



ARCUS

TORRANCE WIND FARM EXTENSION II
PLANNING, DESIGN AND ACCESS
STATEMENT

INFINERGY Ltd
a **BORALEX** company

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1	INTRODUCTION	1-4
	1.1 Background	1-4
	1.2 The Applicant	1-6
	1.3 The Role and Purpose.....	1-6
2	THE SITE	2-9
	2.1 Location	2-9
	2.2 Land Use	2-9
3	THE PROPOSED DEVELOPMENT	3-9
	3.1 Overview	3-9
	3.2 Development Description	3-9
4	THE POLICY CONTEXT.....	4-11
	4.1 Planning Policy Context	4-11
	4.2 Policy Assessment	4-15
5	THE DESIGN STATEMENT	5-16
	5.1 Site Selection	5-16
	5.2 Rationale for the Development.....	5-16
	5.3 The Site	5-17
	5.4 Surrounding Land Use	5-18
	5.5 Site Design	5-19
	5.6 Design Evolution	5-19
	5.7 Summary.....	5-21
6	THE ACCESS STATEMENT	6-21
	6.2 Route to Site	6-21
	6.3 Site Entrance/ Vehicle Access	6-23
	6.4 Construction Traffic Management Plan	6-25
	6.5 Traffic Volume.....	6-25
	6.6 Existing Core Paths	6-25
7	CONCLUSION	7-26

1 INTRODUCTION

1.1 Background

- 1.1.1 This Planning, Design and Access Statement (the PDAS) has been prepared by Arcus Consultancy Services Ltd (Arcus), on behalf of GreenGridPower3 Ltd (the Applicant), to accompany the planning application submitted to North Lanarkshire Council (the Council) for the installation and operation of Torrance Wind Farm Extension II, comprising of 4 turbines with a combined generation capacity of up to 26.4 MW, and associated infrastructure ('the Proposed Development').
- 1.1.2 The Proposed Development is an extension to the operational Torrance Wind Farm Wind Park and Torrance Farm Wind Park Extension, located approximately 600 m north of the centre of Harthill, North Lanarkshire ('the Site') (shown below in Figure 1). The Planning Application boundary is made up of an area of approximately 106.2 hectares ('ha').
- 1.1.3 The Proposed Development will have a construction period of 12 months and the Applicant is seeking planning permission for a period of 40 years.

1.2 The Applicant

- 1.2.1 GreenGridPower3 Limited is a subsidiary of Infinergy Ltd, a renewable energy company developing onshore wind farms throughout the United Kingdom.
- 1.2.2 Infinergy, and therefore the Applicant by extension, 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 farms 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>.

1.3 The Role and Purpose

- 1.3.1 This PDAS provides information on the principles and approach that have guided the design process for the Proposed Development. It is demonstrated how the area within the site boundary (the Site), as detailed in Section 2, and its surroundings have been fully appraised to ensure that the final design solution achieves a balance across a range of factors which are required to be addressed. It describes the starting point for the design of the Proposed Development, the various factors that have driven the design process, and subsequent iterations to the layout that were made in response to the environmental and technical considerations identified during the EIA Scoping process and in the preparation of the EIA Report.
- 1.3.2 This PDAS should be read in conjunction with the EIA Report, Planning Statement, and other documents supporting the Application.
- 1.3.3 This PDAS has been prepared in accordance with Regulation 13 of the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013¹ ('the DMP') which sets out the detailed requirements of the content of a PDAS in relation to planning permission.
- 1.3.4 Regulation 2(1) of the Town and County Planning (Hierarchy of Developments) (Scotland) Regulations 2009 states that development will be classed as a "*major development*" where the applicable threshold in Schedule 1 of the Regulations is met or exceeded. In this instance, the proposal would be classified as 'Other Development', with the threshold for being considered a 'Major' development as where:
- (a) *The gross floor space of any building, structure or erection constructed as a result of such development is or exceeds 5,000 square metres;*
 - or
 - (b) *The area of the site is or exceed 2 hectares.*
- 1.3.5 A PDAS is required in this case as the Proposed Development would constitute 'major development', with the site area exceeding 2 hectares.
- 1.3.6 The requirements under Regulation 13 of the DMP cover both design and access, allowing applicants to demonstrate an integrated approach that will deliver inclusive design, and address a full range of access requirements throughout the design process.
- 1.3.7 The role and purpose of the PDAS, in accordance with Regulation 13 of the DMP, is to:

¹Scottish Government (2013) *Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013* (Online) Available at: <http://www.legislation.gov.uk/ssi/2013/155/regulation/13/made> (Accessed 28/06/2022)

- Explain the design principles and rationale that have been applied to the Proposed Development;
- Demonstrate the steps taken to appraise the context of the Proposed Development, and how the design of the Proposed Development takes that context into account;
- Explain the policy adopted as to access, and how policies relating to access in relevant local development documents have been taken into account;
- State what, if any, consultation has been undertaken on issues relating to access to the Proposed Development and what account has been taken of the outcome of any such consultation; and
- Explain how any specific issues which might affect access to the Proposed Development have been addressed.

