Pennant Walters Ltd

Trecelyn Wind Farm

Volume 1: Non-Technical Summary

November 2023

Report for

Pennant Walters

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1. Introduction

1.1 Overview

1.1.1 Pennant Walters Ltd ('the Applicant') is seeking planning permission for the construction and operation of a wind farm of up to four turbines ('the Proposed Development') on land at Trecelyn ('the Site'). As the installed generating capacity of the Proposed Development would exceed 10 megawatts (MW), it qualifies as a 'Development of National Significance' (DNS) and the application for planning permission will be decided by the Welsh Ministers, with the process administered by Planning and Environment Decisions Wales (PEDW) (or Penderfyniadau Cynllunio ac Amgylchedd Cymru).

1.1.2 To accompany the application for planning permission an Environmental Impact Assessment (EIA) has been undertaken. EIA is a process that identifies the environmental effects of a development and identifies ways that these effects can be reduced and/or managed. An EIA is required by law for large developments that have the potential to cause 'significant' environmental effects. The findings of this process are reported in a document called an Environmental Statement (ES).

1.1.3 The DNS process requires the Applicant to submit a Draft ES to enable technical stakeholders such as Natural Resources Wales (NRW), Cadw and the local planning authorities, and the public, to develop an informed view of the likely significant effects of the Proposed Development, and comment on the proposals, prior to submission of the application.

1.1.4 The Draft ES for the Trecelyn Wind Farm is a public document available for anyone to inspect and has been prepared in accordance with *The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017* (the EIA Regulations). It presents the likely environmental effects of the Proposed Development.

1.1.5 This document sets out a summary of the findings from the Draft ES in non-technical language.

1.2 Purpose of this Non-Technical Summary

1.2.1 The aim of the Non-Technical Summary (NTS) is to enable local communities and other stakeholders to understand the likely environmental effects arising from the Proposed Development in a concise manner which is easily understood and accessible by all. Effects are assessed in terms of how 'significant' they would be, and EIA is primarily concerned with 'likely significant effects' and not those unlikely to be significant.

1.2.2 This NTS includes a description of the Proposed Development, a summary of the consultation process and the results of the EIA work undertaken to date.

2. The wind farm site

2.1.1 The Site lies within the Caerphilly County Borough Council (CCBC) administrative area and 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

2.1.2 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.

2.2 The applicant

2.2.1 Pennant Walters Ltd is a Walters Group company with a focus on renewable energy having obtained consent for and/or developed a wide variety of schemes including onshore wind, solar, small-scale hydro and battery storage. The company now operates six onshore wind farms within South Wales.

3. Site selection

3.1.1 In 2019, the Applicant undertook an exercise to identify sites in South Wales potentially suitable for the development of a wind farm. This exercise was guided by the emerging draft of the National Development Framework document *Future Wales: The National Plan 2040* which outlined Pre-Assessed Areas (PAAs) for onshore wind development, which identify areas with a presumption in favour of large-scale wind energy development.

3.1.2 South Wales was chosen because it has some of the highest wind speeds within Europe and within the UK. The Applicant's existing presence within South Wales was also a determining factor in this selection process as it has developed and now operates six onshore wind farms within South Wales.

3.1.3 The Site identification process picked out broad areas of interest and was followed by a more detailed review to identify specific potential sites within or close to PAAs, and 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). Areas within the Brecon Beacon National Park and any other national landscape designations were also excluded.

3.1.4 There are several areas of South Wales with an average wind speed well above 7m/s. Those areas with wind speeds above 7m/s within the Brecon Beacons National Park, and any other national landscape designations were excluded from the search exercise. Those areas within TAN 8 Area F that have already been developed were also excluded. The eastern limb of PAA 10 (Future Wales 2021) resulted in three sites coming forward, Mynydd Carn y Cefn, Mynydd Llanhilleth and Trecelyn.

3.1.5 Discussions with the land agents of relevant land holders in this region indicated that land at Trecelyn was available to wind farm developers.

3.1.6 The original process of choosing possible sites also included a review of technical factors and a high-level assessment of the landscape impact of each development.

3.1.7 The Proposed Development site was considered to offer a good combination of the assessment factors:

- Excellent wind resource;
- 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.

