



Pennant Walters

Trecelyn Wind Farm

Draft Design and Access Statement



November 2023

Report for

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Document revisions

No.	Details	Date
1	Draft DAS	Nov 2023



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 four turbines located on three parcels of land at Trecelyn, on a site located within the Caerphilly County Borough Council area.

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 supports a planning application for the development of up to four wind turbines located on three parcels of land at Trecelyn and all of the land is comprised of a mix of semi-improved and unimproved grassland. The location of the three parcels of land is identified below:

- Northern Parcel – Grid Reference ST 23440 98116
- Central Parcel – Grid Reference ST 23193 96915
- Southern Parcel – Grid Reference ST 22902 96117

1.1.2 The Site lies within the Caerphilly County Borough Council (CCBC) (the Council) administrative area. 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).

1.1.3 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.

1.1.4 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;

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 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
- **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 2030⁴. This target is embedded in PPW and Future Wales: The National Plan 2040⁵ (which is discussed in more depth in the following section). In January 2023 the Welsh Government (Welsh Government, 2023a)⁶ announced an updated target to meet 100% of its electricity

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 (2023a) Climate Change Minister - Wales aims to meet 100% of its electricity needs from renewable sources by 2035 (Online) Available at: <https://www.gov.wales/wales-aims-meet-100-its-electricity-needs-renewable-sources-2035> (Accessed March 2023)

needs from renewable sources by 2035 and to achieve 1.5GW of renewable energy capacity within local ownership by 2035. This has now been adopted (Welsh Government, 2023b)⁷.

- 1.4.3 The Welsh Government's Energy Generation in Wales 2021 report⁸ published in 2022 assessed the percentage of energy consumption provided by renewables to be at 55% (against the target of 70%).
- 1.4.4 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.
- 1.4.5 As the effects of climate change continue to emerge, the UK Government has produced even further documentation calling for the creation of more renewable energy within the UK. This can be seen through the production of documents such as the Powering Up Britain – March 2023 Energy Security Secretary Statements⁹ and Overarching National Policy Statement for Energy (EN-1)¹⁰ which are seeking to encourage renewable energy development within the UK.
- 1.4.6 The Carbon Budget Delivery Plan (March 2023)¹¹ identified that the UK would not be able to meet the requirements of the Sixth Carbon Budget, barely missing its target by 3% (reaching 97% of the required carbon savings by 2037) (page 15). Therefore, in order for the UK to meet such targets, more renewable energy development is needed and stresses how important such developments are for the UK.
- 1.4.7 Renewable energy also provides much needed energy security to the UK, which has become more of a pressing issue due to climate change, international politics and resource supply as identified within the British Energy Security Strategy (2022)¹².

⁷ Welsh Government (2023b) Consultation Document: Review of Wales' Renewable Energy Targets (Online) Available at: https://www.gov.wales/sites/default/files/consultations/2023-01/consultation-document-review-of-renewable-energy-targets_0.pdf (Accessed March 2023)

⁸ Welsh Government (2022) Energy Generation in Wales 2021. (Online) Available at: <https://www.gov.wales/sites/default/files/publications/2022-12/energy-generation-in-wales-2021.pdf> (Accessed August 2023).

⁹ HM Government (2023). Shapps sets out plans to drive multi billion pound investment in energy revolution. (Online) Available at: [Shapps sets out plans to drive multi billion pound investment in energy revolution - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/shapps-sets-out-plans-to-drive-multi-billion-pound-investment-in-energy-revolution). (Accessed June 2023).

¹⁰ HM Government (2023). Overarching National Policy Statement for Energy (EN-1). (Online) Available at: [EN-1 Overarching National Policy Statement for Energy \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/118111/EN-1-Overarching-National-Policy-Statement-for-Energy.pdf). (Accessed June 2023).

¹¹ HM Government (2023). Carbon Budget Delivery Plan. (Online) Available at: [Carbon Budget Delivery Plan \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/118111/Carbon-Budget-Delivery-Plan.pdf). (Accessed June 2023).