1.3.8 This PDAS has also been prepared in accordance with guidance included within the Planning Circular 3/2013: Development Management Procedures ('the Circular') Part 3, 'Preparation of Statements', Paragraphs 3.23-3.30. This section sets out the requirements for what must be included within the contents of a PDAS.

1.3.9 Paragraph 3.24 of the Circular states that:

"A design statement is a written statement about the design principles and concepts that have been applied to the development and which -

Explains the policy or approach adopted as to design and how any policies relating to design in the development plan have been taken into account.

Describes the steps taken to appraise the context of the development and demonstrates how the design of the development takes that context into account in relation to its proposed use.

States what, if any, consultation has been undertaken on issues relating to the design principles and concepts that have been applied to the development; and what account has been taken of the outcome of any such consultation".

1.3.10 Paragraph 3.26 of the Circular states: A design and access statement must:

"Explain the policy or approach adopted as to access and how:

- (i) Policies relating to such access in the development plan have been taken into account; and*
- (ii) Any specific issues which might affect access to the development for disabled people have been addressed".* This should explain how the applicant's policy / approach adopted in relation to access fits into the design process and how this has been informed by any development plan policies relating to access issues.

1.3.11 This PDAS is structured as follows:

- Section 2 – The Site;
- Section 3 – The Proposed Development;
- Section 4 – The Policy Context;
- Section 5 – The Design Statement;
- Section 6 – The Access Statement; and
- Section 7 – Conclusion.

2 THE SITE

2.1 Location

2.1.1 The Site covers an area of approximately 106.2 ha and is centred on National Grid Reference (NGR) 289988, 665071, approximately 600 m north of the centre of Harthill. The Site is wholly located within the administrative boundary of North Lanarkshire Council; however, the administrative boundary with West Lothian Council is adjacent to the Site's northern boundary. The Site lies to the north of the M8 transport corridor, between Edinburgh (east) and Glasgow (west).

2.2 Land Use

2.2.1 The Proposed Development is situated in an area which is predominantly used for agricultural purposes, specifically sheep farming. The lower topography to the south and southeast of the Site is dominated by coniferous woodland with smaller areas of neutral grassland to the southeast, near Netherton Farm. The southwest of the Site largely comprises improved grassland, neutral grassland, and marsh/grassland with smaller areas of flush, spring and broadleaved woodland. The northwest of the Site is dominated by improved grassland, whereas the northeast of the Site is largely neutral grassland and marsh/grassland. There are stretches of degraded hedgerow, hedgerow trees and post and wire fences demarcating south and west field boundaries.

3 THE PROPOSED DEVELOPMENT

3.1 Overview

3.1.1 The Applicant is seeking planning permission for the construction and operation of a Windfarm and associated infrastructure.

3.1.2 The purpose of the Proposed Development is to generate electricity from the four proposed wind turbines, offsetting the need for power generation from the combustion of fossil fuels. Consequently, the electricity that will be produced results in a saving in emissions of Carbon Dioxide (CO₂) with associated environmental benefits, which is discussed in Chapter 16 - Climate Change and Carbon Balance. Based on current candidate turbine specifications, it is expected that each wind turbine would have an output of 6.6 Megawatts (MW), giving a total installed capacity of 26.4 MW.

3.2 Development Description

3.2.1 The Development will comprise 4 three-blade horizontal axis turbines of up to 200 m blade tip height and a series of on-site access tracks connecting each of the turbine locations; a network of underground cables linking the turbines to an on-site electricity substation and control/maintenance building; a Temporary Construction Compound for use during the construction phase; a Construction Compound and Substation; and proposed new recreational paths for pedestrians and cyclists, which are planned to be constructed within the forestry on the Site, and extend to the north of the Site to connect to Core Path / National Cycle Route 75.

- 3.2.2 The Proposed Development will include all associated infrastructure including a Site Compound and Substation; associated turbine foundations, wind turbine hard-standings, and crane pad; a series of onsite access tracks connecting each of the turbine locations; a network of underground cables linking the turbines to an onsite electricity substation and control/maintenance building; a Temporary Construction Compound; and a permanent anemometer mast to measure wind speed and wind direction.
- 3.2.3 The key parameters of the Proposed Development components, as shown on the Site Layout Plan, are outlined in Table 3.1 below.
- 3.2.4 The Proposed Development will have an operational lifespan of up to 40 years from full commissioning of the proposed turbines. Following this, an application may be submitted to retain or replace the turbines, or alternatively they will be decommissioned.
- 3.2.5 Further details on the Proposed Development and how the final design was achieved is described in Section 5.

Table 3.1: Key Parameters of the Development

Element	Details
Turbines	Up to 4 turbines with a maximum tip height of 200 m. Each turbine will require a small transformer located externally at its base. 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 m ³ of concrete.
Access Track	A total of approximately 2.9 km of on-site access tracks would be required for the Proposed Development. It is anticipated that the entirety of the 2.9 km of access track, including turning heads, would be new. 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. The EIA will assume and assess transformers located outside of the turbines. A substation compound will be located on site and will include a single storey control building, external electrical infrastructure, battery storage components and vehicle parking.
Crane Hardstandings	Four crane hardstanding's 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. In addition to the main hardstanding area, there will be additional flattened areas for crane assembly and turbine blade storage; however, these will be temporary and not constitute hardstanding.
Temporary Construction Compound	A temporary construction compound will be required during the construction of the Development, forming an area of hardstanding providing space for temporary construction cabins, parking and lay down areas; this will measure approximately 16 m x 52.8 m. The temporary construction compound area would be fully reinstated following the construction period.

