RWE

Enoch Hill 2 Wind Farm Planning Application Non-Technical Summary August 2023

Report for

Anna Eberts
Development Project Manager
RWE Renewables UK Onshore Wind Limited
Earn House
Lamberkine Drive
Perth
PH1 1RA

Main contributors

Vicky McLean
Georgia Gabb

Issued by

.....
Vicky McLean

Approved by

.....
Glen Robson

WSP

Nicholls House
Homer Close
Leamington Spa
Warwickshire CV34 6TT
United Kingdom
Tel +44 (0)1926 439 000

Copyright and non-disclosure notice

Third party disclaimer

Management systems

This document has been produced in full compliance with our management systems, which have been certified to ISO 9001, ISO 14001 and ISO 45001 by Lloyd's Register.

Document revisions

No.	Details	Date
1	First Draft	20/03/2023
2	Second Draft	24/07/2023
3	Final, for Issue	14/08/2023

Terminology

For the purposes of this Non-Technical Summary ('NTS') the following terminology is used:

- The ‘Proposed Development’ - the two turbines, battery storage and associated infrastructure of Enoch Hill 2 Wind Farm for which planning permission is being sought;
- The ‘Development Site’ - means the site of the proposed Enoch Hill 2 Wind Farm, located approximately 6km south-west of the settlement of New Cumnock and approximately 9km to the east of the settlement of Dalmellington in East Ayrshire. It is centred at coordinates 258250 (easting) and 606680 (northing). For descriptive purposes, in some chapters it is subdivided into the ‘Main Site’ - where the turbines and the new associated infrastructure would be located - and the ‘Access Track’, with reference to the existing access track that runs through the Pencloe Forest, connecting the Main Site to Afton Road.
- The ‘Applicant’ is RWE Renewables UK Onshore Wind Limited; and
- ‘EAC’ is East Ayrshire Council.

Contents

1. Introduction

1.1.1 RWE Renewables UK Onshore Wind Limited ('the Applicant') is seeking consent from East Ayrshire Council ('EAC') under the Town and Country Planning (Scotland) Act 1997 (as amended), to construct and operate a wind farm generating station with installed capacity of up to 10MW and a battery storage facility up to 11MW (1 Hour), overall providing a combined installed capacity of 21MW. The wind farm, the battery storage and associated infrastructure is regarded to as 'the Proposed Development', which will have a proposed operational period of 35-years.

1.1.2 The Proposed Development will be located approximately 6km south-west of the settlement of New Cumnock and approximately 9km to the east of Dalmellington in East Ayrshire. EIA Figures 3.1A and 3.1B illustrate the Development Site.

1.1.3 The planning application for the Proposed Development is accompanied by the Environmental Impact Assessment Report ("EIA Report"), which has been prepared by WSP UK Ltd ("WSP") on behalf of the Applicant.

1.2 Purpose of the NTS

1.2.1 This document constitutes the Non-Technical Summary ("NTS") and forms part of the EIA Report. The NTS is supported by the EIA Volume 2: Figures.

1.2.2 The EIA Report provides information relating to the Development Site and its surroundings, reasonable alternatives to the Proposed Development, a description of the key features of Proposed Development, a description of any likely significant effects resulting from the construction, operation and decommissioning stages of the Proposed Development. Potential changes as a result of the Proposed Development and other identified developments in the area are considered along with measures to reduce potential significant effects.

1.2.3 The EIA comprises the following volumes:

- Non-Technical Summary (NTS);
- Volume 1: Main Report;
- Volume 2: Figures; and
- Volume 3: Appendices.

1.2.4 The aim of the NTS is to provide an overview of the content and main findings of the EIA Report in a not-technical language, in order to assist the public in understating the project and the associated potential significant effects on the environment.

1.2.5 Those interested in obtaining more detail about the environmental aspects of this proposal should consult the full EIA Report.

1.2.6 The EIA Report and NTS are available to download from the project website: **www.rwe.com/enochhill2.** Hard copies of these documents will also be placed at local libraries by EAC. An additional copy will be provided at the New Cumnock Bowling Club.

1.2.7 Any comments on the Proposed Development should be directed in writing to EAC Planning Department via the public access planning portal, by email (planningrepresentations@east-ayrshire.gov.uk) or by post:

East Ayrshire Council
Planning and Economic Development
Opera House
8 John Finnie Street
Kilmarnock
KA1 1DD

2. Scheme Need and Alternatives

2.1.1 In order to meet international obligations, both the UK government and the Scottish Government have adopted legally binding commitments to reduce greenhouse gas emissions in an effort to reduce the level of future climate change. It remains the case that the Scottish Government expect that a significant proportion of the power generation capacity required to replace fossil fuel generation will come from onshore wind generation in Scotland in the short term. As Scotland has one of the windiest conditions in Europe, it has great potential to generate electricity from wind power, and, if constructed, the Proposed Development would contribute additional renewable generation capacity.

2.1.2 In April 2022, the UK Government published its British Energy Security Strategy. The strategy proposes to accelerate the UK towards a low-carbon, energy independent future. Of relevance to the Proposed Development, it states that there should be an "approach to reduce global reliance on Russian fossil fuels whilst pivoting towards clean, affordable energy". The Proposed Development would generate energy in the UK which would contribute to this approach.

2.1.3 A report published by the House of Commons Environmental Audit Committee in February 2021 ("Growing back better: putting nature and net zero at the heart of the economic recovery") recommends that as the country recovers from the Covid-19 pandemic "the focus must be on how to grow back better, creating a greener, healthier and more resilient economy" and that "It is essential that all decisions on infrastructure investment are considered with regard to UK net zero targets, impacts on biodiversity and future projections for changes in climate likely to affect the UK". The Proposed Development would help towards creating a greener economy.

2.2 Alternatives

2.2.1 **Chapter 2** of the EIA Report provides detail on the consideration of alternative options for the Development Site. These options include no development, alternative sites and alternative technologies and designs.

No Development

2.2.2 Without the Proposed Development, the current main land use of the Development Site for commercial forestry would continue. From an environmental perspective, there would be no contribution towards climate change targets with possible further reliance on fossil fuel use.

Alternative Sites

2.2.3 A high-level assessment was conducted within the south-west of Scotland, to identify potentially suitable sites for wind energy development. This resulted in the identification of other potential wind farm sites, including Benbrack and Enoch Hill, which are now consented.

