



ARCUS

INFINERGY Ltd
a **BORALEX** company

**TORRANCE EXTENSION II WIND FARM
ENVIRONMENTAL IMPACT ASSESSMENT
NON-TECHNICAL SUMMARY**

FEBRUARY 2023



TABLE OF CONTENTS

1	INTRODUCTION.....	2
2	SITE SELECTION AND DESIGN.....	5
3	DESCRIPTION OF THE PROPOSED DEVELOPMENT.....	6
4	EIA METHODOLOGY, SCOPING AND CONSULTATION.	9
5	POLICY CONTEXT.....	10
6	LANDSCAPE AND VISUAL IMPACT ASSESSMENT.....	11
7	NOISE.....	12
8	FORESTRY.....	12
9	TRAFFIC AND TRANSPORT.....	13
10	ECOLOGY.....	14
11	ORNITHOLOGY.....	15
12	ARCHAEOLOGY AND CULTURAL HERITAGE.....	15
13	GEOLOGY, SOILS AND PEAT.....	16
14	HYDROLOGY AND HYDROGEOLOGY.....	18
15	SOCIO-ECONOMICS, LAND USE, RECREATION AND TOURISM.....	19
16	CLIMATE CHANGE AND CARBON BALANCE.....	22
17	OTHER ISSUES.....	23
18	SUMMARY.....	25

1 INTRODUCTION

Background

- 1.1.1 This Non-Technical Summary (NTS) summarises the Environmental Impact Assessment Report (EIA Report) which accompanies the application by GreenGridPower3 Ltd (the Applicant) for consent to install and operate Torrance Extension II Wind Farm (the Proposed Development) and associated infrastructure with a generation capacity of up to 26.4 megawatts (MW). The Development comprises of 4 wind turbines and is approximately 600 m north of the centre of Harthill, within North Lanarkshire.
- 1.1.2 Given the capacity of the Proposed Development, the EIA has been undertaken in accordance with the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017¹ (the EIA Regulations).
- 1.1.3 The EIA Report contains the findings of the assessment of likely significant environmental effects of the Proposed Development and comprises of the following volumes:
- **Volume 1** – Written Statement;
 - **Volume 2** – Figures Excluding LVIA and Cultural Heritage Visualisations;
 - **Volume 3** – LVIA and Cultural Heritage Visualisations;
 - **Volume 4** – Technical Appendices; and
 - **Volume 5** – Confidential Appendices

The following additional documents are also included as part of this EIA Report:

- Planning, Design and Access Statement; and
- Pre-Application Consultation (PAC) Report.

Availability of the Proposed Development EIA Report

- 1.1.4 The EIA Report and accompanying documentation are available online; please visit the dedicated project website: www.torrancewindfarmextension2.co.uk.
- 1.1.5 Copies of the NTS or USB stick comprising the entire EIA Report in Adobe .pdf format may be obtained free of charge while stocks last. Similarly, paper copies of the EIA Report may be obtained at a cost of £750 + P&P. Please email the Applicant at info@torrancewindfarmextension2.co.uk or write to Freepost Infinergy Ltd (no further details or stamps required) to request a copy. Alternatively, please call on the dedicated Freephone number: 0800 980 4299.
- 1.1.6 Hard copies of the application and EIA Report will also be made available for public viewing at the following locations:
- Harthill Community Centre, Main Street, Harthill, ML7 5QE.
 - Craig Inn Community Centre, Main Street, Blackridge, EH48 3SP

¹ Scottish Government (2017) The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 [Online] Available at: <https://www.legislation.gov.uk/ssi/2017/102/contents/made> (Accessed 24/02/2022)

Representations to the Application

- 1.1.7 Any representations on the Town and Country Planning application should be made directly to North Lanarkshire Council as follows:

North Lanarkshire Council
Department of Planning & Environment
Fleming House
2 Tryst Road
Cumbernauld
G67 1JW

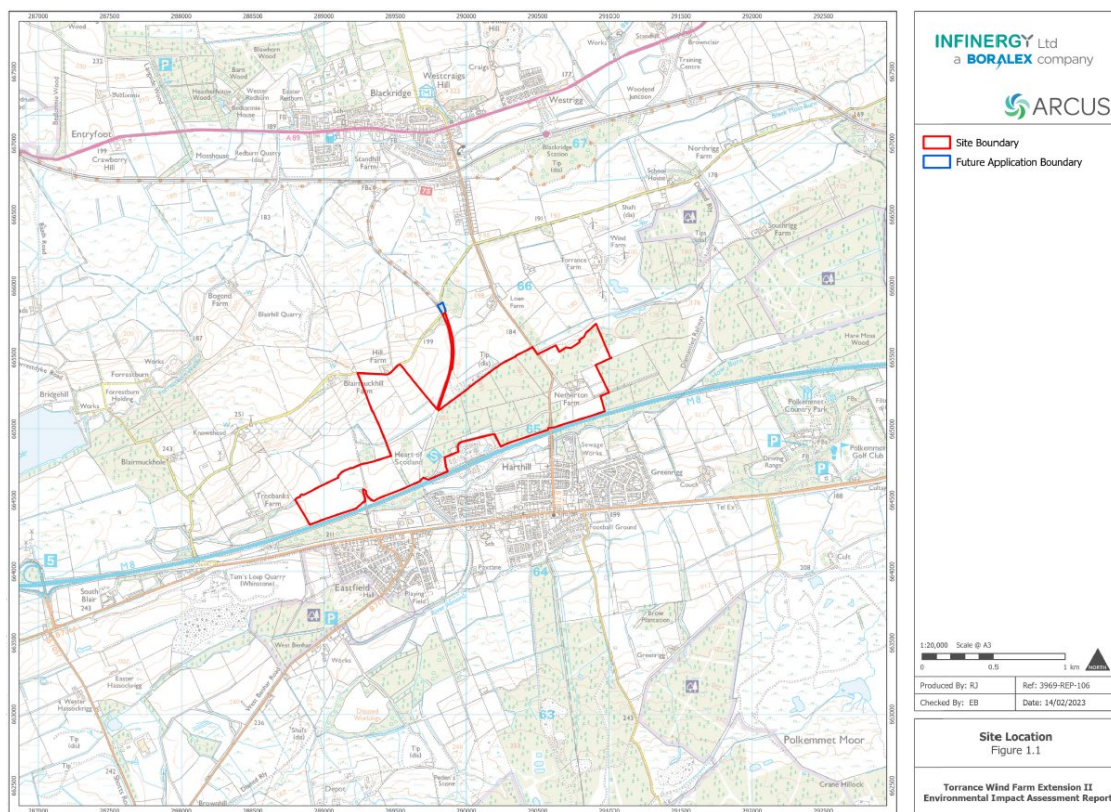
Email: esplanning@northlan.gov.uk Website: www.northlanarkshire.gov.uk

The Applicant

- 1.1.8 GreenGridPower3 Limited is a subsidiary of Infinergy Ltd. Infinergy, a renewable energy company developing onshore wind farms throughout the United Kingdom. Infinergy, has the expertise and experience needed to design, develop, build and operate wind energy developments. The Applicant is committed to helping meet the United Kingdom's renewable energy targets, whilst developing responsibly and putting the right sized wind farm in the right place. Infinergy is a member of trade organisations RenewableUK and Scottish Renewables. For more information please visit: <http://www.infinergy.co.uk>

The Site

- 1.1.9 The Site Location is shown below on Figure 1.1. approximately 600 metres (m) north of the centre of Harthill, North Lanarkshire covering an area of approximately 106.2 hectares (ha), centred on National Grid Reference (NGR) 289988, 665071 (the Site).