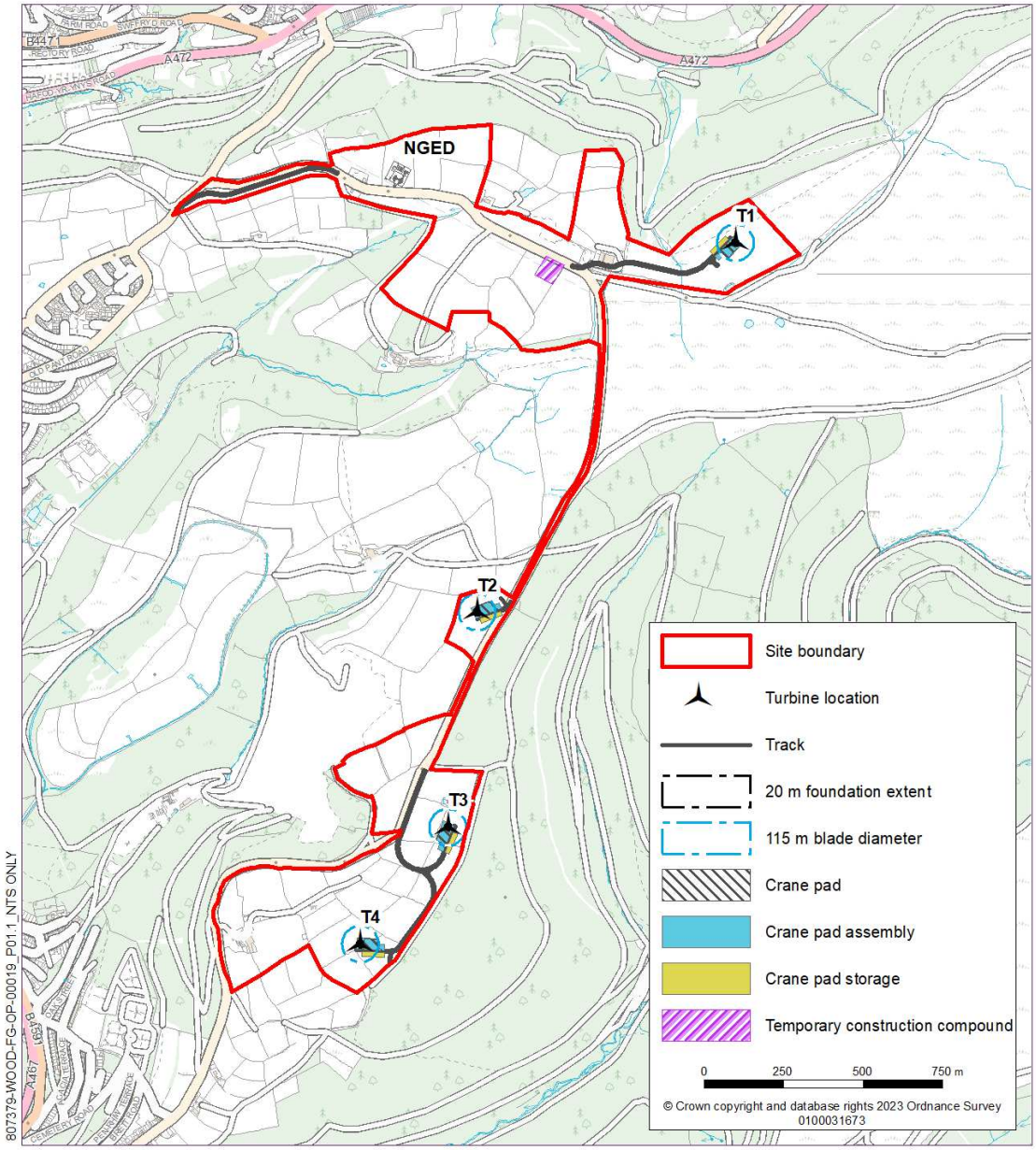
4. The Proposed Development

4.1.1 The Trecelyn Wind Farm ('the Proposed Development') consists of the following elements:

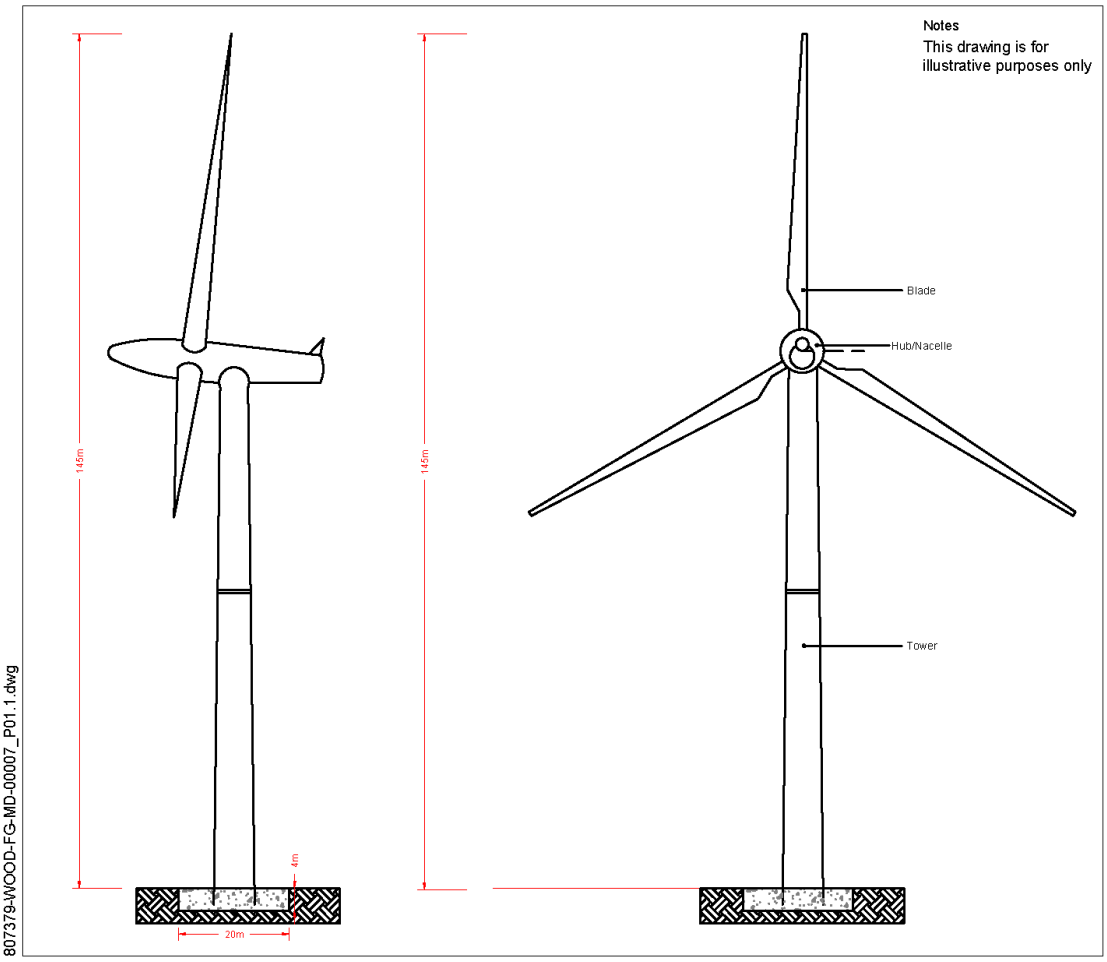
- up to four wind turbines;
- substation and transformer housing;
- temporary contractor's compound
- crane pads and cabling;
- connection to the grid via the 132kv which crosses the Site; and
- improvements to existing access, together with improvements to the internal access road and new and improved access tracks to the turbines.

4.1.2 The proposed wind farm is designed with an operational life of 30 years and permission is sought for this period of operation only. After this period the Site can be fully restored or future generations can decide how they want to secure their energy needs.

4.1.3 The proposed layout of the wind farm is illustrated below. The access point into the Site is from the B4246 to the east of the Site.



4.1.4 Illustration of a typical wind turbine are provided below.



4.1.5 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.

4.1.6 There is no requirement for a grid corridor as the sub-station will be situated directly underneath the 132kV overhead line which crosses the Site.

4.1.7 It is anticipated that the construction period for the Proposed Development would be approximately 24 months in duration. It is anticipated that the Abnormal Indivisible Loads (AILs) [transporting turbine equipment] would travel by road from the Port of Avonmouth, which is the closest port in the region capable of handling wind turbine equipment. The Port of Avonmouth has been frequently used for the delivery of wind turbine components in this region.

4.1.8 It is anticipated that stone would need to be imported from existing quarries and would be sourced from one or more of the local established sources, such as Tarmac Hendy Quarry.

4.1.9 Construction activities would take place between 07:00 to 19:00 hours on weekdays and 07:00 to 13:00 on Saturdays. Quiet on-site working activities such as electrical commissioning have been assumed to extend outside the core working times where required. No working would be undertaken on Sundays.

Micrositing

4.1.10 In carrying out the various surveys that are necessary in advance of construction activities, environmental, geotechnical and health and safety sensitivities, as well as wind-related sensitivities such as turbulence, might be identified that could be avoided if the locations of turbines or tracks are re-sited to a relatively small degree (i.e., 'microsited'). It is therefore proposed that some flexibility for infrastructure micrositing be retained and that appropriate limits of deviation would be up to 50m for turbines and 100m for internal wind farm tracks and other infrastructure such as the substation and site compound. This mitigation may be restricted further in terms of specific locational hard constraints, for example not micrositing closer to a watercourse if within 50m of a watercourse. Distances will be agreed and secured via DNS planning condition.

5. The need for onshore wind power and the policy context

5.1.1 Renewable energy produces energy without burning fossil fuels that release carbon dioxide and contribute to climate change. Renewable energy also provides a new and alternative energy source to tackle energy security issues. Increased use of renewable energy is therefore a key part of European, UK and Welsh energy strategy.

5.1.2 The introduction of the Welsh Government Net Zero Carbon Budget, 2021[1] reports the progress to date which the Welsh Government have set in policy to combat climate change and how they plan to battle climate change over the coming decade:

"In the last six years, we have laid the legislative foundations for a cleaner, fairer, stronger Wales, including through the Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016. Wales has consistently followed the science, starting in 2016 with a target for an 80% reduction in our emissions by 2050. In 2019 we accepted the CCC's recommendation to increase our ambition to 95% shortly after the Senedd became the first Parliament in the world to declare a climate emergency in 2019. On accepting the recommendation, we were clear our ambition should be in line with the spirit of the Paris Agreement in which richer, developed nations should set in law a net zero target by the middle of this century".

5.1.3 The Climate Change (Wales) Regulations 2021[2] also reiterates as "*climate science continues to demonstrate that human activity is warming the planet and that the resulting effect on weather patterns is having increasingly negative consequences for ecosystems, economies, and people. The Welsh Government is proposing to increase Wales's climate targets in response to the latest climate science and the recommendations of the Climate Change Committee (CCC)*". This includes the:

- "*Carbon Budget 2 (2021-2025): an average of 37% below the baseline with a credit ('offset') limit of 0%;*
- *Carbon Budget 3 (2026-2030): an average of 58% below the baseline;*
- *2030 target for an emissions reduction of 63% against the baseline;*
- *a 2040 target for an emissions reduction of 89% against the baseline; and*
- *a 2050 target for an emissions reduction of at least 100% against the baseline ('net zero')*"[2].