2.2.4 While no alternative sites for a development of a two-turbine wind farm were identified and considered by the Applicant, alternatives in respect of layout, number of turbines and technology were considered as part of the iterative design process.

Alternative Design and Technology

2.2.5 The layout and individual siting of the turbines, battery storage and associated infrastructure has progressed through a number of design iterations and refinements, influenced by the EIA process.

2.2.6 The Applicant and its consultants undertook discussions with statutory and non-statutory consultees, the local community and the landowners with the findings all having an influence over the evolution of the design and the scope of the EIA.

2.2.7 The design of the Proposed Development has evolved in response to comments provided through various consultation discussions, desk studies and site work/technical appraisals by the project team.

2.2.8 Following a desktop-based constraints mapping exercise, an initial 'feasibility' layout of three turbines was considered (shown as "Layout 1" on **Figure 2.2** in Volume 2 of the EIA Report) with a further constraints mapping exercise taking place in 2019 and resulting in a two-turbine layout (shown as "Layout 2" on **Figure 2.2**). An environmental constraints map is shown within **Figure 2.1**, Volume 2 of the EIA Report.

2.2.9 The design of the Proposed Development was revisited in March 2023, resulting in "Layout 3". This incorporated minor change to the newly proposed access track between the turbines - to reduce track slope - the inclusion of a battery storage compound and minor change to the northernmost section of the exiting access track (off Afton Road) to reflect the recent realignment works completed by the landowner[1]. There were no changes to the turbine locations or other infrastructure.

2.2.10 Overall, design features and embedded mitigation measures have been incorporated into the design and construction of the Proposed Development to avoid, prevent or minimise significant adverse environmental effects and to enhance beneficial effects.

[1] Realignment works shown on the aerial photography of Bing Maps.

3. Description of the Proposed Development

3.1 Development Site

3.1.1 The Development Site is located approximately 6km south-west of the settlement of New Cumnock and approximately 9km to the east of Dalmellington in East Ayrshire. It is centred at NGR 258250, 606680. The Development Site boundary encompasses an area of approximately 128ha hectares (ha), although the wind farm infrastructure would occupy approximately 1.6ha of this.

3.1.2 The derelict Monquhill Farmhouse is located within the Development Site. The nearest residential property to the Development Site is Brockloch, which is located at Rough Hill adjacent to the B741 Road. Brockloch is located approximately 3.2km to the North of the main part of the Development Site and approximately 4.2km from the nearest turbine.

3.1.3 Access to the Development Site is via an existing track off Afton Road to the east of the site and then following an existing access track through Pencloe Forest.

3.1.4 The topography of the Development Site ranges between 230m-531m Above Ordnance Datum ('AOD'), with the summit of Strandlud Hill located in the main part of the Development Site and Meikle and Auchincally Hills located close to the access track to the east.

3.1.5 Open moorland used for grazing lies to the north of the Development Site, where the site of the Consented Enoch Hill Wind Farm is situated. The consented Pencloe Wind Farm is located to the east, and the operational Brockloch Rig (formerly Windy Standard and Windy Standard Extension Wind Farms) is approximately 1.3km to the south. The Carsphairn and Pencloe forests surround the west, south and east of the Development Site.

3.2 Proposed Development Components

3.2.1 The Proposed Development would comprise the following main elements:

- Up to two wind turbines up to 149.9m to blade tip;
- Access tracks connecting the turbines and other infrastructure elements;
- An upgraded vehicular access from the public highway (Afton Road);
- Hard standing areas (e.g., crane pads);
- Temporary working areas e.g., construction compound;
- Wind farm control building and substation compound;
- Electrical cabling between the control building and turbines;
- Battery Storage; and

- Infrastructure required to provide a connection point to the 132/33kV substation to be located at the Consented Enoch Hill Wind Farm.[2]

3.2.2 A 50m micrositing allowance is proposed for the infrastructure mentioned above and consent is sought for an operational life of 35 years.

3.2.3 The two wind turbines (having a rated capacity of up to 5 megawatts (MW) each) and the battery storage (up to 11MW) would provide a combined installed capacity of up to 21MW.

The location of site infrastructure is shown on **Figure 3.1A** and **3.1B** in Volume 2 of the EIA Report

Construction Process

3.2.4 A Contractor will be appointed to construct the Proposed Development. Felling will be undertaken prior to construction (12.7 hectares). The Proposed Development would be constructed over 18 (including six months for the battery storage installation).

3.2.5 Activities will include:

- Upgrading of entrance and existing access tracks;
- Development of temporary construction compound;
- Construction of on-site access tracks and any passing places;
- Drainage measures under tracks constructed / improved;
- Crane hardstanding areas constructed;
- Construction of turbine foundations;
- Construction of the on-site control building and substation compound and infrastructure required to connect to the existing substation at Enoch Hill Wind Farm;
- Battery compound construction (modification of half the temporary construction compound);
- Installation of batteries and commissioning;
- Excavation of trenches and cable laying adjacent to site tracks;
- Connection of cabling;
- Delivery and erection of wind turbines;
- Commissioning of site equipment; and
- Site restoration such as revegetation of track edges.

3.2.6 Where possible, activities will be carried out at the same time thereby reducing the length of the construction period. The starting date for construction will depend on the date planning permission is granted and grid connection date.

3.2.7 Construction activities are assumed to take place only between 07:00 and 19:00 hours on weekdays and 07:00 to 13:00 hours on Saturdays. Permission for work outside of these hours would be obtained from EAC as required.

[2] The connection between the control building of the Proposed Development and the consented Enoch Hill Wind Farm Scottish Power Energy Networks (SPEN) substation would be by overhead line (to be constructed by SPEN). Permission for this would be sought through a separate application submitted under Section 37 of the Electricity Act 1989.

3.2.8 Standard construction working practises will be applied during construction in accordance with best practice guidance.

Environmental Management during Construction

3.2.9 The range of measures developed to eliminate or reduce the environmental impacts of construction will be detailed in a Construction Environmental Management Plan ('CEMP'), Pollution Prevention Plan ('PPP'), Site Waste Management Plan ('SWMP') and emergency procedures that will all fall under the wider Construction Method Statement ('CMS').