- 1.1.10 The Site is located on the edge of an area of distinctive upland moorland and more settled farmland which lies to the north of the M8 transport corridor, between Edinburgh and Glasgow.
- 1.1.11 The Proposed Development is situated in an area which is predominantly used for agricultural purposes, specifically sheep farming. The immediate locality of the Proposed Development is rural and commercial forestry, although there are a number of small towns within the local area including Blackridge and Harthill.
- 1.1.12 The land cover on the Site consists of improved and semi-improved grassland, with some areas of coniferous plantation. There are stretches of degraded hedgerow, hedgerow trees and post and wire fences demarcating field boundaries. The lower topography to the south and southeast of the Site is dominated by coniferous woodland with smaller areas of neutral grassland to the south-east near Nethererton Farm.
- 1.1.13 The Site is adjacent to the original Torrance Wind Park and Torrance Extension and occupies undulating farmland and a commercial forestry area in the south, rising between approximately 175 to 200 m Above Ordnance Datum (AOD). The existing on-site farming and forestry operations will continue throughout the construction and operation of the Proposed Development.
- 1.1.14 The Site is entirely within the North Lanarkshire Council (the Council) administrative area; however, the administrative boundary with West Lothian Council (WLC) is adjacent to the northern boundary of the Site.

2 SITE SELECTION AND DESIGN

Site selection

- 2.1.1 The selection of an appropriate site which has the potential to support a commercial wind farm development is a complex and lengthy process. It involves examining and balancing a number of environmental, technical, planning and economic issues. Only when it has been determined that a site is not subject to major known environmental, technical, planning or economic constraints is the decision made to invest further resources in developing the proposal and conducting an EIA.

Design Process

- 2.1.2 In accordance with the EIA Regulations, the design alternatives need to be studied with key reasoning, taking into account the potential environmental effects. The Site was selected as a suitable location for wind farm development by the Applicant as it met the following criteria:
- Suitable and proven high annual mean wind speed across the Site;
 - Viable grid connection;
 - Suitable and proven port of delivery and road access for the delivery of large components;
 - Suitable road access;
 - Sufficient distance from nearest residential properties to ensure compliance with appropriate noise limits;
 - Limited peat on site;
 - The Site does not support any international or national ecological or landscape designations; and
 - Located adjacent to existing operational wind farms, where the Site would be often seen as an extension to the existing wind farms.
- 2.1.3 The Development layout has evolved throughout the duration of the EIA. An iterative approach to the siting of the turbines has been taken which has considered the consultation responses, and the findings of the environmental surveys, to guide the evolution of the Proposed Development's design.
- 2.1.4 The Turbine Freeze Layout and associated infrastructure assessed in this EIA Report has been carefully developed taking these factors into account and is considered to balance the requirement to increase the renewable energy generation capacity of the Site whilst minimising the introduction of adverse environmental effects.

AT A GLANCE...

Number of Turbines: Four

Dimensions: maximum height of 200 m to blade tip

Operational Lifespan: 40 years

Generation Capacity: Approximately 26.4MW and around 61.3 GWh per year*

Community Benefit: £5.28 m in total over 40years

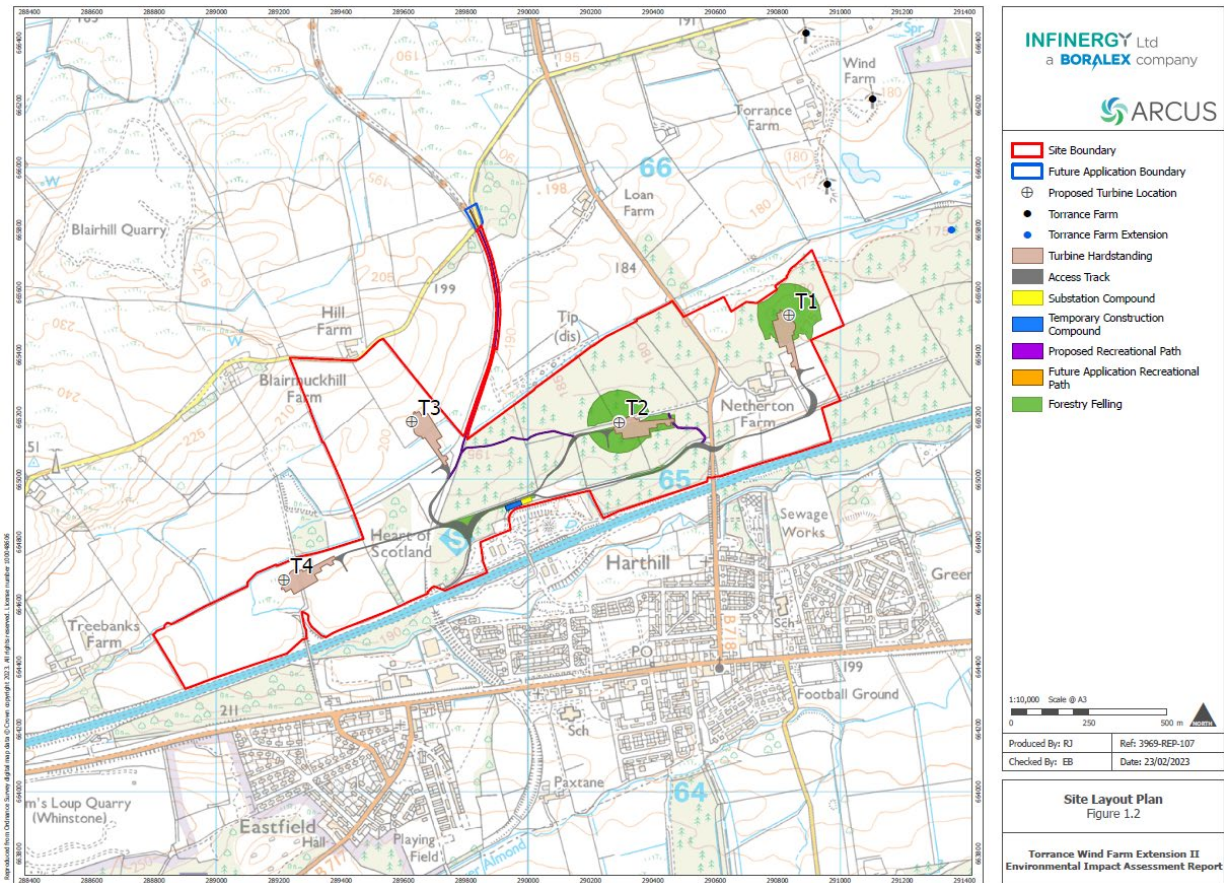
Energy Generated: Potential to provide electricity for the equivalent of approximately 16,376 average UK households[^]

*Based on a conservative capacity factor of 26.54%

[^]Based on an average household consumption of 3.748 MWh/yr

3 DESCRIPTION OF THE PROPOSED DEVELOPMENT

3.1.1 This section of the NTS provides a description of the Proposed Development which forms the basis of the summary presented. It provides a summary of the construction phase, the 40-year operational phase and decommissioning phase of the Proposed Development, as well as the Proposed Developments components. The Proposed Development Layout is shown below in Figure 1.2.



Development Components

3.1.2 The Development would comprise up to 4 three-bladed horizontal axis turbines up to 200 m tip height and all associated infrastructure, including substation, crane hardstandings, underground cabling, and Temporary Construction Compound (TCC).

