Pennant Walters

Mynydd y Glyn Wind Farm

Draft Design and Access Statement

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Document revisions

No.	Details	Date
1	Draft	October 2022
2	Final	October 2022

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Executive summary

Purpose of this report

This report has been produced for the purpose of describing the approach taken by the Applicant (Pennant Walters) to the design of the Proposed Development which is a wind farm for up to seven turbines located on Mynydd y Glyn in the County Borough of Rhondda Cynon Taf.

The report identifies relevant planning policy relating both to design and to access at the national and local level. It explains the considerations given by the Applicant when selecting the site and also how the design has evolved in response to environmental and technical surveys, guided by appropriate planning policy.

The Proposed Development is then assessed against the standards for Good Design which are contained in Planning Policy Wales and which are consistent with the Welsh Government's guidance for Design and Access Statements (DAS).

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1. Introduction

1.1 Background

1.1.1 This Draft Design and Access Statement (DAS) has been prepared by WSP E&IS UK Ltd (WSP) on behalf of Pennant Walters Ltd (the Applicant). The DAS forms part of a suite of documents supporting a planning application for the development of up to seven wind turbines located to the east of Trabanog within the Rhondda Cynon Taff County Borough Council (RCTCBC) area, (from here on referred to as the Proposed Development). The application has been submitted to Welsh Government, via Planning and Environmental Decisions Wales (PEDW), to be considered as a Development of National Significance (DNS).

1.1.2 This DAS should be read in conjunction with the accompanying **Draft Planning Statement**, which sets out the planning policy context for how the application's design and access issues have been taken into account, and the **Draft Environmental Statement** (ES), which sets out an assessment of the likely significant environmental effects of the Proposed Development.

1.1.3 This DAS has been prepared in line with the Planning (Wales) Act 2015 which sets out the requirements regarding the contents of a DAS and reflects the objectives of good design set out in Planning Policy Wales (PPW) (Welsh Government, 2021)[1] and Technical Advice Note 12: Design (TAN 12) (Welsh Government, 2016)[2]. The DAS is informed by the guidance in Design and Access Statements in Wales (Welsh Government, 2017)[3].

1.2 Purpose and structure of the report

1.2.1 The DAS explains the design rationale for the wind farm, providing an explanation of the design principles and concepts that have informed the Proposed Development (as described in **Draft ES Chapter 3: Scheme Need, Alternatives and Iterative Design Process** and **Draft ES Chapter 4: Description of the Proposed Development** of the ES), and how access issues have been taken into consideration. The DAS is structured as follows:

- **Section 1: Introduction** – provides background information on Design and Access Statements, the approach to design, and renewable energy policy background;
- **Section 2: Summary of the Proposal** – provides a summary of the site location, Proposed Development, and the DNS regime;
- **Section 3: Vision** – sets out the vision for the Proposed Development;
- **Section 4: Site and Context Analysis** – sets out the site's context and the relevant planning policy;
- **Section 5: Design Development** – summarises the factors that were considered in the design process; and

[1] Welsh Government (2021) Planning Policy Wales Edition 11
[2] Welsh Government (2016) Technical Advice Note 12 - Design
[3] Welsh Government (2017) Design and Access Statements in Wales

- **Section 6: The Proposal** – shows how the Proposed Development responds to PPW's requirements for good design and highlights how the design process has produced an appropriate scheme in relation to the planning policy context.

1.3 Approach to the design

1.3.1 The design process involved in formulating the layout of the Proposed Development has been led by a combination of engineering requirements and environmental considerations in order to produce an appropriate layout in terms of function and energy yield, whilst trying to avoid or reduce environmental effects.

1.3.2 The Proposed Development has been developed with environmental considerations at the forefront of both site selection and design. This is demonstrated through the site selection process which ensures that technical, environmental and economic criteria are considered. Other factors that have guided the site design have included planning policy and existing infrastructure.

1.3.3 A detailed understanding of the existing environment (including land use, infrastructure, ecology, hydrology, ornithology, noise and archaeology) helped to ensure a holistic approach to the design of the wind farm. The design has also been informed by an Environmental Impact Assessment (EIA) which has considered the likely significant effects on a range of environmental receptors. The findings of the EIA are contained in the **Draft Environmental Statement**. Where relevant this DAS refers to the findings of the ES.

1.4 Onshore wind and national policy

1.4.1 The need to address climate change is embedded in law. The Climate Change Act 2008 (as amended) requires the UK to achieve a 100% reduction in greenhouse gas (GHG) emissions, otherwise known as net zero, in 2050. Welsh Ministers are bound to deliver net zero in 2050 under the Environment (Wales) Act 2016, which also requires Welsh Ministers to produce a plan to show how Wales will meet the reductions in GHG required for each five-year period to 2050.

1.4.2 In September 2017 the Welsh Government Cabinet Secretary for Environment and Rural Affairs announced to the Welsh Assembly that it was setting a target of generating 70% of Wales' electricity consumption from renewable energy by 2030 and a target for one Gigawatt of renewable electricity capacity in Wales to be locally owned by 2030[4]. This target is embedded in PPW and Future Wales: The National Plan 2040[5] (which is discussed in more depth in the following section). The Welsh Government's Energy Generation in Wales 2019 Report[6] published in October 2020 assessed the percentage of energy consumption provided by renewables to be at 51% (against the target of 70%).

1.4.3 The Welsh Government recognises the importance of wind power in meeting the renewable targets for 2030 and to ensure that the necessary carbon reductions are achieved on the path to net zero in 2050.