Element	Details
Substation Compound	The electricity substation compound would comprise a fenced hardstanding with maximum dimensions of approximately 16 m x 25 m. The area for the substation compound would be prepared by removing the topsoil and subsoil down to competent bearing strata, and concrete foundations would be required to take the weight of the components. An electrical earth network would be buried around the building.

4 THE POLICY CONTEXT

4.1 Planning Policy Context

National Planning Framework 4

- 4.1.1 On the 13th of Feb 2023, the National Planning Framework 4 (NPF4) was formally adopted by the Scottish Government and replaces NPF3.
- 4.1.2 NPF4 sets out a national spatial strategy for Scotland to 2045, stating *'Scotland's future places will be net zero, nature-positive places that are designed to reduce emissions and adapt to the impacts of climate change, whilst protecting, recovering and restoring our environment.'* NPF4 recognises that: *'Meeting our climate ambition will require a rapid transformation across all sectors of our economy and society. This means ensuring the right development happens in the right place.'*
- 4.1.3 Six National Developments support the delivery of Sustainable Places, including Strategic Renewable Electricity Generation and Transmission Infrastructure, which supports *'electricity generation and associated grid infrastructure throughout Scotland, providing employment and opportunities for community benefit, helping to reduce emissions and improve security of supply.'*
- 4.1.3 Policy 1 (Tackling the Climate and Nature Crises) states: *'When considering all development proposals, significant weight will be given to the global climate and nature crises.'*
- 4.1.4 Policy 2 (Climate Mitigation and Adaptation) states:
- a) Development proposals will be sited and designed to minimise lifecycle greenhouse gas emissions as far as possible.*
 - b) Development proposals will be sited and designed to adapt to current and future risks from climate change.*
 - c) Development proposals to retrofit measures to existing developments that reduce emissions or support adaptation to climate change will be supported.'*

4.1.5 Policy 11 (Energy) states that development proposals for all forms of renewable, low-carbon and zero carbon and zero emissions technologies will be supported, including *'wind farms including repowering, extending, expanding and extending the life of existing wind farms'*. The policy will only support such developments where they *'maximise net economic impact, including local and community socio-economic benefits such as employment, associated business and supply chain opportunities.'*

4.1.6 Policy 14 (Design, Quality and Place) requires development proposals to *'be designed to improve the quality of an area whether in urban or rural locations and regardless of scale.'*

The North Lanarkshire Local Development Plan

4.1.7 The North Lanarkshire Local Development Plan (NLLDP)² was adopted on 5 July 2022, superseding the North Lanarkshire Local Plan (2012)³.

4.1.8 The overall strategic aim of NLLDP is to increase sustainable growth, promote regeneration and ensure North Lanarkshire becomes an even more 'successful place'. It sets out the Policies and Proposals to guide and meet North Lanarkshire's development needs over the next 5-10 years.

4.1.9 Various Supplementary Planning Guidance documents (SPGs) were approved after the adoption of NLLP in 2012 to help demonstrate how development proposals would be assessed. These SPGs are treated as a material consideration by the Council and continue to remain in force after the NLLDP has superseded the NLLP.

4.1.10 The NLLDP reflects the Scottish Government's core principles and objectives including:

- Building a low carbon economy;
- An increased emphasis on place making;
- Respecting and maximising environmental assets;
- A sustainable approach to growth and development; and
- Well-connected places.

4.1.11 The following policies outlined within the NLLDP are considered to be of relevance to the Development with regards to design and access. Some of these policies have been summarised, or where directly quoted are shown in italics. For full policy wording please refer to NLLDP:

Policy PROT B- Historic Environment Assets

4.1.12 Policy PROT B states that in determining applications the Council will protect natural and resilient sustainable places by safeguarding historic environment assets. Development must not cause harm to the character and appearance of a site and its setting protected for its historic environment value, in order to gain planning permission or any other relevant consent.

² 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 21/10/2022)

³ North Lanarkshire Council (2012) *North Lanarkshire Local Plan* [Online] Available at: <https://www.northlanarkshire.gov.uk/sites/default/files/2020-09/NLC%20Local%20Plan%202012.pdf> (Accessed 13/06/2022)

4.1.13 Regarding Category B3 areas (Regionally/Locally Designated), the Policy states:

"The layout, design, materials, scale, siting and use of any development shall be appropriate to the character and appearance of [Category B and C Listed Buildings] and its setting. There is a presumption against demolition or other works that adversely affect the special interest of a listed building or its setting.