3.1.3 The components of the Proposed Development are summarised in Table 3.1 below.

Table 3.1: Key Parameters of the Proposed Development

Element	Details
Turbines	<p>Up to 4 turbines with a maximum tip height of 200 m.</p> <p>Each turbine will require a small transformer located externally at its base.</p> <p>Turbine Foundations would be approximately 30m in diameter with a depth of the excavation being approximately 5 m. Each foundation is expected to be made up from approximately 1200 m3 of concrete.</p>

Element	Details
Access Track	A total of approximately 2.9 km of on-site access tracks would be required for the Proposed Development. All on-site access tracks would be a minimum of 5 m wide.
Electrical Infrastructure	Onsite underground cabling will be laid, linking the turbine transformers to the onsite electricity substation and windfarm control/maintenance building. A substation compound will be located on site and will include a single storey control building, external electrical infrastructure and vehicle parking.
Crane Hardstandings	Four crane hardstandings will be required adjacent to each turbine. The total area of hardstanding at each turbine location, including the turbine foundations, would be approximately 6000 m ² . Based on a fill depth of 450 mm, an approximate total of 2700 m ³ of stone would be required per hardstanding.
Temporary Construction Compound	A temporary construction compound will be required during the construction of the Proposed Development, forming an area of hardstanding providing space for temporary construction cabins, parking and lay down areas; this will measure approximately 16 m x 53 m. The temporary construction compound area would be fully reinstated following the construction period.
Substation Compound	The electricity substation compound would comprise a fenced hardstanding with maximum dimensions of approximately 16 m x 25 m.

Construction Phase

3.1.4 The on-site construction period is estimated at approximately 12 months in duration and would comprise the principal operations:

- Construction of access junction(s);
- Formation of site compound(s) including hardstanding and temporary site office facilities;
- Construction of new access tracks and passing places (as required), inter-linking the turbine locations and substation compound;
- Construction and upgrade of culverts under roads to facilitate drainage and maintain existing hydrology;
- Construction of crane hardstanding areas;
- Construction of turbine foundations;
- Construction of control building and associated substation;
- Excavation of trenches and cable laying adjacent to site roads;
- Connection of on-site distribution and signal cables;
- Remedial works to the public highway to accommodate turbine deliveries;
- Delivery and erection of wind turbines;
- Commissioning of site equipment; and
- Site restoration.

3.1.5 It is proposed that construction activities be limited to the working hours of 07:00 to 19:00 on weekdays and 07:00 to 13:00 on Saturdays and Public Holidays, with the exception of any emergency working or turbine deliveries. Work outside these hours is not usual, though if it were required to meet specific demands (e.g., during foundation pours or to undertake work which is highly weather dependent such as low wind speeds needed for turbine tower

erection), permission for short term extensions to these hours would be sought from the planning authority, as required.

Operational Phase

- 3.1.6 The Development will have an operational lifespan of up to 40 years from full commissioning of the proposed turbines.

Turbine Maintenance

- 3.1.7 Turbine maintenance will be carried out in accordance with the manufacture's specification. The following routine turbine maintenance will be undertaken:
- Initial service;
 - Routine maintenance and servicing;
 - Gearbox oil changes;
 - Blade, gearbox and generator inspections; and
 - Replacement of blades and components as required.
- 3.1.8 Operational waste would generally be restricted to small volumes of waste associated with machinery repair and maintenance disposed of by the maintenance contractors in line with normal waste disposal practices.
- 3.1.9 The frequency of track maintenance depends largely on the volume and nature of the traffic using the track, with weathering of the track surface also having a significant effect. Since the volume of traffic using the access tracks during operation would be low (although heavy plant is particularly wearing), the need for track maintenance is anticipated to be low and infrequent. Any maintenance that is required would generally be undertaken in the summer months when the tracks are dry. However, maintenance can be carried out when required.

Decommissioning Phase

- 3.1.10 The Proposed Development has been designed with an operational life of 40 years. At the end of the operational period, it would be decommissioned and the turbines dismantled and removed. Any alternative to this action would be subject to further consenting process.
- 3.1.11 Overall, it is estimated that the decommissioning period for the Proposed Development would be approximately six months.

4 EIA METHODOLOGY, SCOPING AND CONSULTATION.

- 4.1.1 EIA is the process undertaken to identify and evaluate the likely significant effects of a proposed development on the environment and to identify measures to mitigate or manage any significant adverse effects. The assessment must be carried out following consultation with statutory consultees, other interested bodies and members of the public. The purpose of identifying significant effects is to ensure decision makers are able to make an informed judgement on a proposal. Where one or more significant effects are identified, it does not automatically follow that a proposal should be refused.
- 4.1.2 This EIA Report has been prepared following a systematic approach to EIA and project design.
- 4.1.3 The process of identifying environmental effects is both iterative and cyclical, running in tandem with the iterative design process. The key elements in EIA are:
- Site selection and feasibility;
 - Scoping;
 - Baseline studies to establish the current environmental conditions at the Site;
 - Identification of potential environmental effects;
 - Mitigation to avoid or reduce the effects through iterative design process;
 - Assessment of residual effects;
 - Preparation of an EIA Report;
 - Submission of the EIA Report;
 - Consideration of application and environmental information by the Scottish Government, North Lanarkshire Council (the Council) and other consultees;
 - Determination of application (with or without conditions); and
 - Implementation and monitoring.
- 4.1.4 The aim of the Scoping process is to identify key environmental issues at an early stage, to determine which elements of the Proposed Development are likely to result in significant effects on the environment and to establish the extent of survey and assessment required for the EIA.
- 4.1.5 Public consultation is a key component to the EIA process. The Applicant has engaged with members of the local community through hosting four rounds of public consultation events (16th August, 17th August, 29th November, and 30th November 2022). These public consultation events provide members of the public the opportunity to speak with representatives of the Applicant and EIA team, and also to ask any questions they may have regarding The Development.
- 4.1.6 With an overall generating capacity of up to 26.4 MW, consent for the Proposed Development is being sought from North Lanarkshire Council (the Council) under the Town and Country Planning (Scotland) Act 1997² as amended by the Planning etc. (Scotland) Act 2006³. The requirement for EIA in Scotland for wind farm generating stations with an electrical output capacity of up to 49.9 MW is provided under Part 4 of the Town and Country Planning

² Scottish Government (1997) Town and Country Planning (Scotland) Act 1997 [Online] Available at: <https://www.legislation.gov.uk/ukpga/1997/8/contents> (Accessed 02/03/2022)

³ Scottish Government (2006) Planning etc. (Scotland) Act 2006 [Online] Available at: <https://www.legislation.gov.uk/asp/2006/17/contents> (Accessed 02/03/2022)

(Environmental Impact Assessment) (Scotland) Regulations 2017⁴ (the EIA Regulations).

- 4.1.7 A number of environmental disciplines have been assessed to identify any effects that may be significant in the context of the EIA Regulations. Mitigation is proposed where possible to prevent significant effects.
- 4.1.8 In accordance with the EIA Regulations, the assessment has considered cumulative effects where applicable.

5 POLICY CONTEXT

- 5.1.1 The Proposed Development will have an overall installed capacity of up to 26.4 MW and thus will be submitted to the Local Planning Authority (LPA) under the Town and Country Planning (Scotland) Act 1997. The relevant LPA's Local Development Plan (LDP) has primacy in the decision-making process. The Development is wholly within the North Lanarkshire Council administrative area.
- 5.1.2 The Proposed Development relates to the generation of electricity from renewable energy sources and comes as a direct response to national planning and energy policy objectives. Furthermore, the Proposed Development would make a contribution to the attainment of emissions reduction, renewable energy and electricity targets at both the Scottish and UK levels. Detailed reference to the renewable energy policy context is provided in the Planning Statement.
- 5.1.3 National planning policy and guidance has been reviewed as part of the EIA process including the National Planning Framework 4, Scottish Planning Policy and relevant Circulars and Planning Advice Notes.
- 5.1.4 The Development Plans relevant to the Proposed Development has also been taken into account as follows:
- ClydePlan Strategic Development Plan (2017)⁵;
 - The North Lanarkshire Local Development Plan (2022)⁶; and
 - Relevant supplementary guidance, particularly the Onshore Wind Energy Supplementary Guidance (2016).
- 5.1.5 Consideration has been given to the relevant policies contained within the Proposed Development Plan during the design of the Proposed Development. The policies most relevant to the Proposed Development relate to renewable energy developments, and they provide guidance on the main issues the planning authority will consider to determine the application.

