



Non-Technical Summary (NTS) Official

For the Repowering of Bears Down Wind Farm with five wind turbines, up to 150m in height.

Bears Down Wind Farm, Trevilledor Cross, Newquay, TR8 4HQ

November 2023

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1 Introduction

1.0.1 This Non-Technical Summary (NTS) accompanies a full Environmental Statement (ES) and planning application by Clean Earth Energy Ltd (the Applicant) to Cornwall Council for full planning permission to repower the Bears Down Wind Farm with five turbines up to a tip height of 150m on Bears Down Wind Farm, Trevilledor Cross, Newquay, TR8 4HQ.

1.0.2 The proposed East Merkland wind farm will comprise of:

‘Five wind turbines, with a maximum tip height of 150m, along with associated infrastructure, including access tracks, crane pads, cables, electrical housing and entrance modifications.’

1.0.3 Whilst establishing the proposal, the application has sought to reduce environmental impacts by considering proximity and amenity to ‘sensitive receptors’, noise, ecological constraints, existing infrastructure and local designated areas and features.

1.0.4 This NTS and accompanying Environmental Statement report the work undertaken in the identification, assessment, and mitigation of the likely environmental effects of the proposed scheme.

1.0.5 This NTS will be submitted to Cornwall Council as the Local Planning Authority (LPA).

1.0.6 Alternatively copies of the NTS and Environmental Statement may be obtained from Clean Earth Energy at the following address; Unit 2a, Bess Park Road, Trenant Industrial Estate, Wadebridge, PL27 6HB.

1.0.7 The purchase costs are:

- Environmental Statement- £100
- Technical Appendices- £20 per report
- Non-Technical Summary- £50
- Digital copies of the above on a CD or USB- £20

- 1.0.8 Comments on the application should be forwarded Cornwall Council during the consideration and determination stage of the planning application.

- 1.0.9 The proposal location has been selected because of its siting in an area identified as suitable for wind turbine development in the recently published Cornwall Climate Emergency Development Plan (CEDPD). The suitability of the area for wind turbine development is further evidenced by the presence of the existing wind turbines on site known as Bears Down Wind Farm (E1/98/1286, C2/00/00611) and the adjacent Denzell Downs wind farm which sits to the south of the proposed development site - consisting of 5 x 100m to tip wind turbines (PA11/01429, PA13/04805).

2 The Proposed Development

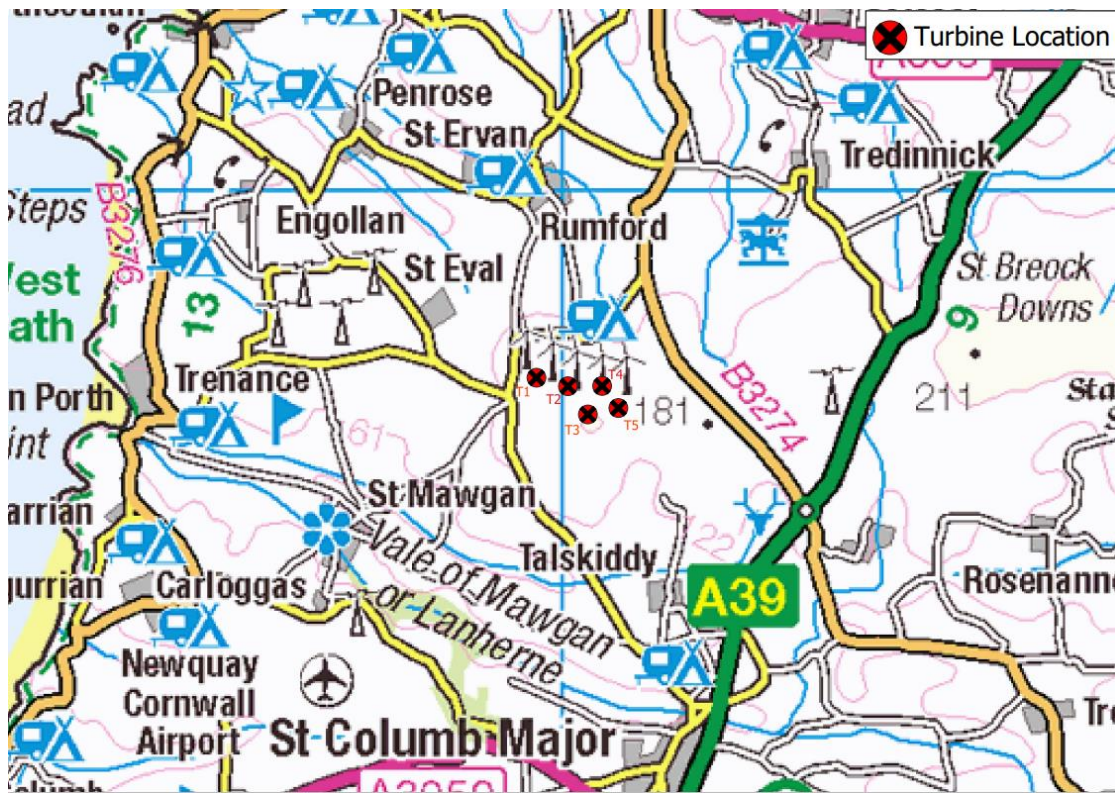
- 2.0.1 CE proposes to repower the Bears Down wind farm - which is coming to the end of its operational life - with the introduction of five wind turbines with a maximum blade tip height of up to 150m.
- 2.0.2 The proposed wind farm is predicted to generate approximately 71GWh of renewable energy annually, providing enough energy to power over 14,000 Cornwall homes¹, while offsetting approximately 530,000 metric tonnes of carbon over its lifetime.
- 2.0.3 The proposed development site, covering approximately 18ha of land, has been consistently identified as being a suitable area for wind turbines by Cornwall Council, and most recently in the CEDPD². The proposed site is in an area with several wind turbine developments nearby including wind farms Denzell Downs (PA11/01429, PA13/04805) and repowered St Breock (PA12/02907), as well as single-turbine developments at Ennis Barton Farm (PA11/00579), and Rosedinnick Farm (PA11/07592).
- 2.0.4 The proposed development is situated within the St Breock Downs (LCA18) (LCT D), an area of moderate sensitivity to large wind turbines. The landscape is determined to have the capacity to accommodate the repowering of existing wind farms³. In an area heavily influenced by wind turbines, this repowering project will ultimately reduce number of visible turbines within the landscape area while substantially increasing the power output by replacing present turbines with a smaller number of more efficient ones.
- 2.0.5 CE has considered the existing wind turbines in the landscape and taken the necessary design measures to ensure that sensitive receptors in the area will not experience serious harm to living conditions or visual amenity due to the proposed development. The proposed layout was also designed to adhere to noise limits at the surrounding properties. **Figure 1** indicates the proposed turbine locations, please see the accompanying planning plans in **Appendix B** of the Environmental Statement for further details.

¹ <https://www.gov.uk/government/statistics/regional-and-local-authority-electricity-consumption-statistics>

² SD03 Climate Emergency DPD Policy Map (2021)
<https://www.cornwall.gov.uk/media/jpkbn24q/sd03-climate-emergency-dpd-policy-map.pdf>

³ Landscape Sensitivity Assessment: EB022 - RLU 14 - Cornwall CA: 18 - St Breock Downs (2022)
<https://www.cornwall.gov.uk/media/genhmqz1/eb022-rlu-14-st-breock-downs.pdf>

Figure 1: Proposed turbine Locations



3 Screening and Scoping

- 3.0.1 Wind turbines are industrial installations for the production of electricity and therefore fall under category 3a of schedule 2 of the Town and County Planning (Environmental Impact Assessment) Regulations 2017.
- 3.0.2 Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 requires developments that may have a significant impact on the environment to be screened by the Local Planning Authority prior to application, in order to assess the need for an Environmental Impact Assessment.
- 3.0.3 A formal screening opinion request was submitted to Cornwall Council on 7th November 2023. The screening opinion dated 23rd November 2023 (Planning ref: PA23/08718), deemed that the proposal would likely have significant effects on the environment and an Environmental Impact Assessment and Environmental Statement is therefore required.
- 3.0.4 The screening response can be found in **Appendix A**.