¹² HM Government (2022). British Energy Security Strategy. (Online). Available at: [British energy security strategy - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/118111/British-Energy-Security-Strategy.pdf) (Accessed June 2023)

2. Summary of the Proposed Development

2.1 The location of the Proposed Trecelyn Wind Farm

2.1.1 The Proposed Development would take place across three parcels of land (the “Site”) and all of the land is comprised of a mix of semi-improved and unimproved grassland. The location of the three parcels of land is identified below:

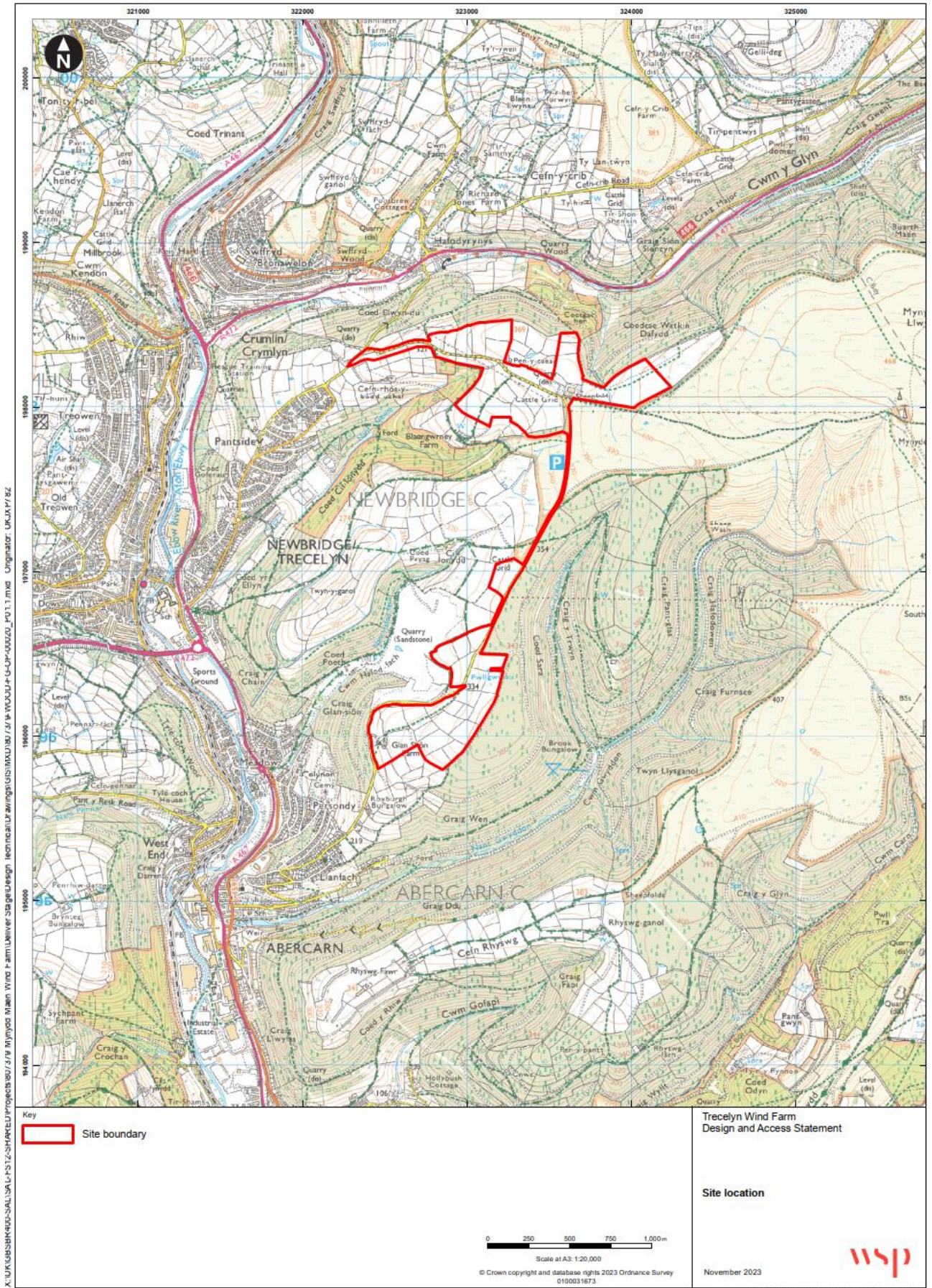
- Northern Parcel – Grid Reference ST 23440 98116
- Central Parcel – Grid Reference ST 23193 96915
- Southern Parcel – Grid Reference ST 22902 96117

2.1.2 The Site lies within the Caerphilly County Borough Council (CCBC) administrative area.

2.1.3 The settlement of Hafodyrynys lies 443m to the north west of the Northern Parcel’s site boundary. The outskirts of Newbridge lie 1.5km to the west of the Central Parcel’s site boundary. The outskirts of Abercarn are approximately 600m to the west from the Southern Parcel’s site boundary. The Central and Southern Parcels border Abercarn Forest.