Policy EDQ 1- Site Appraisal

4.1.14 Policy EDQ 1 requires all development proposals to be appraised in terms of the site and its surroundings to ensure it will integrate successfully into the local area and avoid harm to neighbouring amenity. In order to be concise, not all of the matters to be addressed in appraisals through Policy EDQ 1 are listed below, only those deemed to have relevance to the Development with regard to design and access are listed. For the full list of matters, please refer to EDQ 1 in the NLLDP document.

4.1.15 *"The matters to be addressed in the appraisal include but are not limited to*

- *massing, height, style, finishing materials of any building or buildings on the site and surrounding Land Use Character Area*
- *orientation and topography of the site and surrounding Land Use Character Area*
- *mixture of uses in the Land Use Character Area*
- *public utilities, e.g. underground services (including the fibre network), drainage systems, overhead power lines*
- *ground stability and contamination on the site and surrounding Land Use Character Area*
- *existence and quality of connections and access including site and building entrances, roads, paths and visuals on the site and surrounding Land Use Character Area*
- *impacts associated with the holistic water environment and flood risk*
- *biodiversity of plants and animals on the site and surrounding Land Use Character Area*
- *heritage, or amenity value of buildings or structures above or below ground on the site and surrounding Land Use Character Area*
- *the nature and types of features to be safeguarded or enhanced on the site and surrounding Land Use Character Area*
- *in addition to the criteria set out here, proposals for renewable energy development must have regard to the considerations set out in Scottish Planning Policy paragraph 169."*

Policy EDQ 3- Quality of Development

4.1.16 Policy EDQ 3 states that:

"Development will only be permitted where high standards of site planning and sustainable design are achieved. Planning Applications will need to demonstrate that the proposed development takes account of the site appraisal carried out as a requirement of Policies EDQ1".

4.1.17 The policy also lists various ways in which proposals must achieve high quality development. A full list of the requirements for achieving high quality development can be found in Policy EDQ 3 of the NLLDP however those most relevant are listed below. High quality development can be achieved by:

- *"Moving towards a low-carbon economy, addressing resource efficiency, mitigation of and adaptation to the effects of Climate Change energy and waste issues in order to create a sustainable development with a low ecological footprint"*

- “Mitigating any likely air quality, noise, or pollution impacts particularly in or adjacent to Air Quality or Noise Management Areas.”
- Ensuring that water body status is protected and, where possible, enhanced. ... Sustainable Urban Drainage Systems should be adopted within site design and appropriate details, including during the construction phase, require to be submitted with any relevant planning application. Buffer strips may be required in respect of the water environment between a development and each watercourse.”

4.1.18 *Ensuring “Adequate provision has been made for the development and maintenance of landscaped open space areas and amenity space and play provision, and for linking to and enhancing open spaces and green networks”*

4.1.19 The Proposed Development will also be required to comply with the criteria in the following Supplementary Planning Guidance (SPGs):

SPG 1 – Landscaping

4.1.20 This SPG document (SPG1 – Landscaping⁴) provides detailed guidance on the impact of development on the surrounding landscape and how to mitigate landscape effects. It outlines what a Landscape Scheme should include and when they are required for planning applications. SPG1 is structured as follows:

- **A. Landscaping:** Sets out the initial considerations for landscaping design of new developments in North Lanarkshire (e.g. what is the intent of the landscaping and how will the physical conditions of the site alter any landscaping decisions);
- **B. Hard Landscaping:** sets out guidance on how hard surfaces and materials can be appropriately integrated into proposals. This section covers in particular guidance on Surfacing, Walls and Fences, and Street Furniture.
- **C. Soft Landscaping:** sets out guidance on how soft landscaping can be used for buffering, softening at development edges, for providing screening, privacy, enclosure or shelter, and how they can provide character. This section goes into particular detail on Trees and Shrubs.
- **D. Grassed Areas:** outlines how grass areas form important elements in many developments and provides guidance on how to integrate grassland into developments and what to avoid.
- **E. Maintenance:** Details the maintenance requirements which must be adhered to and provides guidance on Good Maintenance Practice.

SPG 8 - Assessing Development in the Rural Investment Area

4.1.21 This SPG document (SPG8: Assessing Development in the Rural Investment Area⁵) was formed to support Policy NBE 3B of NLLP and addresses key issues and obstacles for development in the Rural Investment Area (RIA). The SPG provides detailed advice regarding what may be considered acceptable development in the RIA in terms of and land use, materials and detailing, access & car parking, landscaping, biodiversity.

⁴ North Lanarkshire Council (2009) *Supplementary Planning Guidance: Landscape* [Online] Available at: https://www.northlanarkshire.gov.uk/sites/default/files/2020-09/01%20Landscaping_0.pdf (Accessed 12/04/2022)

⁵ North Lanarkshire Council (2010) *Supplementary Planning Guidance: Assessing Development in the Rural Investment Area* [Online] Available at: <https://www.northlanarkshire.gov.uk/sites/default/files/2020-09/08%20Develop%20in%20the%20RIA.pdf> (Accessed 12/04/2022).

SPG 12 – Assessing Planning Applications for Wind Turbine Developments

4.1.22 SPG 12: Assessing Planning Applications for Wind Turbine Developments⁶ provides more detailed advice and criteria for wind turbine developments.