3.2.10 The CEMP will, as a minimum, implement all of the mitigation measures required during construction as identified as necessary within this EIA Report to mitigate any likely significant adverse effects, and will outline a suite of control measures to manage the potential environmental impacts during this phase (including noise, pollution, surface water runoff and waste).

3.2.11 An Environmental Clerk of Works ('ECoW') would be appointed prior to construction with a key role in the preparation of the CEMP along with support from other environmental specialists as required.

Operational Process

3.2.12 Long-term land management practises in relation to forestry will continue unaffected following completion of the Proposed Development.

3.2.13 The turbines would be maintained and serviced at regular intervals in accordance with manufacturer recommendations and industry best practice. .

Environmental Management during Operation

3.2.14 Activity is limited during the operational period however, site and task specific risk assessments and method statements including control measures in relation to surface water runoff, dust, pollution control and waste will remain in place to cover any maintenance works which may be required.

3.2.15 The Proposed Development will be operated in accordance with ISO 14001 environmental management procedures ensuring compliance with applicable environmental legislation and best practice.

End Of Life Process

3.2.16 As the Proposed Development nears the end of its operational life, a decision will be taken as to whether or not a life extension, repowering or decommissioning will be required.

3.2.17 Repowering operations would involve the installation on the Development Site of new turbines, which would require a new application and further environmental assessment. Decommissioning would involve the removal of the wind turbines, kiosks, control building and substation, batteries and re-instatement of the Development Site.

3.2.18 However, for the purpose of the assessment of the likely significant effects of the Proposed Development, the EIA Report assumes that the project will be decommissioned at the end of its operational life.

4. Planning

4.1 Overview

4.1.1 **Chapter 5** of the EIA Report sets out the legislative context, in terms of the Town and Country Planning (Scotland) Act 1997(as amended); the Town and Country Planning (Development Hierarchy) Regulations (Scotland) 2009 and the Town and Country Planning (Environmental Impact Assessment) Regulations (Scotland) 2017. The chapter also summarises national and local planning policy relevant to the proposed development.

4.1.2 The Proposed Development will exceed the 20MW threshold set by the Development (Hierarchy) Regulations and therefore is categorised as a 'Major Development'.

4.2 Planning Policy

4.2.1 National Policy comprises National Planning Framework 4 ('NPF4') (2023), which provides the spatial strategy for Scotland to 2045 and takes account of the target of net zero emissions by 2045 set by the Scottish Government. It provides a strong framework for the deployment of renewable energy developments and identifies the need for strategic scale renewable energy developments, including onshore wind farms. In addition, subject specific national planning policies, National Planning Advice and Circulars are also included within this chapter.

4.2.2 Following adoption of the NPF4 which was published on 13th February 2023, the statutory Development Plan covering the Site comprises:

- NPF4 (2023); and
- East Ayrshire Local Development Plan (2017).

4.2.3 The publication of NPF4 has coincided with the implementation of certain parts of the Planning (Scotland) Act 2019 (the 2019 Act). A key provision is that in the event of any incompatibility between a provision of NPF4 and a provision of a Local Development Plan (LDP), then whichever of them is the later in date will prevail.

4.2.4 Supplementary guidance documents have also been prepared by EAC which apply to the Proposed Development including:

- Planning for Wind Energy Supplementary Guidance (2017).
- Dark Skies Park Lighting Supplementary Guidance (2017).
- Minerals Local Development Plan (2020).

4.2.5 Other applicable planning guidance includes:

- East Ayrshire Landscape Wind Capacity Study (2018).
- East Ayrshire Local Development Plan 2 (pending adoption and will supersede the 2017 plan).
- National Planning Advice and Circulars.

5. Environmental Impact Assessment

5.1.1 EIA is a process by which information about the environmental effects of a proposed development is collected, evaluated and presented to assist consultation and to enable decision makers to take account of these effects when determining whether or not a project should proceed and, if it does, what particular controls over its construction and operation are needed to avoid or reduce effects on the environment.

5.2 EIA Regulations

5.2.1 Under the Town and Country Planning (Scotland) Act 1997 (as amended), planning permission is required from EAC for the construction and operation of a wind farm that would have an installed capacity of less than 50 MW. The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 apply to wind farm applications with more than two turbines, or where the hub height of any turbine or height of any other structure exceeds 15 metres. The Proposed Development falls into this category and the EIA which accompanies the application is compliant with this legislation.

5.3 Assessment of Environmental Effects

5.3.1 The EIA Report has identified the likely effects of the Proposed Development on the environment (including people) and a determination has been made as to whether any of these could be significant. 'Mitigation' measures to reduce or avoid adverse effects were incorporated into the design of the Proposed Development and the assessment of residual effects presented in the EIA Report takes these into account.

5.3.2 The EIA Report accompanies the planning application and summarises the findings of the EIA. The assessment of effects is undertaken in an impartial manner using professional experience and judgement, and the findings are presented in a systematic way in the EIA Report, which will be used by EAC to help inform its decision about whether or not the Proposed Development should be approved.

5.4 Consultation

5.4.1 Consultation is a vital aspect of the EIA process, both to agree what work should be carried out to inform the EIA and to seek feedback on the proposals from key stakeholders. Extensive consultation (including public consultation) was undertaken throughout the design evolution of the Proposed Development.

5.4.2 An EIA scoping report for the Proposed Development was submitted for comment to EAC on 21 February 2020 along with a request for a scoping opinion. EAC issued formal scoping opinion on 02 April 2020. The scope of the assessment was progressively refined in response to comments from EAC and consultees, together with environmental information that has been obtained from work carried out as part of the EIA and the evolution of the project proposals.

5.4.3 RWE also held public events from April to June 2023 in the form of community drop-in events. During all three events, members of the project team were available to answer questions and provide feedback forms to attendees. A representative of the project team also attended the New Cumnock Community Council Meeting on 26th April 2023.

6. Potential Environmental Effects

6.1.1 The emphasis of the EIA Regulations is on the assessment of the likely 'significant' environmental effects which a proposed development is likely to give rise to.