2.1.4 The site location is shown in **Figure 2.1** Site Location below.

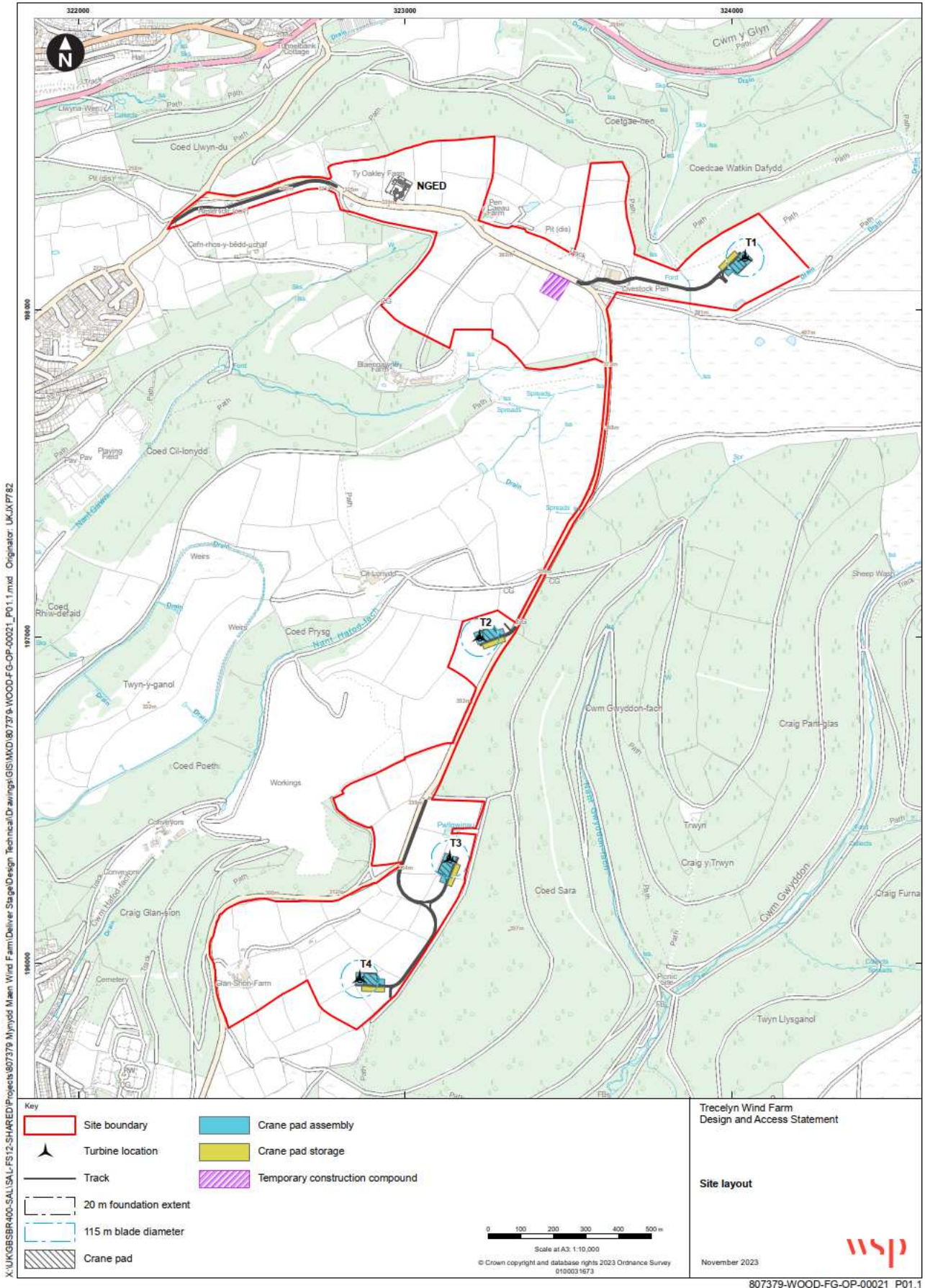
Figure 2.1 Site Location



2.2 The Proposed Development

- 2.2.1 The Proposed Development is to construct and operate a wind farm of up to four turbines with a maximum height to blade tip of 145m and associated infrastructure including underground cabling, access tracks, transformer and a substation.
- 2.2.2 The wind farm will be designed with an operational life of 30 years. At the end of this period the Applicant has three options; to decommission the wind farm and dismantle and remove the turbines; to apply for an extension to the operating period using existing equipment; or apply to install new equipment on the Site. For the purposes of this assessment, it is assumed that the wind farm will be decommissioned.
- 2.2.3 The Proposed Development will also include:
- Access works - new access off the existing road together with new and improved internal wind farm tracks off the main internal access road;
 - Crane pads at each turbine location;
 - Turbine foundations;
 - Underground power cables linking the turbines and the on-site substation;
 - Temporary construction compounds, laydown, and storage areas; and
 - Grid connection infrastructure, including the on-site substation, control building and overhead connection into the existing overhead line, together with construction enabling works.
- 2.2.4 The layout of the site is contained in **Figure 2.2**.

Figure 2.2 Site Layout



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.

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.

4. Site and Contextual Analysis

4.1 Site location and context

- 4.1.1 The site encompasses an area of approximately 87 hectares (ha). The Proposed Development would take place across three parcels of land (the “Site”) and all of the land is comprised of a mix of semi-improved and unimproved grassland. The location of the three parcels of land is identified below:
- Northern Parcel – Grid Reference ST 23440 98116
 - Central Parcel – Grid Reference ST 23193 96915
 - Southern Parcel – Grid Reference ST 22902 96117
- 4.1.2 The three parts of the Site are connected by a single minor road that runs in an arc from Abercarn in the south to its junction with the minor road between Newbridge and Hafodyrynys in the north. The northern part of the site is host to a section of a 132kV overhead electricity transmission line supported by steel lattice towers.
- 4.1.3 The Site is located on the upper slopes (between approximately 340 m and 400 m AOD) of ridges that extend to the west and south-west of the massif formed by Mynydd Llwyd, Mynydd Twyn-glas and Mynydd Maen. The southern and central parts of the Site are separated from Mynydd Maen, to the east, by the deeply incised and heavily afforested valleys of Nant Gwyddon, which also extends to the immediate south of the Site before joining the Ebbw River at Abercarn.