[4] Welsh Government (2020). Lesley Griffiths high on ambition for clean energy. (Online) Available at: http://www.assembly.wales/en/bus-home/pages/rop.aspx?meetingid=4644&assembly=5&c=Record%20of%20Proceedings#C494225 (Accessed October 2022).
[5] Welsh Government (2021) Future Wales: the national plan 2040. (Online) Available at: https://gov.wales/future-wales-national-plan-2040 (Accessed October 2022).
[6] Welsh Government (2020) Energy Generation in Wales 2019

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2. Summary of the Proposed Development

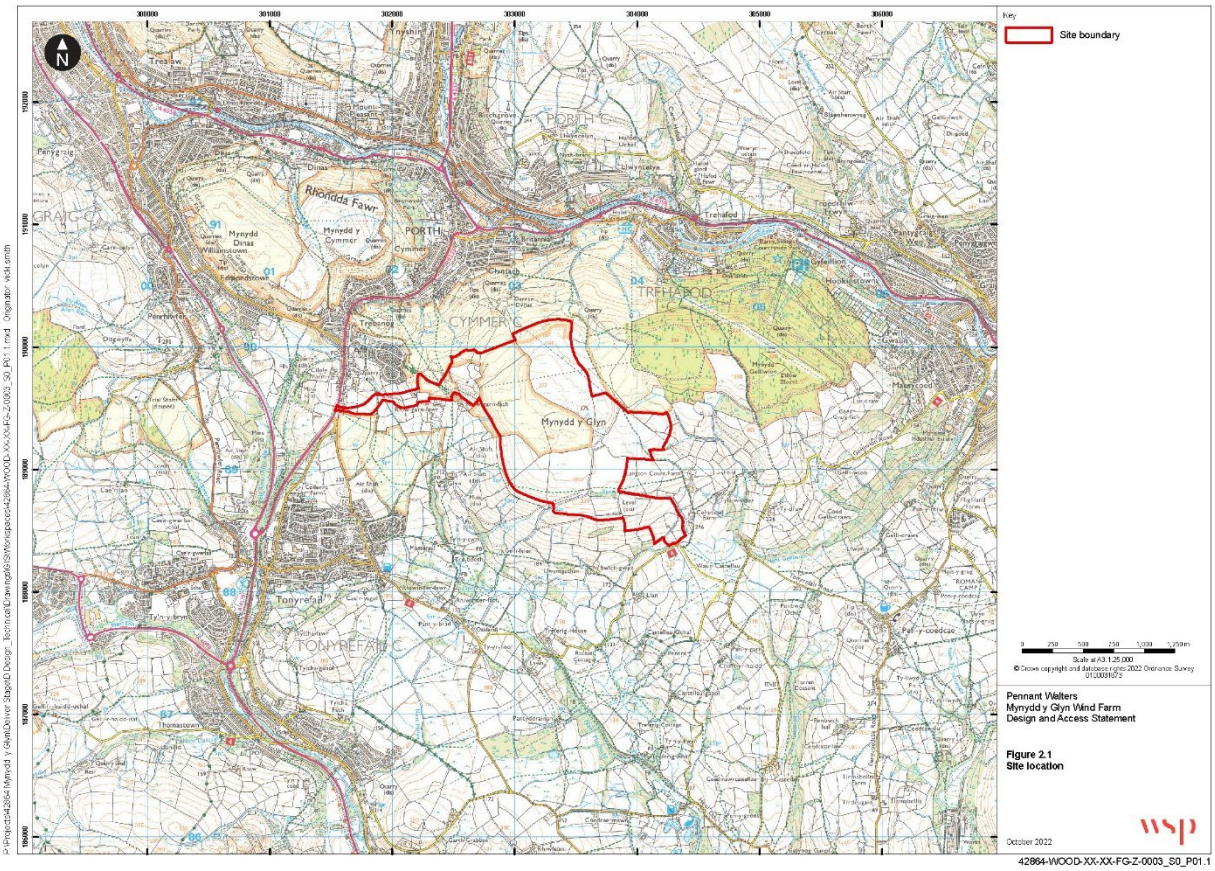
2.1 The location of the Proposed Mynydd y Glyn Wind Farm.

2.1.1 The Site is located approximately 1km east of Trebanog and approximately 600m south east of Glynfach. Grid reference for the site is ST 03626 89459. The site would be accessed via a new track leading from a new junction taken from the A4233.

2.1.2 The Proposed Development would be located on the summit and upper slopes of Mynydd-y-Glyn to the south of Rhondda River, the Site subject to the Proposed Development is absent of distinct field boundaries and tree cover resulting in it being open and exposed.

2.1.3 The site location is shown in Figure 2.1 Site Location.

Figure 2.1 Site Location



2.2 The Proposed Development

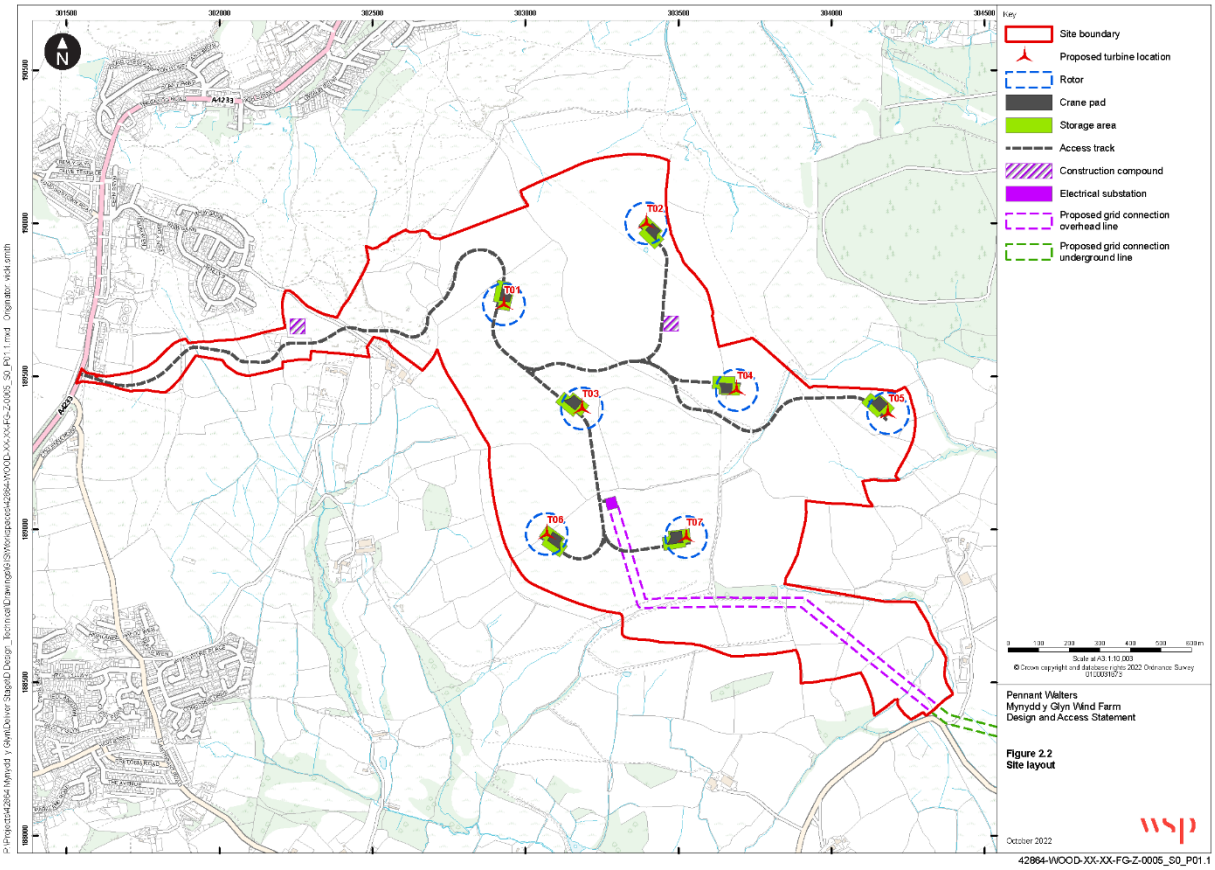
2.2.1 The Proposed Development is a wind farm consisting of a maximum of seven wind turbines, each with a three-bladed rotor with a diameter of up to 136m, a hub height of up to 97.5m and maximum height to blade tip of 155m. It will comprise:

- substation and control building;
- temporary construction compounds, including temporary site offices;
- crane pads at each turbine location;
- turbine foundations, laydown and storage areas
- underground power cables linking the turbines and the on-site substation;
- internal access tracks;
- new access from the A4233;
- an overhead line section of a longer grid connection (the remainder to be underground) between the site and an existing WPD substation; and
- other construction enabling works.

2.2.2 A full description is provided in **Draft ES Chapter 4: Description of the Proposed Development**.

2.2.3 The layout of the site is set out in Figure 2.2 Site Layout.

Figure 2.2 Site Layout



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2.3 Developments of National Significance

2.3.1 Due to the potential generating capacity being over 10MW the Proposed Development constitutes a DNS. The DNS category was established under the Planning (Wales) Act 2015 to ensure timely decision making on applications of national significance for Wales. As a DNS the application for development is submitted to the Welsh Government for determination by PEDW rather than being submitted to the local planning authority. Following submission, a Planning Inspector will be appointed who will consider the application and supporting evidence before recommending to Welsh Ministers whether or not planning permission should be granted for the application.

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3. Objectives

3.1 The objectives for the Proposed Development

3.1.1 Underpinning the design of the Proposed Development is the intention to provide a wind farm that will provide a source of renewable energy to support the energy needs of Wales without having significant effects on the environment. This means that the Proposed Development has been located and designed to:

- ensure carbon emissions are reduced;
- provide the most appropriate locations for wind turbines to ensure that the maximum amount of wind energy can be utilised from the site;
- ensure that visual impacts on the surrounding area are minimised;
- ensure that the public access to the site is maintained, in a safe manner; and
- ensure the residential and the environmental amenity of features in and around the site are protected.

3.1.2 The design process reflects the vision for the Proposed Development.

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4. Site and Contextual Analysis

4.1 Site location and context

4.1.1 The site encompasses an area of approximately 182 hectares (ha) and is located on the summit and upper slopes of Mynydd-y-Glyn to the south of Rhondda River.

4.1.2 There is no built development within the Site, but it is traversed by an overhead electricity transmission line supported by double pole pylons.

4.1.3 There is a Public Rights of Way (PRoW) network within and across the Site, One footpath, (RH|ANT|75/1) forms part of the Penrhys Pilgrimage Way which is a 21 mile long path from Llandaff Cathedral in Cardiff to Penrhys in the Rhondda. There is access land present across the northern slopes and a proportion of the summit with a further small area of access land located to the north of Tonyrefail.

4.1.4 Parts of the Site are located within a Site of Importance for Nature Conservation (SINC), designated within the RCTCBC Local Development Plan (LDP). Additionally, the Site lies within Mynydd y Glyn and Nant Muchudd Basin Special Landscape Area (SLA), partially within Rhondda Historic Landscape Area and approximately 15km from the Brecon Beacons National Park.

4.2 The Development Plan

Future Wales

4.2.1 Future Wales: The National Plan 2040 (Future Wales from here on) was adopted in February 2021. Future Wales sets out national policy and is the highest tier of the development plan against which DNS applications are assessed. Future Wales includes a range of high-level policies which are intended to shape local authority development plans and inform decision making on applications for DNS.

4.2.2 There are two specific policies on renewable and low carbon energy:

- **Policy 17 – Renewable and Low Carbon Energy and Associated Infrastructure** sets out the Welsh Government's support for the development of all renewable and low carbon technologies in principle. It states that in determining planning applications for renewable and low carbon energy development, decision-makers must give significant weight to the need to meet Wales' international commitments and target to generate 70% of consumed electricity by renewable means by 2030 in order to combat the climate emergency. It has already modelled the likely impact on the landscape of wind turbines in Pre-assessed Areas and has found them to be capable of accommodating development in an acceptable way. The policy sets out the presumption in favour of large-scale wind within the Pre-assessed Areas but also outside, subject to performance against Policy 18. The site is not located in Pre-assessed Area (PAA) for wind; and
- **Policy 18 – Renewable and Low Carbon Energy Developments of National Significance** states sets out a range of criteria that developments must meet including consideration of landscape effects with specific regard to national Parks and AONB and ensuring no unacceptable adverse: visual impacts on nearby communities; impacts on heritage assets; impacts by virtue of shadow flicker; and impacts on the transport network. The supporting text of Policy states that "*Irrespective of location or*

scale, the design and micro-siting of proposals must seek to minimise the landscape and visual impact, particularly those in close proximity to homes and tourism receptors."

4.3 Rhondda Cynon Taf Local Development Plan

4.3.1 The Proposed Development is located within the administrative area of RCTCBC. The local planning authority adopted its LDP in March 2011. The document was intended to apply up to 2021 although it remains the current plan subject to the finalisation and adoption of the Council's proposed Revised Local Development Plan 2022-2037. **Table 4.1** summarises what are considered to be the relevant LDP policies.