6.1.2 The environmental topics considered in the EIA for the Proposed Development and reported in the EIA Report are:

- Chapter 6 – Renewable Energy Policy, Carbon Balance and Peat Management;
- Chapter 7 - Noise;
- Chapter 8 – Aviation;
- Chapter 9 - Landscape and Visual Impact;
- Chapter 10 - Historic Environment (including archaeology and cultural heritage);
- Chapter 11 - Ecology;
- Chapter 12 - Ornithology;
- Chapter 13 - Geology, Hydrology and Hydrogeology;
- Chapter 14 - Traffic and Transport;
- Chapter 15 - Socio-Economics; and
- Chapter 16 – Infrastructure and Other Issues.

6.1.3 The potential significant effects identified for the topics listed above have been assessed by a team of qualified experts, using appropriate methodologies which were agreed with EAC and its relevant consultees. As part of the assessment, mitigation measures have been identified in order to reduce the residual effects.

6.1.4 EAC confirmed that an assessment of the effect known as ‘shadow flicker’ could be scoped out of the EIA Report, provided that no residential properties were located within 2.5km of the site. The nearest residential properties to the proposed turbines are located approximately 4.2km to the north and therefore shadow flicker effects were not considered further.

6.1.5 **Chapter 17** summarises the mitigation and residual effects for the Proposed Development. The following sections provide a brief summary of the main findings of the EIA as set out in detail within the technical chapters of the EIA Report.

6.1.6 The key outcomes of the assessment undertaken for each individual environmental topic considered within the EIA has been summarised in the sections below.

6.2 Renewable Energy Policy, Carbon Balance and Peat Management

6.2.1 The primary purpose of the Proposed Development is to generate renewable energy, thereby assisting in the reduction of greenhouse gas emissions by reducing the need for production of electricity from combustion of fossil fuels. **Chapter 6** of the EIA Report summarises the prevailing renewable energy policy framework, including international, UK and Scottish policy and targets, which are supportive of onshore wind farms in principle, subject to siting and environmental considerations.

6.2.2 It also describes the 'carbon balance' (the length of time the Proposed Development would take to offset the carbon emissions from component manufacture and its construction and decommissioning), taking account of carbon losses from peat disturbance within development areas. The carbon savings for the Proposed Development are calculated using accepted Scottish Government guidance.

6.2.3 It is predicted that the carbon loss in developing the Proposed Development would be paid back in ~1.5 years (4% of the 35-year operational life) based upon the expected outcome under the fossil fuel mix scenario. Even considering the maximum scenario against the fossil fuel mix, the Proposed Development would have achieved the carbon balance within ~2.5 years (7.1% of the 35-year operational life).

6.2.4 On the basis of potential annual CO_2 savings of 16,273 tonnes/year (based on figure of 432 tonnes of CO_2 savings per GWh and a capacity factor of 43%), the Proposed Development could result in a total carbon saving of approximately 0.57 million (M) tonnes over its 35-year operational life and generate electricity to annually supply the equivalent of 9,708 homes.

6.3 Noise

6.3.1 An assessment of the potential significant effects from the Proposed Development with respect to noise has been undertaken. This has included a construction noise assessment which accounted for construction traffic noise assessment for residences situated along construction traffic routes, and an operational noise assessment of the Proposed Development (alone and cumulative with other development).

6.3.2 The results of the construction noise assessment show that no noise sensitive receptors ('NSRs') fall within the distance at which impacts from some construction activities would be likely. Furthermore, the effect of construction traffic noise on residential noise sensitive receptors is assessed as **not significant**.

6.3.3 The nearest NSR to the proposed battery storage facility is approximately 3.5 km to the north. Significant noise-related effects are therefore unlikely as a result of the distance between these.

6.3.4 When operational, turbine noise occurs by movement of the blades through the air as they rotate. At higher wind speeds, the noise is usually masked by the increasing sound of wind blowing through trees and around buildings. The level of masking determines the perceived noise level of the wind farm. An operational noise impact assessment was undertaken in order to predict the potential noise levels emitted by turbines and assess them against established standards (referred to as ETSU-R-97). The results of the assessment show that the ETSU-R-97 noise limit criteria at all NSRs would not be exceeded for the Proposed Development in isolation, and therefore effects are predicted to be **not significant**.

6.3.5 In addition, a cumulative noise assessment has been undertaken, in order to determine the operational noise effects of the Proposed Development in combination with other wind farm developments. To this aim, existing, consented and in planning wind farm developments within 10 km of the Development Site have been considered. The results show that there are no exceedances of the ETSU-R-97 limit criteria, therefore cumulative effects resulting from the operation of the Proposed Development in combination with others are considered **not significant**.

6.4 Landscape and Visual

6.4.1 A Landscape and Visual Impact Assessment ('LVIA') has been undertaken to evaluate the landscape and visual effects of the Proposed Development during its construction, operation and decommissioning phase. This was carried out by chartered landscape architects, in accordance with best practice guidance. The assessment taken into account of the relevant national and local planning policy in relation to wind farm developments.

6.4.2 Potential effects considered resulting from the Proposed Development include those relating to landscape character, designated and protected landscapes and views / visual amenity experienced by residents, tourists, visitors and road / rail users. Consideration has also been given to cumulative effects resulting from other wind farm developments in the 35km Study Area.

Landscape Effects

6.4.3 The Development Site falls within the *Southern Uplands with Forestry* landscape character type ('LCT') area, which extends over a large area of East Ayrshire to the south and west, and further south into Dumfries and Galloway. This is noted to be amongst those landscape character types generally most able to accommodate wind energy development. The Development Site also partly located within the *Southern Uplands* LCT however none of the Proposed Development infrastructure is situated within this LCT.

Direct Landscape Effects

6.4.4 During construction, there would be localised landscape effects on the Development Site resulting from vegetation removal including removal of trees. The design of the Proposed Development has however, sought to minimise tree loss where possible.

6.4.5 For the wider landscape character, significant landscape and cumulative effects would occur where visible on the *East Ayrshire Southern Uplands with Forestry* and *Southern Uplands* LCTs. The extent of significant effect would be limited to the immediate areas of the proposed turbines and within the Development Site itself due to forestry and landform. A very restricted part of the LCT in Dumfries and Galloway immediately south of the Development Site would experience **significant** effects up to a maximum distance of 2km from the southernmost turbine when forestry is included.

6.4.6 No direct landscape effects would occur to the *Southern Uplands* LCT given that none of the Proposed Development infrastructure is located within this LCT.