5.1.4 In 2021, Future Wales: The National Plan 2040 (Future Wales) was introduced as a national development framework to combat the *"climate emergency which is actively changing our environment and directly affecting communities"*. Future Wales aims to help plan new development and manage land use through enhancing the economic, social, environmental, and cultural well-being of Wales. Future Wales builds on the well-being goals set out in the Future Generations (Wales) Act (2015) to create a Prosperous,

[1] Welsh Government (2021). Net Zero Wales Carbon Budget 2 (2021 to 2025). (c. 1), pp. 10. [Online]. Available at: https://gov.wales/sites/default/files/publications/2021-10/net-zero-wales-carbon-budget-2-2021-25.pdf [Accessed November 2023].
[2] Welsh Government (2021). The Climate Change (Wales) Regulations 2021: integrated impact assessment. (c1), pp. 3. [Online]. Available from: https://gov.wales/sites/default/files/pdf-versions/2021/7/5/1625823413/climate-change-wales-regulations-2021-integrated-impact-assessment.pdf [Accessed November 2023].

Resilient, Healthier, More Equal, Cohesive, Globally Responsible and Vibrant and Thriving Wales.

5.1.5 Future Wales specifies:

"It is vital that we reduce our emissions to protect our own well-being and to demonstrate our global responsibility. Future Wales together with Planning Policy Wales will ensure the planning system focuses on delivering a decarbonised and resilient Wales through the places we create the energy we generate, the natural resources and materials we use and how we live and travel".[3]

5.1.6 Future Wales also maintains "*Wales can become a world leader in renewable energy technologies. Our wind and tidal resources, our potential for solar generation, our support for both large and community scaled projects and our commitment to ensuring the planning system provides a strong lead for renewable energy development, mean we are well placed to support the renewable sector, attract new investment and reduce carbon emissions*".

5.1.7 The latest version of Planning Policy Wales (Edition 11) [4] (PPW11) acknowledges Wales has been set a 95% net zero target for 2050 by the CCC and how nationally, the intention is to go beyond this to become fully net zero. PPW11 outlines:

"Climate change is a global challenge, with impacts felt at the local level presenting a significant risk to people, property, infrastructure and natural resources. We need to plan for these impacts, reducing the vulnerability of our natural resources and build an environment which can adapt to climate change. The planning system plays a significant role in managing this risk. Development allowed today will be around for decades to come. The most important decision the planning system makes is to ensure the right developments are built in the right places".

5.1.8 There is therefore a demonstrable need to tackle climate change, with renewable energy developments seen as a key element in this.

5.1.9 PPW11[4] states that *"Local authorities should facilitate all forms of renewable and low carbon energy development and should seek cross-department co-operation to achieve this. In doing so, planning authorities should seek to ensure their area's full potential for renewable and low carbon energy generation is maximised and renewable energy targets are achieved. Planning authorities should seek to maximise the potential of renewable energy by linking the development plan with other local authority strategies, including Local Well-being plans and Economic / Regeneration strategies"*.

5.1.10 In January 2023 the Welsh Government[5] announced an updated target to meet 100% of its electricity needs from renewable sources by 2035 and to achieve 1.5GW of renewable energy capacity within local ownership by 2035, these targets have now been formally adopted[6].

[3] Welsh Government (2021). Future Wales the National Plan 2040. (c. 2), pp. 45. [Online]. Available at: https://gov.wales/sites/default/files/publications/2021-02/future-wales-the-national-plan-2040.pdf [Accessed November 2023].
[4] Welsh Government (2021). Planning Policy Wales 11th Ed. (c. 3), pp. 31. [Online]. Available at: https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf [Accessed November 2023].
[5] 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 October 2023)
[6] 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 October 2023)

5.1.11 Onshore wind power is recognised as being a deliverable, mature technology. Wind power is one of the few energy technologies that is both low in CO_2 emissions, helping to tackle climate change, yet can also be delivered quickly, affordably and is domestically secure thereby addressing the key energy security challenges. It is this critical ability to address both issues that makes wind power a central feature in Welsh Energy policy.

5.1.12 The proposed Trecelyn Wind Farm could make a meaningful contribution to meeting the renewable energy targets set by the Welsh Government.

6. Environmental Impact Assessment

6.1 EIA Introduction

6.1.1 EIA is a process by which information about the environmental effects of a proposed development is collected, evaluated, and taken into account in its design. It considers the people and environmental resources (collectively known as 'receptors') that could be affected by the Proposed Development.

6.1.2 If the development is given consent, the EIA process provides a consideration of the most appropriate methods for its construction, operation and decommission.

6.2 Scoping and engagement

Early engagement

6.2.1 Engagement has been undertaken with consultees, stakeholders and other interested organisations.

6.2.2 A Scoping Report was submitted to the PEDW in August 2022. The Scoping Report identifies the potentially significant effects requiring assessment, determines the subject matter of the assessment and the methodologies for undertaking the assessment. PEDW subsequently provided a Scoping Direction, which included comments from a range of stakeholders, on behalf of the Welsh Ministers, in December 2022. The Scoping Direction and the statutory consultee responses have subsequently informed the assessment work and further design evolution undertaken to date.

Informal consultation and engagement

6.2.3 The Applicant has undertaken consultation and engaged with a range of statutory and non-statutory consultees, local communities, organisations and individuals to refine the Proposed Development, the EIA and assist in the development of any required mitigation. Early engagement with the local planning authorities, local community and interested parties took place from. A virtual exhibition was hosted on the project website with all the information that was available to those who attended in person from 1 July 2021.

6.3 Potential environmental effects

6.3.1 The following sections provide a brief summary of the main findings of the EIA as set out in the technical chapters of the Draft ES. As required by *The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017*, the ES sets out whether effects on these receptors would be ‘significant’ or not.

6.3.2 Effects which are considered ‘significant’ are deemed important enough to influence the decision to be taken by the competent authority (Welsh Ministers) as to whether planning permission should be granted based on a balance of the effects.

Embedded environmental measures

6.3.3 EIA is an iterative process and opportunities for environmental mitigation, referred to as 'embedded environmental measures' have been considered throughout the design development of the Proposed Development and in the assessment undertaken for the Draft ES where likely significant effects have been identified. Where possible, these measures have been developed with input from key stakeholders together with appropriate technical standards, policies and guidance. These embedded environmental measures include avoidance, best practice and design commitments.

Topics scoped out of the EIA

6.3.4 There are some aspects for which a detailed assessment has not been undertaken because the potential for significant effects from these topics is unlikely. Where appropriate, this has been agreed with PEDW and other technical stakeholders:

- Climate: The vulnerability of the Proposed Development to climate change and extreme climate events is considered as part of the scope of other relevant environmental topics, and where relevant has been designed so that it is not vulnerable to the effects of Climate Change. A Carbon Balance Assessment has been completed and is appended to the Draft ES (as **Appendix 2A**)
- Major accidents and disasters: Measures will be incorporated into the design and risk assessments implemented during construction to ensure the likelihood of major accidents and disasters is very low. The main accident risk relates to the potential for land subsidence from historic coal mining. A Coal Mining Risk Assessment has been completed and is appended to the Draft ES (as **Annex B** to **Appendix 11A**).
- Population and human health: Such effects are considered as part of the scope of other relevant environmental topics such as Landscape and Visual Impact Assessment, Traffic, Noise, Shadow Flicker and Socio-economics.