Table 4.1 Rhondda Cynon Taf County Borough Council Local Development Plan policies

Policy title	Summary
CS1 Development in the North	Turbine T2 appears to be located within this plan area. The Policy focus is upon economic and social development which seeks to build strong, sustainable communities. Objectives with a potential relevance to the Proposed Development are that it seeks to promote accessibility including walking and cycling, encourage a strong and diverse economy promoting employment in leisure and tourism, protect the cultural identity by protecting historic built heritage and the natural environment.
CS2 Development in the South	The remaining turbines sit within the southern area. With an emphasis on sustainable growth though social and economic regeneration objectives of potential relevance to the Proposed Development are considered to be limited to the need to protect the cultural identity of the Strategy Area by protecting historic built heritage and the natural environment.
AW7 Protection and Enhancement of the Built Environment	Policy seeks to only permit development proposals which impact upon sites of architectural and/or historical merit, and site is archaeological importance where it can be demonstrated that they preserve or enhance the character and appearance of the site.
AW8 Protection and Enhancement of the Natural Environment	Aims to preserve and enhance the distinctive natural heritage by protecting it from inappropriate development permitting development only where it would not cause harm to SINCs or RIGs or other locally designated sites unless it can be demonstrated that that the proposal is necessary for their positive management, would not unacceptably impact on the reasons for designation or could not be reasonably be located elsewhere and the benefits clearly outweigh the value of the site. Furthermore, that there would not be unacceptable impacts upon features of importance to landscape or nature conservation, including ecological networks, natural resources such as air, water and soil and natural drainage of surface water.
AW10 Environmental Protection and Public Health	The Policy does not permit development that could result in unacceptable harm to health and/or local amenity due to air, light, noise pollution, landfill gas and land stability, water pollution, flooding or other risk to the environment, local amenity, public health or safety unless measures can be provided to overcome the above.
AW12 Renewable and Non Renewable Energy	Permits development of renewable and non renewable energy schemes where it can be demonstrated that there will be no unacceptable harm upon the interests of soil conservation, agriculture, nature conservation, wildlife, natural and cultural heritage, landscape importance, public health and residential amenity. Development should minimise resource use.

Policy title	Summary
AW13 Large Wind Farm Development	Proposals for wind farms over 25MW will be permitted where it can be demonstrated that it is within the boundary of a Strategic Search Area, on predominantly flat, extensive area of upland, a minimum of 500m from residential properties, unless it can be demonstrated that closer would not have an unacceptable impact on human health, will not have an unacceptable effect on the visual quality of the wider landscape, minimise and possibly enhance public access, not cause unacceptable harm and where appropriate enhance sites designated for the nature conservation value, protect the beauty and special qualities of the BBNP
AW14 Safeguarding of Minerals	The polices seeks to safeguard minerals from development, including sandstone recognising in the supporting text that there may be significant constraints to their extraction such as proximity to residential areas and designated sites for landscape and nature conservation. It notes that Pennant Sandstone cover approximately 70% of RCTCBC.
SSA22 Green Wedge	Green Wedges are identified to prevent the coalescence of settlements. Within these areas development that would prejudice the open nature of the land will not be permitted. The proposed access tracks crosses the Green Wedge.
SSA23 Special Landscape Areas	Identifies Special Landscape Areas including *6. Mynydd y Glyn and Nant Muchudd Basin*. It states that development within these areas will be expected to conform to the highest standards of design, siting, layout and materials appropriate to the character of the area.

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5. Design Evolution

5.1 Introduction

5.1.1 This section sets outs the process undertaken to evolve the Proposed Development from site selection through to the onsite design options chosen. A full description of the approach to the selection of the site and to deciding on the specific design is set out in **Draft ES Chapter 3: Scheme Need, Alternatives and Iterative Design Process**.

5.2 Site selection

5.2.1 Pennant Walters as Applicant undertook a site selection process in 2019. The site selection was informed by national policy considerations and specific technical criteria relevant to the proposed use for wind turbines and landscape.

5.2.2 As set out in Section 4.2, Future Wales sets out a series of Pre-Assessed Areas (PAA) for Wind Energy within which the principle of developing large scale wind farms is supported. Although at the time of the site selection process the approach to PAA was emerging it was clear that the final version of Future Wales would include PAA. The Applicant undertook a high-level review of areas with a more detailed review of options that were within or close to PAAs.

5.2.3 The consideration of wind speed was a key consideration. Areas that did not have a mean annual average wind speed above 7 metres per second (considered by the Applicant to be the minimum required for a commercially viable scheme) in the ETSU NOABL database were excluded from further consideration. Those areas with wind speeds above 7m/s within the Brecon Beacons National Park (BBNP), and any other national landscape designations, were excluded from the search exercise consistent with Future Wales planning policy.

5.2.4 Four sites were identified, all of which are being taken forward as DNS applications by the Applicant.

5.2.5 A summary of the main factors considered in the site selection and the performance of this site is set out in **Table 5.1**.

Table 5.1 Summary of main factors considered in site selection

Assessment Category	Specific factor	Site performance
Wind resource	Average annual wind speed Wind direction	7m/s Predominantly southwest
Electronic Infrastructure	Proximity of transmission lines Proximity of grid connection points	33kv, 66kv and 132kv sufficiently close to the site Adjoining the site
Land Value	Land ownership Ecological value Archaeological value Landscape value (and designations)	Willingness of landowner Low/moderate Low/moderate Outside of a PAA and any sensitive landscape designations.

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Assessment Category	Specific factor	Site performance
Land Form	Size of site, useable area Steepness of terrain Smoothness of hill tops Alignment of high ground to prevailing wind	Over 200ha Predominantly flat ridge areas Plateau on steep sided banks Good Very Good
Land use/Land cover	Road network and access Radio-telecommunications masts Current land use Nearby land use Proximity of urban settlements	Classified highway immediately to the west No masts on site, telecoms links identified. Grazing mixed livestock Land surrounding the site is rural, agricultural. The LDP identifies the site and 70% of the County Borough as mineral safeguarding (sandstone) Porth to the north and Trebanog to the west.

5.2.6 Overall, the Site was considered to be a suitable site due to a range of factors:

- excellent wind resource;
- whilst outside a Future Wales PAA for Wind Energy it is also well outside a national park and AONB;
- large usable area;
- low vulnerability to major accidents and disasters arising from, for example, flooding or sea level rise, due to location;
- good potential access;
- available existing electric infrastructure nearby;
- not common land or any other national statutory designations; and
- likely low impact on ecology, archaeology, geology etc. given the baseline conditions, both from the Proposed Development and from potential major accidents and disasters (although these could only be confirmed subsequently once the necessary surveys had been undertaken).