6.4.7 The assessment indicates that the proposed turbine height of up to 149.9m to blade tip is comparable to that of other nearby consented wind farm developments. In many views, the Proposed Development would be perceived as an ‘extension’ to (or closely related to) the adjacent existing and consented wind farms, including Enoch Hill, South Kyle and Pencloe.

6.4.8 There would be **no significant** effects on nationally designated landscapes or Wild Land Areas.

Indirect Landscape Effects

6.4.9 There would be **significant** indirect landscape effects to the *Southern Uplands* LCT up to around 2km from the Proposed Development.

6.4.10 In relation to the remaining surrounding landscape character, there would be no significant indirect effects occurring. This is largely due to the size and scale of the *Southern Uplands with Forestry* LCT which acts as a buffer around the Proposed Development.

Landscape Designations

6.4.11 **No significant** effects are predicted as a result of the Proposed Development on the Afton Sensitive Landscape Character Area ('SLCA') designation.

Visual Effects

6.4.12 The majority of visual effects are experienced as a result of the operational period of a wind farm. Visual effects during construction generally start at zero and increase progressively until they are the same as per operations once the turbines are erected.

Visual Effects from Properties / Settlements

6.4.13 The proposed turbines have been located remote from residential properties to the north, within a less sensitive part of the Development Site, thus increasing the level of mitigation afforded to landscape and visual receptors in the *Upland Basin* to the north along the B741 and around the New Cumnock area.

6.4.14 **Significant** temporary visual effects during construction would be experienced from a very small number of residential properties and users along Glen Afton Road at Burnfoot and Lochbrowan around the site entrance. However, none of these receptors would experience significant visual effects during operation.

6.4.15 **Significant** 'cumulative' visual effects would be experienced from parts of the southern edge of New Cumnock, near the cemetery during operation. There would be **no significant** visual effects on the views from any other settlements within the study area including the majority of New Cumnock.

Visual Effects from Transport Routes

6.4.16 Visual effects on views from the transport routes within 10km have been considered. Routes included in the assessment are as follows:

- A76 between Cumnock and east of New Cumnock;
- B741 between Auchenroy and New Cumnock; and
- Glasgow to Carlisle railway line near New Cumnock.

6.4.17 There would be **significant** visual effects during operation on the views from parts of one road, the B741 within approximately 5-6km distance of the Proposed Development, between east of Burnside and west of Bankglen.

6.4.18 None of the other transport routes would be significantly affected by views of the Proposed Development.

Visual Effects from Recreational Routes

6.4.19 The visual assessment has considered the potential visual effects likely to be experienced by people (walkers / cyclists / horse riders / joggers / others) on recreational routes within the Study Area.

6.4.20 **Significant** visual effects during operation would affect views from parts of the following recreational routes:

- EAC Core Path No. C10: Coalfield Cycle Route (partly overlapped by Scottish Hill Track 84: Afton Road, part of the New Cumnock Path Network);
- EAC Core Path No. C12: New Cumnock Circular;
- DGC Core Path No. 183 / 667: Circular route within Carsphairn Forest; and
- Right of Way 'e' between Afton Road and EAC Core Path No. 12.

6.4.21 There would be **no significant** effects on any of Scotland's Great Trails, Regional Trails or the Sustrans National Cycle Network.

Visual Effects from Recreational and Tourist Destinations

6.4.22 There would be **no significant** visual effects on any recreational and tourist destinations.

6.5 Historic Environment

6.5.1 An assessment of the direct effects on historic heritage assets, as well as indirect effects on the setting of off-site heritage features and the wider historic landscape, have been considered in the Historic Environment assessment.

6.5.2 Data was collected for both designated and non-designated heritage assets, heritage assets of regional or potentially national importance, together with other relevant designated sites. This was undertaken though desk-based research, which included a review of West of Scotland Archaeology Service Historic Environment Record ('HER'). In addition, a site visit was carried to confirm ground conditions and to visit the archaeological features identified as part of the desk-based studies.

6.5.3 There are no designated heritage assets within the Development Site boundary. There are 18 listed buildings within the 10km of the Development Site, nine of which are located at the western edge of this study area, within the Dalmellington Conservation Area. There are no Historic Battlefields or World Heritage Sites within 10km of the Development Site. Three scheduled monuments, one Conservation Area and one designated Garden and Designed Landscape ('GDL') are located between 5km and 10km of the Development Site, with an additional scheduled monument located over 10km beyond the Development Site including Craigengillan GDL.

6.5.4 There are a number of non-designated heritage assets within a 500m study area, largely relating to post-medieval agricultural activity and livestock management.

6.5.5 The assessment has determined that no previously recorded heritage assets would be disturbed as a result of the Proposed Development. Effects would be restricted to potential disturbance of previously unrecorded heritage assets and deposits of paleoenvironmental or geoarchaeological interest that may be identified in working areas during the construction phase (where present).

6.5.6 There is no evidence to suggest as yet unknown remains dating to the prehistoric or medieval periods are present within the Development Site and so **no significant** direct effects are predicted during construction. Any potential effects would be mitigated by the adoption of a scheme of archaeological work agreed with the West of Scotland Archaeology Service ('WoSAS') Archaeologist.

6.5.7 In relation to the potential indirect effects (i.e. visual effects) on the settings of designated heritage assets within the wider area (including Craigengillan Garden and Designed

Landscape, The King's Cairn, Beoch Cairn and Fardenreoch Cairn), **no significant** effects are predicted during construction or operation of the Proposed Development.

6.6 Ecology

6.6.1 The potential effects of the Proposed Development on habitats and non-avian animal species during the construction, operation and decommissioning have been assessed in line with best practise guidance from the Chartered Institute of Environmental Management ("CIEEM").

6.6.1 The assessment has been based both on the results of the desk study and field surveys, and on professional knowledge of ecological processes and functions, and relevant published information. Baseline field surveys commenced in 2016, with further protected species surveys for otter, water vole, badger, red squirrel and pine marten undertaken in March 2023 to update the results of earlier ecological surveys.

6.6.2 There are no statutory designated sites present within the Development Site or within a 2km radius. There are six non-statutory sites within 2km of the Development Site, three of which are classed as Local Nature Conservation Sites ('LNCS'), while the remaining three sites are listed within the Ancient Woodland Inventory. One Provisional LNCS, Connel Burn / Benty Cowan overlaps the Development Site. Glen Afton LNCS is around 10m east of the Development Site entrance.