- 4.1.4 To the north, the Site is separated from the Cefn Crib/Mynydd Llanhilleth massif by Cwm y Glyn, which runs eastward toward Pontypool, and by the valley of a minor tributary of the Ebbw River to the west. To the west of the Site, several tributaries of the Ebbw River have created a complex of ridges and valleys that reduce in elevation westward toward the valley of the Ebbw River. The most southerly of these, adjacent to the southern and central parts of the Site, is the steep-sided Cwm Hafod-fach, the northern end of which is occupied by the Hafod sandstone quarry. The northern part of the Site extends westward as far as the much more open valley of Nant Gawni.
- 4.1.5 The Site’s land-use almost entirely consists of a mosaic of small and medium-sized fields that appear to generally be given over to pasture, although aerial photography indicates that some fields may occasionally be used for arable cultivation. Field boundaries, particularly in the southern part of the site, appear to consist of hedgerows that have been allowed to grow out so that they now take the form of rows of mature hawthorn.
- 4.1.6 There are several residential properties within or within close proximity to the Site. Glan Shon Farm is located within the southern part of the Site and Cil-lonydd is located approximately 300m to the west of the central part of the Site. In relation to the northern parcel of the Site, Pen-y-Caeau farmstead is located to the immediate north, Blaengwrney Farm to the immediate south and Cefn-rhos-y-bedd-uchaf approximately 300m to the west. The nearest properties to the Site are Hafodyrynys approximately 400m to the north-west, Panside and Swffryd Bronawelon approximately 700m to the north-west and west respectively, the northern and eastern parts of Abercarn (Llanfach, Persondy, Celynen and High Meadow) between approximately 450m and 900m to the south west. Other parts of Abercarn and parts of Newbridge/Trecelyn and Crumlin are all located in the Ebbw valley within 2km to the west of the site.

- 4.1.7 There is a Public Rights of Way (PRoW) network within and across the Site which includes a bridleway, restricted byway and several footpaths. Further details are set out in draft ES **Chapter 16: Socio economics**. In addition, a small area of the Site is within Mynydd Maen Common which is designated as common land.
- 4.1.8 There are two Sites of Importance for Nature Conservation (SINC), designated within the CCBC Local Development Plan (LDP) partly present within the Site and further SINCS close to the site. Additionally, the Site is located in an area designated as a Visually Important Local Landscape in the CCBC LDP.