5.3 Design

5.3.1 Following site selection the design has been informed by the technical and site-specific requirements. The design was optimised to maximise the capability for wind generation whilst reducing the environmental impact as far as possible. The design process was informed by a number of criteria:

- ground conditions – ground conditions must be suitable for the installation of wind turbines, access tracks and cables;
- site topography – the site topography is computer modelled to establish the wind flow on and around the site to provide guidance on the best locations for the wind turbines;

- distance between turbines – to minimise turbulence interaction between wind turbines (wake effect), turbines should be separated by set distances both perpendicular to, and in line with, the prevailing wind direction. This design feature is a key factor in maximising the overall power generating capacity of a site;
- proximity to occupied dwellings – wind turbines have to be located sufficiently far away from houses to protect local amenity;
- environmental constraints – features and areas of local environmental sensitivity (ecology, archaeology, hydrology etc.) are identified and their implications considered;
- landscape and visual design considerations are taken into account and the layout modified accordingly;
- existing land use – whilst the wind turbines and their associated infrastructure typically occupy no more than 2% of the site, the existing use of the land is considered in the layout of tracks and turbines. For example, existing track lines are used where practicable;
- the presence and magnitude of woodland is also important, as these can reduce energy production from wind turbines;
- proximity to obstructions – such as tall trees or buildings;
- available spare capacity of the electricity grid to take power from the wind farm; and
- proximity to a road network suitable to allow the transport of construction plant, equipment and wind turbine components to the site.

5.3.2 In addition to the above considerations, planning guidance, discussions and/or consultation with statutory and non-statutory consultees and the landowners have influenced the evolution of the design.

Design iterations

5.3.3 Wind farm design is an iterative process, and the layout of the Proposed Development has evolved in response to a number of environmental and technical constraints – including site character and appearance of the scheme – and discussions with the local community and statutory and non-statutory consultees during non-statutory consultation. **Table 5.2** identifies the main iterations of the design and the rationale for such changes.

Table 5.2 Design Iterations

Design Iteration	Rationale / Summary
Layout 1 **March 2020**	Initial layout based on known information and good design practice. This layout served as a starting point for consideration of the Proposed Development.
Layout 2 **April 2020**	This layout was prepared following some initial constraints identification and mapping including heritage, telecoms, noise, landscape and ecology. This layout included 4 turbines of 175m blade tip / 132m rotor blade.

Design Iteration	Rationale / Summary
Layout 3 **7 turbine layout** **October 2020**	This design iteration worked to a 7 turbine layout, with turbines moved due to environmental constraints and engineering feasibility.
Layout 4 **May 2021**	This design followed on from an extensive suite of ecological surveys and modelling, the proposed layout was refined with the aim of minimising the potential effects on sensitive receptors. This layout included 7 turbines of 175m blade tip and 150m rotor diameter and another iteration included 175m blade tip and 130 rotor diameter.
Layout 5 **Revised layout** **June 2022**	This iteration updated the layout as follows: • Adding an access track to the substation position; • Moving one turbine outside of potential deep peat; • Moving other turbines away from steeper gradients; and • Adding an access track from the A4233 up to the Site.
Layout 6 **Access Track Amendments** **July 2022**	An in-depth constraints review of the access tracks was undertaken, resulting in amendments to their routing in order to limit impacts on sensitive receptors. This included amendments to the red line boundary.
Layout 7 **LVIA Review** **July 2022**	Following further assessments including a review of Landscape and Visual impacts, the maximum tip height of the turbines was reduced from 175m to 155m to reduce impacts on local receptors.
Layout 8 **Design Freeze for Draft ES** **August 2022**	Following an engineering review, the changes from the previous layout include: • Addition of crane pads and storage areas; • Minor changes to access track layouts; and • Addition of construction compound locations. The non-turbine infrastructure required on site was designed and arranged in such a way as to avoid the identified on-site constraints where possible. Whilst the majority of the infrastructure layout was designed following the turbine layout design, some minor iterations to turbine locations and track alignments were necessary to facilitate the optimum on-site infrastructure requirements. Access track routes in particular are designed to minimise water crossings and to avoid potentially sensitive areas within the Site.

Micro-siting

5.3.4 The application seeks a micro-siting allowance for the turbines and associated infrastructure. The allowance which is being sought is up to 50m for turbines and 100m for internal wind farm tracks and other infrastructure such as substations and compounds.

This would allow minor changes to turbine locations at the construction stage and this allowance has been accounted for in the EIA process.

5.4 Public involvement and consultation

Introduction

5.4.1 EIA scoping is the process of identifying those aspects of the environment which need to be considered when assessing the effects of a particular development proposal. This recognises that there may be some environmental elements where there will be no significant effects resulting from the development and hence where there is no need for further investigations to be taken.

5.4.2 Scoping is undertaken through consulting organisations and individuals with an interest in and knowledge of the site combined with the professional judgement of the EIA team. It takes account of published guidance, the effects of the kind of development proposed and the environmental resources which could be affected.

Scoping Report

5.4.3 As the Proposed Development qualifies as a DNS, a formal Scoping Direction was sought from Planning Inspectorate Wales (PINS)[7] on 15 September 2021 in order that the Environmental Statement contains the information required for it to evaluate the environmental effects of the Proposed Development. To assist it in reaching its opinion, and to allow broader consultation on the scope with bodies which may be unfamiliar with the proposals, the following information was provided in a Scoping Report:

- the development characteristics;
- the anticipated temporal and technical scope;
- an overview and evaluation of the main environmental issues, including:
  - landscape and Visual amenity;
  - historic Environment;
  - biodiversity;
  - ornithology;
  - water Environment;
  - ground Conditions;
  - traffic and Transport;
  - noise; and
  - infrastructure and other issues including Shadow Flicker; Socio-economics; Major accidents and disasters.
- an outline of the proposed methodologies for completing the identification of the baseline conditions and the assessment of predicted impacts and effects; and
- a summary of the proposed scope of the EIA.