EIA Screening Conclusion:

- 3.0.5 Having regard to the characteristics, scale and potential impacts of the development, the proposal would be a significant negative intrusion in the landscape including the Cornwall National Landscape (formerly known as the Cornwall AONB). The impact on above ground heritage assets within a wide radius of the site is unknown.

4 Energy and Planning Policy Appraisal

- 4.0.1 The national policy context relevant to the proposed five turbine repowering development on Land at Bears Down, St Eval, is described below. Other specific legislation and planning policy pertinent to the environmental studies required by Cornwall Council to accompany and inform this supporting statement (noise, electro-magnetic interference, shadow flicker etc.) are provided in the respective technical sections of this document.
- 4.0.2 It has been the policy of successive Governments since 1992 to stimulate the exploitation and development of renewable energy sources wherever they have prospects of being economically attractive and environmentally acceptable. Whilst this policy has its foundations in environmental imperatives, and in particular concerns about carbon dioxide emissions and climate change, more recently concerns about the security and diversity of national energy supply, and the need for sustainable development, have endorsed this policy.
- 4.0.3 At a European level, the 2009 Renewables Directive places an obligation on the UK to generate 15% of its total energy requirements (i.e., not just electricity) from renewable energy by 2020. In the UK, the Climate Change Act 2008 establishes a framework to place the UK on an economically credible path to achieving a reduction in CO² levels to 80% of 1990 levels by 2050. Following this, the Low Carbon Transition Plan was launched in 2009, setting out how the UK will meet these target reductions of 34% in carbon emissions by 2020, and detailing actions for individual sectors of the economy, including the target of 40% of electricity to be supplied by low carbon sources including renewables. In addition, the 2007 Energy and Planning White Papers, and subsequent implementation of the 2008 Energy and Planning Acts developed frameworks and mechanisms to facilitate the consenting of national infrastructure projects that will contribute to the supply of energy from renewable sources.
- 4.0.4 However, in November 2015, it was revealed that the UK is predicted to fall short of these legally binding EU obligations. This therefore brings a greater sense of urgency in implementing renewable energy developments to meet these targets. Moreover, our proposal will contribute to reaching those targets both locally and nationally with an estimated annual yield in carbon savings of 17,000 tonnes. This will be achieved through providing 70GWh of energy annually, powering the equivalent of over 14,600 homes.

4.0.5 In addition, the UK Government recently took a large and progressive step in committing to reduce emissions following the 2015 global climate agreement struck at the United Nations Conference on Climate Change in Paris, ratifying the agreement in November 2016. This sets out a clear long-term goal of net-zero emissions by the end of the century, where advancement was independently assessed in 2018 and five years thereafter. This long-term goal sends a strong signal to investors, businesses, and policymakers about shifting to a low carbon economy. To date, 196 parties have adopted the agreement, only emphasising the global movement towards climate action.

4.0.6 Prior to Glasgow's hosting of COP26 in November 2021, the UK set in law the world's most ambitious climate change target to cut emissions by 78% by 2035 compared to 1990 levels at the UN Climate Change Conference. This latest target enshrined in the UK's 6th Carbon Budget extends the net-zero commitment as the UK breaks the records in renewable electricity generation, which has more than quadrupled since 2010 while low carbon electricity now provides 50% of our total generation.

4.0.7 The following planning policy appraisals set out the current legislation and guidance relevant to the proposed repowering development at Bears Down. Full details can be found within **Chapter 4** of the Environmental Statement. The policy appraisal includes:

- The National Planning Policy Framework (NPPF) 2023
- Planning Practice Guidance (PPG) on Renewable and Low Carbon Energy
- Cornwall Local Plan Strategic Policies 2010-2030
- Cornwall Council Climate Emergency Action Plan 15th July 2019
- Cornwall Council Climate Emergency Development Plan March 2023
- Cornwall Renewable Energy Planning Advice March 2016
- Annexe 1: An assessment of the landscape sensitivity to onshore wind energy and large-scale photovoltaic development in Cornwall
- Annexe 2: Cumulative Impact Assessment Guidance for Cornwall - Wind Turbines
- Renewable Energy in the context of the application.

Decision Taking

4.0.8 The starting point for the decision maker is s38(6) of the Planning and Compulsory Purchase Act 2004 which requires that applications are determined in accordance with the

development plan unless material considerations indicate otherwise. This duty is also provided for in the National Planning Policy Framework (NPPF) at paragraphs 2 and 47.

4.0.9 In practice this requires the decision maker to first determine whether the proposal is in accordance with the relevant development plans; Cornwall Local Plan Strategic Policies 2010-2030 (CLP), and the Climate Emergency Development Planning Document (CEDPD).

Renewable Energy in the Context of the Application

4.0.10 The applicant expects that the wind turbine will make the following contributions to national energy and environmental policies:

- The proposed wind farm at Bears Down will save over 17,000 tonnes of carbon each year, compared to the equivalent fossil fuel production (depending on the UK energy mix at any one time).
- The wind farm is expected to generate in excess of 70GWh per year, enough electricity generation to power over 14,600 homes⁴.
- The Bears Down repowering development will contribute to legally binding government targets for renewable electricity generation and emissions reductions.
- The 300% increased generation of renewable energy on the site will contribute to the diversity and security of the UK's electricity supply.
- The proposal will contribute to Cornwall Council's aim of transitioning to a carbon neutral county by 2030 and re-enforcing the actions set to follow the Climate Crisis declaration on 22nd January 2019.

Energy Balance

4.0.11 An estimate of the energy payback for modern wind turbines is 6-12 months, depending upon the site wind speed and turbine model. Over a 35-year lifetime, a wind turbine would therefore generate at least 34 times the energy that was used in its manufacture and installation⁵.

4.0.12 An estimate of the energy payback for modern wind turbine development is 6-12 months depending upon the site wind speed and turbine model. Over the wind farms lifetime, the

⁴Subnational Electricity Consumption Data. Accessed via: <https://www.data.gov.uk/dataset/480984d5-13d7-48b1-93c8-2a0871ef5543/sub-national-electricity-consumption-data> (Accessed 6th June 2023).

⁵Life cycle costs and carbon emissions of wind power: executive summary, 2015. Accessed via: https://www.pure.ed.ac.uk/ws/portalfiles/portal/19730353/Executive_Summary_Life_Cycle_Costs_and_Carbon_Emissions_of_Wind_Power.pdf (Accessed 4th February 2022)

wind turbines will therefore generate at least 34 times the energy that was used in its manufacture installation. Please note that this is the prediction for a 'low wind' environment and therefore conservative. The location at Bears Down has been proven to have a good to high wind speed therefore it would be reasonable to expect the energy payback to be far greater than stated.

5 Landscape and Visual Impact

- 5.0.1 To assess the potential impact of the proposed development a landscape and visual impact assessment (LVIA) was prepared by Amalgam Landscape. The full assessment is detailed within **Appendix D** of the Environmental Statement.
- 5.0.2 The purpose of the LVIA is to identify and outline the existing landscape character and visual amenity receptors within the study area and to assess the potential magnitude of impact and level of effect, including their significance on these receptors as a result of the proposed development. An initial desk study was undertaken in to gain an understanding of the overall importance, character, quality and sensitivity of the existing landscape within the study area. A site survey, including a photographic survey, was then undertaken in November 2023.
- 5.0.3 The main study area is a 10km radius measured from the location of the proposed development. An additional broad study area of a 30km radius measured from the location of the proposed development is used to assess the wider extent of potential visibility.
- 5.0.4 The LVIA and associated figures are detailed within **Appendix D** of the Environmental Statement. Wireframe diagrams and photomontages from viewpoint receptors were created to aid assessment. Visual representations accompanying this LVIA have been prepared, for fifteen viewpoints (Vps).
- 5.0.5 Any effects on landscape character and visual amenity receptors and their views during the construction and decommissioning phases will be short term, reversible, and temporary in duration. Therefore, construction and decommissioning activities on both landscape character and visual amenity receptors and their views will ensure that the overall effects will be **low impact** and have **minor adverse** effects.
- 5.0.6 The proposed development will have minimal effects on any landscape elements. There will be loss of grassland for the new access tracks and the proposed wind turbine foundations, having **low impacts** and **minor adverse** effects on landscape elements. However, due to the proposed biodiversity enhancements, as detailed in **Appendix E** over time will bring **minor beneficial effects** to landscape elements.