6.6.3 The layout of the Proposed Development within Connel Burn/Benty Cowan Provisional LNCS has avoided vegetation communities for which the Development Site has been notified and, wherever possible, avoided peatland habitat. The proposed substation, battery storage, temporary construction compound and storage/laydown areas have been sited to avoid sensitive vegetation communities.

6.6.4 The layout of the Proposed Development has also been designed with a buffer of 50m around watercourses and waterbodies, where possible, excluding watercourse crossings in order to minimise construction risks on the aquatic environment.

6.6.5 The Development Site is dominated by conifer plantation woodland. Smaller stands of upland habitats (including modified blanket bog, grassland, mires, flushes and heath) occur along forestry rides within the coniferous plantation and in the open areas bordering the plantation.

6.6.6 A number of potential Groundwater Dependant Terrestrial Ecosystems ('GWDTEs') have been identified within the Development Site, as part of the surveys. A full description of the GWDTE assessment is provided in **Chapter 13 - Geology, Hydrology and Hydrogeology**.

6.6.7 The ecological surveys identified otter activity on Carcow Burn and on Small Burn, with all signs recorded on the periphery of the Study Area (for otter this refers to the Development Site and 250m buffer and access tracks with 100m buffer). No evidence to indicate overland routes or connectivity between the two river catchments was found. However, it cannot be ruled out that otter make use of this route for passing between the two catchments.

6.6.8 A Species Protection Plan ('SPP') for protected species including otter would be prepared to ensure compliance with legislation. It would include details of pre-construction surveys a suite of embedded measures that would be implemented across the Development Site to avoid causing harm to or disturbing this species. This will form part of an overarching CEMP to be implemented under the supervision of the ECoW.

6.6.9 Bats are active during spring, summer and autumn and activity surveys were carried out in 2016/2017 and 2021/2022. Three species (soprano, common pipistrelle and *Myotis*

species) were found to be roosting in the derelict Monqhill Farmhouse on the Development Site. No bat activity at the building was recorded during winter. Based on experience from similar upland sites within the south and west of Scotland, the level of bat activity recorded is typical of this type of upland habitat that is remote from the main valleys and, in this case, is dominated by dense coniferous plantation with a low level of habitat complexity. The survey results suggest that low numbers of Daubenton's bat, soprano and common pipistrelle bats utilise the Development Site.

6.6.10 To reduce bat collision risk, current NatureScot guidance recommends that turbines should be positioned at least 50m (measured from blade-tip) from any features (i.e., key watercourses and woodland edge) likely to be used by commuting and foraging bats and this was generally accounted for in the design of the Proposed Development..

6.6.11 The only evidence of badger at the Development Site was a single badger print recorded along an access track close to the derelict Monquhill Farmhouse. The presence of the print confirms that the Development Site is within the home range of at least one individual or group of badgers, although no setts or activity typically attributed to an actively defended territory were recorded.

6.6.12 Possible pine marten scats were recorded during the 2023 surveys. No other signs of pine marten such as prints, dens or sightings were recorded, and no other evidence of pine martens was recorded in previous surveys.

6.6.13 No signs of red squirrel were recorded within the main Development Site. However, a single red squirrel was sighted within woodland to the north of the access track in August 2017. No other signs of red squirrel such as discarded cones or dreys were recorded.

6.6.14 Salmon were recorded at two survey locations (on the Carcow Burn and on the Afton Water), both located outside of the Development Site and downstream of the Proposed Development. Trout were recorded at seven of the eight survey locations with two being within the Development Site (Carcow Burn (survey site 3) and a tributary of Carcow Burn (survey site 4)). Where trout were present, their population densities were 'good' to 'excellent'. A single European eel was found in the Carcow Burn at Site 1 (outside of the Development Site). The results show that healthy populations of aquatic invertebrates are present at all the survey locations.

6.6.15 Following the implementation of mitigation measures to be set out in the CEMP and associated plans along, **no significant** effects to any ecological feature (designated/non-designated sites, bats, mammals or aquatic invertebrates) are predicted during construction and operation of the Proposed Development. Furthermore, no significant cumulative effects would occur.

6.7 Ornithology

6.7.1 The potential effects of the Proposed Development on birds during the construction, operation and decommissioning of the Proposed Development have been assessed.

6.7.2 The assessment has been based on the results of the desk study and field surveys as well as on relevant published information and professional knowledge. Baseline surveys were carried out in accordance with CIEEM and NatureScot ('SNH') guidance from April 2016 to August 2018.

6.7.3 The desk study identified a single European site, the Muirkirk and North Lowther Uplands Special Protection Area ('SPA'), within the 20km search area. This SPA was not taken forward for assessment given the low risk of the potential connectivity of its qualifying species and the Proposed Development Site.

6.7.4 Goshawk was the only species identified from surveys to be assessed given its status as a Wildlife and Countryside Act ('WCA') (1981) Schedule 1 species. The Proposed Development also falls within the Zone of Influence ('ZoI') for nesting goshawk. The species is therefore of sufficient importance that a significant effect may occur as a result of the Proposed Development. Two breeding pairs of goshawk were identified within the ZoI. Disturbance effects during construction, operation and decommissioning are not considered significant due to the extent of available habitat. Collision risk is low (1.05 collisions over the 35-year operational period) and so effects are considered not significant.

6.7.5 A full assessment, including, where appropriate, collision risk modelling of goshawk, was undertaken following CIEEM (2022) guidance. Working practices to minimise effects on ornithological features during construction are to be set out in a Breeding Bird Protection Plan ('BBPP'). This would form part of an CEMP and would be implemented under the direction/supervision of an ECoW. Taking this and other mitigation measures into account, it was concluded that the Proposed Development would have **no significant** effects on birds in isolation or cumulatively with other developments.

6.8 Geology, Hydrology and Hydrogeology

6.8.1 An assessment of the of the potential effects of the Proposed Development on geology, hydrology (including flood risk) and hydrogeology has been carried out.

6.8.2 The assessment identified a number of water environment receptors at potential risk from the Proposed Development. These included bedrock aquifers and associated Water Framework Directive ('WFD') groundwater bodies, watercourses and associated WFD surface water bodies and ponds and five GWDTEs.

6.8.3 There are no Geological Conservation Review ('GCR') sites, i.e. sites of geological and geomorphological features of national and international importance within the Development Site or Study Area (2km buffer around the Development Site).