[7] On 1 October 2021 PINS Wales became the Planning and Environment Decisions Wales (PEDW) (or Penderfyniadau Cynllunio ac Amgylchedd Cymru)

Scoping Direction

5.4.4 A Scoping Direction was received from the Planning Inspectorate dated 01 December 2021. The ES details the final scope of the assessment in relation to effects that it has assessed could be significant and therefore needed to be subject to more detailed assessment. Both the Scoping Report and the subsequent Scoping Direction have been used as a basis to assess, and inform the design of, the scheme.

Consultation

5.4.5 The initial proposals for the site were subject to early public consultation which closed in November 2021[8]. The consultation sought views on the site constraints, emerging proposals, environmental impacts, transport issues and community benefit. An Interim Consultation Report summarising the responses received is available.

5.4.6 This Draft DAS together with other documents will be the subject of statutory consultation, feedback from which will be reviewed in relation to the present proposals for the Proposed Development.

[8] Details of the public consultation are available via: Pennant Walters (2022). Consultation (Online) Available at: Consultation – Mynydd-y-Glyn (Accessed October 2022).

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6. The Proposal

6.1 Introduction

6.1.1 This section sets out further information about the Proposed Development and how it meets the objectives of Good Design contained in the PPW in line with the Welsh Government's DAS guidance (2017). The objectives of Good Design are included in **Figure 6.1**.

Figure 6.1 Objectives of Good Design

Source: Welsh Government (2021) Planning Policy Wales – Edition 11

6.1.2 The five objectives examined in the following sections are:

- **Character** – sustaining or enhancing local character promoting legible design and a successful relationship between public and private spaces;
- **Access** – ensuring access for all;
- **Movement** – promoting sustainable means of transport;
- **Environment sustainability** – ensuing the efficient and protection of resources; and

- **Community safety** – ensuring safe and attractive spaces.

6.1.3 At the start of each section the Welsh Government's DAS guidance (2017) requirements are captured. Additionally, in the final section, consideration is given to how the Proposed Development responds to the policy context.

6.2 Character

DAS Guidance: How does the proposal sustain or enhance local character and promote legible development, a successful relationship between public and private space, quality, choice and variety and innovative design?

Wind farm design

Turbines

6.2.1 The Proposed Development consists of up to seven turbines, each with a three-bladed rotor with a diameter of up to 136m, a hub height of up to 97.5m and maximum height to blade tip of 155m. The turbines proposed are three bladed variable speed pitch regulated, with the rotor and nacelle mounted on a cylindrical tower. This is a typical modern, horizontal axis design comprising four main components: a rotor (consisting of a hub and three blades); a nacelle (containing the generator and also often a gearbox) to which the rotor is mounted; a tower; and a foundation. This reflects ongoing innovation in wind turbine design.

6.2.2 The specific choice of wind turbine is dependent on the final commercial and technical choice by the Applicant but would not exceed the physical parameters specified in the consent (and as assessed in the ES). The turbines would be supported by a transformer which is likely to be located immediately adjacent to the turbine tower (although they can be incorporated into the nacelle or base of the tower and this will be dependent on final turbine choice).

6.2.3 The design process has considered an appropriate colour for the wind turbines and determined that a neutral colour (colour specification, light grey RAL 7035) with a semi-matt finish, so as to minimise the visual intrusion, is the preferred colour to minimise contrast against the sky.

6.2.4 The wind farm has been designed to be operational for up to 30 years and will include site management to ensure that site facilities such as roads, boundaries, gates and signage are maintained. At the end of the operational life of the turbines, there are two possible options. Firstly, to decommission the wind farm and remove the turbines; or apply to install new equipment on the site (for which a further planning consent would be required).

Foundations

6.2.5 The full foundation requirements will be subject to finalisation dependent on detailed ground investigation. The design of foundations will minimise excavation requirements and visible projection above ground level and allow for the re-establishment of surface vegetation when construction is complete. Foundations will usually comprise a reinforced concrete base slab with dimensions of approximately 20m diameter x 4m depth.

Substation

6.2.6 The applicant has received an offer of a grid connection from Western Power Distribution (WPD) as the Distribution Network Operator (DNO). The connection is planned between the on-site substation and the electricity grid at Upper Boat. This connection will be comprised of two components, the first of which is an overhead line to the south eastern boundary of the Site towards Upper Boat, subsequently the line will be undergrounded to the connection point. The underground cable will be delivered by WPD, whilst the overhead line will be consented as part of this DNS process.

6.2.7 The specific arrangement for the on-site substation depends on WPD's requirements. A transformer may be required to be located onsite. If required, a transformer would be provided within a substation compound which would comprise a stoned area of approximately 37.5m x 35m containing the transformer and associated equipment (isolators, circuit breakers). If a transformer is not required then all electrical equipment would be housed within the substation building.

6.2.8 The substation building (approximately 14m x 10m) would be a single storey building which will house metering, protection and control equipment, storage and welfare facilities. The substation building would be traditional blockwork construction and faced in stone with a slate roof. Any associated fencing would be finished in either moorland green/brown or dark grey in order to blend with either the existing landscape colours or traditional building colours for the area.

Site context

6.2.9 The assessment of the site's wider context formed a key part of the site selection process as illustrated by Section 5.2 of this DAS. Furthermore, the Proposed Development is supported by an ES, which has considered the likely significant environmental effects of the development on environmental and human receptors.

Cultural heritage setting

6.2.10 An assessment of the impact on the cultural heritage setting has been undertaken. There are no designated historic assets on the Site whilst the three non-designated historic assets would be avoided by the Proposed Development. The presence for unknown archaeology is however recognised and the Applicant is committed recording any archaeology found – where the limited intrusive groundworks are required – with the exact approach to be secured through DNS condition.

6.2.11 **Draft ES Chapter 7: Historic Environment** assesses the potential for the Proposed development to affect the setting of historic assets such as Scheduled Monuments, listed buildings, conservation areas, historic parks and gardens and the Registered Historic Landscape recognising that the Site lies within the Rhondda Registered Historic Landscape designated as one of the largest and best-known mining conurbations and coalfield communities in Britain.

6.2.12 The assessment is supported by an ASIDOHL assessment (Draft ES Appendix 7E) which is an accepted approach for the consideration of effects upon the historic landscape. The conclusions reached is that effects upon the historic landscape overall would be slight. This is because despite some change to some views, including those affecting designated features of national importance, the Proposed Development does not remove any aspects which are currently present in the landscape whilst the location at the southern edge of the Rhondda Historic Landscape means that the Landscape will retain its coherence, the visual and historic connection between the different HLCAs would remain, and the historic development of the area could still be understood.