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 Local Development Plan

- 4.3.1 The Proposed Development is located within the administrative area of Caerphilly County Borough Council.

Caerphilly County Borough Council

4.3.2 Caerphilly County Borough Council adopted its LDP in November 2010, which sets policies to guide development up to 2021. The policies of relevance to the Proposed Development are identified below in **Table 4.1**.

Table 4.1 Caerphilly County Borough Local Development Plan up to 2021

Adopted LDP policy	Policy summary
<u>Overarching Policies</u>	
SP2 Development Strategy – Development in the Northern Connections Corridor.	Requires development within the Northern Connections Corridor to be sustainable, well sited, make efficient use of existing infrastructure and encourage sustainable modes of travel, whilst also protecting the area's natural heritage.
SP3 Development Strategy – Development in the Southern Connection Corridor.	Requires development within the Southern Connection Corridor to make efficient use of existing infrastructure and encourage sustainable modes of travel, is well designed to ensure it does not compromise the social, economic and heritage functions/character of the area.
SP6 Place Making.	This policy seeks to ensure development contributes positively to an area through the creation of sustainable places that have regard to the local natural, historic and current built environment. The policy contains eight criteria to help ensure development is sustainable and range in their scope from a criteria relating to developments being a high standard of design to the efficient use of resources.
SP8 Minerals Safeguarding.	The Proposed Development is located within a sandstone resource area and policy SP8 seeks to balance the need to maintain/safeguard the mineral resources of Caerphilly County Borough alongside allowing development within such areas.
SP10 Conservation of Natural Heritage.	Requires development to conserve and protect the natural heritage of the region. Natural heritage comprises local geology, geomorphology, biodiversity, landscape and amenity value.
CW1 Sustainable Transport, Accessibility and Social Inclusion.	This policy relates to development that could generate a significant number of travel related trips. Development is required to ensure walking and cycling is encouraged and where a larger number of freight trips are created, that the least damaging route would be utilised.
CW2 Amenity.	Seeks to ensure that development is in accordance with its neighbouring land uses. Development cannot result in unacceptable impacts upon the amenity and function of neighbouring land uses or constrain their future development.
CW3 Design Considerations – Highways.	Requires development to ensure it is adequately and safely connecting into local highways and infrastructure whilst also incorporating sufficient pedestrianisation where relevant.
CW4 Natural Heritage Protection.	Affords protection to the locally designated natural heritage features of the Caerphilly County Borough. This includes protecting Special Landscape Areas (SLA), Visually Important Local Landscapes (VILL), Sites of Importance for Nature Conservation (SINC), Local Nature Reserves (LNR), Regionally Important Geological Sites (RIGS), Green Corridors, and Local Priority Habitats and Species. Developments that

have a clear and strong needs case that outweigh the potential effects on the identified designations can be permitted.

CW5 Protection of Water Environment.	Development is required to ensure it would not have unacceptable adverse effects upon the local water environment and properly manages its groundwater and surface water effects.
CW6 Trees, Woodland and Hedgerow Protection.	Requires development to ensure it protects trees, woodlands and hedgerows from harm, but does allow for their removal so long as they are appropriately replaced.
CW15 General Locational Constraints.	Identifies a list of general locational constraints but highlights that certain development might fall outside of these constraints, in which national planning policy would apply.
CW19 Locational Constraints – Rural Development and Diversification.	Development located within rural areas are required to be consistent to the scale of their surroundings and compatible with neighbouring uses, including neighbouring natural and heritage features.
CW22 Locational Constraints – Minerals.	The Proposed Development is within a mineral safeguarding area. Development within such areas are permitted where it can be shown that the minerals being safeguarded has no value/are no longer needed and the needs case for the development outweighs any disbenefits. Developments within mineral safeguarding are viewed more favourably when temporary.
CW23 Locational Constraints – Mineral Site Buffer Zones	This policy only supports development within Mineral Site Buffer Zones where the development is not sensitive in nature. The Proposed Development is within such a zone for sandstone.
<u>Area Specific Policies for the Northern Connection Corridor (NCC)</u>	
NH2 Visually Important Local Landscapes. • NH2.3 Abercarn.	Seeks to protect the distinctive visual and sensory landscapes contained within identified (Abercarn) Visually Important Local Landscapes.
NH3 Sites of Importance for Nature Conservation (SINCs). • NH3.112 Coed Cil-Lonydd, East of Newbridge. • NH3.113 Mynydd Maen, East of Newvridge. • NH3.124 Gwydon Valley Woodlands, Abercarn. • NH3.128 Cwm Hafod-Fach Woodlands, North of Abercarn. • NH3.134 Cwm Gofapi Woods, Cwmcarn.	The policy provides protection to Sites of Importance for Nature Conservation, which are designated due to the biodiversity, priority habitats and species that are located within them. The Proposed Development would only be approved so long as it does not generate any unacceptable effects on the identified Sites of Importance for Nature Conservation it is within/close to.
MN1 – Mineral Site Buffer Zones. • MN1.3 Hafod Fach Quarry – Active.	Identifies the Mineral Site Buffer Zones that exist around the mineral sites within the Caerphilly County Borough. Policy CW23 provides the protection for these buffer zones.