7. Environmental Assessment

7.1 Introduction

7.1.1 This section provides a summary of the preliminary assessment of likely significant effects to resources and receptors including:

- Landscape and Visual;
- Historic Environment;
- Biodiversity;
- Ornithology;
- Water Environment;
- Ground Conditions;
- Traffic and Transport;
- Noise;
- Aviation and Telecommunications;
- Shadow Flicker;
- People and Business (Socio-economics); and
- Inter-project cumulative effects.

7.2 Landscape and Visual

Landscape

7.2.1 Landscape effects can occur as a result of changes in fabric, character and values attached to the landscape arising from the construction and operation of the Proposed Development. This may include changes to the landscape elements and patterns within the development site and effects upon landscape character (as defined nationally by the LANDMAP system), landscape designations such as the Bannau Brycheiniog National Park (BBNP) and the variety of local landscape designations that exist in this part of South Wales.

7.2.2 Baseline information has been obtained from a desk-based study including review of published landscape character assessments. Computer modelling has generated a Zone of Theoretical Visibility (ZTV) which provides mapping of the areas from where the Proposed Development could theoretically be visible. This has been used as part of the process to select viewpoints which were then checked and refined with a field survey.

7.2.3 The Proposed Development Site is located on the upper slopes (between approximately 340m and 400m AOD) of ridges that extend to the west and southwest of the massif formed by Mynydd Llwyd, Mynydd Twyn-glas and Mynydd Maen.

7.2.4 Land-use across the Proposed Development Site predominantly comprises a mosaic of small and medium-sized fields that are generally 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 Proposed Development Site, comprise hedgerows that have been allowed to grow out to form rows of mature hawthorn. Remnant stone walls reinforced by post and wire fencing are apparent along the edge of the minor road within the Proposed Development Site.

7.2.5 With regard to Public Rights of Way (PRoW), the western section of the northern Proposed Development Site is traversed by a restricted byway which also runs adjacent to the western boundary. The eastern section of the northern parcel of the Proposed Development Site is traversed by a public footpath which also runs adjacent to the northern boundary with another public footpath running adjacent to the southern boundary. The southern part of the Proposed Development Site is traversed by a public footpath with another running along its eastern boundary and a bridleway along its north-western boundary. Both the central and northern parts of the Proposed Development Site abut the extensive area of open access land that covers most of the Mynydd Maen/ Mynydd Llwyd massif.

7.2.6 The landscape assessment considered the potential for effects on landscape features and elements, landscape designations and LANDMAP areas within the 23km study area which has been based on the recommended study area for wind turbines of a height of 143m (to blade tip) within published guidance[7]. As set out within this Draft ES the maximum tip height for the Proposed Development is 145m, however, this LVIA has assessed to 143m to blade tip in accordance with candidate turbine. Variations to the turbine dimensions, within the overall maximum blade tip heights, could affect the overall appearance and proportion of the turbines and each option would need to be considered on a case-by-case basis. However, an additional 2m increase of the blade tip height to 145m would not alter the findings of this assessment. For the production of the final ES the LVIA will include an updated assessment of up to 145m blade tip. Of the landscape receptors considered, the assessment concluded that there would be significant landscape effects on the following receptors:

- Visual and Sensory Aspect Areas (VSAA) –
  - BLNGWVS119 Mynydd Pen – y – fan
  - BLNGWVS226 St. Illtyd
  - BLNGWVS688 Mynydd Bedwellte
  - CYNONVS214 Mynydd Llwyd and Mynydd Maen
  - CYNONVS372 Mynydd Maen
  - TRFNVS024 Unnamed
- Historical Landscape Aspect Area (HLAA) –
  - BLNGWHL044 HAA 44 St Illtyd Fieldscape
  - CYNONHL558 Cwm Dows and Cwm Philkins
  - CYNONHL724 Nant Gawni and Hafod-fach
  - TRFNHL017 HL017 Waun-wen and Mynydd Llanhilleth
  - TRFNHL018 HL018 Glyn Trosnant and Hafod-yr-Ynys

[7] Natural Resources Wales. (2021). *Using LANDMAP in Landscape and Visual Impact Assessments GN46*. [online]. Available at: https://naturalresourceswales.gov.uk/guidance-and-advice/business-sectors/planning-and-development/evidence-to-inform-development-planning/using-landmap-in-landscape-and-visual-impact-assessments-gn46/?lang=en

- Local Landscape Designation :
  - NH2.3 Abercarn VILL
  - NH1.6 Myynddislwyn
  - ENV2.1 St. Illtyd Plateau and Ebbw Eastern Sides
  - ENV2.4 Mynydd Carn-y-Cefn and Cefn yr Arail

7.2.7 The Proposed Development has been designed so as to minimise the effects on these designations through the use of non-reflective pale grey on the rotor blades and upper towers.

7.2.8 There would be no significant effects upon the BBNP, or any other national landscape designation.

Visual

7.2.9 The assessment of visual effects is concerned with changes to views available to people and to their visual amenity. The assessment considered potential effects on 83 visual group receptors:

- 20 Settlements;
- 10 Long Distance Footpaths;
- 6 Sustran cycle routes;
- 4 Outdoor Recreational Facilities;
- 6 Country Parks and Historic Parks and Gardens;
- Open Access Land and PRoW within 5km and 5-10km of the proposed turbines;
- 24 viewpoints; and
- 11 Transport Routes.

7.2.10 Of these, the following receptors were assessed as likely to experience some form of significant effect as a result of the Proposed Development:

- Settlements: Abercarn, Swffryd / Hafodyrynys, Newbridge / Trecelyn, Pantygasseg, Llanhilleth, Croespenmaen, Trinant, Blackwood and St Illtyd.
- Long Distance Footpaths: Taith Torfaen Anytime Challenge, Ebbw Vale Walk, Cistercian Way, Torfaen Trail, Raven Walk, Celtic Way, Sirhowy Valley Ridgeway Walk, Monmouthshire Way and Rhymney Valley Ridgewalk.
- Sustrans cycle routes: NCN466.
- Country Parks: Sirhowy Valley Country Park.
- Outdoor Recreation Receptors: Public Rights of Way (PRoW) and Open Access Land (OAL) on Site, within 5km and within 10km, within 15km.
- Photoviewpoints: 11 viewpoints.
- Transport Routes: A472 and B4471

7.2.11 The majority of the above are related to views from the edge or elevated parts of settlement, or certain sections of recreational routes.

7.2.12 A cumulative assessment has also been completed in order to evaluate the effects that could be generated were Trecelyn Wind Farm to become operational along with some or all of the other wind farms that are either already operational, have been consented or are proposed, in 23km radius cumulative study area. The assessment considers 21 wind energy developments within the cumulative study area. Two scenarios were assessed, Scenario 1 includes only operational wind turbines and those already consented, whilst Scenario 2 included all those within Scenario 1 and those within the planning and scoping process.

7.2.13 The assessment illustrated the nature of the interaction between Trecelyn Wind Farm and other proposed wind energy schemes from receptors where the greatest potential for significant cumulative visual effects to be experienced.

7.2.14 In conclusion, for scenario 1 the absence of significant cumulative landscape and visual effects does not differ to those predicted in relation to the baseline scenario used for the main body of the LVIA. In scenario 2 the separation distances in excess of 14km, the relationship between the other planning application schemes included in this scenario at Bryntail Farm (14.5km, southwest) and Mynydd y Glyn (19.8km, southwest) would be too weak to give rise to any significant cumulative landscape effects with the Proposed Development. However, for cumulative visual effects the addition of the Proposed Development would reinforce already significant effects from other developments on visual receptors.