⁴ Scottish Government (2017) Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 [Online] Available at: <http://www.legislation.gov.uk/ssi/2017/102/contents/made> (Accessed 25/02/2022)

⁵ Clydeplan (2017) Clydeplan Strategic Development Plan [Online] Available at: <https://www.clydeplan-sdpa.gov.uk/images/ApprovedPlanHighRes.pdf> (Accessed 15/02/2022)

⁶ North Lanarkshire Council (2021) *The North Lanarkshire Local Development Plan* [Online] Available at: https://www.northlanarkshire.gov.uk/sites/default/files/2022-03/NLLDP%20Non-Graphic%20Policy%20Document_0.pdf (Accessed 22/02/2023)

6 LANDSCAPE AND VISUAL IMPACT ASSESSMENT

- 6.1.1 The potential effects on the landscape and visual receptors that would arise as a result of the Proposed Development have been assessed in **Chapter 6** of the EIA Report. The EIA considers the likely significant effects on landscape character and visual amenity associated with the construction, operation and decommissioning of the Proposed Development.
- 6.1.2 The Proposed Development is located on the boundary of the Plateau Moorlands LLCA 7 and the Lowland Plateau LLCAs 8, 9, and 11.
- 6.1.3 Significant localised landscape effects within proximity to the Proposed Development are predicted for the Plateau Moorland LLCA, the Upper Almond Valley LLCA, the Avonbridge to Armadale Plateau Edge LLCA, and the Armadale & Bathgate LLCA.
- 6.1.4 The Proposed Development, as a solus development, would result in Moderate, significant, direct, adverse landscape effects, and there would be limited improvement to the existing landscape character of the Site as a result of the proposed planting and biodiversity management objectives in the scheme design.
- 6.1.5 Cumulatively, alongside the existing wind farm development within the local landscape the Proposed Development would bring about a large magnitude of change on the landscape character of the Site, which would result in a Moderate, significant, direct, adverse cumulative landscape effect.
- 6.1.6 The analysis demonstrates that significant visual effects would extend to an area of at least approximately ~3.8 km distance from the nearest proposed wind turbines as indicated by viewpoints within this area. Significant effects would therefore be largely contained within approximately ~3.8 km from the Proposed Development with further potential significant visual effects possible (in combination with the existing neighbouring wind farm developments within the Detailed Study Area. Importantly these levels of effect are indicative of a visual effect on a particular viewpoint location and they should not be assumed to translate into visual effects on the overall visual experience, as each of the viewpoints have been specifically located where the sensitivity of the receptor and the views of the Proposed Development would be greatest, in this sense they are not typical or representative.
- 6.1.7 In terms of settlements, significant effects are identified at the four settlements within 2 km of the Proposed Development; Eastfield, Harthill, Greenrigg and Blackridge. Considering the proximity of the turbines to the settlements, the horizontal extent of the array of turbines west to east, and the blade tip height of the turbines, the significant visual effects could affect the living standards of a limited number of properties within Harthill, Eastfield, and Greenrigg, when judged objectively and in the public interest. The significant visual effects would not affect the living standards of the villages overall, when judged objectively and in the public interest.
- 6.1.8 Significant visual effects would be experienced along the A89, B718, B717, B7066 roads, for local traffic, and also those recreational receptors travelling the road as part of the NCR 75 route. Significant effects would therefore be largely contained within approximately ~2.85 km from the Proposed Development along the road network.

- 6.1.9 Regarding recreational routes, there would be a large magnitude of change arising from the Proposed Development along the NCR 75 and core paths within 2 km of the Proposed Development, reducing to medium with the level of screening within the wider landscape and settlement areas along the route. Views from the NCR 75 would be oblique and partially screened by built development within Blackridge. The Proposed Development would be viewed from the core path network alongside a large number of wind farm developments within the wider landscape, sequentially and statically, in medium to long distance views. The nature of these effects would be major, long-term, cumulative and adverse which would be significant in the context of the EIA Regulations.

7 NOISE

- 7.1.1 An assessment of the effects of noise due to the Proposed Development has been undertaken in **Chapter 7** of the EIA Report.
- 7.1.2 During construction, noise may result from the use of plant and machinery to carry out construction activities. No significant effects are anticipated due to general construction activities. Notwithstanding this, best practice mitigation measures will be adopted to manage noise emissions, including restrictions on working hours during the construction the Proposed Development.
- 7.1.3 During operation, wind turbines can generate noise from the machinery housed within the turbine and from the movement of the blades through the air. Modern turbines are designed to minimise noise and planning conditions are used to ensure compliance with specified noise limits.
- 7.1.4 The assessment has been undertaken in accordance with the recommendations of ETSU-R-97, the method of assessing wind turbine noise recommended by Government guidance, and following the current best practice methods described in the GPG, as endorsed by the Scottish Government. Operational wind turbine noise from the proposed development is compliant with the noise limits derived in line with the requirements of ETSU-R-97 and the GPG, therefore no mitigation is required for operational or cumulative operational noise.
- 7.1.5 Noise produced during decommissioning of the Proposed Development is likely to be of a similar nature to that during construction, although the duration of decommissioning will be shorter than that of construction. Any legislation, guidance or best practice relevant at the time of decommissioning would be complied with.

8 FORESTRY

- 8.1.1 **Chapter 8** evaluates the potential effects of the Proposed Development on the woodland resource. This assessment was undertaken by McKay Forestry Consultant Ltd. This chapter describes the plans as a result of the Proposed Development for felling, restocking and forest management practices; the process by which these were derived; and the changes to the physical structure of the forest.
- 8.1.2 The Site includes part of Nethererton Woodland, a mixed conifer plantation established in 2001 with some areas of nearly-native woodland. The Proposed Development within the woodland comprises of two turbines and the associated access tracks. Felling a “keyhole” for each turbine includes the stand off area as ecological mitigation.

- 8.1.3 The area of permanent woodland loss would be 6.65 ha which requires a matching area of compensatory planting. The layout has no requirement to fell any nearby-native woodland.
- 8.1.4 All areas of woodland to be felled are of a tree size suitable for timber harvesting. The proposal is for a fell a keyhole design to minimise the area of permanent woodland loss. With adherence to UKFS and timely compensatory planting there will be no adverse effect to forestry. The Applicant is committed to providing the appropriate level of compensatory planting to mitigate this loss of woodland area.