- 5.0.7 The proposed development will not directly affect any landscape relevant designations. However, with reference to the ZTVs (**Figures 8-11**), there will be the potential for indirect impacts and effects on the setting of selected landscape relevant designations as a result of the operation of the proposed development, as detailed in **Appendix D**.
- 5.0.8 The proposed development is within the **medium-low (low-moderate)** sensitivity *St Breock Downs character area (CA24)* which extends in a broad band across the centre of the study area including towards the eastern fringes. Already influenced by existing wind energy schemes, including Bears Down, Higher Denzell Farm and St Breock, which form prominent vertical features in this open landscape, the proposed development will replace the existing wind turbines at Bears Down, albeit with taller but fewer wind turbines. In close proximity, the magnitude of impact will be **high**, the level of effect will be **moderate**. From the fringes of the *St Breock Downs character area (CA24)* it will be from selected open and elevated locations that the proposed development will be perceived as a small cluster, in combination with adjacent wind energy schemes on the distant open ridge. There will be an increase in the perception of wind energy development and the magnitude of impact will be **medium**, the level of effect will be **minor**. Further landscape character areas are detailed within **Appendix D**.
- 5.0.9 As illustrated in **Viewpoints 1-15 (Figures 12-26)** of **Appendix D**, the proposed development has the potential to be perceived in combination with the nearby operational, consented, and pending planning wind energy schemes. They will largely be perceived as a small cluster with the nearby operational Higher Denzell Farm wind energy scheme.
- 5.0.10 Set within an expansive downland landscape, already influenced by wind energy schemes, the replacement of the existing wind turbines at Bears Down with the proposed development, in combination with the nearby operational wind energy schemes, will not dramatically change the wider characteristics of the landscape character areas or create a landscape dominated by wind turbines.
- 5.0.11 The expansive downland landscape, as agreed by CC guidance, has the capacity to absorb the proposed development even in combination with other wind energy schemes without creating a 'wind farm' landscape.

5.0.12 As illustrated in **Viewpoints 1-15 (Figures 12-26)** of **Appendix D**, the proposed development has the potential to be perceived in combination with the nearby operational, consented, and pending planning wind energy schemes. They will largely be perceived as a small cluster with the nearby operational Higher Denzell Farm wind energy scheme. The sequential views have already been influenced by the existing Bears Down wind turbines, which the proposed development will replace.

5.0.13 Mitigation measures during the site selection and design stages have ensured that the proposed development will have limited direct effects on landscape elements and limited landscape vegetation will be lost.

5.0.14 Exposed views of the proposed development will generally be only from those receptors in close proximity or from selected, high, and open locations further afield. Although potentially and selectively perceived, the proposed development will be viewed as a replacement to the existing Bears Down wind energy scheme albeit taller but with fewer vertical moving elements, in combination with the adjacent operational wind energy schemes, within an expansive landscape already influenced by wind energy development.

5.0.15 The majority of effects on landscape character, landscape relevant designations and visual amenity receptors and their views will be **neutral** largely because of the enclosure provided by the surrounding rolling landform, hedgerows and hedgebanks and the dense screening vegetation focussed around residential properties, settlements and transport corridors in the wider landscape.

5.0.16 In summary, the proposed development will:

- Replace the existing wind energy scheme at Bears Down with fewer but taller wind turbines;
- Avoid and does not have a direct impact on any designated landscapes;
- Be set within a landscape already influenced by wind energy schemes, with the ability to accommodate change without detriment to its landscape character or views;
- Is positioned within a landscape that has the capacity to accept wind energy development (as defined by Cornwall Council within their landscape sensitivity assessment);
- Be perceived in close proximity as prominent vertical elements, in combination and adjacent to operational wind energy schemes;
- Very quickly become 'lost' within the wider expansive undulating landscape; and

- Overall, have **limited impacts** on landscape relevant designations, landscape character and visual amenity receptors and their views.

6 Ecology

Introduction

- 6.0.1 Western Ecology conducted the ecological survey effort with the inclusion of an EclA to support the Proposed Bears Down Repowering Development.
- 6.0.2 The ecological baseline for the development site was determined through:
- Desktop survey
 - Preliminary ecological appraisal (3rd September 2022)
 - Breeding bird vantage point surveys (June 2023 to September 2023)
 - Wintering bird vantage point surveys (October 2022 to March 2023)
 - Bat activity surveys; (Transects Summer and Autumn 2022 and 2023), (Remote Monitoring Autumn 2022) and (Bat Emergence surveys August and September 2023)
- 6.0.3 To accurately assess the potential impacts from the proposed development, the baseline conditions of the site required establishment. This includes ecological features which have the potential to be affected by the proposal, both within and adjacent to the development area.
- 6.0.4 The Zone of Influence for the purpose of this assessment is immediate habitats that will be potentially impacted by these proposals, non-statutory nature conservations sites within 2km, and statutory designated sites within 5km unless they have been designated for species at risk of wind turbines whereby they have been considered within 10km.

Impact Assessment

- 6.0.5 As part of the impact assessment, the available means to avoid, minimise or mitigate for adverse impacts are incorporated into the design, so that the final impact assessment identifies the residual (net) impacts that are predicted. The consequences for development control, policy guidance and legislative compliance can then be identified.
- 6.0.6 **Error! Reference source not found.**, Appendix E shows the matrix used for the assessment of the significance of effect on a valued receptor. Where there is potential that the proposed development will have a significant effect on a valued ecological feature of nature conservation interest, recommendations for mitigation are made based on the mitigation hierarchy: Avoidance, Mitigation, Compensation.

Construction Impacts

6.0.7 During the construction phase, there is predictable adverse effects which are generally unavoidable; many are short term and can be minimised as part of the construction management. Full details of all potential construction phase impacts can be found in **Appendix E**.

Habitats

6.0.8 Cornish hedgebanks and the hedgerows they support are of local value, there is potential for adverse effects during the construction phase associated with accidental damage. Unmitigated construction is probably to have an adverse effect on Cornish hedgebanks. The effect would be **permanent, minor adverse**.

Species

Badger

6.0.9 Unmitigated construction phase is near-certain to have an adverse effect on Badgers. The effect would be **minor, short term, permanent adverse**.

Bats - roosting

6.0.10 Unmitigated construction phase is near-certain to have an adverse effect on day roosting bats. The effect would be **short term, minor adverse**.

Bats - foraging and commuting

6.0.11 Unmitigated construction is near certain to have a **negligible effect** on foraging and commuting bats. Any effects were it to occur would be **temporary, minor** and associated with temporary loss of habitat to construction such as grassland and hedgebank.

Breeding birds

6.0.12 It is probable that unmitigated construction would have a minor, **temporary adverse** effect on nesting birds.

Wintering/passage birds

6.0.13 Any impacts associated with the construction phase would be short-term and temporary given the reinstatement of much of these areas. It is probable that unmitigated construction would have a **minor, temporary adverse** effect on winter/passage birds.

Reptiles

6.0.14 It is likely that unmitigated construction would have an adverse effect on individual reptiles were they to be present. Any affect was it to occur would be **adverse, minor and short term**.

Operational Impacts

6.0.15 During the operational phase, there are predictable adverse effects including the permanent loss of habitat under the development, disturbance during maintenance, and barrier effects and displacement of birds. There is also the potential for effects on birds and bats due to changes in the turbine locations, number of units, and their size, which can affect impacts associated with the moving blades of the turbines.