4.1.23 The guidance also helps guide wind farm designs, particularly in terms of the number and height of turbines and can help ensure that wind farm locations reflect the scale and character of the landscape within which they are proposed.

SPG 15 – Good Design Toolkit

4.1.24 SPG 15: Good Design Toolkit⁷ provides further guidance on the Council's requirements for all new development proposals to deliver high quality, well-designed places. The SPG summarises a range of tools which can be used to ensure the successful design of development and sets out how they can be implemented:

- Urban Design Framework;
- Community Engagement;
- Site Appraisal Checklist;
- Design Objectives;
- Design Briefs;
- Design Guides and Codes;
- Good Design Practice;
- Design and Access Statements;
- Concept Statements; and
- Masterplans.

4.1.25 The NLLDP and relevant Supplementary Guidance states that proposals for development need to ensure that significant visual intrusion within the landscape in terms of scale, location, design etc. has been minimised.

4.2 Policy Assessment

4.2.1 The assessment of the Development against the relevant policies within the NLLDP is contained within the accompanying Planning Statement. This Section of the PDAS focusses on the policies with specific relevance to the design of the Development.

⁶ North Lanarkshire Council (2012) *Supplementary Planning Guidance: Assessing Planning Applications for Wind Turbine Developments* [Online] Available at: <https://www.northlanarkshire.gov.uk/sites/default/files/2020-09/12%20Wind%20Turbine%20Development.pdf> (Accessed 12/04/2022).

⁷ North Lanarkshire Council (2010) *Supplementary Planning Guidance: Good Design Toolkit* [Online] Available at: <https://www.northlanarkshire.gov.uk/sites/default/files/2020-09/15%20Good%20Design%20Toolkit.pdf> (Accessed 12/04/2022).

5 THE DESIGN STATEMENT

5.1 Site Selection

5.1.1 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.

5.1.2 In accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017⁸ ('the EIA Regulations'), the design and site alternatives need to be considered, taking into account the potential environmental effects. The Site was selected as a suitable location for a wind farm development by the Applicant as it met the following criteria:

- Character of Site and surrounding area;
- Topography;
- Ease of access to Site for construction/Suitable road access, subject to the construction of a new access point;
- Lack of environmental constraints;
- Lack of on-site international or national ecological, landscape or cultural heritage designations;
- Location adjacent to an existing wind farm;
- A sufficiently high annual mean wind speed across the Site;
- Viable grid connection in close proximity to the Site
- Sufficiently limited theoretical visibility of wind turbines from populated areas and transport routes, and the potential for the Development design to respond to the adjacent cumulative context; and
- The Site is sufficiently distant from the nearest residential properties to ensure compliance with ETSU-R-97 noise limits, as well as to avoid or reduce the potential for adverse effects on residential visual amenity and shadow flicker effects.

5.2 Rationale for the Development

5.2.1 The use of the Development is intended to support Scottish Government's commitments to reduce emissions of greenhouse gas emissions to combat the effects of climate change.

5.2.2 The Renewable Energy Directive 2009/28/EC⁹ sets targets for Member States in respect of the use of energy from renewable resources. The UK's obligation is 15% of energy consumption from renewable energy resources by 2020.

5.2.3 The European Council 2030 Climate and Energy Framework¹⁰ has set a further target of at least a 40% reduction in greenhouse gas emissions by 2030. The target is binding and all Member States are required to participate in this effort to further combat climate change.

⁸ The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 [Online] Available at: <https://www.legislation.gov.uk/ssi/2017/101/contents/made> (Accessed 22/06/2022)

⁹ European Commission (2009) Directive 2009/28/EC of the European Parliament and of the Council [Online] Available at: <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:en:PDF> (Accessed 27/06/2022)

5.2.4 The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019¹¹ sets a national target for net-zero emissions of 2045. Setting a 'carbon neutral', net-zero target of 2045 is ambitious and ahead of the rest of the United Kingdom's target of 2050. The Government has set ambitious targets for reduction of carbon emissions. Projects, such as the Development play a key role in aiding the decarbonisation of the energy sector.

5.3 The Site

5.3.1 The Site is located approximately 600 m north of the centre of Harthill, and is centred on National Grid Reference (NGR) 289988, 665071. The Site covers an area of approximately 106.2 ha and lies wholly within the administrative boundary of North Lanarkshire Council; however, the administrative boundary with West Lothian Council is adjacent to the Site's northern boundary. The Site lies to the north of the M8 transport corridor, between Edinburgh (east) and Glasgow (west).

5.3.2 The B718 runs north-south through the east of the Site, and there are two forestry access tracks running east to west within the Site, either side of the B718. The Site can currently be accessed on foot by the public for walking and recreation, though there are health and safety restrictions in place during periods of harvesting.

5.3.3 There are a number of watercourses within the Site, all of which drain to the south into How Burn, which continues to flow east from the Site for approximately 1.88 km before discharging into the River Almond.

5.3.4 Netherton Farm is situated in the south-eastern corner of the Site and Loan Farm is located directly west of the B718. No other built infrastructure or farmsteads lie within the application boundary.