9 TRAFFIC AND TRANSPORT

- 9.1.1 **Chapter 9** of the EIA Report evaluates the potential effects of the Proposed Development on traffic and transport including the surrounding public road network and sensitive receptors.
- 9.1.2 The most recognisable traffic and transport characteristic associated with wind farm developments is the need to transport the wind turbine components to the Site. The proposed Port of Entry (PoE) for turbine components is the King George V Dock, Glasgow and these will then be transported to the site via the M8. This port has been used by is frequently used for renewables deliveries in the past for a large number of wind farms, because it has a sufficient quay and is well located for the trunk road network.
- 9.1.3 Abnormal Load Vehicles may require a police escort and would likely restrict traffic along the route for a short duration of time.
- 9.1.4 The Abnormal Load Site Entrance will be formed within the existing Harthill service station off the M8 (Grid Ref: NS898647). This entrance will be used for the delivery of wind turbine components, which will be loaded on HGVs and by the accompanying escort vehicles.
- 9.1.5 The Applicant is currently in dialogue with the operators of the Harthill service station to explore whether the Abnormal Load Site Entrance can also be utilised by general construction traffic (HGVs) as the Main Site Entrance during the peak months of the construction phase; this is not a confirmed option at the time of writing but has been considered as part of the application should an agreement between the service station and Applicant be reached. Using the Harthill service station as the Main Site Entrance is the preferred option, with the current Main Site Entrance being formed off the B718 Westcraigs Road to the north of Harthill (Grid Ref: NS906651).
- 9.1.6 That notwithstanding, the Traffic and Transport chapter focuses on assessing the effects of access being taken via the Main Site Entrance at the B718 Westcraigs Road as the environmental worst-case. If the alternative access option were to be implemented, the effects identified in this assessment would be significantly less than those assessed within the Traffic and Transport chapter.
- 9.1.7 During the construction phase, two 'moderate' and significant effects have been identified. These were as a result of the predicted increase in HGVs on the B7066 and B718 during concrete delivery and during the cumulative scenario. Mitigation measures are proposed, which primarily consist of a Construction Traffic Management Plan. If these mitigation measures are implemented, then the residual effect is reduced to 'minor' and not significant in all cases.

- 9.1.8 During operation, traffic generation would be minimal and within the residual capacity of the road network and no significant effects were identified.
- 9.1.9 Prior to decommissioning of the Proposed Development, a traffic assessment would be undertaken with the relevant consultees to agree the mitigation implemented via Decommissioning Traffic Management Plan.

10 ECOLOGY

- 10.1.1 **Chapter 10** of the EIA report considers the potential effects of the Proposed Development on non-avian ecology including designated sites, terrestrial and aquatic habitats, and protected species.
- 10.1.2 The assessment has been carried out in accordance with BS 42020:2013 Biodiversity – Code of Practice for Planning and Development⁷ by ecologists working to the Chartered Institute of Ecology and Environmental Management (CIEEM) Code of Professional Conduct⁸.
- 10.1.3 The scope of the ecological assessment and baseline conditions were determined through a combination of desk study, targeted surveys, and consultation with relevant nature conservation organisations.
- 10.1.4 This process established ecological features that could potentially be affected by the Proposed Development. The six Important Ecological Features (IEFs) taken forward for assessment were bats, badger, otter, Barblues Bing SINC, Loan Birch Wood SINC and AWI site, and Torrance Marshes SINC.
- 10.1.5 The Proposed Development has been designed to minimise impacts on important habitats, peatland and protected species as far as practicable. This has been achieved through embedded mitigation and the iterative design process.
- 10.1.6 No significant ecological effects have been identified for the construction and operation of the Proposed Development, either alone or in combination with other developments. Embedded mitigation has been proposed to minimise potential effects during the construction phase and to reduce the likelihood of legal offences.
- 10.1.7 As part of the Proposed Development, habitat enhancement is also proposed. This is detailed within TA 10.5 outline Habitat Management Plan with the main aims being increasing native woodland coverage, enhancing habitat for birds, and enhancing habitat for bats whilst also minimising the collision risk to bats around operational turbines. Main examples of how these aims will be met would be through extensive native tree planting and creating a minimum of 4 wader scrapes in suitable habitat within or adjacent to the wind farm site to provide important foraging habitat for breeding waders and their chicks. Nesting boxes and bat boxes will also be installed in suitable locations around the Site.

⁷ BSI Group (2013). BS 42020:2013 – a code of practice for biodiversity in planning and development. BSI.

⁸ CIEEM (2019). Code of Professional Conduct. Available at: <https://cieem.net/resource/code-of-conduct/>
Accessed on: November 2022.

11 ORNITHOLOGY

- 11.1.1 **Chapter 11** of the EIA Report details the baseline ornithological conditions recorded within and around the Proposed Development and presents an assessment of likely significant effects on populations of identified Important Ornithological Features (IOFs).
- 11.1.2 Based on each species' presence, their conservation importance and conservation status, the IOFs that were taken forward into the assessment are: Pink-footed goose, Peregrine, Curlew, Barn owl, the Firth of Forth SPA/Ramsar site, and the Firth of Forth SSSI.
- 11.1.3 No significant effects were predicted on any IOFs, and therefore no specific mitigation measures have been proposed. Effects on all IOFs remain not significant.
- 11.1.4 Habitat enhancement is proposed which will provide benefits for breeding birds, including IOF species. Native woodland coverage will be increased, which will provide habitat to woodland species, while creation of wader scrapes will provide foraging habitat for breeding waders and their chicks.

12 ARCHAEOLOGY AND CULTURAL HERITAGE

- 12.1.1 **Chapter 12** of the EIA Report evaluates the effects of the Proposed Development on archaeological and cultural heritage receptors.
- 12.1.2 The assessment of archaeological and cultural heritage effects has taken into account both potential direct effects arising from proposed construction activities, as well as indirect (primarily visual) effects as a result of changes to the settings of cultural heritage assets. Consultation was undertaken with Historic Environment Scotland, The West of Scotland Archaeology Service Historic Environment Team and North Lanarkshire Council Archaeologist.
- 12.1.3 The assessment was informed by a Desk-Based Assessment (DBA) which aided understanding of impacts on known archaeological remains within the Site, and the potential for unknown (buried) archaeological remains to be present. No designated heritage assets were identified within the Site or within 1 km of the Site. However, a single non-designated asset was identified through Canmore archaeological records, recording the location of the Netherton 'Old Hall' depicted on the First Edition Ordnance Survey. Two additional assets consisting of a series of interconnected field boundary walls and a section of railway line, were identified during the site walkover and review of historic mapping respectively. The DBA records an additional 27 non-designated assets within the 1 km Study Area. The type and distribution of these assets predominantly reflects the agricultural and industrial nature of the region around the CSA from the Post-Medieval period onwards, in particular relating to coal-mining activity at the Benhar, Blairmuckill, and Netherton collieries. Direct effects are only likely to occur as a result of construction within the footprint of the Proposed Development. Within the turbine area, there are no recorded assets. There are two assets with the potential for direct effect due to their proximity to the substation, with four undesignated assets recorded along the existing access track proposed for upgrading.
- 12.1.4 The DBA indicates that the Site has low potential to contain assets pre-dating the Medieval period. There is a medium potential to encounter Medieval ridge and furrow, recorded in fields within 500m of the Site. There is a high potential to encounter Post-Medieval assets relating to agriculture and mineral a

extraction within sections of the Site not heavily disturbed by mining or quarrying. Areas of the Site covered by modern forestry have limited potential to preserve ephemeral archaeological features due to the disturbance from tree roots and tree bowls. Whilst any potential direct effect is unlikely to be significant, archaeology is a finite and irreplaceable resource, and mitigation to consist of pre-construction surveys is recommended, along with a programme of trial trenching or watching brief.