Habitats

6.0.16 Approximately 40m of hedgebank habitat will be permanently lost to access track widening and new gateways. Unmitigated operational phase is near-certain to have a **permanent, minor adverse** effect on this receptor.

Species

Badger

6.0.17 Unmitigated operational phase is near-certain to have **no adverse effect** on badgers.

Bats - roosting

6.0.18 Unmitigated operational phase is near-certain to have **no adverse effect** on day roosting bats.

Bats - commuting and foraging

6.0.19 **Negligible** impact on individual barbastelle bats and their populations.

6.0.20 **Negligible impact** on individual greater horseshoe bats and their populations.

6.0.21 **Negligible impact** on individual Myotis and Brown Long-eared bats and their populations.

6.0.22 **Negligible** impact on individual Nathusius' Pipistrelle bats and their populations.

6.0.23 It is near certain that the operational phase would have a **negligible** impact on individual Soprano Pipistrelle bats and their populations. Any effect, were it to occur, would be at an individual level due to collision mortality and would be **minor adverse**.

6.0.24 It is near certain that the operational phase would have a **negligible** impact on individual Serotine bats and their populations who would not be foraging at height in this location. Any effect, were it to occur, would be at an individual level due to collision mortality and would be **minor adverse**.

6.0.25 It is probable that re-powering will have **no adverse** effect on populations of common pipistrelle. Any effect, were it to occur, would be at an individual level due to collision mortality and would be **minor adverse**.

6.0.26 It is probable that re-powering will have **no adverse** effect on populations of Noctule. Any effect, were it to occur, would be at an individual level due to collision mortality and would be **minor adverse**.

Breeding/summer birds

6.0.27 Disturbance/displacement therefore represents a **negligible** impact to breeding bird species. For most target species recorded, the predicted number of collisions is less than 1 individual per summer season, which is considered to be a **negligible** impact on local populations. It is near-certain that the operational phase will have a **negligible** effect on local breeding bird populations.

Wintering/passage birds

6.0.28 Habitat loss therefore represents a **negligible** impact, and no specific mitigation is recommended. The proposed repowering is therefore very unlikely to create any new barriers within the landscape and birds will be able to continue to use the site, as they are currently. This impact is considered to be **negligible**, and no mitigation is recommended for barrier effect. For most target species recorded, the predicted number of collisions per annum is less than 1 individual per winter season, which is considered to be a **negligible** impact on local populations.

Reptiles

6.0.29 It is near-certain that the operational phase will have a **negligible** effect on local reptile populations.

Mitigation

Construction phase

6.0.30 The following mitigation would be provided to minimise the unavoidable effects during the construction phase:

- Design and delivery of a Construction Environmental Management Plan that incorporates ecological protections for all sensitive ecological features.
- Precautionary mitigation is recommended to prevent accidental damage to the retained sections of hedgebanks during the construction phase.
- Hedgebanks lost to temporary construction areas will be mitigated by reinstatement once construction is complete.
- Hedgerow realignment along the access track.
- Prior to the start of development an update badger survey will be required.
- Works associated with the substation will probably require a Natural England European Protected Species (EPS) mitigation licence for bats.
- Decommissioning of retired turbines and construction of new turbines carried out as a phased approach to minimise disturbance.
- Ground nesting bird surveys should be completed prior to works in the accepted bird nesting season of March to August inclusive.
- Vehicle and machinery movements should follow only designated routes to help contain disturbance to the works areas.
- Following identified methods for widening of the access track and hedgerow removal/realignment.

Operational phase

6.0.31 The following mitigation would be provided to minimise unavoidable effects during the operational phase:

- Handling and storage of chemicals and oils in line with Government guidelines and manufacturers recommendations.
- Creation of at least 40m of hedgebank with hedgerow habitat.

Residual impacts

6.0.32 Residual impacts on valued ecological receptors during the construction and operational phases are minimal, with **no effect being significant** at the level of assessment. Details of potential impacts and their significance at the level of assessment is given in **Table 14** of the EclA in **Appendix E**. Where no reasonable pathway of effect exists and pre-mitigation impact has been discounted, the receptor is not considered.

6.0.33 The proposed development will involve the creation of other neutral grassland and the enhancement of bare ground with mixed scrub habitat on site. Alongside other neutral grassland creation off-site. Hedgerow creation in site will involve the creation of Cornish hedge bank. The proposed repowering development will total to 12.02% net gain in habitat areas and 11.20% in hedgerow habitat.

Cumulative effects

6.0.34 No pending decision applications were found on the Cornwall planning portal within 10km on 29th October 2023.

6.0.35 Cumulative effect is **unlikely**.

7 Heritage Impact Assessment

Introduction

- 7.0.1 A Heritage Impact Assessment (HIA) was carried out by South West Archaeology Ltd. (SWARCH) to inform the proposal to repower the existing Bear's Down Wind Farm with five wind turbines - up to 150m to tip - on the same site. The assessment identified the significance of each heritage asset recognised on site, and in the surrounding area, and subsequently assessed the potential impacts of the proposed wind turbine on the identified assets. The full HIA report can be viewed in **Appendix F** of the Environmental Statement.
- 7.0.2 The assessment was divided into two main components. The first component addresses the direct impacts of the proposed development - defined as the physical effect that the development may have on heritage assets within, or immediately adjacent to, the development site. The direct effects of the development were taken to be its direct physical effect on any buried archaeological resources. The second component of the assessment addresses the potential indirect impacts of the proposed development. Indirect impacts would occur where the proposed development would impinge on the setting of a heritage asset, though would not have a direct physical effect.

Results

Direct Impacts

- 7.0.3 The assessment revealed that the site formed part of an extensive area of upland 'waste' utilised by neighbouring lowland communities for its natural resources and for rough grazing. From the assessment of historical maps, it is known that the site was not enclosed until the 19th century.
- 7.0.4 The site has previously been subject to archaeological fieldwork as part of the planning considerations for the existing 16 wind turbines on site and the adjacent Denzell Downs wind farm. Furthermore, the site was investigated for utilities associated with a covered reservoir on site. The investigations involved a desk-based assessment, two geophysical surveys, and a watching brief.
- 7.0.5 Apart from many Early Bronze Age barrows, a possible enclosure at the top of the hill, and some lithic scatters to the south, the geophysical surveys and the watching briefs

undertaken provide little indication of any permanent settlement, or activity other than burial, prior to the 19th century.

7.0.6 The exception to this is a ‘pit alignment’ identified on site, possibly indicative of discrete cut and infilled features such as pits with surrounding banked/compacted materials or removed fence posts. Given the proximity of the covered reservoir and the associated South West Water (SWW) pipeline, it is probable that these are relatively modern features. However, it remains possible they could relate to, for instance, an early manorial boundary running across the unenclosed moorland.

7.0.7 The archaeological potential of the site is assessed as being **low**.

7.0.8 The proposed works would have a major impact on any archaeological remains below the footprint infrastructure. The direct impacts are judged to be **Minor Adverse**.

7.0.9 It is suggested that the impact be mitigated via a suitable programme of monitoring and recording.

Indirect Impacts

7.0.10 The full assessment of each heritage asset can be found in **Appendix F** of the Environmental Statement, and a summary of each assessment can be found in **Chapter 7** of the Environmental Statement.

Historic Landscape

7.0.11 The scale of the landform, and the size and regularity of the later 19th and 20th century fields in the area, serve to diminish the apparent scale of the turbines. As the proposed scheme represents a repowering and reduction of the number and density of the turbines present, despite the increase in individual turbine size, this can be regarded as a **beneficial** effect.

7.0.12 The overall impact on the historic landscape is assessed as **minor beneficial**. As the turbines have an operational life it is possible, they could be removed, and the residual adverse visual effects reversed. Thus, the residual impact is technically temporary/reversible.