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6.3 Access

DAS Guidance: How do the proposals ensure ease of access for all into the development and to all elements within the site?

Site access

6.3.1 Chapter 12 of the Draft ES describes the transport network surrounding the site and the routes to be taken both by local construction vehicles and by deliveries of turbine components from the port of Swansea. Direct access into the site for construction and operation will be via the A4233 (Trebanog), where it is proposed to create a new construction access.

Construction

Site access

6.3.2 The access for construction will be from a new junction created with the A4233. **Draft ES Chapter 12: Traffic and Transport** assesses the likely effects on the traffic and transport network. A total of 86 two-way HGV trips per day are predicted.

6.3.3 Based on the construction programme the approximate peak of 42 HGV movements per day two-way (approx. 21 arrivals plus 21 departures per day) is predicted. This number represents between 0.2% and 0.6% of total vehicle movements along the three roads assessed and exceeds only a 30% increase in HGVs along the A4233 Trebanog Road. The other two roads are therefore scoped out of further assessment.

6.3.4 The assessment for the A4233 Trebanog Road considers the effects on severance, driver delay, pedestrian delay and amenity, fear and intimidation (of pedestrians and cyclists), accidents and safety and concludes that they would be not significant.

6.3.5 A Draft Construction Traffic Management Plan (CTMP) has also been prepared (Draft ES Appendix 12B). This sets out the management of daily delivery profiles and controls construction vehicle movements and routeing of HGVs to/from the site.

Onsite access

6.3.6 It is anticipated that approximately 5.4km of onsite track will be required for the Proposed Development overall. The tracks will be approximately (~)5m wide, ~0.6m deep (dependent of ground conditions), with a ~2m grass verge either side. The tracks will be constructed of suitable roadstone. Any existing track will be upgraded. Gradients for new tracks will be kept to less than 8 percent with radius curves to 50m where practicable. The track layout is designed to accommodate the requirements of delivery vehicles and to allow the construction workforce, plant and machinery to move safely. The track layout seeks to follow contours where possible and to avoid cross slopes, however it is recognised that the track leading onto Mynydd y Glyn from the A4233 will not achieve this throughout its length. Tracks are routed to avoid sensitive ecological, archaeological and hydrological features.

Operation

6.3.7 During the operational phase the expectation is that the Proposed Development would require the maintenance of turbines at six monthly intervals and at other times when faults occur. More maintenance may be required early in the 30 year operation life and towards the end of the period.

Access for all

6.3.8 The type of Proposed Development is such that it is not designed to enable access for members of the public regardless of levels of mobility. Therefore, specific provisions for disabled access have not been incorporated into the design. Although onsite tracks are capable of being used by the public and have been designed to provide safe and appropriate access, they are not designed for the purpose of enabling access for all.

6.3.9 There are some Public Rights of Way (PRoW) which cross the site. Section 6.6 sets out considerations of the PRoW with respect to ensuring safe access during construction and operation.

6.4 Movement

DAS Guidance: How does the proposal promote sustainable means of travel?

6.4.1 The wind turbines, substation and other infrastructure on site will only be accessed by construction personnel and maintenance teams who will periodically attend the development site to, for example, maintain and service the turbines.

6.4.2 As stated in the **Draft ES Chapter 12**, given the site's location in relation to the public transport network, the opportunity for contractors to travel to the site by public transport is not viable. Additionally, the distance to the established cycle network and lack of footway connections to local amenities and establishments means that travel by alternative sustainable modes is unlikely to be chosen by contractors. Car-sharing or arrival by minibus is something that can be promoted to the construction workforce.

6.4.3 The public will have some access to the area given that it is Access land and does include a network of PRoWs. The **Draft ES Chapter 12** states that the proposed construction access crosses an existing PRoW. This will be managed through appropriate measures set out in the **Draft CTMP** for the duration of the proposed construction works. After this point the impact on the PRoW would be minimal with the access being used sparingly for routine maintenance vehicles in the operational phase.

6.4.4 The approach to ensuring safe access in the construction phase will be specified by the Construction Traffic Management Plan (CTMP), as part of the Construction Method Statement (CMS), and Construction Environmental Management Plan (CEMP). Construction works will be sign posted, and users of the PRoW network notified of activity.

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6.5 Environmental Sustainability

DAS Guidance: How does the proposal achieve efficient use and protection of natural resources, enhance biodiversity, and demonstrate designing for change?

Renewable Energy

6.5.1 The Welsh Government has set a target for 70% of energy consumption in 2030 to be provided by renewable sources. Dependant on the final turbine choice, the Proposed Development of up to 7 turbines could generate up to 30MW of power with the Draft ES assessing a candidate turbine that would generate up to 24MW[9] of power. This is capable of powering approximately 15,376 average households. With regards to resource efficiency, and supporting a reduced reliance on fossil fuels, this is considerable.

6.5.2 The Proposed Development will help to ensure environmental sustainability through the production of renewable energy thus supporting the move away from fossil fuels.

6.5.3 The site design has been influenced by the optimal scheme for wind power generation, taking into account consideration of achieving the best wind resource and reducing turbulence from turbines. The design responds to site conditions whilst balancing the effects arising from construction and operation. The design layout was found to be the most sustainable and appropriate for the type of development proposed.

Agricultural land

6.5.4 As set out in **Draft ES Chapter 11: Ground Conditions**, the site is assessed as Agricultural Land Classification (ALC) Grade 4 and 5. Therefore, no land that is considered to be the 'best and most versatile' (Grades 1 to 3a) will be lost through the development. The actual built development covers a relatively small percentage of the overall land take. Measures embedded in the design will ensure that soil removed during construction is reused on site where possible and low ground pressure machinery will be used where possible to minimise soil impaction.

Landscape assessment

6.5.5 The landscape and visual assessment is set out in **Draft ES Chapter 6: Landscape and Visual Impact Assessment**. With regards to the BBNP, the LVIA considers that given the site's location there are no direct impacts on this nationally designated landscape. An assessment has been undertaken of potential indirect effects on the special qualities for which the BBNP is designated (based on composite Landscape Character Areas (LCAs)). The LVIA has assessed that there would be no significant landscape effects upon the distinctive characteristics and character of the LCAs within the BBNP.

