards the community benefits package.

6.13.9 A Local Electricity Discount Scheme (LEDS) is being proposed as part of the community benefits package to deliver direct and tangible benefits to people living and working closest to the Proposed Development in the form of an annual discount to electricity bills.

Potential for Shared Ownership

6.13.10 The Applicant is also interested to understand whether there is any appetite from the community in exploring the potential for shared ownership of the Proposed Development, in line with Scottish Government's aspirations on community ownership[2].

Biodiversity Enhancements

6.13.11 A Biodiversity Enhancement and Management Plan (BEMP) will be implemented during the life of the project which will offer opportunities for interrelated environmental enhancements at the Site with respect to peat, biodiversity and forestry. Biodiversity enhancements will include:

- Broadleaved Woodland Creation
- Peatland Restoration / Enhancement
- Acid Grassland Restoration; and
- Living Green Roofs.

Cultural Heritage Enhancements

6.13.12 Several Cultural Heritage Enhancements and Initiatives will be implemented, including the following:

- Enhancement of appreciation points at the assets along with the provision of Interpretation Boards to further the understanding and experience of the monuments.
- Creation of designated pathways to access monuments and limit foot erosion.
- Improvement of existing parking availability to provide more access to appreciate the monuments.
- Outreach to local communities in the form of presentation by industry leaders for furthering understanding of the history in the area.
- Excavation and publication of results of any archaeological investigations within Site with local groups/Student Summer Schools in conjunction with Local Universities or Colleges. This would be subject to agreement with the local authority.
- Removal of intrusive vegetation upon Garlies Castle (SM) once agreement has been secured with Scottish Ministers in line with HES under Scheduled Monument Consent.
- A LiDAR survey of the Site to assist local groups in visually understanding their history; and
- Appointment of a Heritage Ranger to oversee and implement the measures outlined above.

Recreational Access Enhancements

6.13.13 Once the Proposed Development is operational, the wind farm tracks will be opened to the public to increase access to the countryside. Where possible, footpaths and tracks would be suitably equipped to enable wheelchair access, with further options currently still being explored. Recreation and access benefits are also discussed in the Socio-Economic and Community Benefit Impact Report submitted as part of the application for Section 36 consent, alongside this EIA Report.

6.13.14 Parts of the Site will continue to be used for farming and forestry operations during the operational phase of the Proposed Development, and as such, responsible access will be promoted throughout the Site.

[2] Local Energy Scotland is the independent body that manages the Scottish Government's Community and Renewable Energy Scheme (CARES). https://localenergy.scot/hub/shared-ownership/.

6.14 Availability of the EIA Report

6.14.1 In accordance with Section 18 of the EIA Regulations, 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 Scotsman, the Edinburgh Gazette, and in a relevant newspaper within the locality of the Proposed Development; likely to be the Galloway News.

6.14.2 Printed copies of the NTS and EIA Report are available by request from:

Blair Hill Wind Farm Project Team
Renewable Energy Systems Ltd.
Third Floor, STV,
Pacific Quay,
Glasgow,
G51 1PQ
Email:blairhill.windfarm@res-group.com
Website: https://blairhill-windfarm.co.uk/

6.14.3 Hard copies of the NTS are available free of charge, and hard copies of the EIA Report will be charged at £1,500.00 per copy. The price of the hard copy reflects the cost of producing the Landscape and Visual visualisations.

6.14.4 A printed copy of the EIA Report is available to view during normal opening hours at the following locations:

Newton Stewart Library
Church Street
Newton Stewart
DG8 6ER

John McNeillie Library
Wigtown County Buildings
Wigtown
DG8 9JH

6.14.5 Electronic copies of the EIA Report, including all figures, appendices and accompanying documents are available to view and download on the project website https://blairhill-windfarm.co.uk/ and can also be accessed at https://www.energyconsents.scot/.

6.14.6 Alternatively, a USB copy can be made available on request at a charge of £15 by emailing blairhill.windfarm@res-group.com.

7 Conclusion

7.1.1 The Blair Hill Wind Farm represents a key contribution to Scotland's renewable energy targets, delivering approximately 92.4 MW of clean energy to power around 115,700 homes annually. By aligning with both national and local climate policies, the project supports the UK's commitment to net-zero emissions and Scotland's 2045 carbon reduction goals.

7.1.2 The project has undergone a rigorous design process, incorporating feedback from statutory consultees, environmental studies, and public consultations. This iterative approach has ensured that potential impacts on local wildlife, habitats, and cultural heritage have been carefully assessed and mitigated. Measures such as the Biodiversity Enhancement and Management Plan and Peat Management Plan illustrate the commitment to environmental protection while maximising renewable energy production.

7.1.3 Public engagement has been an integral part of the development, allowing for local concerns to be addressed and for the project to offer tangible community benefits. These

include the creation of jobs, opportunities for local businesses, and enhanced recreational access through a cultural heritage trail.

7.1.4 Overall, the Blair Hill Wind Farm demonstrates a sustainable and balanced approach to renewable energy development. It offers long-term environmental and socio-economic benefits while minimising impacts on the local landscape and ecosystems. This responsible project design ensures that Blair Hill contributes positively to both the local community and the wider fight against climate change.

NON-TECHNICAL SUMMARY FIGURES