LE5 Protection of Informal Open Spaces.

- **LE5.11 Panside, Newbridge.**

Requires development to not compromise spaces that are considered to be Informal Open Spaces.

Area Specific Policies for the Southern Connection Corridor (SCC)

NH2 Visually Important Local Landscapes.

- **NH2.3 Abercarn.**

Seeks to protect the distinctive visual and sensory landscapes contained within identified (Abercarn) Visually Important Local Landscapes.

5. Design Evolution

5.1 Introduction

- 5.1.1 This section sets out 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 Bannau Brycheiniog National Park (BBNP), and any other national landscape designations, were excluded from the search exercise consistent with Future Wales planning policy. Those areas within the former TAN 8 Area F that have already been developed for wind farms were also excluded. The eastern limb of PAA 10 resulted in three sites coming forward, Mynydd Carn-y-Cefn, Mynydd Llanhilleth and Trecelyn.
- 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	132Kv overhead line passes through the Site.
Land Value	Land ownership Ecological value Archaeological value	Willingness of landowner Low/moderate – not within any designations

Assessment Category	Specific factor	Site performance
	Landscape value (and designations)	Low/moderate – not within any designations. Within PAA 10 but outside any sensitive landscape designations; sufficiently distant from BBNP and Blaenavon World Heritage Site.
Land Form	Size of site, useable area Steepness of terrain Smoothness of hill tops Alignment of high ground to prevailing wind	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	Existing highway access via A472 and access routes within the Site. No existing infrastructure, site used for grazing mixed livestock. Wind Turbines within 1km Newbridge to the west and Abercarn to the south.

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

- Excellent wind resource;
- Fully within Future Wales PAA 10 and as such subject to Policy 17 and 18;
- Large usable area;
- Low vulnerability to major accidents and disasters arising from, for example, flooding or sea level rise, due to location on high ground plus an absence of existing infrastructure;
- Good potential highway access;
- Nearby wind farm developments where cumulative visual effects could likely be accommodated;
- Available existing electrical infrastructure; and
- Likely low impact on ecology, archaeology (including the Site being suitably south of the Blaenavon Industrial World Heritage Site to avoid impacts), geology etc. given the baseline conditions, both from the Proposed Development and from potential major accidents and disasters.

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. Spacing requirements may vary between turbine manufacturers and are also subject to wind conditions;
- 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 1A September 2021	Initial layout based on known information and good design practice. This layout including five turbines served as a starting point for consideration of the Proposed Development.
Layout 1B March 2022	This iteration included the removal of one turbine and was prepared following some initial constraints identification and mapping.

Design Iteration	Rationale / Summary
Layout 1C August 2023	This design iteration included main access and access tracks included. Crane pads were also added and substation moved as a result of discussions with National Grid.
Layout 1D August 2023	Further design changes to access reflecting investigations of land ownership.
Layout 1E August 2023	This iteration involved minor relocation of T3 to take into account mineral rights.

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 and Environment Decisions Wales (PEDW) in August 2022 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.

Scoping Direction

- 5.4.4 A Scoping Direction was received from the PEDW in December 2022. 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 March 2023¹³. The consultation sought views on the site constraints, emerging proposals, environmental impacts, transport issues and community benefit.
- 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.