Aggregate Impact

7.0.13 The proposed repowering scheme represents a significant net reduction in the number of visible wind turbines from the majority of designated heritage assets. Where there is an increase in the number of turbines theoretically visible, it represents the extension of the ZTV arising from the increased height of the proposed turbines. That increase is generally in the 5-10km+ range where the visibility of turbines in the landscape is markedly reduced and much more reliant on optimum weather conditions. Overall, the beneficial impacts of the proposed development are determined to outweigh the adverse impacts, and that the likely aggregate impact of the proposed development is **Minor Beneficial**.

Cumulative Impact

7.0.14 As the proposed development is for the repowering of an existing wind farm, the baseline scenario consists of an existing an operational 16-turbine wind farm. The project would therefore represent a reduction from the baseline, the benefits of the reduction are therefore considered to outweigh the adverse impacts, and the cumulative impact of the proposed development is likely to be **Minor Beneficial**.

Conclusion

7.0.15 Overall, the proposed repowering project is judged to have a **Minor Beneficial** effect on heritage assets due to the reduction of the number of turbines in the landscape from 16 to five.

8 Noise

Introduction

- 8.0.1 An operational noise impact assessment was undertaken by TNEI Group for the proposed Bears Down Wind Farm Repowering. Cumulative noise impacts were a key consideration in the assessment due to the presence of the existing wind farms of Bears Down and Denzell Downs.
- 8.0.2 The noise assessment models the Vestas V136 4.5MW in Mode PO4 (full mode with serrated blades). This turbine has been selected as it is representative of the turbine type which could be installed at the site.
- 8.0.3 The guidance included in the IOA GPG and ETSU-R-97 have been considered.
- 8.0.4 The nearest noise sensitive receptors were identified and a sample of the 12 most sensitive locations were selected to be assessed as Noise Assessment Locations (NAL). Background noise was assumed from noise surveys previously undertaken as part of the Denzell Downs and original Bears Down Wind Farm planning applications. Worst case cumulative wind direction was considered, and noise levels and wind speed at 10m above ground level were correlated.
- 8.0.5 A 38dB fixed minimum was already set by Cornwall Council in March 2000 for the original Bears Down condition 11 for 9 x 600kw wind turbines (Decision notice 98/1286) and this was carried for all schemes in this area. The new repowering scheme will have significant added generation capacity, fits in the context of a climate emergency declared by Cornwall Council, and shows that only 4 properties would benefit from the marginal raise and only in rare conditions. Hence the analysis suggests that a 40dB fixed minimum criteria would be appropriate.
- 8.0.6 The full noise report can be seen in **Appendix G**.

Cumulative Limits

- 8.0.7 The assessment results show that predicted cumulative wind turbine noise levels marginally exceed the Total ETSU-R-97 Noise Limits at NAL7-Pennatillie by +0.5dB in daytime at 6m/s in north westerly winds. In these conditions, the proposed cumulative

scenario with Bears Down Wind Farm Repowering is predicted at 40.5dB (LA90) and existing cumulative scenario with the original Bears Down Wind Farm is predicted only 1dB below, at 39.5dB. Also, the scenario with only the existing Denzell Downs Wind Farm, Rosedinnick Wind Turbine and Trevibban Wind Turbines is predicted at 38.6dB which demonstrates that at this location other existing wind turbines have a relatively high contribution to the cumulative noise levels. Noise mitigation is suggested for Bears Down Wind Farm Repowering for this marginal exceedance.

Site-Specific Limits

- 8.0.8 A second test calculated more restrictive site-specific limits, comparing them to predictions for the proposed development on its own.
- 8.0.9 The assessment shows that the predicted wind turbine noise levels from a Vestas V136 in full mode PO4 exceed the Site Specific Noise Limits only by +1.6dB at NAL7-Pennatillie at 6m/s in daytime and broadly in north westerly winds. In these specific wind conditions targeted noise mitigation via the use of a Sound Optimised Mode SO13 for the Vestas V136 would meet the Site Specific Noise Limits.

Conclusions

- 8.0.10 The assessment results show that predicted cumulative wind turbine noise levels marginally exceed the Total ETSU-R-97 Noise Limits at NAL7-Pennatillie by +0.5dB in daytime at 6m/s in north westerly winds.
- 8.0.11 It was found that the predicted wind turbine noise levels from a Vestas V136 4.5MW wind turbine operating in mode PO4(full mode with serrated blades) exceed the Site Specific Noise Limits at NAL7-Pennatillie by +1.6dB at 6ms daytime in north westerly winds. The assessment also shows that in specific conditions targeted noise mitigation via the use of a Sound Optimised Mode SO13 (amongst SO11-SO13 available modes) for the nearest of the five turbines (Turbine 5) would meet the Site Specific Noise Limits.

9 Flood Risk Assessment and Hydrological Assessment

Introduction

- 9.0.1 Engineering & Development Solutions (EDS) have undertaken Flood Risk Assessment (FRA) and Hydrological Assessment for the proposed wind turbine development on Land at Bears Down Wind Farm.
- 9.0.2 Assessment and consequent surface water strategy have been completed in accordance with the best practice principles of SuDS, the National Planning Policy Framework (NPPF), Sustainable Drainage Systems (SuDS), Guidance for Cornwall and Planning Practice Guidance (PPG).
- 9.0.3 The objective of this assessment is to qualitatively consider the potential effects of the construction phase and operation of the proposed development on hydrological and hydrogeological impact. The results of the assessment indicate that the embedded mitigation measures will be sufficiently protective of the hydrological and hydrogeological environment.
- 9.0.4 The full FRA and Hydrological Assessment can be viewed in **Appendix H**.

Hydrological and Geological Context

Hydrology

- 9.0.5 Most excess surface water runoff will infiltrate into the ground; overland flows will proceed north with land fall towards the Porthcothnan Stream. The stream flows in a general northeast direction away from the site before confluencing with the Penrose Stream, which outfalls at the coast in Porthcothnan Bay. A lesser component of the flow will be conveyed westerly out of the site, down the existing access track towards the unnamed tributary of the Gluvian Stream.

Hydrogeology

- 9.0.6 The site is underlain by Staddon Formation which is primarily made up of sandstone, siltstone, and mudstone. The area is designated as a “Secondary A” Aquifer type. This describes permeable layers that can support local water supplies and may form an important source of base flow to rivers.

9.0.7 The area is classified as ‘**High-Medium**’ Groundwater Vulnerability.

Assessment of Flood Risks

9.0.8 Flood Risks

- The site is not at significant risk from either fluvial or tidal flooding.
- The risk of groundwater flooding or impact of the proposed works is low.
- Flooding from surface water does not pose significant risk to the development.
- The likelihood of flooding from sewers is negligible.
- Flooding of the site from reservoirs and other artificial water bodies is not considered to be a significant risk.

9.0.9 The development of the site will alter the nature of the surface permeability across the site through the implementation of the hardstanding and extension to the access track. To prevent an increase in the risk of flooding to areas downstream of the site, the surface water runoff from the development needs to be managed by means of a sustainable surface water drainage system.

Sustainable Drainage System

Drainage Design

9.0.10 It is proposed to drain the impermeable areas of the development by means of a series of shallow swales laid along the lower perimeter of the hardstanding area and access road. The swales will convey flows to six individual soakaways as shown in drawing **J-3131-3001A - Appendix H**.

9.0.11 Please see **Appendix H** for an outline of the design standards used to inform the SuDS design and for details of the drainage calculations performed.

9.0.12 Management and maintenance responsibility for the infrastructure will be the responsibility of the site owner/operator. Activity schedules can be seen in **Tables 1 and 2 - Appendix H**.

Construction Stage Drainage

9.0.13 To limit the potential for silt discoloured water to run off the site during construction, it is proposed that the silt fencing should be constructed at the front end of the works. The

designed soakaway systems should be the last stage of the construction process, to prevent silt build up or blockages within the drainage systems.