5.3.5 The topography in the east and south of the Site is relatively flat and low, and the topography in the northwest of the Site is gently sloping to face south. The elevation in the east and south parts of the Site varies between 175 m Above Ordnance Datum (AOD) and 190 AOD while the elevation in the north-western portion of the Site gradually increases from approximately 190 AOD to 220 AOD. Overall, there is an undulating topography which generally slopes south and south-east in places.

5.3.6 The Proposed Development is situated on land predominantly used for agricultural purposes, specifically sheep farming. The lower topography to the south and southeast of the Site is dominated by coniferous woodland with smaller areas of neutral grassland to the southeast, near Netherton Farm. 6.65 ha of felling is required to facilitate construction of the Development. The southwest of the Site largely comprises improved grassland, neutral grassland, and marsh/grassland with smaller areas of flush, spring and broadleaved woodland. The northwest of the Site is dominated by improved grassland, whereas the northeast of the Site is largely neutral grassland and marsh/grassland. There are stretches of degraded hedgerow, hedgerow trees and post and wire fences demarcating south and west field boundaries.

¹⁰ European Commission (2014) The European Council 2030 Climate and Energy Framework [Online] Available at: https://ec.europa.eu/clima/policies/strategies/2030_en#tab-0-1 (Accessed 27/06/2022)

¹¹ Scottish Government (2019) Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 [Online] Available at: <http://www.legislation.gov.uk/asp/2019/15/contents/enacted> (Accessed 27/06/2022)

5.3.7 Access to the site will be afforded from the M8 that abuts the Site's southern boundary. Abnormal Load Vehicles will exit the M8 at Harthill Services and will turn directly into the Abnormal Load Site Entrance. General Construction Traffic will enter the Main Site Entrance from the B718, via the M8 and the B7066.

5.3.8 There are no statutory designated sites within or immediately surrounding the Site.

5.4 Surrounding Land Use

5.4.1 The Site is located on the edge of an area of distinctive upland moorland and more settled farmland. The immediate locality of the Proposed Development is predominantly rural and commercial forestry with some dispersed properties, however there are some number of small towns within the local area, the closest of which being Harthill and Eastfield located to the South of the Site.

5.4.2 Larger settlements in the wider area include Livingston (approximately 12.6 km east) and Glasgow (approximately 21 km west).

5.4.3 The closest property outwith the Site is Hill Farm which stands alone adjacent to the Site's north-western boundary on Blairmuckhole and Forrestdyke Road and is located approximately 260 m from the nearest turbine. There are a further two farms located nearby the Site. Blairmuckhill Farm is approximately 170 m northwest of the Site and 560 m from the nearest turbine. Treebanks Farm is approximately 200 m west of the south-western Site boundary and 640 m from the nearest turbine.

5.4.4 The Site is adjacent to the original Torrance Wind Park and Torrance Extension (hereafter referred to as the "Existing Windfarm"). Five turbines and ancillary infrastructure have already been installed to the east of the Site as part of the Existing Windfarm, the closest of which is approximately 200 m northeast of the Site boundary and 420 m from the nearest turbine.

5.4.5 In addition to wind turbines, there are numerous tall telecommunications masts and pylons located within the landscape.

5.4.6 The closest Scheduled Monument is Mid Bracco deserted farmstead (SM9661), located approximately 5.25 km north-west of the south-west corner of the Site.

5.4.7 The closest listed buildings is the Category B Listed Westcraigs (LB14553) approximately 1.3 km north of the Site's most northern boundary and the Category C listed Blackridge Church (LB14552) is located 1.42 km northwest.

5.4.8 The following national and international designations are located within the surrounding area (all distances are approximate and directions given in relation to the Site boundary):

- Blawhorn Moss Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC) and National Nature Reserve 2.1 km north;
- Black Loch Moss SSSI and SAC 4.6 km north-west;
- Hassockrigg and North Shotts Mosses SSSI 2.12 km southwest;
- North Shotts mosses SAC 2.62 km southwest;
- Two scheduled monuments within 5 km of the proposed turbines; and
- Five Category A or B Listed Buildings within 5 km.

5.4.1 The above designations are discussed as necessary within the relevant technical chapters of the EIA Report.

5.5 Site Design

5.5.1 The design of a wind energy development is driven by the key objective of positioning turbines so that they capture the maximum energy possible within a suitable area determined by environmental and technical constraints.

5.5.2 The key constraints to onshore wind farm site design which need to be taken into account during the design process include:

- Visibility from sensitive receptors, including nearby properties, settlements and landscape designations;
- Presence of sensitive habitats and protected species;
- Presence of sensitive ornithological species;
- Presence of watercourses, private water supplies and related infrastructure;
- Presence of cultural heritage features;
- Proximity to noise sensitive receptors;
- Presence of peat;
- Ground conditions and topography; and
- Key recreational and tourist routes.

5.5.3 For further details on the environmental and technical constraints, and how this influenced the design of the Development, please refer to Chapter 2 of the EIA Report.