6.8.4 Two bedrock aquifers and WFD groundwater bodies are located beneath and beyond the Development Site. The potential effects on these features during construction are considered to be **not significant** due to the limited extent of works, low permeability of aquifers and embedded mitigation proposed (see below for further details).

6.8.5 Watercourse features within the Development Site include Small Burn flowing into Connel Burn (River Nith), four tributaries to Carcow Burn and an unnamed tributary at the headwaters of the Carcow Burn. **No significant** effects on watercourses and associated WFD surface water bodies are predicted following implementation of mitigation.

6.8.6 Within the Development Site there is a high to medium likelihood from surface water flooding along the areas of the tributaries and indicated as a high likelihood within the forestry areas within the Development Site, particularly along drainage routes, but these are not near any proposed infrastructure. No further consideration was therefore given to flood risk.

6.8.7 A number of Private Water Supplies ('PWSs') are situated within 2km of the Development Site. The closest is the type B supply at Lochbrowan. This property is located approximately 200 m to the east of the Development Site's access area on the Glen Afton public road. None of the PWS's surface water or groundwater catchments are in hydrological connection with the Development Site and therefore were not considered further in the assessment.

6.8.8 An assessment of the potential GWDTEs based on their topography, geology and hydrogeology has indicated that there are no truly groundwater-dependent habitats

present, or groundwater dependency is low. In the most part, the presence of peat and / or till and low permeability bedrock ensures that any groundwater levels are local and perched. Therefore, wider-scale groundwater supply to the habitats identified is limited, with the majority of the supply coming instead from surface or very near-surface infiltration and surface runoff.

6.8.9 Embedded mitigations would be implemented as part of the Proposed Development to protect the water environment and ground conditions. These include design iterations to avoid sensitive areas, incorporation of buffer zones around the watercourse network, avoidance of deep peat, track, drainage, watercourse crossing and cable trench design, turbine micrositing, Construction Site Licence ('CAR') and the development of a CEMP amongst others.

6.8.10 The cumulative impact assessment indicated that there would be **no significant** cumulative water effects with consented developments within the Development Site or wider Study Area or in the same surface catchments.

6.9 Traffic and Transport

6.9.1 An assessment of the traffic levels that would be generated during the construction, operation and decommissioning phases of the Proposed Development has been carried out, with the construction phase being the main focus as this is when most traffic will be generated. Consideration has been primarily given to Heavy Goods Vehicle ('HGV') and abnormal load movements.

6.9.2 Estimates of traffic generation associated with the construction phase of the Proposed Development have been based on calculations of vehicle loads of imported materials. As a worst-case scenario, the assessment assumes that all stone for construction would be imported from off-site.

6.9.3 The proposed quarry, from which it is assumed the bulk of the construction materials will be sourced, is located north-east of Cumnock, approximately 18km from the Development Site. The quarry is accessed via the B743 from which the route continues westbound and onto the B713, then A76, B741, Afton Road and along an existing access track through Pencloe Forest.

6.9.4 The route proposed for turbine delivery vehicles is from Glasgow Port moving along Kings Inch Drive then onto the M8, M77, A77, A76, B741 then Afton Road to existing access tracks through Pencloe Forest.

6.9.5 The impact of construction-related traffic on the proposed access routes for road stone deliveries and concrete deliveries has been determined, in percentage terms, relative to the background traffic. The movement of abnormal loads is closely managed, and all vehicles will be escorted by police at set times.

6.9.6 As noted above, the assessment considers a worst-case scenario where 100% of all road stone required for the construction of on-site access tracks will be imported. As such, the assessment presented is considered to be an absolute worst- case.

6.9.7 Based on the construction programme and traffic generation, the construction traffic results in an approximate peak of 96 HGV movements per day two-way (approximately 48 arrivals and 48 departures per day). The peak construction traffic is predicted to occur in month five of the 18-month construction programme, due to month four having deliveries for multiple construction activities and including eight days with concrete delivery.

6.9.8 The construction route will be agreed with EAC as part of a Construction Traffic Management Plan ('CTMP') at the detailed design stage. Wherever possible, construction traffic would be scheduled to avoid peak hour travel to ensure minimal disruption.

6.9.9 In line with the industry guidance, following environmental effects which are listed in have been considered in the road link assessment: severance; driver delay; pedestrian delay; pedestrian amenity; fear and intimidation; and accident and safety. In respect of these, and with the incorporation of appropriate mitigation measures within a draft CTMP, there are **no significant** effects predicted.

6.10 Socioeconomics

6.10.1 Potential impacts relating to socioeconomics, tourism and recreation (including access) receptors have been considered within this assessment. A desk-based study was carried out to determine relevant baseline socio-economic, tourism and recreation conditions at the Site and within relevant Study Areas including the East Ayrshire Local Authority for socioeconomics and labour and 10km Study Area for tourism and recreation as set out in **Chapter 15** of the EIA Report.

6.10.2 In 2021, East Ayrshire had a total population of 122,000 with the overall Study Area population comprising of a higher pensionable age compared to the average for Scotland. Employment rates are also higher than the average for the country. The leading employment industry is human health and social work activities. The construction sector supports around 2,500 jobs (around 5.9% of all jobs in Study Area).

6.10.3 It is identified within the socio-economic assessment that the Proposed Development could generate capital expenditure of around £7.4m during construction.

6.10.4 The construction of the Proposed Development is estimated to support a total 47 net temporary construction jobs over the 18-month construction programme across the Study Area. It should be noted that the number of construction workers employed would depend on the duration of the construction programme and may vary if the programme is altered.

6.10.5 Construction of the Proposed Development is likely to increase occupancy of nearly hotels and other suitable short-term accommodation facilities, stemming from the construction jobs generation and mobility of the labour market. The increase in localised presence of person through construction, is also likely to increase trade in local hospitality establishments. During operation, there would be the creation of some full-time skilled jobs with additional local spending through the use of the local facilities. These aspects would lead to a short-term minor benefit both during construction and operation.

6.10.6 There are a number of tourist and visitor destinations within 10km of the Proposed Development, including Knockshinnoch Lagoons Local Nature Reserve and hill summits such as Cairnsmore of Carspharin. A number of cultural heritage features are also present between 5- 10km away (for example, Kyle Castle).