- 12.1.5 The assessment considered the potential effect of the turbines in relation to the setting of heritage. Within the 5 km Study Area there are 16 nationally designated heritage assets, comprising two Scheduled Monuments and 14 Listed Buildings. With 496 heritage assets scoped out of consideration, all remaining assets within the 15 km Study Area were included for the setting appraisal, totalling 158 designated heritage assets comprising two World Heritage Sites, one Battlefield Site, one GDL, 33 Scheduled Monuments, 118 Listed Buildings (six Category A, 55 Category B, and 58 Category C), and three regionally designated Conservation Areas.
- 12.1.6 The key aim of the assessment was to determine whether the turbines altered the settings of historic assets so that the cultural significance of these assets was diminished.
- 12.1.7 Of the changes to setting identified, there is considered to be one significant indirect (settings) effect. Significant effects are limited to the Category B Listed Building LB14553, located 1.2 km north of the Proposed Development, in the centre of Blackridge, with no other significant effects likely upon Cultural Heritage receptors in the surrounding historic environment.
- 12.1.8 Other effects as a result of changes to setting were negligible to minor and not significant. In respect of potential effects upon the settings of features, no result, mitigation is proposed other than that embedded in the design.
- 12.1.9 No additional significant cumulative indirect (setting effects) from the Proposed Development and other wind farm developments is likely so that any effect would result from the Proposed Development as assessed in isolation. All cumulative effects are considered to be not significant.

13 GEOLOGY, SOILS AND PEAT

- 13.1.1 **Chapter 13** of the EIA Report evaluates the effects of the Proposed Development on the Geology, Soils and Peat resource and provides a preliminary geological assessment on the existing ground conditions while considering peat instability and management.
- 13.1.2 This geological assessment identifies areas of geological interest and features of note. The information and data collated from the peat and geological assessments have informed the site layout to minimise the potential impacts on peat and geology as a result of the Proposed Development.
- 13.1.3 Following completion of Phase 1 peat probing it was concluded that no significant peat deposits are present on the Site. Therefore, the requirement for the completion of an Outline Peat Management Plan (OPMP) and Peat Slide Risk Assessment (PSRA) as part of this EIA Report has been scoped out of this assessment.
- 13.1.4 The Site is extensively underlain by historical mine workings from underground extraction. A number of surface features have also been identified including

remnants of mine workings. There are no shafts or adits recorded within the Site. It should also be noted that there remains a possibility that further mine entries may exist on the Site which are not recorded.

- 13.1.5 A Coal Mining Risk Assessment (CMRA) was completed by Wardell Armstrong, which recommended a targeted site investigation in order to better inform the assessment of shallow mining risk. Should the investigation deem it a requirement, a programme of ground treatment works by drilling and pressure grouting would have to be undertaken prior to construction of the Proposed Development, or the turbine locations adjusted to avoid areas of ground instability. Furthermore, during soil stripping, excavation for foundations, etc., the earthworks contractor must examine the ground for any signs of unrecorded mine entries in the site area. If signs of mine entries are detected, then investigation and stabilisation of the mine entry will need to be undertaken.
- 13.1.6 For construction effects, following pre-construction ground investigation and the implementation of any remedial actions to mitigate any identified risks, a resulting very low risk would remain, which is considered to be a negligible significance of effect and therefore not significant in terms of the EIA Regulations.
- 13.1.7 Targeted site investigations will be undertaken pre-construction at the location of proposed site infrastructure and at turbine locations following forest clearance, to determine more details on soils, geology and potential contamination, as well as to determine the presence of any unrecorded mining activities. Should the site investigations identify the presence of unrecorded coal mining and / or contamination with the potential to impact the Proposed Development, a programme of ground treatment works by drilling and pressure grouting and / or remediation would have to be undertaken prior to construction of the Proposed Development, or the turbine locations adjusted to avoid areas of ground instability and contamination.
- 13.1.8 A micrositing allowance of 50 m is being sought as part of the application to support this process. This allowance has been included within the EIA assessment process.
- 13.1.9 Implementation of the proposed mitigation measures and undertaking the construction works in accordance with best practice will ensure that there are no significant residual effects on geology, soils and peat from the Proposed Development.

14 HYDROLOGY AND HYDROGEOLOGY

- 14.1.1 **Chapter 14** of the EIA Report evaluates the potential effects of the Proposed Development on hydrological and hydrogeological resources.
- 14.1.2 All turbine infrastructure associated with the Proposed Development is located within the sub catchment of How Burn which lies within the River Almond catchment. All turbine infrastructure is located out with areas identified as medium to high risk of flooding from all sources. A small area of the Proposed Development where a recreational footpath is proposed is located within the Barbauchlaw sub catchment within the River Avon catchment.
- 14.1.3 The Proposed Development does not lie within a designated Drinking Water Protected Area (DWPA). Consultation with North Lanarkshire Council and review of Torrance Wind Farm PWS information has confirmed there to be no PWS within 2 km of the Site boundary.
- 14.1.4 There are no statutory designated sites hydrologically connected to this Development as confirmed within the baseline assessment.
- 14.1.5 Five communities of Groundwater Dependant Terrestrial Ecosystems (GWDTEs) were found to be present within the 100 m and 250 m buffer zones from site infrastructure. These communities are likely to be indirectly affected by disruption of near-surface water, diverting of sub-surface flows and localised lowering of water levels. There is direct loss of three GWDTE communities as a result of infrastructure placement, however the area of loss is relatively small with a maximum of 4.8% area loss.
- 14.1.6 Embedded good practice construction methods provided in the Outline Construction Environmental Management Plan (WCEMP), Technical Appendix 14.1 and a 50 m buffer of surface watercourses, with the exception of turbine 4, will limit the potential for significant effects on the hydrological environment. This also includes mitigation measures to protect GWDTE communities outlined in Technical Appendix 14.1, including identifying flush areas prior to track construction and maintaining hydraulic conductivity by spanning these sections with plastic pipes or drainage matting.
- 14.1.7 All effects have been assessed as minor or negligible and are not significant in terms of the EIA Regulations.

15 SOCIO-ECONOMICS, LAND USE, RECREATION AND TOURISM

- 15.1.1 **Chapter 15** of the EIA Report evaluates the effects of the Proposed Development on socio-economics, land-use, recreation, and tourism.
- 15.1.2 The assessment considered the potential effects arising from the construction, operation, and decommissioning phases of the Proposed Development on the socio-economic, land use, recreation and tourism resources. Existing baseline conditions have been identified from desk-based collection of data, site visits, and consultation with relevant stakeholders.

Socio-Economics

- 15.1.3 Based on the BiGGAR Economics report commissioned by RenewableUK⁹, onshore wind Capital Expenditure (CAPEX) is £1.32 million per MW on average. Assuming an installed capacity of up to 26.4 MW, the total CAPEX of the Proposed Development would be expected to be approximately £34.8 million.
- 15.1.4 The RenewableUK report estimates that, of these construction costs, regional expenditure would be 12% (in this case North Lanarkshire and West Lothian); national expenditure would be 36% (Scotland); and UK expenditure would be 47%. The remaining 53% of construction costs will be spent outwith the UK.
- 15.1.5 On this basis, it is estimated that, during the construction phase, the Proposed Development (assuming a 26.4 MW scheme) will be worth approximately £16.4 million to the UK economy. Of that approximately £5.9 million is expected to be spent within Scotland (national) and £2.0 million is expected to be spent within North Lanarkshire and West Lothian (regional).
- 15.1.6 It is anticipated that a temporary workforce peaking at 40 people will be employed during the 12-month construction period. It is also likely that there will be some local employment generated as an indirect result of the construction of the Proposed Development. This could include supply chain spin-offs for local businesses and sub-contracted work relating to the transportation of labour and materials. Local shops, cafes, accommodation providers and hotels often experience an increase in turnover during the construction phase as they have opportunities to provide additional services to the developer and their contractors. There are numerous accommodation providers in the local area, and it is expected that local services will be used by temporary construction contractors.
- 15.1.7 During the construction process there will be opportunities where those employed by contractors will develop skills that will be of benefit to the local economy and to local businesses in the longer term, such as project management and construction skills which can be transferred to other roles and projects.
- 15.1.8 The construction will bring about short-term, beneficial, direct, indirect and induced effects to the area, through the increase in employment and expenditure on capital costs.
- 15.1.9 The Proposed Development will have both direct and indirect effects on employment during operation. The Development will be regularly maintained

⁹ RenewableUK (2015) Onshore Wind: Economic Impacts in 2014 [Online] Available at: https://cdn.ymaws.com/www.renewableuk.com/resource/resmgr/publications/reports/onshore_economic_benefits_re.pdf (Accessed 14/10/2021)

by a specialist maintenance team. Employees are likely to include a part-time maintenance engineer (local site operator) and a small number of staff to periodically service the turbines. Induced effects will include local spending by the Applicant and maintenance contractors.