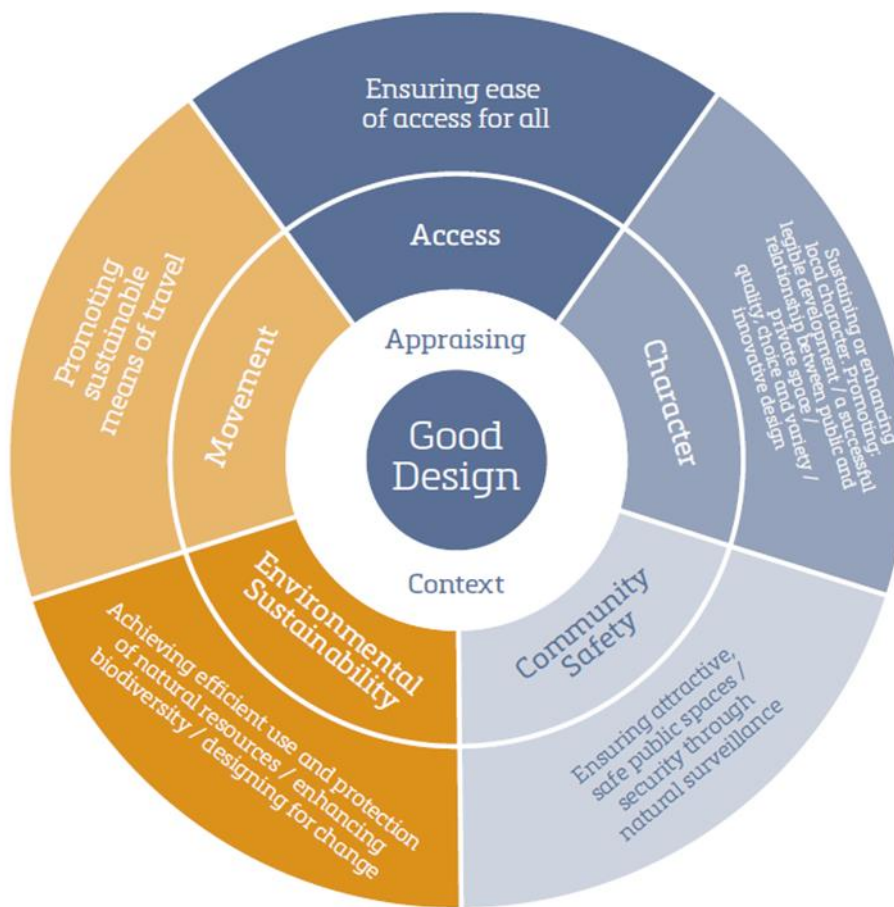
¹³ Details of the public consultation are available via: <https://trecelyn-windfarm.co.uk/> (accessed October 2023).

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 four 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** – ensuring 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 four turbines, each with a three-bladed rotor and maximum height to blade tip of 145m. 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 All wind farms need to be connected into the grid distribution system, though such connections are often subject to a different consenting process to the wind farms themselves. The Site substation will connect the wind farm into the national distribution system on site (to be via a 132kV connection in the sub-station compound). National Grid (NG) will make this connection.
- 6.2.7 The arrangement of the substation, to be in the northern parcel of the Site, would depend on NG's requirements, and shall be determined by the rating of the grid connection and requirement for a step-up transformer. If required, a transformer would be provided within the 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. Associated fencing would be 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. There are records of three non-designated assets with the Site boundary. The draft ES Chapter concludes that the Proposed Development would not result in any adverse effect on their heritage value. The presence for unknown archaeology is 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 Blaenavon Industrial Landscape World Heritage Site (BILWHS). The draft chapter assessment identifies that the BILWHS is partially within the ZTV at distances of over 10km from the Site with negligible change at this distance.

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 Draft ES **Chapter 12: Traffic and Transport** 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 Avonmouth via a preferred abnormal indivisible loads (AILs) road. Direct access into the site for construction and operation will be via Old Pant Road. Accesses for each development element will then be developed in line with the site layout.

Construction

Site access

- 6.3.2 **Draft ES Chapter 12: Traffic and Transport** assesses the likely effects on the traffic and transport network.
- 6.3.3 Based on the construction programme the approximate peak of 48 HGV movements per day two-way is predicted. This number represents an increase between 0.13% and 0.21% of total vehicle movements along the roads assessed, namely the A4046 (Ebbw Vale) and A467 (Swffryd/Pantside). The number of movements does not exceed a 30% increase in HGVs. As a result, the roads are therefore scoped out of further assessment. Effects on severance, driver delay, pedestrian delay and amenity, fear and intimidation (of pedestrians and cyclists), accidents and safety are negligible.
- 6.3.4 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 routing of HGVs to/from the site.