6.10.7 The majority of the Development Site is subject to the ‘right to roam’ under the Land Reform (Scotland) Act 2003 such that access for recreation (including walking and horse riding) is permitted over most of the Development Site. However, the Development Site does not currently include any publicly accessible footpaths (designated or non-designated) which could easily facilitate recreational activities.

6.10.8 The construction of the Proposed Development is likely to have **no significant** effects on recreational users as there will be no permitted access to members of the public during construction or any decommissioning activities.

6.10.9 Subject to agreement with all landowners and tenants, the public would have access to the Development Site tracks during operations, thereby facilitating relatively easy public access to areas that would otherwise have been more challenging to access. This would provide a new network of publicly accessible routes across the Development Site, thereby

facilitating relatively easy public access to areas that would otherwise have been more challenging to access.

6.10.10 The residual effects of the Proposed Development during the operational phase are anticipated to be minor beneficial in relation to the labour market and negligible for the Tourism and Recreation, which are considered to be **not significant** in EIA terms.

6.11 Infrastructure and Other Issues

6.11.1 When considering infrastructure, telecommunications and safety, appropriate design and management of a wind farm can avoid potential impacts in respect of these interests. With regard to safety related issues, the Proposed Development will be constructed and operated in accordance with all relevant UK health and safety legislation, guidance and best practice to ensure the risk to public safety is appropriately managed. The Development Site will be appropriately signed to indicate the presence of construction work. Therefore, **no significant** effects are expected.

6.11.2 In respect of infrastructure and telecommunications, the incorporation of suitable buffer and separation distances from these assets (as specified by the operators) into the layout design is often sufficient to mitigate any possible effects. Alternatively, where siting of turbines, battery storage or associated infrastructure to avoid potential impacts is not feasible, a range of technical solutions can be implemented to mitigate effects.

6.11.3 A number of telecommunications and infrastructure consultees indicated that they operate telecommunications links or plant in the vicinity of the Development Site. However, none of these would be directly affected by the Proposed Development.

6.11.4 If a reduction in television reception quality does occur in the surrounding area, it is most likely to be apparent when the Proposed Development becomes operational. It is expected that any issues would arise in the first year of operation and, within this period, the Applicant will meet the cost of investigating any complaints and effectively rectifying any problems that are identified as relating to the Proposed Development.

6.11.5 The Proposed Development will be constructed and operated in accordance with all appropriate health and safety guidance and standards to ensure the risk to public safety is minimised and kept within acceptable levels. The potential for significant effects as a result of major accidents and disasters has been taken into account for a range of topics and it is considered that there would be no significant effects. The potential for significant effects in relation to population and human health has also been considered and **no significant** effects are predicted.

6.11.6 To conclude, there would be **no significant** effects in respect of existing infrastructure and other issues (i.e., telecommunications, safety, population and human health and major accidents and disasters).

6.12 Aviation

6.12.1 An assessment of the effects of the Proposed Development on aviation has been undertaken by a qualified aviation expert.

6.12.2 The airspace within, above, and surrounding the Development Site is used by both civil and military aircraft. The potential effects of wind turbines on aviation primarily concern the maintenance of safe aviation operations. There are two aspects specifically that can cause impact:

- Physical obstruction: turbines can present a physical obstruction at, or close to, an aerodrome or other aviation activity area; and
- Radar / Air Traffic Services ('ATS'): turbine clutter appearing on a radar display can affect the safe provision of ATS as it can mask unidentified aircraft from the air traffic controller and / or prevent them from accurately identifying, or maintaining identity of, aircraft under their control. In some cases, radar reflections from the turbines can affect the performance of the radar itself.

6.12.3 The construction of the Proposed Development will create a physical obstruction to flight operations in the vicinity of the wind turbines. Construction infrastructure such as cranes and erected wind turbines can be difficult to see from the air, particularly in poor meteorological conditions, leading to potential increased obstacle collision risk. Furthermore, during the construction phase, the presence and movement of construction infrastructure may present a potential obstacle collision risk to low flying aircraft operations.

6.12.4 A range of embedded mitigation measures, in the form of appropriate notification to aviation stakeholders of the extent of the Proposed Development, the maximum height of obstructions, the operational period and timings of any maintenance activity, together with the lighting and marking of infrastructure, would minimise effects to aviation flight operations as a result of construction.

6.12.5 The Proposed Development is located within Low Flying Area ('LFA') 16 and Tactical Training Area ('TTA') 20T which are considered by the MOD to be areas of key importance for low flying training. The MOD have requested that specific aviation infrared lighting be fitted to the Proposed Development to mitigate the effect to low flying operations during operation of the turbines. Embedded mitigation for the operational phase including notification to aviation stakeholders, lighting and marking will result in **no significant** predicted effects.

6.12.6 The Level of Service ('LoS') Analysis demonstrated that both turbines will theoretically be highly likely to be detectable by Glasgow Prestwick Airport Terma and Lowther Hill Primary Surveillance Radar ('PSR'). With a mitigation scheme in place, however, the post-mitigation effects are predicted to be **not significant**.

7. Conclusion

7.1.1 The role of onshore wind remains central to achieving Scottish renewables energy targets which have increased in recent years. The Scottish Government's target is to achieve 50% of total national energy use from renewable sources by 2030 and a largely decarbonised energy system by 2050. In December 2022, the Scottish Government stated that 85.2% of total energy consumption in Scotland in 2021 came from renewable sources, and this proposal would make an important contribution to reducing carbon emissions and to meeting this, as yet unachieved target. The Scottish Government's Onshore Wind Policy Statement (2022) sets a new target for Scotland, aiming at increasing the onshore wind installed capacity to 20 GW by 2030. There is therefore a recognised need to dramatically increase renewable electricity generation, with onshore wind identified by the Scottish Government as being of critical importance, and the Proposed Development would contribute to achieving these targets.

7.1.2 The Proposed Development has been informed by, and builds upon, the comprehensive iterative design process undertaken throughout the EIA process. This has resulted in the elimination or mitigation of potentially significant environmental effects in respect of all environmental topic areas considered in the EIA Report.

7.1.3 The Proposed Development would provide a number of economic benefits which result from investment into the local and national economy, job creation and benefits in respect of national energy security, as well as the environmental benefits which would arise from the provision of low carbon renewable energy.