7.3 Historic Environment

7.3.1 The assessment within **Chapter 7** of the Draft ES considered the likely significant effects of the Proposed Development on the historic environment, which includes archaeological remains, historic buildings and historic landscapes.

7.3.2 Information on the existing historic environment was based on the results of a site walkover and a desk study, which involved the collation of data from Glamorgan Gwent Archaeological Trust Historic Environment Record and information on designated historic assets from Cadw.

7.3.3 There are no designated historic assets located within the Site boundary. One listed building group, farmhouse Swffryd-ganol including front garden wall, Barn Range including cow-house at Swffryd-ganol (Cadw 22673-22674) lies on the periphery of the 1km study area to the north-west of the Site. No scheduled monuments or registered park and gardens, conservation areas, or World Heritage Sites are located within 1km of the Site boundary.

7.3.4 There are three records of non-designated historic assets located within the Site boundary. These non-designated assets include Bee Bole, Penycacau Farm, Crumlin (GGAT11121g), Pwllgwinae (GGAT04981g) and Glan-shon (GGAT04973g).

7.3.5 The assessment of effects has concluded that there would be no impacts on the heritage significance of designated heritage assets during the construction phase for the wind farm.

7.3.6 There would be no impact or a negligible magnitude of impact to the identified historic assets for both the construction and operational phases and as such the significance of effects is deemed to be non-significant.

7.3.7 A cumulative assessment has been undertaken to consider potential effects with other consented and proposed wind farms within 5km of the Proposed Development. For those assets where it was determined that there was no change, or that the effect of the

Proposed Development would be negligible, these have not been considered within the cumulative assessment, as significant cumulative effects are unlikely to occur.

7.4 Biodiversity

7.4.1 **Chapter 8** of the Draft ES has considered the likely significant effects of the Proposed Development on biodiversity features (designated wildlife sites, habitats and species) within the area that the Trecelyn Wind Farm could affect. This area, known as the Zone of Influence (ZoI), differs depending on the type of feature considered and the nature of the potential environmental change that may arise.

7.4.2 The assessment methodology has been aligned with the standard industry guidance provided by the Chartered Institute of Ecology and Environmental Management.

7.4.3 Information on the existing biodiversity features has come from a variety of sources including historical records of flora and fauna, descriptions of wildlife sites gained through desk study, and extensive field surveys.

7.4.4 Four statutory designated biodiversity sites of international importance are located within 10km of the Site boundary: Aberbargoed Grasslands Special Area of Conservation (SAC), Usk Bat Sites SAC, Cwm Clydach Woodlands SAC and River Usk SAC. One statutory designated biodiversity sites of national importance were identified within 2km: Ty'r Hen Forwyn Site of Special Scientific Interest (SSSI).

7.4.5 There are seven non-statutory nature conservation sites within the study area, none of which are located within the Site boundary.

7.4.6 The species surveys identified the following:

- At least 14 trees onsite with high potential to support roosting bats, with a total of nine bat species/species group confirmed to be using the bat survey area;
- No evidence of badger activity or their setts were recorded during the initial survey nor during subsequent survey visits;
- Dormouse surveys conducted between May and November 2020 and between April and November 2021 found no evidence of dormice;
- Great crested newt surveys comprising: Habitat Suitability Index (HSI) and eDNA surveys identified waterbodies P1, P2, P3 and P4 associated with the northern parcel and waterbody P7 located within the southern parcel tested positive for eDNA; and
- During the course of the ecological surveys undertaken across the Site, only occasional incidental sightings of common lizard were recorded, an incidental sighting of slow-worm.

7.4.7 A range of environmental measures which relate to Biodiversity are embedded as part of the Proposed Development to avoid or reduce significant environmental effects as far as possible. Standard best practice environmental measures would be employed such as the adoption of pollution prevention and dust control techniques, and measures to avoid the spread of invasive species such as Japanese knotweed. Good practice measures are detailed in the Draft Construction Environmental Management Plan (CEMP) which accompanies the Draft ES. Other environmental measures to be adopted include:

- habitats which would be subject to temporary loss, will be re-vegetated and reinstated as soon as possible after construction;
- site lighting will be controlled to prevent incidental spillage on to features that may be used by nocturnal species;

- removal of habitat or features that could support reptiles (e.g., scrub, dense tussocky grassland, rocks) will be kept to a minimum, and excavations in these areas will take place outside the hibernation period;
- any trees with moderate or high bat roosting potential which require felling will be subject to appropriate updated roost surveys to ensure that roosting bats will not be affected;
- turbines have been located to maintain a minimum 50m blade-tip stand-off from features that are known to be favoured by bats where practicable (e.g., woodland edges and key waterbodies);
- where the stand-off is not viable, either curtailment or felling will be implemented;
- Feathering of blades during idling; and
- GCN population to be translocated from the construction footprint and reinstatement of suitable GCN habitat.

7.4.8 Although areas of habitat designated would be lost to project infrastructure, a Landscape and Ecology Management Plan (LEMP) will be devised to accompany the DNS application, which will include measures that compensate and enhance the habitats impacted by proposals and produce a net gain in nature conservation across the Site by designing in wildlife, and ensuring any avoidable impacts are appropriately mitigated.

7.4.9 In conclusion the Proposed Development is not predicted to have significant effects on any Biodiversity Receptors.

7.5 Ornithology

7.5.1 **Chapter 9** of the Draft ES reports the findings of a provisional assessment of effects on Ornithology.

7.5.2 Considerable data gathering and a range of surveys were undertaken from 2020 to 2022 to assess how the proposed Trecelyn Wind Farm site is used by birds.

7.5.3 No part of the Study Area is covered by any statutory designations. However, there are several such designations within the Survey Boundary's potential ZoI that include bird species in their citations. These include several SSSIs and the Severn Estuary Special Protection Area (SPA) and Ramsar site.

7.5.4 During the 2020 to 2022 breeding survey seasons, a total of 59 species were recorded, including 12 target species (which are species identified as being potentially sensitive to the development). four (goshawk, kestrel, long-eared owl and nightjar) were confirmed as breeding within the Study Area, two as probably breeding (peregrine and cuckoo), and one as possibly breeding (red kite). These species were all recorded in low numbers and generally with limited distribution.

7.5.5 One Schedule 1 species was identified on Site, a number of red list passerine species were also recorded within the Survey Boundary.

7.5.6 During the migratory and winter 2020–2021 and 2021–2022 survey seasons, a total of 53 species were recorded, including 12 target species: mallard, red grouse, snipe, herring gull, lesser black-backed gull, grey heron, goshawk, hen harrier, red kite, kestrel, osprey and peregrine. As set out in the species accounts that follow, all of these species were recorded relatively infrequently and in low numbers. No significant populations beyond a local context were recorded.

7.5.7 In light of the temporary nature of anticipated construction activities, the delivery of embedded measures via a CEMP to minimise the potential for visual and noise disturbance during the nesting season, and the relatively low sensitivity of the wider breeding bird assemblage, no such significant adverse effects are anticipated to arise during construction.

7.5.8 Permanent and temporary land-take to facilitate the construction of turbines and associated infrastructure has the potential to reduce the availability of nesting, foraging or resting habitats for the moorland breeding bird assemblage. In addition, embedded measures delivered via a LEMP, secured by condition, will include measures to mitigate for habitat losses by enhancing retained habitats and potentially increasing their potential to support nesting (and wintering) birds.

7.5.9 A collision risk modelling (CRM) exercise has been undertaken to understand the risk of birds colliding with turbine blades once operational. Analysis using CRM suggests that the number of birds that would collide with operational turbines represents a very small increase of annual mortality rates for lesser black-backed gull, herring gull, goshawk, peregrine, red kite and kestrel.