9.0.14 It is proposed that a temporary line of silt fencing be installed downslope of the works area during the construction phase to mitigate the potential effects of temporary additional impermeable surfaces on site. Additionally, moveable straw bales provided at the lower end of the access track will allow interception and filtration of any runoff bypassing the SuDS system along the access.

9.0.15 This study can conclude that the site is not at risk of flooding and will not cause any increase in flood risk elsewhere once the proposed sustainable drainage system is operational.

10 Electro Magnetic Interference (EMI) and Aviation

- 10.0.1 The UK government's guidance on renewable and low carbon energy (2014) outlines that wind turbine developments can potentially affect electromagnetic transmissions (e.g., radio, television, and phone signals). This would occur either through the blocking or deflecting of the line of site of transmissions (as with any large structure), or the dispersal of signals.
- 10.0.2 Cornwall Council's Renewable Energy Planning Advice (March 2016) further highlights that applications for wind turbine developments must not produce unacceptable adverse impacts on tv reception, communications links, or telecommunications systems which are not capable of being acceptably mitigated.
- 10.0.3 **Error! Reference source not found.** outlines the telecommunications organisations which have been consulted regarding potential impacts from the proposed development. Details of the correspondence to date can be found in **Appendix I** of the Environmental Statement. Potential impacts from the proposed development were identified to the ATC radar, however the Applicant and the Safeguarding Team have agreed that mitigation is feasible, and discussions are in progress to agree upon suitable mitigation measures.

Table 1: Responses from telecommunications and aviation organisations that have been consulted.

Consultee	Date of Consultation Initiated	Date of Consultation Received	Consultation Response
Ofcom	N/A	N/A	Ofcom no longer consult
Atkins Global	28/09/2023	05/10/2023	Objection
Joint Radio Company (JRC)	28/09/2023	N/A	No response at time of writing
Ministry of Defence (MoD)	28/09/2023	N/A	No response at time of writing

- 10.0.4 Atkins Global have objected based on potential interference in relation to UHF Radio Scanning Telemetry communications within the region. CE will be engaging in discussions with Atkins to address any issues and develop appropriate mitigation measures.
- 10.0.5 At the time of writing a consultation response has not been received from the MoD or JRC. When a response is received it will be uploaded onto the Cornwall Council planning portal as supporting information to this planning application. Should any adverse impacts arising from the proposed development be identified, the Applicant will engage in discussions

with the MoD and JRC to ensure that mitigation measures can be agreed to deem the proposal acceptable.

10.0.6 Due to the positive consultation response from JRC, and the feasibility and agreement of mitigation measures to impacts on radar, the Applicant is confident that the proposed repowering scheme on Land at Bears Down Farm is unlikely to adversely impact telecommunication links. The turbines can be fitted with MOD accredited visible or infrared aviation safety lighting, should this be deemed necessary, to mitigate any low-flying concerns. Any concerns raised by the MOD will be addressed following consultation.

11 Shadow Flicker

- 11.0.1 The Applicant has completed a shadow flicker assessment for the proposed repowering scheme, the full assessment can be found in **Appendix J** of the Environmental Statement.
- 11.0.2 Shadow flicker describes the effect of the sun passing behind the rotating blades of a wind turbine, causing a shadow that flicks on and off. Under certain combinations of geographical position and time of day, properties in the local vicinity to the turbine may be affected by shadow flicker. Concerns have been expressed that the stroboscopic effects of shadow flicker may induce epilepsy or similar symptoms. However, the operating speed of the blades on the proposed wind turbine would cause shadow flicker at a substantially lower frequency range than that considered to induce photosensitive epilepsy. As a result, there are **no** predicted adverse health effects of the development caused by shadow flicker.
- 11.0.3 The Vestas-136 wind turbine model has a rotor diameter of 136m. From this measurement a 1,360m study area was set out for the assessment following guidance which states that shadow flicker may affect properties up to a distance of ten times the rotor diameter from a turbine. The potential shadow flicker effects beyond this distance can be considered insignificant.
- 11.0.4 The assessment concluded that 210 properties fall within the test area, of which 56 could potentially be impacted by shadow flicker for over 30 minutes a day or over 30 hours a year.
- 11.0.5 Of these properties, Property 205 and Property 210 are representative of caravan parks. For details, please see **Appendix J** of the Environmental Statement.
- 11.0.6 It is important to note that all shadow flicker values represent a theoretical maximum number of shadow flicker minutes per day and hours per year. The modelling calculations take no account of weather conditions (e.g., cloud cover, wind speed and direction, mist, and fog) or screening by trees or hedges and walls, which are expected to greatly reduce potential shadow flicker effects. Furthermore, some of the affected dwellings may not have windows facing the development and any affected windows may well be rooms that are not generally in use at times when adverse effects may occur.

- 11.0.7 Minimising any potential effects of shadow flicker on neighbouring properties has been considered in the positioning of the turbines, by maximising the distance of the development site from the existing properties. Nevertheless, monitoring and mitigating measures will be put in place to address any potential effects that may arise.
- 11.0.8 A desktop study indicates that clusters of vegetation present in the vicinity of the affected properties could provide additional screening to limit the potential of shadow flicker occurring. Similarly, topographic screening may also provide some relief from potential shadow flicker effects in these locations. For detailed timings of each shadow flicker event from each turbine on the individual houses considered please see **Appendix J** of the Environmental Statement.
- 11.0.9 To address any remaining shadow flicker effects a shadow flicker programme will be installed into the turbines, on commissioning, to ensure that all impacts could be eliminated in the presence of conditions that would cause shadow flicker. The programme will ensure that individual turbines are able to be curtailed (switched off) during periods where the conditions are optimum for shadow flicker if a valid complaint from an impacted receptor is received, effectively nullifying any shadow flicker. This programme can be initiated at any time during the operational life of the proposed wind turbines. Should any affected residents require, further mitigation may include the planting of additional trees at the affected dwellings to generate more screening.

12 Transport

12.0.1 CE have prepared a Construction Transport Management Plan (CTMP), which outlines the process and associated impacts of the construction of the proposed development. The only significant impacts result from the movement of Heavy Goods Vehicles (HGVs) during the transport phase of the wind turbines. As such, the impact associated with the transport and construction of the proposed development is expected to be **modest** in scale and duration. The full report can be found in **Appendix K** of the Environmental Statement.

12.0.2 The wind turbine components will most likely be delivered by sea to Avonmouth Port and transported to the site via the local road infrastructure. The indicative transport route is outlined in **Figure 2**.

12.0.3 The route will begin by exiting Avonmouth Dock onto King Road, then taking the second exit at the St Andrews roundabout onto Crawley Way. The route will continue along Crawley Way for 0.35km, reaching the St Brendan's Roundabout, taking the second exit, and continuing west for 0.78km. The route will then take the M5 slip lane and head south on the M5. The route continues along the M5 for 120km.

12.0.4 The route will take Junction 31 of the M5 onto the A30 and continue along the A30 for 119km, after which the route will take the A39/B3279 slip, taking the 3rd exit onto the A39. The route continues along the A39 for 8.4km, and during this section of the route three roundabouts are identified - the following exits will be taken at each roundabout:

- First roundabout (Halloon roundabout) - 4th exit
- Second roundabout (Trekennyng roundabout) - 3rd exit
- Third roundabout (Winnard's Perch roundabout) - 1st exit

12.0.5 Upon exiting the third roundabout, the route joins the B3274 for 3.4km before turning left off the B3274 onto an unnamed road signed for Music Water Theme Park. The route continues along this road for 1.9km, then turns left travelling south for 0.65km before turning into the Bears Down Wind Farm access junction.