- 15.1.10 The Proposed Development will also be of direct financial benefit to the local community, contributing £5,000 per MW installed capacity to a Community Benefit Fund. Based on an installed capacity of 26.4 MW, this will result in an annual value of approximately £132,000 per year. With a 40-year operational period, this will provide approximately £5.28 million in community benefit.
- 15.1.11 Overall, the operation of the Proposed Development will bring long-term, beneficial, direct, indirect and induced effects to the area, through the increase in employment and business opportunities. The Proposed Development also brings with it significant community benefits, directly through the form of the community benefit fund, and also through providing local contractors the opportunity to provide services during the construction phase.

Land Use

- 15.1.12 The Site is currently predominantly plateau moorland, forestry and settled farmland. Activities may be temporarily affected during the construction phase of the Proposed Development. The Applicant will work with stakeholders to ensure they are able, wherever possible, to continue to operate their activities safely during the construction phase. Access to the residential property within the Site, Netherton Farm, will not be affected during any stage of the Proposed Development.
- 15.1.13 The Site covers an area of approximately 106.2 ha. However, the total infrastructure footprint is substantially less. The total new land take of the Proposed Development, consisting of the turbine infrastructure (wind turbine foundations, crane hardstandings, access tracks, recreational paths, construction compound, substation equates to approximately 5.2 ha. This equates to approximately 4.9% of the total land in the Site. Following construction and restoration the temporary construction compound will be removed and the land reinstated, therefore the footprint of the Proposed Development infrastructure on the surface of the ground during operation will be approximately 4.6 ha. This equates to approximately 4.1% of the total land in the Site.
- 15.1.14 As part of the Proposed Development, additional recreational paths will be incorporated into the layout of the wind farm. These new recreational paths are intended to provide all users the option of different circular routes, of varying lengths, around the site. Furthermore, an additional recreational path is proposed from the wind farm site to the existing Core Path NL/2013/1, located approximately 0.7 km to the north. By creating this recreational path local residents will provide greater access between villages of Harthill and Blackridge. As part of the Proposed Development, this recreational path only extends to the boundary between North Lanarkshire Council and West Lothian Council. It is anticipated that a separate planning application will be submitted to WLC to complete the link between the proposed recreational path and Core Path NL/213/1.
- 15.1.15 The Proposed Development is partially located within commercial forestry plantation and the construction period will involve the felling of 6.65 ha of forestry within the Site.

- 15.1.16 In order to comply with the criteria of the Scottish Government's Control of Woodland Removal Policy, compensatory planting would be required. The Applicant is committed to providing appropriate compensatory planting.

Tourism

- 15.1.17 Tourism is a key element in the socio-economic, environmental, and cultural welfare of Scotland. In 2019, prior to the Covid-19 global pandemic, around 17.5 million overnight trips were taken in Scotland (UK and international visitors) for which visitor expenditure totalled around £5.9 billion. These figures represent substantial increases on 2018 figures; in 2018, around 15.5 million overnight trips were taken in Scotland, for which visitor expenditure totalled around £5.1 billion.
- 15.1.18 The Site, neighbouring lands, and the regional area is host to several tourism and recreation receptors (largely but not exclusively relating to the natural environment), including:
- Polkemmet Country Park (and Scottish Owl Centre)
 - Forrestburn Hillclimb
 - Blawhorn Moss National Nature Reserve
 - Shotts Golf Club
 - Drumtassie Fishery
 - Airdrie and District Angling Club
- 15.1.19 There are approximately 17 recognised recreational routes, paths, and trails located within the Primary and Secondary Study Areas, including the National Cycle Network and Core Paths although it is acknowledged that public access may not be limited to such formally recognised routes.
- 15.1.20 The National Cycle Network Route 75 is located approximately 470 m northeast of the Site at its closest point. As part of Scotland's National Cycle Network, the route is of national importance; however, due to the route's length, there are extensive sections of the route which are not within close proximity to the Proposed Development.
- 15.1.21 Core Paths are key routes designated by local authorities that make up part of the wider path network in order to provide public access throughout the areas. There are no Core Paths within the Primary Study Area but there are 16 Core Paths within the Secondary Study Area, as designated by the Council and WLC. The nearest Core Path is Route NL/212/1, approximately 260 m northwest of the nearest turbine (T3) and directly adjacent to the north of the Site boundary.
- 15.1.22 There are a number of settlements near to the Site which offer a range of accommodation; the nearest settlement offering accommodation is Harthill.
- 15.1.23 There will be no significant direct or indirect effects on tourism or recreation as a result of the Proposed Development both in isolation or cumulatively, although access to some areas of land within the Site will be temporarily restricted to the public during the construction and decommissioning phases for health and safety reasons. The residual effects are considered to be not significant in terms of the EIA Regulations.
- 15.1.24 Surveys of the public's attitudes to wind farms provide no clear evidence that the presence of wind farms in an area has a negative impact on local tourism and recreation. Tourists using the local core paths and local tourist attractions may have a particular sensitivity to visual effects; however, access to tourist

facilities will be unaffected, and no significant effects as a result of the operation of the Proposed Development are predicted.

- 15.1.25 During operation the Site will be accessible to the public with the exception of temporary exclusions for health and safety reasons such as during maintenance.
- 15.1.26 The Proposed Development will bring recreational benefits in the provision of increased recreational paths which will provide options of different circular routes of varying lengths around the site. Furthermore, an additional recreational path is proposed from the wind farm site to the existing Core Path NL/2013/1, located approximately 0.7 km to the north. By creating this recreational path local residents will provide greater access between villages of Harthill and Blackridge.

16 CLIMATE CHANGE AND CARBON BALANCE

- 16.1.1 The Scottish and UK Governments have set ambitious targets for reducing GHG emissions by 2045 and 2050 respectively. The Development, in conjunction with other renewable energy developments, will contribute to Scotland and the UK's aims to reduce carbon emissions and achieve meet its ambitious GHG emissions targets.
- 16.1.2 DUKES 2022 details that renewable electricity represented 39.6% of total UK generation in 2021, with wind generations overall share of capacity increasing to 20.7% of all generators overall, down 3.5% on 2020. Of the total renewable energy generation in the UK, onshore wind accounts for 24%¹⁰.
- 16.1.3 Scotland had 13.6 GW of installed renewable electricity generation capacity operational as of September 2022. The bulk of Scottish renewable generation capacity as of 2020 is still onshore wind, at 8.8 GW of operational capacity. Total renewable capacity in Scotland continues to grow steadily with an 11.7% increase between September 2021 and September 2022¹¹.
- 16.1.4 The Proposed Development will contribute approximately 26.4 MW of installed capacity which will contribute to increasing renewable energy generation capacity within Scotland and the UK.
- 16.1.5 The cumulative effect of the Proposed Development with other Scottish renewables generation is considered to be a fundamental change in the climate effects of Scottish / UK energy supply and contribute to the legally binding emission reduction targets.
- 16.1.6 As a 'Very High' sensitivity receptor (i.e., very high environmental value, and of international importance), with a 'Low' magnitude of effect (i.e., a slight change to the baseline condition, leading to a minor alteration of character), this represents a moderate, positive effect that is significant under the EIA Regulations.