7.5.10 The likely significant effects upon Severn Estuary SPA/Ramsar and constituent Flat Holm and Steep Holm SSSI with respect to lesser black-backed gull and herring gull populations was assessed as part of the Draft ES. In light of the low anticipated mortality rates in the context of the designated site and local population sizes and limited potential for displacement impacts, the Proposed Development would not result in any likely significant adverse effects on the integrity of the lesser black-backed gull population supported by the Severn Estuary Ramsar/SPA or Flat Holm and Steep Holm SSSI.

7.5.11 The disturbance and displacement of the breeding bird assemblage is of low magnitude and will further be mitigated where necessary through the LEMP.

7.6 Water Environment

7.6.1 The assessment provided in **Chapter 10** of the Draft ES has considered the likely significant effects of the Proposed Development on the Water Environment, including the aquatic environment, surface water resources and flood risk. The effects on water quality, river flows, physical changes to rivers, lakes and other water features have been considered. The assessment is accompanied by a Flood Consequences Assessment (FCA) within **Appendix 10A**.

7.6.2 Information on the existing Water Environment is based on a site walkover and a desk study, which involved the collation of data from a range of sources including NRW, the Sustainable Drainage (SuDS) Approval Body (SAB) at Caerphilly County Borough Council.

7.6.3 There are no watercourses within the Proposed Development area except for an Ordinary Watercourse (unnamed watercourse tributary of Trosnant Brook which crosses the northern land parcel) and two tributaries of Nant Gawni (culverted below the access road between the northern and central land parcels). In the wider study area, there are two Main Rivers (Afon Ebwy on the western edge and the Trosnant Brook which is a tributary of Afon Lwyd on the northern edge) and several Ordinary Watercourses including the Nant Gawni, Nant Hafod-fach and Nant Gwyddon, which are tributaries to the Afon Ebwy and generally flow to the west. There are eight springs shown in the OS mapping within the study area; however, none are located within the Proposed Development area. There are 13 ponds located within the study area, with one falling within the Proposed Development site area near turbine 3.

7.6.4 The Site overlays a 'Secondary A' aquifer – defined as permeable layers of rock capable of supporting water supplies at a local rather than strategic scale.

7.6.5 According to the NRW Licensed Water Abstractions dataset, there are no licensed groundwater and surface water abstractions within the Proposed Development area. Within the wider study area there are two abstraction licences.

7.6.6 A range of environmental measures which relate to the Water Environment are embedded as part of the design of the Proposed Development to avoid or reduce significant environmental effects as far as possible. Examples of these measures include the following:

- Adherence to Pollution Prevention Guidance Notes (PPGs) and Guidance for Pollution Prevention Notes (GPPs) to ensure that the risk of accidental release of pollutants into the water environment is minimised;
- Implementation of a Water Management Plan to minimise runoff from the Site. Discharges would be minimised to 'greenfield' rates such as those from the current undeveloped site;
- Excavated materials during construction works will be segregated and stored or re-used on-Site; and
- Areas of construction compounds that are used for fuel storage, plant maintenance and refuelling will be surfaced with fully impermeable materials to prevent any infiltration of contaminated runoff and contain bunding.

7.6.7 The construction, operation and decommissioning of the Proposed Development is not expected to result in any significant effects on the water environment, provided that all recommended mitigation measures are put in place. No cumulative effects with other developments are anticipated.

7.6.8 All potential sources of flooding have been considered, with surface water runoff originating from the Proposed Development, due to increased areas of hardstanding, posing the greatest potential flood risk.

7.6.9 The Flood Consequence Assessment (FCA) concludes that the Proposed Development, together with the proposed flood risk management measures above, would not be subject to an unacceptable level of risk, nor would there be potential increased flood risk elsewhere.

7.6.10 The Water Framework Directive (WFD) Assessment concludes that the significance of effects on the WFD status of watercourses would not be significant.

7.7 Ground Conditions

7.7.1 The assessment within **Chapter** 11 of the Draft ES has considered the likely significant effects of the Proposed Development on the Ground Conditions, including agricultural land, soils, land contamination and ground instability receptors (for example human health). This assessment is based on risk assessments that consider whether the construction, operation or decommissioning of the Proposed Development could disturb areas of old contaminated ground, introduce new soil contamination, or cause gas to move out of the ground and affect human health.

7.7.2 The study area for Ground Conditions for contaminated land receptors includes the Site and a 250m buffer area beyond the boundary. This is based upon the potential for contaminants to migrate from the site to offsite receptors through the soil or in

groundwater, or to migrate onto the site through soil or in groundwater from offsite sources.

7.7.3 Baseline conditions were identified through site visits and a desk study, informed by a number of sources which include:

- Information on previous land uses has been obtained from historical mapping. Information on geological and soil conditions has been obtained from maps and other data sets provided by the British Geological Survey (BGS) and Natural Soil Resources Institute (in electronic format).
- Mapping data related to peat and agricultural land classification has been obtained from NRW and the Welsh Government.
- Information of historic coal mining workings, and coal outcrops and fissures has been obtained from the Coal Authority.

7.7.4 The agricultural classification for the Site, including the Wind Farm development site and the Grid Connection is assumed, for the purposes of the assessment, to be Grade 4, and the agricultural land sensitivity is Low, through the use of the Predictive Agricultural Land Classification Map.

7.7.5 A Phase 1 peat depth survey was conducted during September 2021. The survey indicated that the Site is generally not underlain by peat, as peat of ≥0.4m in thickness in the upper 0.8m of a soil profile or >0.3m thickness of organic material resting directly on bedrock was not found in Site.

7.7.6 The Coal Mining Risk Assessment identifies eight coal seams worked beneath the site at depths of between 179m and 516m below ground level. No investigative or remedial activity is recorded within the site or within 50m of it.

7.7.7 The Phase 1 Geo-environmental desk study (WSP, 2023) has identified potential sources of land contamination on the Proposed Development Site including potential residual mine waste/ spoil (likely to be limited in extent if present), current and former agricultural activities, active diesel tanks, potentially asbestos containing waste in stockpiles, infilled ground (made ground) and a burning pit. The sources identified are small-scale and localised or diffuse in nature. The coal mining history of the Site also means that there is potential for mine gas to be present.

7.7.8 A range of environmental measures which relate to the Ground Conditions are embedded as part of the design of the Proposed Development to remove or reduce significant environmental effects as far as possible. Examples of these measures include the following:

- adoption of industry standard methods for the handling and storage of soils; based on Defra's current good practice guidelines which describe standard working methods and techniques to protect soil resources;
- measures to avoid soil compaction to avoid damage to soil, and the reuse of permanently displaced soil within the Proposed Development boundary;
- A soil resources survey will be completed by a soil scientist / experienced soil specialist prior to construction and the findings of the soil resources survey will be used to inform the construction phase Soil Management Plan (SMP);
- any temporary onsite storage of excavated materials suspected or confirmed to be contaminated will be placed on impermeable sheeting, covered over and with adequate leachate / runoff drainage to prevent migration of contaminants from the stockpile; and

- intrusive geo-environmental ground investigation will be completed during the pre-construction phase, including soil sampling and chemical testing, to confirm the ground conditions. Deeper soil testing will be carried out as needed to inform the detailed (post consent) design of the Proposed Development.

7.7.9 The construction, operation and decommissioning of the Proposed Development is not expected to result in any significant effects on the Ground Conditions, provided that all recommended mitigation measures identified in the Draft ES and detailed further in the Draft CEMP are put in place. No cumulative effects with other developments are anticipated.