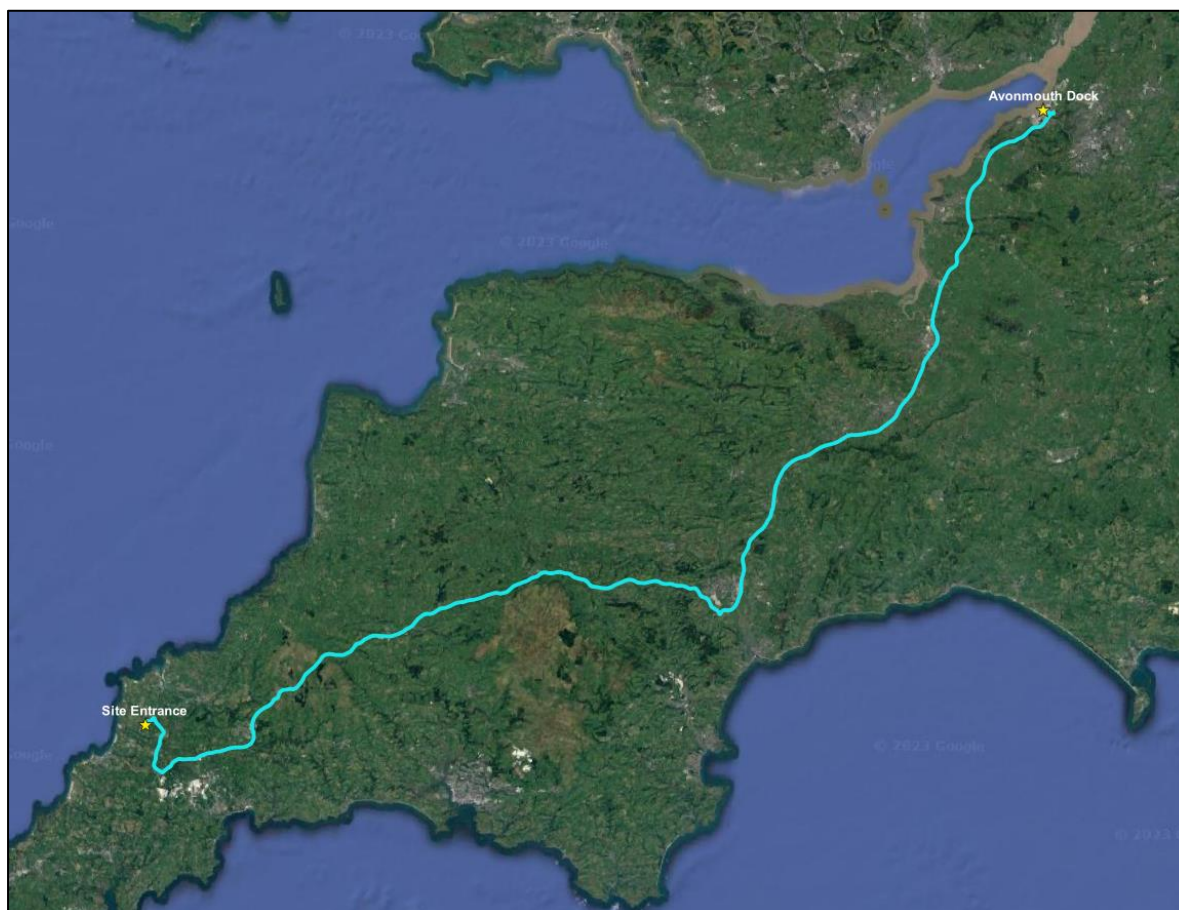


Figure 2: Wind turbine component delivery route.

12.0.6 Sections of the main highways may require the use of the full width of the carriageway for long loads, hence such loads would require a police escort. Multiple street furnishings along the route will need to be removed, however this will be temporary and restored back to its original state after the delivery of the components.

12.0.7 For the installation of the proposed wind turbines, there will be an approximate total number of 136 HGV movements for the main components and 4,960 normal construction vehicle movements.

12.0.8 It is recognised that the delivery of the turbine components will require careful thought and planning. Additionally, each HGV movement will be pre-planned with notifications sent to every local Council, Highway, and Police authority according to the requirements of the Abnormal Indivisible Loads - Roads Vehicles (Authorisation of Special Types) (General) Order 2003.

13 Public Consultation

13.0.1 The Applicant is hosting a public consultation on Wednesday 29th November 2023 between 3pm to 7pm at St Eval Community Centre, Orion Drive, St Eval. Please note this is an open event with no appointment required.

13.0.2 However, registering your interest prior to the event is encouraged, via phone on 01208 895576 or by emailing bearsdown@cleanearthenergy.com.

14 Socio-economic

- 14.0.1 A socioeconomic assessment has been undertaken by CE to understand the effect that the proposed repowering scheme on Land at Bears Down could have on the local communities, economy, and the tourism industry.
- 14.0.2 There is no prescribed standard criteria for assessing the socioeconomic effects of developments within the UK. There are many studies available to review the potential socioeconomic impact of renewable energy which particularly focused on wind turbine development. The assessment is based on a local review estimating the potential socioeconomic impacts to employment and business.
- 14.0.3 The site is an existing wind farm and lies within an agricultural setting within Cornwall. Although there are hamlets and villages within the area, there are no major cities within the vicinity, the nearest city being Truro located approximately 23km to the South-West of the proposed development. The nearest town is St Columb Major, situated 4.5km to the South of the proposed development.
- 14.0.4 Farming and agricultural activities are common within the vicinity of the proposal, making up the main land use throughout the area. There are a variety of tourist activities within Cornwall, the majority of which are located near or along the coastline.
- 14.0.5 According to the Office for National Statistics, Cornwall had a resident population of 568,210 in 2022⁶. The nearest settlement of St Eval had a population of 895 according to the 2021 census⁷, while the nearest town St Columb Major had a population of 3,661 according to the 2021 census⁸.
- 14.0.6 Construction and Manufacturing categories contribute to 13% of the total employment: the proposal will contribute to these industries and The Applicant will endeavour to employ local businesses and contractors for onsite construction and general support activities. In addition to this, The Applicant, CE, is already a local business based in Cornwall that employs locally.

⁶ <https://populationdata.org.uk/cornwall-population/>

⁷ https://www.citypopulation.de/en/uk/southwestengland/cornwall/E63006875_st_eval/

⁸ https://www.citypopulation.de/en/uk/southwestengland/cornwall/E63006899_st_columb_major/

14.0.7 Due to its scale and location, the proposed development has the potential to substantially increase employment in this sector and provide particular benefit to the local economy. In addition to providing Community Benefit Funds, such as those provided by the Denzell Downs Community Fund⁹, wind farm developments can also provide positive economic impact due to those staying, working and eating in the area while construction work is ongoing. Despite the drop in employment in the sector, CE have continued to grow and support the local economy through well paid, high-skill jobs within this industry and here in Cornwall. The project would be a valuable part of CE's portfolio and would include many contractors ranging from gardeners to electricians and technicians. These would be involved in construction aspects such as services, construction, civil and electrical engineering and improvements to cabling. Post-construction, there will be a need for ongoing operational and maintenance activities for the next 35 years, providing further consistent employment.

14.0.8 Powering Up Britain¹⁰ addresses national priorities such as energy security and net zero. It aims to achieve this in the most pro-growth, pro-business way, noting that the energy transition is one of the greatest economic opportunities for this country.

14.0.9 The proposed development is in line with the stated national priorities within the Net Zero Growth Plan, providing an increase in generated power from the existing development in a manner that contributes towards both energy security and the path towards net zero in a way that will benefit the British economy, in addition to Cornwall's ambition to be Net Zero by 2030.

14.0.10 The Cornwall Local Plan: Strategic Policies (2010 - 2030)¹¹ notes that the quality of Cornwall's landscapes, seascapes, towns, and cultural heritage enable tourism to play a major part in Cornwall's economic, social, and environmental wellbeing. Employment figures within the tourism sector are estimated at 0.5%¹². An assessment has been completed to identify the main tourist attractions within 10km of the site, impacts over this distance from the site are not expected. This has determined a range of different attractions, including Nature Reserves, Recreation, Theme Parks, Historical and Horticultural.