¹⁰ UK Government (2020) Digest of United Kingdom Energy Statistics 2020 [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1094629/DUKES_2022.pdf (Accessed 17/01/2023)

¹¹ Scottish Government (2021) Climate Change Plan Monitoring Reports 2021 Compendium [Online] Available at: <https://www.gov.scot/publications/climate-change-plan-monitoring-reports-2021-compendium/documents/> (Accessed 17/01/2023)

- 16.1.7 No additional significant effects to those already identified within the EIA Report will occur as a result of climate change during the operational phase of the Proposed Development.

17 OTHER ISSUES

- 17.1.1 An assessment was undertaken of the effects of the Proposed Development upon other issues not covered elsewhere in the EIA Report including:

- Shadow Flicker;
- Aviation;
- Telecommunications and other Utilities; and
- Human Health and Safety.

Shadow Flicker

- 17.1.2 Shadow flicker is an effect that can occur when the shadow of a blade passes over a small opening (such as window), briefly reducing the intensity of light within the room, and causing a flickering to be perceived. Due to the proximity of the Proposed Development to the residential areas of Eastfield, Harthill, and Greenrigg (to the south), and Blackridge (to the north), a large number of potential shadow flicker receptors (2,041) are located within a distance of ten times the rotor diameter from the turbines. 1,588 receptors located within the Study Area, which is based on the calculated area over which shadows may be cast.
- 17.1.3 The predicted levels of shadow flicker at the most-affected receptor, Hill of Harthill Farm, are 133 hours per year with a maximum of 2.9 hours per day. At the next most-affected receptor, Netherton Farm, predicted levels of shadow flicker are considerably lower at 42.8 hours per year with a maximum of 1.7 hours per day.
- 17.1.4 While these receptors are the most-affected of the receptors considered within this assessment, the average levels of shadow flicker when considering all 1,588 receptors is 13.6 hours per year with a maximum of 0.6 hours per day.
- 17.1.5 A number of receptors are predicted to experience levels of shadow flicker above the thresholds of 30 minutes (0.5 hours) per day and 30 hours per year. As such, shadow flicker due to the Proposed Development, without appropriate mitigation is considered to be significant as per the EIA Regulations.
- 17.1.6 Of the 1,588 receptors located within the Study Area of the Proposed Development, there are 100 receptors which may experience cumulative shadow flicker effects.
- 17.1.7 67 receptors are predicted to experience maximum daily cumulative shadow flicker effects in excess of 30 minutes (0.5 hours) per day and three receptors are predicted to experience annual cumulative shadow flicker effects in excess of 30 hours per year.
- 17.1.8 As such, cumulative shadow flicker, without appropriate mitigation, is considered to be significant as per the EIA Regulations.
- 17.1.9 A range of mitigation measures are available to control the effects of shadow flicker, including:
- Control at Property: the provision of blinds, shutters, or curtains to affected properties.

- Control on Pathway: for example, screening via planting close to an affected property; and
- Control at Source: for example, shutdown of turbines at times when effects occur.

17.1.10 With appropriate mitigation applied, operational residual effects from shadow flicker would be not significant as per the EIA Regulations, either due to the Proposed Development in isolation, or cumulatively.

Aviation

17.1.11 Operational wind turbines have the potential to affect the safe operation of aviation interests, including airfields, radars, meteorological radars and military low flying exercises. The general approach to wind farm development is to avoid adverse effects on aviation infrastructure where possible, and to find appropriate technical mitigation solutions where this cannot be achieved.

17.1.12 The potential effects of the Proposed Development on aviation activity have been assessed technically and operationally. Through Scoping, consultation has been undertaken with the relevant stakeholders, including the MOD, Edinburgh Airport, and Glasgow Airport. The primary risk to the proposed development is the objection sustained by Edinburgh Airport. Following undertaking its own assessment and reviewing the third-party assessment, it is concluded that the proposed development will not affect the Edinburgh radar due to terrain between the radar antenna and the wind turbine blades. Pager Power is willing to provide further evidence and assurances to Edinburgh Airport that the Primary Surveillance Radar (PSR) will not be affected.

17.1.13 Discussions with NATS to implement a technical mitigation prior to construction of the proposed development for the impacts upon the PSRs at Orchardton (Cumbernauld), Kincardine, and Lowther Hill are progressing.

17.1.14 An objection from Glasgow Airport is not predicted following consideration of the potential impacts upon their PSR in an operational context and their consultation response. They will provide their official position following submission of the planning application.

17.1.15 Visible aviation lighting will be required for all turbines.

Telecommunications and Utilities

17.1.16 Consultation undertaken with telecommunications consultees has confirmed that there are fixed communication links operating across proposed wind turbine locations. Discussions are ongoing with MBNL and Vodafone who are both being consulted to find a suitable mitigation option. Construction of the Proposed Development will not begin until agreements / appropriate mitigation have been put in place to ensure the Proposed Development will not interfere with telecommunications signals, and thus there will be no significant effects on Telecommunication.

17.1.17 Effects on television reception are unlikely, and technical solutions are readily available as suitable mitigation measures should unexpected adverse effects arise. Adverse effects on infrastructure such as utilities would be avoided through safe systems of work and thorough consultation with consultees who have assets within the Site. Therefore, there are no significant effects predicted upon telecommunications, television reception and utilities as a result of the Proposed Development.

Human Health and Safety

- 17.1.18 Due to its location, the Site is not prone to natural disasters. Whilst adverse weather conditions, most notably high wind speed events, ice producing conditions and lightning strikes, do occur within Scotland, wind turbines are designed to withstand extreme weather conditions. Brake mechanisms, vibration sensors and lightning protection measures are installed on turbines allowing them to be operated under optimal conditions and inhibited during extreme weather events.
- 17.1.19 The risk of construction accidents as they relate to human health and safety are detailed and managed through the CDM Regulations and in an oCEMP through specific construction risk assessment method statements, which will be prepared in accordance with conditions attached to any consent of the Proposed Development.
- 17.1.20 Therefore, the overall risk of health and safety including major accidents and disasters is considered negligible and not significant in terms of the EIA Regulations.

18 SUMMARY

- 18.1.1 An EIA Report for the Proposed Development has been carried out in accordance with the regulatory requirements and relevant good practice guidance, which involves the compilation, evaluation and presentation of any potentially significantly environmental effects resulting from the Proposed Development.
- 18.1.2 The design strategy has created a wind farm that represents optimum fit within the technical and environmental parameters of the Site. Throughout this process, an iterative approach has allowed the findings of the public consultation exercises, along with the EIA, to guide the evolution of the Proposed Development allowing the design to be modified in order to avoid environment effects where possible.
- 18.1.3 Through embedded design and proposed mitigation, major and significant adverse effects as a result of the construction and operation of the Proposed Development have been avoided; however, some significant landscape and visual will remain. Given the nature of the Proposed Development, these effects cannot be avoided in their entirety.
- 18.1.4 The Proposed Development presents an important environmental benefit as a renewable energy generator contributing to Scotland's ambitious renewable energy targets and offsetting fossil fuel energy sources which produce CO₂ and contribute to climate change.
- 18.1.5 The renewable industry is an important economic asset to the UK and Scotland, and supports a substantial and growing number of employment opportunities. The Proposed Development will further contribute to the positive effects of renewable energy, and associated skills base within the UK and Scotland, and the spend and employment is positive for the local area.
- 18.1.6 Overall, this EIA shows that, given the iterative design process, and with the committed good practice measures and proposed further site-specific mitigation in place, most significant potential environmental effects associated with the construction and operation of the Proposed Development can be avoided or minimised.