7.8 Traffic and Transport

7.8.1 An assessment has been completed of the likely effects of construction traffic on the local transport network and on road users. This has included a calculation of the likely number of movements of Heavy Goods Vehicles (HGVs) and AILs in and out of the development Site over the anticipated 24-month construction period. This has been compared to the forecast background traffic numbers for the anticipated year of construction of 2026 when development-related traffic movements would be greatest, based on traffic growth models designed by the Department for Transport.

7.8.2 Access to the Proposed Development is expected to be taken from an Unclassified Road which routes north/south through the Site. It is envisaged that four access points will be provided at locations adjacent to proposed infrastructure. Access 1 will provide access to the proposed substation site, while accesses 2, 3 and 4 will provide access to Wind Turbine Generators 1, 2, and 3+4 respectively.

7.8.3 The proposed route for Abnormal Indivisible Loads (AILs) - a type of load that cannot be divided into two or more loads for transportation by road - carrying the wind turbine components is as follows:

- Avonmouth Port > M49 > M4 > A4042 > A472 > A467 > Central Avenue > Old Pant Road > Unclassified Road > Site Access.

7.8.4 Based on the construction program there would be a peak of 48 HGV movements two-way during a 12-hour weekday. This peak is predicted to occur during month 2 (April 2026) and therefore only for 4 weeks of the total 104-week construction programme. Taking account of the environmental considerations of severance, driver and pedestrian delay, pedestrian amenity and intimidation, the increase in traffic during construction would not result in a significant effect. However, it is appropriate to consider some additional management in the form of a Construction Traffic Management Plan (CTMP) to reduce the potential for effects as far as reasonably possible. A Draft CTMP has therefore been provided as part of the submission documents and will be considered by CCBC.

7.8.5 During operation of the wind farm, maintenance traffic will be minor and will be carried out using a 4x4 van. Turbines would be typically maintained at 6 monthly internals, with each service requiring on average two technicians over two days per turbine. If unscheduled repairs are required there may be the need for an HGV / crane however, this is not anticipated and if it occurred it would be very infrequent.

7.9 Noise

7.9.1 A baseline sound level survey was carried out at three locations (M1, M2, M3) between Monday 4 September 2023 and Friday 22 September 2023 with meteorological data acquired from a full height meteorological mast. The monitoring was undertaken at the following locations:

- Glan Shon Farm;
- Blaengawnery Farm;
- Ty Oakley; and
- Cefn-y-Crib Farm

7.9.2 The Proposed Development is located in a rural area east of Newbridge. In the vicinity of the nearest NSRs the local acoustic environment consists primarily of distant road noise from the A467 and A472, local vehicle movements, farming activities and naturogenic sounds of flora and fauna.

7.9.3 Noise from construction and decommissioning of the Proposed Development would be minimal. The implementation of general good-practice noise control measures, such as the use of silencers, mufflers and/or acoustic hoods on machinery during construction and decommissioning will ensure no significant effects on receptors. Although it is not yet confirmed whether it will be required, potential noise effects from foundation piling have been assessed.

7.9.4 A preliminary assessment of noise effects has been undertaken in accordance with the ETSU-R-97 Guidance 'The Assessment and Rating of Noise from Windfarms' and 'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise' by the Institute of Acoustics.

7.9.5 The assessment concluded that the noise effects from construction piling (if required) would not be significant at any of the identified receptors, largely due to distance from the piling operations.

7.9.6 The results show that predicted cumulative turbine noise levels are below the lowest daytime fixed noise limits for the majority of the receptors during the daytime, except for:

- R11 – Ty-hir, Cefn Crib, Road
- R12 - Tir Shon Shenkin R13 - Bwthyn Yr Ysgol, Blaen-y-cwm Rd
- R14 - Cefn-y-Crib Farm, Blaen-y-Cwm Rd

7.9.7 And all but two receptors during the night time:

- R12 - Tir Shon Shenkin
- R13 - Bwthyn Yr Ysgol, Blaen-y-cwm Rd

7.9.8 Exceedances of the daytime limits of up to 3.0 dB are indicated at receptors R11 to R14 resulting in a potential **significant** effect. During the night-time, compliance is predicted at the majority of receptors, resulting in a **not significant** effect. Exceedances of the night-time limits of up to 1.1 dB are indicated at receptors R12 and R13 resulting in a potential **significant** effect.

7.9.9 It should be noted that directivity effects may have a significant influence at the majority of receptors where exceedances are predicted, due south/ south west/ west of the proposed turbines. Often the receptors are not going to be downwind of all the assessment wind farm sites at the same time and so the noise levels are likely to be lower than predicted in this assessment. The cumulative noise at these receptors is dominated by turbines forming part of the proposed Mynydd Maen Wind Farm (noting that sound power levels for Mynydd Maen Wind Farm have been assumed at this stage).

7.9.10 At all receptors where exceedances are identified, noise from turbines associated with the proposed Mynydd Maen Wind Farm is dominant. Assuming this proposed wind farm would be under the same planning constraints, the contribution from the Mynydd Maen

turbines could be significantly reduced by specifying reduced power operating modes, which would significantly reduce the cumulative turbine sound levels.

7.10 Aviation and Telecoms

7.10.1 Aviation radar, microwave and other electromagnetic signals are transmitted throughout the country by a wide range of operators. There is potential for interference to affect the transmission of these signals from any large structure, including wind turbines. A desk-based assessment, and consultation with authorities and companies working in this field in Wales, has been undertaken to identify any telecommunications or aviation interests that may be affected by the Proposed Development.

7.10.2 The desk study and consultation exercise identified a number of microwave links in the wider area, including two links operated by Ofcom. The National Air Traffic Service (NATS) / Cardiff Airport indicated that the Proposed Development would be visible to the Cardiff and Bristol Airports radar, as well as the Clee Hill Radar.

Aviation

7.10.3 The Site is located in an area identified by the Ministry of Defence as being within a zone that is deemed to be *"Low priority military low flying areas less likely to raise concerns".* There may be a requirement to install aviation safety lighting on turbines to ensure visibility to aircraft.

7.10.4 The assessment concluded potential technical impacts on radar at Cardiff Airport and the NERL Clee Hill Radar. A subsequent review by independent aviation consultants has identified that there are mitigation options available, such as upgrades to radar equipment, that would enable operation of wind farms without radar interference. Further consultation is being undertaken with NATS and Cardiff and Bristol Airport to agree measures that will be adopted and how these will be secured, most likely via a condition on any planning consent should this be forthcoming.

Telecommunications

7.10.5 Ofcom identified four links crossing the Site which may be affected by the Proposed Development. If a reduction in television reception quality occurs in the surrounding area, it is most likely to be noticed when the proposed wind farm becomes operational. Should planning permission be granted and to mitigate any problems with reception arising, the developer would assess current television signals in advance of development and mitigate post-development problems to television reception arising where effects are attributable to the proposed wind farm. Consultation suggests adverse effects may not occur and that in the unlikely event that interference does occur, this would be localised. This could be controlled by planning condition.

7.10.6 Viewing quality can be improved by considering each or a combination of the following mitigation techniques:

- replace or upgrade the receiving aerials (e.g., with directional receiving aerials) for affected households;
- re-tune the television receivers at affected households;
- re-align the television aerial to an alternative transmitter and re-tune the receiver at affected households; and

- provision of a bespoke 'self-help' solution (this could comprise a new low powered transmitter, a cable network, a satellite receiver, or a combination of these measures).

7.10.7 The Applicant is committed to adopting measures to ensure no significant effects on Aviation or Telecommunications arise as a result of the Proposed Development.