⁹ <https://grantscape.org.uk/fund/denzell-downs-community-fund/>

¹⁰ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147340/powering-up-britain-joint-overview.pdf

¹¹ <https://www.cornwall.gov.uk/media/ozhj5k0z/adopted-local-plan-strategic-policies-2016.pdf>

¹² <https://www.ons.gov.uk/census/maps/choropleth/work/industry-current/industry-current-88a/79-travel-agency-tour-operator-and-other-reservation-service-and-related-activities?lta=E06000052&lud=E06000052>

- 14.0.11 The proposed development will generate several economic benefits. CE commits to sharing a portion of the revenue with the wider local community, through the setup of a local community fund. Community fund money from similar projects has previously been used for the construction or restoration of important community projects or for improvements to local amenities which do not have access to public funds.
- 14.0.12 CE endeavours to hire local businesses within the construction phase of the development, which brings in a significant number of manhour tasks and creates new jobs. This in turn indirectly benefits third party suppliers, such as accommodation providers and local businesses where employees are likely to spend money on subsistence while the development, construction, and operational works are underway.
- 14.0.13 After construction has been completed and the wind farm begins generating electricity, the landowners directly involved in the project will benefit from their investment in the project from rental payments. Combined with other expenses, the proposed development represents a substantial long-term investment for the local area. In particular, the Community Benefit Fund will involve a percentage of wind farm income being distributed through community through an independent group.
- 14.0.14 CE, while operational across the whole of the mainland UK, have had a strong presence in Cornwall since being founded in 2010. One of the UK's leading renewable energy companies, its headquarters remains in Wadebridge, contributing to local employment and raising the profile of industrial and technology companies in Cornwall.
- 14.0.15 The proposed development will generate enough electricity to power approximately 14,000 Cornwall homes annually, while offsetting approximately 530,000 metric tonnes of carbon over the 35-year operational lifetime of the proposal, providing significant social and socio-environmental benefits to the community. The community benefit fund has the potential to bring notable social benefits if applied to the improvement of important local amenities for which public funding is not available. As an existing example, St Ervan Parish Council notes that the current Bears Down community fund has supported a number of local organisations including Cornwall Air Ambulance Trust¹³.

¹³ <https://www.stervan-pc.co.uk/Contents/ContentItems/4jp500vpn1vyyvbjn98cs83zm7>

- 14.0.16 The main concerns related to wind turbine developments often relate to the potential impacts on the wider community from noise, shadow flicker, and landscape and visual amenity disturbance. These potential impacts have been considered, quantified, and assessed individually by independent consultants and CE. The results can be found in the respective technical chapters of the Environmental Statement. Overall, it would have limited impacts on landscape relevant designations, landscape character and visual amenity receptors and their views.
- 14.0.17 Educational visits can be another social benefit of wind turbine developments, providing opportunities to expand student's knowledge on the importance of climate change and renewable energy. Whitelee Windfarm in Scotland offers an educational program developed by Glasgow Science Centre¹⁴, while in Cornwall the Energy Recovery Centre already offers an opportunity to learn about waste management strategies¹⁵. The proposed development may provide similar opportunities.
- 14.0.18 Cornwall has been an early adopter of renewable energy, and there has been no conclusive evidence that it has had a negative impact on tourism. Tourism numbers have been increasing overall over time, and in the future Cornwall is likely to see more climate tourism, which will not be negatively affected by the proposed development.
- 14.0.19 Furthermore, the turbines will be seen in the context of other wind farms in the landscape, in particular their placement on a site that has been a wind farm since 1999. It is therefore concluded that the impacts of the proposal on the area are unlikely to deter visitors from enjoying the area. No significant effects are found on any other tourism or recreational destinations identified within the study area.
- 14.0.20 Studies suggest that the public are not likely to be deterred from visiting an area due to wind turbine presence, with 70-90% of tourists displaying neutral to positive attitudes towards onshore windfarms in UK rural landscapes¹⁶¹⁷¹⁸¹⁹. There have been more

¹⁴ <https://www.whiteleewindfarm.co.uk/visitor-centre/what-we-offer/schools/education-programme>

¹⁵ <https://suezcornwall.co.uk/community-and-education/education-activities/cornwall-energy-recovery-centre-visitor-centre/>

¹⁶ Modrue, T., Moss, O. (2020) The impacts of onshore windfarms on a UK rural tourism landscape: objective evidence, local opposition and national politics. *Journal of Sustainable Tourism* 20 (2): 1-23

¹⁷ Aitchison, C. (2012). Tourism impacts of windfarms: Submitted to Renewables Inquiry Scottish Government. University of Edinburgh

¹⁸ Regeneris Consulting and the Tourism Co. (2014). Study into the potential economic impact of windfarms and associated grid infrastructure on the Welsh tourism sector, commissioned by the Welsh government

¹⁹ NU -Northumbria University. (2014). Evaluation of the impacts of onshore windfarms on tourism. <https://www.northumberland.gov.uk/NorthumberlandCountyCouncil/media/Planning-and-Building/planning%20policy/Core%20strategy/Evidence%20based/EB14-Evaluation-of-the-impacts-of-onshore-wind-farms-on-tourism.pdf>

than 60,000 additional international visitors to Cornwall & Scillies in 2019 compared to 2009, showing that during the time that wind farm development has expanded, tourism has not declined overall²⁰. In addition, visitors are likely to support other local tourism attractions and restaurants/cafes.

14.0.21 Due to careful siting of the turbine in an area that is within close proximity to other wind developments, and the nature of the development as a repowering that will result in an overall reduction in the number of turbines, the proposed development will reduce visual clutter while significantly increasing the amount of renewable electricity generated from the site.

14.0.22 The proposal has been assessed as having an overall positive socio-economic impact on the local area. The wind turbines represent a significant additional source of revenue for local businesses within the construction industry which will ripple into other local businesses in the wider community. In addition to the Community Benefit Fund and payments to landowners directly involved in the project, CE's headquarters in Wadebridge will contribute to local employment and raising the profile of industrial and technology companies in Cornwall. Furthermore, provision of a community benefit fund throughout the full term of the development will aid in the growth or maintenance of much needed community projects.

14.0.23 Individual reports have been conducted to assess noise, shadow flicker, visual and heritage impacts on the local area, and are further discussed in **Appendix G, J, D and F** of the Technical Chapters of the Environmental Statement respectively.

²⁰ <https://www.visitbritain.org/inbound-trends-uk-nation-region-county?area=1730>

15 Conclusion

15.0.1 The Non-Technical Summary has addressed a wide range of likely significant effects on the environment from the proposed development, and demonstrates that the proposed repowering of Bears Down wind farm:

- Is in line with national guidance and is supported by national, regional and local policy on renewable energy and sustainable development;
- Will have limited impacts on landscape relevant designations, landscape character and visual amenity receptors and their views;
- Will not have significant impact any habitat or species of nature conservation importance;
- Will have a Minor Beneficial effect on heritage assets;
- Will meet the noise criteria given in ETSU-R-97;
- Will not adversely impact Flood Risk, hydrology, hydrogeology with the application of the appropriate mitigation measures;
- Will not produce unacceptable levels of shadow flicker on the residents of the properties located in proximity to the proposal thanks to mitigation measures;
- Will not have a significant impact on transportation networks; and
- Will have positive effects on the local community in the form of a community benefit fund, collaborative benefit and the opportunity to provide jobs, particularly in the construction employment sector. This proposal is not expected to affect tourism within the local area.

15.0.2 This NTS has not established any exceptional circumstances that outweigh the legislation and planning policy relevant to this renewable energy development.

15.0.3 The proposed landscape area (CA18) is deemed suitable to accommodate Band D turbine developments up to 150m to tip, with 'moderate' sensitivity. CE predicts the proposal will generate over 70GWh annually, contributing a significant amount to Cornwall Council's overarching aim of becoming a carbon neutral county by 2030. This proposal is also estimated to save over 595,000 tonnes of carbon during its operational lifetime of 35 years.

15.0.4 Therefore, this planning application for the Repowering of Bears Down Wind Farm should be granted planning permission, allowing the development to contribute to national and local targets to produce renewable energy and contribute to the security of the UK's energy market.