6.5.6 The likely effects on locally designated Special Landscape Areas (SLA) have also been assessed in the LVIA. The LVIA notes for the host SLA, the Mynydd y Glyn and Nant Muchudd Basin SLA that *"The small irregular field pattern within the Nant Muchudd Basin would be maintained although may become dominated by the turbines due to their scale and proximity"*, and that *"The un-industrialised nature of the landscape is also a characteristic which would be altered by the Proposed Development whilst the proposed turbines would also be clearly visible in the views from the settlements referenced in the*

[9] Based on turbines with an output of 3.45MW being implemented.

primary landscape qualities as featuring Mynydd y Glyn as a backdrop in outwards views". Direct effects have therefore been assessed with the level of effect identified as ranging from Major and Significant to None and Not Significant.

6.5.7 Indirect effects have also been assessed for the SLAs entirely or partly located within 10km of the Proposed Development. The following landscape effects are assessed:

- Llwyncelyn Slopes SLA – effects would be significant in the eastern part of the SLA; and
- Cwm Clydach SLA– effect would be significant in the southern parts of the SLA.

Biodiversity

6.5.8 **Chapter 8: Biodiversity** of the Draft ES examines how the proposals will affect non-avian ecological and biodiversity connectivity and outlines the incorporated mitigation measures identified to reduce or eliminate negative effects. No significant effects are assessed. Environmental measures required to avoid or reduce biodiversity impacts will be incorporated into a Habitat Management Plan (HMP). The final ES will include an Outline HMP which will set out a range of enhancement and management for the Site.

6.5.9 **Chapter 9: Ornithology** of the Draft ES considers the effects on ornithology, including breeding and non-breeding birds. Significant effects on birds are ruled out other than with regard to Golden Plover. Additional work is therefore underway to understand better how these birds use the site and to informed a site/species specific mitigation strategy. This will be discussed within consultees and presented within the final ES.

Water environment

6.5.10 **Draft ES Chapter 10: Water Environment** outlines a series of embedded measures including good working practices, drainage and materials management and management of water discharges which would support appropriate management of the aquatic environment, water resources and flood risk during the construction phase. Measures such as a detailed drainage design utilising SuDS principles and appropriate fuel storage would be implemented in the operational phase. No significant effects are concluded for the water environment.

6.6 Community safety

DA DAS Guidance: How has the proposal ensured attractive, safe public spaces and security through natural surveillance?

6.6.1 The Proposed Development will be delivered in a safe manner and ensure that the opportunities for crime are minimised through effective design measures, such as fencing around the substation compound being incorporated into the scheme. Additionally, the construction compound would be lit with security lighting and it is anticipated that a small security area would be established at the junction to the public highway.

6.6.2 There is a network of PRoWs which cross the site whilst it is also designated in part as open access land. There is potential for some disruption to the PRoWs, with some limited interventions required such as signage, diversion or possible closure and further information on the management measures which could be employed is provided within **Draft ES Chapter 16: Socio Economics**. In summary however signage will be placed at appropriate locations to inform the public of the construction activities taking place. An

overall Construction Method Statement (CMS) will be prepared by the appointed site contractor that that will provide a commitment to ensure that all workers understand that the site is open to access, and public safety should be considered at all times. The construction works will be undertaken in accordance with all health and safety legislation and in accordance with a Construction (Design and Management) (CDM) Regulations. A Construction Phase (Health & Safety) Plan that will be prepared for the works.

6.7 Responding to the planning policy context

DAS Guidance: This section of the document provides the opportunity to explain how the proposals have responded to relevant planning policy and guidance. The relevant policy and guidance should have been identified at the site and context analysis stage, this section should provide a summary of the design decisions that have been made in response to these policies.

6.7.1 The planning policy context is set out in Section 4. The proposal would see the development of a wind farm outside an area identified in Future Wales Policy 17 as a location suitable for large scale wind development (as a PAA for Wind Energy) but still benefiting from a positive policy framework in favour of onshore wind energy generation via Policy 18.

6.7.2 The reason why land has been chosen outside of a PAA is that the one closest to the Site, PAA 9 is considered to be constrained both by the availability of land with a suitable wind speed and by the fact that a significant area within it includes valleys containing centres of population. This resulted in the need to identify high ground with good wind speed, away from local population centres, on Mynydd y Glyn.

6.7.3 Future Wales Policy 18 provides criteria against which the Proposed Development should be assessed and the extent to which the Proposed Development in its final form, complies with Policy 18 and the relevant local planning policies is set out within the accompanying **Draft Planning Statement**.

6.7.4 National and local planning policy seeks to encourage renewable generation, as such the design evolution of the project sought to balance the objective of maximising renewable energy output with the objective of protecting local environmental conditions wherever possible.

6.7.5 Examples of how planning policy and site context influenced the design of the Proposed Development include the reduction in turbine height from 175m to 155m in response to initial consideration of visual effect and in line with Future Wales Policy 18 Criteria 2 and RCTCBC LDP Policy AW12 together with the re-siting of turbines and location of access tracks in order to avoid sensitive historical and biological receptors consistent with Future Wales Policy 18 Criteria 5 and 6 and LDP Policies AW7 and AW8.

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7. Conclusion

7.1 Summary of the Proposed Development design

7.1.1 The Proposed Development positively contributes to the achievement of the UK and Wales' goal to increase renewable energy generation to help combat the challenges posed by climate change. The design of the Proposed Development has been informed by consideration of technical, environmental and policy constraints. Additionally, the iterative design process has been informed by consultation with key stakeholders and the local community.

7.1.2 The design has been informed by the EIA process. The Draft ES demonstrates that the effects on a range of environmental receptors have been assessed and a range of measures have been proposed to reduce, and avoid, impacts of the Proposed Development on the environment where possible.

7.1.3 Whilst the Draft ES identified that some significant environmental effects are predicted to occur at a local level, national policy highlights that these are often inherent in the development of onshore wind energy and that the level of effect should be balanced against the socio-economic benefits and environmental benefits arising from the mitigation of climate change.

7.1.4 There will be some disruption to public access within the site during the construction phase, but this will be temporary and once operational the Proposed Development will not restrict access with appropriate mitigation measures. The Draft ES states there will be no significant negative effects regarding access to the Site, or upon it, as a result of the construction activities proposed. Furthermore, non-significant effects will be further reduced via the adoption of management measures in the form of a Construction Traffic Management Plan.