5.6 Design Evolution

5.6.1 The final layout of the Proposed Development as presented in the EIA Report has been the subject of a number of iterations and refinements which sought to avoid or minimise, predicted adverse effects as far as reasonably practicable via design mitigation. The resultant proposal balances the environmental and technical constraints, whilst producing an economically viable project. Design changes made as a consequence of the key constraints are considered to be mitigation which is 'embedded' within the design of the scheme.

5.6.2 Whilst the Proposed Development has undergone numerous design iterations, a selection of the key turbine layout design iterations are described below, and also detailed in Chapter 2 of the EIA Report, which demonstrated how the layouts have evolved throughout the EIA process.

Scoping Layout: Up to 10 Turbines (Tip Height Up to 140 m)

5.6.3 The Scoping Report layout consisted of up to 10 turbines with a tip height of up to 140 m, and a generation capacity of up to 46 MW. The Scoping Layout also utilised a larger Site Boundary of 201.4 ha centred on NGR 290152, 665390.

5.6.4 The initial layout maximised potential turbine numbers, reflective of known constraints at the time which were not necessarily subject to detailed site work. The following key known on-site constraints were adhered to:

- Suitable separation distances between turbines based upon anticipated rotor diameters and prevailing wind direction, in order to reduce wake loss and issues associated with wind turbulence; and
- 50 m buffers from watercourses.

- 5.6.5 The Proposed Development was scoped under the Town and Country Planning (EIA) (Scotland) Regulations 2017 (the EIA Regulations), and a Scoping Opinion was received from North Lanarkshire Council (the Council) in December 2020.

Interim Layout: 4 Turbines (Tip Height Up to 200 m)

- 5.6.6 Following the consultation responses received during the scoping exercise (Technical Appendix A2.2) and through the results of ongoing EIA survey work, a number of iterations took place following the Scoping Layout. This interim Layout utilised a Site Boundary of 105.4 ha centred on NGR 289989, 665068.
- 5.6.7 The Interim Layout removed six turbines from the scoping layout with the remaining four turbines being increased from 140 m to 200 m. The change in tip height and general dimensions were chosen to reflect current trends in wind turbine technology. The need to produce lower costing renewable electricity has led to wind turbines becoming taller, where substantial improvements in yield are achieved by using longer turbine blades.

Chilled Layout: 4 Turbines (Tip Height Up to 200 m)

- 5.6.8 The Chilled Layout represents the Proposed Development layout proposed in this EIA Report and shared with the local community at the third round of Public Exhibitions (November 2022).
- 5.6.9 The layout is comprised of up to 4 turbines at a tip height of up to 200 m. The layout incorporates infrastructure elements which were not present on the Scoping Layout and other earlier iterations. This includes internal access tracks, a TCC and Substation Compound, and recreational paths. This Chilled Layout utilised a Site Boundary which extended to the north of the site to include a proposed recreational path which would link the Site to the Core Path NL/213/1. This Site Boundary had an area of 106.4 ha and was centred on NGR 289988, 665073.
- 5.6.10 The Chilled Layout incorporates necessary rotor spacing requirements, based on a prevailing south-westerly wind, and the turbines positioned to minimise interaction with on-site constraints, including areas of deep peat and watercourses. This included some minor refinements to the positions of turbines one (T1) and four (T4) in the Interim layout, as more detailed site survey results became available and consultation responses identified an Airwave telecommunication link which would be impacted by T4. T1 was moved 34 m south and T4 was moved 45 m northwest.

Frozen Layout – 4 Turbines (Tip Height of 200 m)

- 5.6.11 The Frozen Layout represents the Proposed Development layout proposed in this EIA Report and shared with the local community at the third round of Public Exhibitions (October 2022). The layout is comprised of up to 4 turbines at a tip height of up to 200 m, the layout of which remains the same as that seen in the Chilled Layout.

- 5.6.12 This final iteration featured amendments to the Site Boundary and Proposed Recreational Path. These were found to encroach into the West Lothian Council (WLC) Planning Boundary and so were amended so that both the Site Boundary and Recreational Path were situated entirely within North Lanarkshire. It is anticipated that a separate, future planning application will be submitted to WLC to complete the link between the proposed recreational path and Core Path NL/213/1. This will provide Harthill with a further recreational route which links to the village of Blackridge to the north.
- 5.6.13 Following the amendments to the Site Boundary, the Site Boundary had an area of 106.2 ha and was centred on NGR 289988, 665071.

5.7 Summary

- 5.7.1 Various economic, technical and environmental factors were all considered in the iterative design process. These were informed through a variety of baseline surveys and consultation with a range of stakeholders.
- 5.7.2 The final design takes account of the surveys and consultation, and is considered to meet the balance of increasing the renewable energy generation capacity of the Site whilst minimising the introduction of new environmental effects.
- 5.7.3 In advance of the scoping stage, turbines were positioned to avoid immediately known onsite constraints and incorporate landscape and visual considerations. The application layout incorporates necessary rotor spacing requirements, based on prevailing south-west wind, and the turbines positioned to minimise interaction with onsite constraints including any deep peat and watercourses.