7.11 Shadow Flicker

7.11.1 Shadow flicker is the flickering effect caused when rotating wind turbine blades periodically cast shadows through constrained openings such as the windows of properties.

7.11.2 A study has been undertaken to identify whether shadow flicker is likely to occur at residential properties in the vicinity of the Proposed Development. Modelling has been carried out to predict the duration of potential shadow flicker effects and the times of day and year when it could occur.

7.11.3 Up to 18 properties have been identified which have the potential to experience some level of shadow flicker as a result of the operation of the wind farm.

7.11.4 The effect of shadow flicker can be resolved using standard mitigation measures such as a turbine control module which consists of bespoke software, a clock, a timer, a switch, a wind direction sensor and a light sensor. The module can control a specific turbine (or turbines) which would be programmed to shut down on specific dates at specific times when the sun is bright enough, there is sufficient wind to rotate the blades and the wind direction is such that nuisance shadow flicker could occur.

7.11.5 The Applicant will commit to installing a shadow flicker impact module, prior to operation, to fully mitigate any unacceptable shadow flicker on nearby properties. With this measure in place there will be no residual shadow flicker effects arising from the Proposed Development.

7.12 People and Business (Socio-economics)

7.12.1 The assessment has considered the likely significant effects of the Proposed Development on tourism and recreational and economic receptors at both the construction and operational stages.

7.12.2 The study area for baseline data covered the Site boundary and, together with the wider county borough, regional and national context. Sources of information included the following:

- Department of Business, Energy and Industrial Strategy (BEIS) for the installed capacity of renewable energy for Torfaen County Borough Council and Blaenau Gwent County Borough Council;
- The Welsh Government for data relating to deprivation, national renewable energy generation statistics and data for spend and visitor trips by region and local authority area; and
- The Nomisweb and StatsWales websites for data related to demography, occupations, employment/unemployment, out-of-benefits for Torfaen County Borough Council and Blaenau Gwent County Borough and at ward level.

7.12.3 The Proposed Development is entirely located across the Caerphilly wards of Abercarn, Newbridge and Crumlin. Abercarn has 76.5% of its working age population as economically active, with Newbridge having 71.9% and Crumlin 75.8%. This is not too dissimilar to the economic activity of the other identified wards, though it is important to

note that the Caerphilly ward of Newbridge is slightly lower at 71.9% and the Blaenau Gwent ward of Llanhilleth is considerably lower at 66.8%.

7.12.4 The earnings by place of residence shows that weekly earnings within CCBC (£589.10) earn slightly less than the average for Wales (£598.10), with BGCBC having considerably lower weekly earnings (£525.40).

7.12.5 The Welsh Index of Multiple Deprivation (WIMD, 2019[Error! Bookmark not defined.]) is an official Welsh Government measure of deprivation in Wales. The WIMD includes a number of different measures in small geographic areas called Lower Super Output Areas (LSOA). The WIMD is designed to allow comparison of deprivation across the country with LSOAs ranked from 1 (most deprived) to 1,909 (least deprived). The Proposed Development is located across Crumlin 4, Abercarn 2 and Newbridge 2 LSOAs. There are some considerable variations in terms of deprivation across these LSOAs. Crumlin 4 (929) scores well in terms of overall deprivation score, especially when compared to the Abercarn 2 (718) and Newbridge 2 (214) LSOAs. Overall, Newbridge 2 has high levels of deprivation against most of the WIMD categories, though scores well against the physical environment (1166) and housing (1129) categories.

7.12.6 There are a number of Public Rights of Way (PRoWs) that cross the Site:

- There are a range of footpaths in the north east of the site (CRUM/FP149/1, CRUM/FP157/1, CRUM/FP162/1, CRUM/FP163/1). Turbine 1 would cross the path of CRUM/FP149/1.
- There are Restricted Byways in the north west of the site (NWBG/RBW158/1 and NWBG/RBW160/1) which intersect the Site boundary.
- Restricted Byway in a north to south direction (comprising NWBG/RBW161/1, NWBG/RBW366/1, NWBG/RBW170/1, NWBG/RBW171/1, ABEC/RBW171/1) would provide the access road linking from the northern parcel to the southern parcel.
- Restricted Byway and Bridleway NWBG/RBW172/1; ABEC/BR179/1; ABEC/BR179/2 provides a loop of PRoW to the west of Turbine 2, off the Restricted Byway identified above.
- In the southern part of the site there are a range of footpaths ABEC/FP181/1, ABEC/FP388/1, ABEC/FP334/1 located in proximity to Turbine 3 and Turbine 4

7.12.7 A number of measures will be implemented in relation to these PRoWs, including (where necessary) temporary closure and diversion, during both construction and operation. A number of health and safety signs will also be put in place through construction and operation. It is anticipated that PRoWs will remain open, where possible, during construction and that alternative permissive paths will be made available so as to allow continued use by the public during construction and operation.

7.13 Inter-related cumulative effects

7.13.1 Inter-related cumulative effects consider whether any of the individual environmental topic effects resulting from the Proposed Development could combine to create effects that are significant.

7.13.2 The most likely types of receptors where topic effects are likely to combine are those pertaining to the amenity of the relevant human population, for example noise, visual, shadow flicker and traffic. Consideration has also been given to the potential for cumulative effects on other environmental receptors.

7.13.3 The assessment focused on those receptors where potential significant effects have been predicted in at least two or more topics and/or where the technical assessments have shown that potential individual effects are nearing the thresholds of established national criteria. No receptors were identified as resulting in inter-related cumulative effects.

8. Looking Forward

8.1 What happens next?

8.1.1 Following the end of the Statutory Consultation period (22 December 2023, Pennant Walters will consider all comments that have been received as part of the consultation process. Where appropriate, these consultation responses will inform further design refinements and proposals for environmental measures to reduce impacts from the Proposed Development.

8.1.2 Based on consultation responses, any design refinements and additional information that becomes available from site visits and surveys, the environmental assessment will be reviewed and updated for the Final ES. It is expected that the Final ES to accompany the DNS application will be submitted in Spring 2024.

8.2 What if I would like further information?

8.2.1 This document is a non-technical summary of the Draft ES for the proposed Trecelyn Wind Farm project. The full Draft ES, which provides more detailed and technical information, is available to view on the following link: https://trecelyn-windfarm.co.uk. Further information can also be obtained:

- via email: info@trecelyn-windfarm.co.uk ; and
- telephone: 0800 699 0081.

8.2.2 Public consultation events will also take place as follows:

- Llanfach Village Hall, Twyn Road, Abercarn NP11 5LB, Thursday 30 November, 2pm – 7pm
- Newbridge Memo, High Street, Newbridge NP11 4FH, Friday 1 December, 2pm – 7pm

8.3 How can I have my say?

8.3.1 We want to hear your views on the Proposed Development. You can get in touch in the following ways:

- Completing the feedback questionnaire online via the Project website: https://trecelyn-windfarm.co.uk;
- Providing feedback by email (info@trecelyn-windfarm.co.uk) or in writing (FREEPOST TC CONSULTATION); and
- Completing a hard-copy feedback form, which can be provided on request by calling or emailing using the contact details above or in person at the face-to-face events. The feedback form can be returned free-of-charge using the Freepost address: FREEPOST TC CONSULTATION (please write this in capitals, you do not need a stamp).

8.3.2 Consultation responses received via any other method than those listed above, such as through social media, will not be formally recorded as part of the consultation.

8.3.3 Responses given orally, such as via telephone (0800 699 0081) or via a meeting, will be recorded and issues raised will be included in the Consultation Report.

8.3.4 All responses must be received by 22 December 2023 at 11:59pm. Feedback submissions sent via post will be accepted for up-to five working days after this date.

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