Onsite access

- 6.3.5 It is anticipated that approximately 3.46km of onsite track will be required for the Proposed Development overall which includes 2.4km of new access tracks and 1.06km of existing tracks which will require upgrades. 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 and deep cut and fill into the existing terrain where possible. Tracks are routed to avoid sensitive ecological, archaeological and hydrological features.

Operation

- 6.3.6 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

- 6.3.7 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.
- 6.3.8 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 ES draft **Chapter 12: Traffic and Transport** 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 is something that can be promoted to the construction workforce. Safe access in the construction phase will also be specified in the Construction Traffic Management Plan (CTMP).
- 6.4.3 The public has access to the Site given that it includes a network of PRoWs and common land. This will be managed through appropriate measures, set out in the Construction Environmental Management Plan (CEMP), 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. Construction works will be sign posted, and users of the PRoW network notified. The means of managing the construction interface with the commoners will be set out in the CEMP whilst, for construction works within the common, this would be delivered via Section 38 the Commons Act 2006.

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 100% of energy consumption in 2035 to be provided by renewable sources. Dependant on the final turbine choice, the Proposed Development of up to 4 turbines could generate up to 20MW of power¹⁴. This is capable of powering approximately 11,492 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 mainly Grade 5 Agricultural Land Classification (ALC) and some Grade 4. 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 impactation.

Landscape assessment

- 6.5.5 The landscape and visual assessment is set out in **Draft ES Chapter 6: Landscape and Visual Impact Assessment**. The assessment identifies that there would be no significant landscape effects on the distinctive characteristics and character of LCAs that form part of the BBNP, and no significant effects on the special qualities of the BBNP as a result of the Proposed Development during construction or at operation.
- 6.5.6 The likely effects on locally designated Special Landscape Areas (SLA) and Visually Important Local Landscapes (VILLs) have also been assessed in the LVIA. Of these, one VILL (Abercarn) would have direct significant effects, whilst three others would have indirect significant effects from the Proposed Development. Significant overall landscape effects have been assessed for the following: Abercarn VILL and Mynyddiswyn SLA within the CCBC area and St Illtyd Plateau and Ebbw Eastern Sides SLA and Mynydd Carn-y-Cefn & Cefn yr Arail SLA within the Blaenau Gwent CBC area.

¹⁴ The Draft ES has assessed on the basis of candidate turbines with an output of 4.2MW being implemented.

Biodiversity

- 6.5.7 Draft ES **Chapter 8: Biodiversity** examines how the proposals will affect biodiversity. It concludes that no significant effects will occur. Draft ES **Chapter 9: Ornithology** considers the effects on ornithology, including breeding and non-breeding birds. The draft chapters conclude that no significant effects will occur. An Ecological Construction Method Statement (ECMS) will be prepared which will set out in detail the measures to be implemented to protect important ecological features during the construction phase of the Proposed Development. This can be secured by planning condition. The Construction Environmental Management Plan (CEMP) would ensure appropriate management measures in place.
- 6.5.8 The Applicant is committed to preparing a Landscape and Ecological Management Plan (LEMP) which will set out the objectives for biodiversity protection, mitigation, monitoring and habitat enhancement measures (where applicable).

Water environment

- 6.5.9 **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. In addition, a small area of the Site is within Mynydd Maen Common which is designated as common land. There is potential for some disruption to the PRowS, with some limited interventions required including one proposed closure and diversion, and signage for users, with further information on the management measures which could be employed is provided within **Draft ES Chapter 16: Socio Economics**. Signage will be placed at appropriate locations to inform the public of the construction activities taking place. An overall CEMP will be prepared by the appointed site contractor 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.

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 within an area identified in Future Wales Policy 17 as a location suitable for large scale wind development (as a PAA for Wind Energy). The Proposed Development would make a contribution to the generation of renewable energy, required to support the reduction in carbon emissions that Future Wales and PPW are seeking to achieve.
- 6.7.2 The development has been designed so as to minimise the take up of land, the impact on the landscape and the effects on biodiversity assets. Additionally, through the Draft ES the effects on a range of other environmental receptors have been assessed. The EIA process has helped to ensure that where possible the design of the windfarm has sought to avoid or reduce the environmental impacts. Detailed consideration has therefore been given to the criteria in Policy 18 of Future Wales through site selection and design refinement.
- 6.7.3 The **Draft Planning Statement** provides a detailed assessment of the Proposed Development against the planning policy framework.

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 development 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 Environmental Management Plan and Construction Traffic Management Plan.