6 THE ACCESS STATEMENT

- 6.1.1 The access principles for access considered in the Development include, where possible, using existing tracks and routing of new tracks to minimise engineering works.

6.2 Route to Site

- 6.2.1 The proposed transport route to Site involves exiting the M8 motorway onto the A899 road, which runs north to south, and joins the A71 to the south by means of a 4-arm roundabout located at Newhouse. From the A71, the route to site joins the A704 and A706. The full route is shown in Figure 2, below:
- 6.2.2 Details of roads capacity, sensitive receptors and a traffic collision assessment can be found in Chapter 9 of the EIA Report.

6.3 Site Entrance/ Vehicle Access

- 6.3.1 The 'Main Site Entrance' will be formed off the B718 Westcraigs Road to the north of Harthill (Grid Ref: NS906651). This entrance will consist of a crossroad junction onto the B718. The west arm of the crossroad will provide access to the main construction compound and three of the four turbines, with the eastern arm providing access to a further one turbine. ALVs will traverse across the crossroad junction under escort.
- 6.3.2 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 only for the delivery of wind turbine components, which will be loaded on HGVs and by the accompanying escort vehicles. This entrance will only be used under escort with deliveries likely to take place at night.
- 6.3.3 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) during the peak months of the construction phase; this is not a confirmed option at the time of writing but is considered as part of the application should an agreement between the service station and Applicant be reached.
- 6.3.4 All public roads along the route are at least 5 m wide. Road junctions and bends along the route have been assessed to ensure that vehicles will be able to negotiate these safely and enable easier access via larger vehicle such as HGV (length 16.5m, height 3.6m, width 2.5m) to the Site.
- 6.3.5 The Site entrance point and visibility splays for the 'Main Site Entrance' formed off B718 Westcraigs Road are shown in figure 3 below:

6.4 Construction Traffic Management Plan

- 6.4.1 A Construction Traffic Management Plan ('CTMP') will be prepared with traffic management measures which will ensure efficient and safe transport of vehicles and personnel to and from site, and with minimum disruption to other road users. It is anticipated that this will be enforced via a suitably worded planning condition. The CTMP will be submitted for approval by the Council Roads Department prior to the commencement of construction activity.
- 6.4.2 Following construction, once in full operation, the Proposed Development will not generate any significant traffic movements, with security and maintenance staff the only likely infrequent visitors, travelling by car or light van.
- 6.4.3 Pedestrian access will be restricted for security purposes to prevent theft and vandalism, and to ensure public safety.

6.5 Traffic Volume

- 6.5.1 The Proposed Development is expected to be constructed over a 12-month period in stages. A detailed overview of the predicted increase in traffic during the construction phase was undertaken, this identified the peak month of construction as Month 4 and predicted that total traffic would increase by 101 vehicle movements per day during this month which includes 41 HGV movements. A further 119 daily HGV movements will occur on four non-consecutive days when concrete is delivered.

6.6 Existing Core Paths

- 6.6.1 There are no core paths located within the Site boundary however there are 16 Core paths and The National Cycle Route 75 located within 2 km of the Site.
- 6.6.2 There are a number of existing forestry tracks used for the commercial woodland harvesting. The Site is currently accessible on foot to the public for walking and recreation, though there are health and safety restrictions in place during periods of harvesting and other forestry operations which means the network of paths and tracks is not always fully accessible to the public.
- 6.6.3 The effects on walking routes during construction will be limited to temporary access restrictions and general amenity from the construction site. Furthermore, given the proposed layout and entrance point for construction traffic, it is likely that these effects will be restricted to the path network in the northwest of the Site.
- 6.6.4 The development proposal includes the creation of recreational paths. One of the proposed recreational paths extends across the boundary between North Lanarkshire Council and West Lothian Council (WLC). It is anticipated that a separate planning application will be submitted to WLC to complete the link between the proposed recreational path and the existing Core Path. This will provide Harthill with a further recreational route which links to the village of Blackridge to the north.

7 CONCLUSION

- 7.1.1 This PDAS has been prepared in accordance with requirements of Regulation 13 of the DMP and the relevant LDP policies.
- 7.1.2 The principal use of the Proposed Development is to produce electricity by harnessing energy from the wind, a renewable resource, which will feed into the grid network.
- 7.1.3 The final layout of the Proposed Development consists of 4 three-bladed horizontal axis turbines of up to 200 m blade tip height. The Proposed Development includes all associated infrastructure including a Site Compound and Substation; associated turbine foundations, wind turbine hard-standings, and crane pad; a series of onsite access tracks connecting each of the turbine locations; a network of underground cables linking the turbines to an onsite electricity substation and control/maintenance building; a Temporary Construction Compound; and a permanent anemometer mast to measure wind speed and wind direction
- 7.1.4 The design of the Proposed Development has been carefully developed considering the technical and environmental constraints identified throughout the EIA process. The identification of environmental effects is an iterative process, running in tandem with the design process for the Proposed Development. The design of the Proposed Development has resulted in a site design which meets the objective of maximising electricity generation whilst minimise environmental effects, including access arrangement which seek to use existing forest routes where practicable.