

Rhoscrowther | Wind Farm



Design & Access Statement

October 2021

Design and Access Statement – Contents

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1.0 Introduction

- 1.1 Rhoscrowther Wind Farm Limited ('the Applicant') is proposing to develop a wind farm (hereafter referred to as 'the Development') on land south of the Valero Refinery near the village of Rhoscrowther. The Development is located within the Haven Waterway Enterprise Zone, approximately 5km west of Pembroke and 4km east of Angle in south west Wales. The location of the Development is shown in ES Figure 1.2 of Volume II of the Environmental Statement. The site occupies an area of circa 13 hectares.
- 1.2 This document provides the explanation and rationale for the design principles and access issues for the Rhoscrowther Wind Farm (referred to as "the Development"). This document complements the Environmental Statement.
- 1.3 The Development will consist of 3 turbines up to 135m to tip height, with associated infrastructure including approximately 1.3km of new access tracks, turbine transformers, new site entrances, single storey control building and substation, underground power cables and a temporary construction compound. A site layout plan at Figure 1.1 of Volume II of the Environmental Statement. Each turbine will have a generating capacity up to 4.3MW. The maximum installed capacity of the Development would therefore be 12.9MW.
- 1.4 This report forms part of an application to the Welsh Ministers for planning permission for a Development of National Significance.
- 1.5 Article 8(b)(v) of the Developments of National Significance (Procedure) (Wales) Order 2016 requires a prospective applicant for consent for a development of national significance to publish a design and access statement required by article 14 on a website it maintains for at least 42 days before making the application. This was undertaken by the Applicant as part of its pre-application consultation.
- 1.6 Article 14 of the Developments of National Significance (Procedure) (Wales) Order 2016 states:

'(1) An application must include a statement ("a design and access statement") which complies with paragraph (2).

(2) A design and access statement must—

(a) explain the design principles and concepts that have been applied to the development;

(b) demonstrate the steps taken to appraise the context of the development and how the design of the development takes that context into account;

(c) explain the policy or approach adopted as to access, and how policies relating to access in the development plan(1) have been taken into account; and

(d) explain how any specific issues which might affect access to the development have been addressed.'

2.0 SITE LOCATION

2.1 The Development Site occupies an area of approximately 13 hectares on land near to the village of Rhoscrowther, 9km west of Pembroke and 4km east of Angle. The site is to the south of the Haven Waterway in an area characterised by undulating farmland, dotted with farmsteads and occasional buildings sited alone or grouped in small clusters. It is located on the slopes of a shallow valley between two gently rolling low ridgelines that run east/west with the ridgeline to the north rising to approximately 63m AOD and that to the south rising to approximately 59m AOD. A stream passing through the site drains into the sea in Angle Bay approximately 1.3km to the west.

2.2 The Valero Oil Refinery ("the Refinery") is located to the north of the site on rising land. It is a large sprawling industrial complex which includes six tall stacks up to 169m high, with buildings, a multitude of tanks, pipework, gantries and other structures including extensive car parking. There are solar farms at Hoplass and Wogaston Farms to the south east of the site and slightly further afield to the north east is the Pembroke Power Station (the power station) and extensive electricity transmission lines. To the west of the site on the shores of Angle Bay are the remains of the former BP Oil Storage site.

- 2.3 Both the Site and the Refinery lie within the Haven Waterway Enterprise Zone.
- 2.4 The former Cheveralton Landfill Site, which closed in 1995, is located within the eastern half of the site itself and has since reverted back to agricultural use.
- 2.5 The site lies close to the boundary of the Pembrokeshire Coast National Park. The boundary runs in a north-south direction a short distance to the west of the site, encompassing the eastern margins of Angle Bay and continuing south and east to include the Angle Peninsula and Freshwater West. The turbines would be located between approximately 0.75km and 1.5km from the National Park boundary at its nearest point.
- 2.6 There are no dwellings within the site. There are sporadic dwellings, including farmsteads, in the surrounding area including a cluster of properties at Wallaston Green and on the lane which runs to the south of the site. Within Rhoscrowther village the nearest residential property is situated approximately 550m from the nearest turbine. As a result of an incident at the refinery in the early 1990's most of the residents moved out of the village and many of the properties have been demolished. Whilst at the time of the Inquiry only two dwellings were occupied, it is understood that one of these has recently been vacated and only the dwelling nearest the site remains occupied.
- 2.7 There are no public rights of way across the site. However, there is a network of rural roads in the surrounding area which includes the B4320, the main road between Pembroke and Angle, and the minor roads to the north and south of the site boundary, the former also providing access to the refinery. Other public rights of way in the area include the Pembrokeshire Coast National Trail.

3.0 PROPOSED DEVELOPMENT

- 3.1 The Development consists of three wind turbines, each with a height of up to 135m to tip. Each turbine has a total installed capacity of up to 4.3 megawatts. The layout of the turbines is shown on Figures 1.1 and 1.2 contained within Volume II of this ES. Elevations of the

turbines are illustrated in Figure 1.3.

- 3.2 The Ordnance Survey National Grid References of the turbines on which this ES has been based are set out below:

Turbine	Easting	Northing
1	191098	202098
2	191423	201926
3	191577	201601

- 3.3 The turbines will be connected together by underground electrical cables buried between 0.8m and 1.2m deep, together with communication and low voltage cables. The cables would be laid where possible adjacent to a hard core track used for construction of the turbines and to provide access for maintenance. The new tracks extend to approximately 1.3km in length.
- 3.4 In addition to the turbines, there is a requirement for an Electrical Sub-station (48m x 25m) and Control Building (9m x 9m) which are proposed to be contained within a secure compound within the site. Details of these structures are illustrated in Figures 1.4 and 1.5 of ES (Volume II). The Control Building will provide housing for the control equipment necessary to connect the array to the grid and to monitor the performance of the turbines. It would also contain welfare facilities for staff working on site during the operational period.
- 3.5 Access to the site will be gained via two new entrances off the unclassified road to the north of the site. About 1.3km of new access tracks will be constructed across the site as indicated on the overall site layout plan Figure 1.1 and shown in more detail on Figure 1.6. New access tracks are required to facilitate construction of, and ongoing operational access

to, the turbines and switchgear and metering building, including the delivery of turbine components and turbine erection traffic.

- 3.6 In line with turbine manufacturer guidelines, the access track will be up to 4.5m wide at the running surface (excluding shoulders/verges, widening at bends, junctions, and crane hardstandings) to satisfy the requirements of the safe operation of construction and turbine deliveries.
- 3.7 The access track layout will be micro-sited to minimise cut and fill and earthworks requirement requirements. This will help to mitigate environmental impacts during the works, and also visual impact.
- 3.8 Access track construction will involve the removal of vegetation and top soil, excavation of the underlying subsoil to a suitable bearing stratum, and profiling of the ground as required to suit turbine access guidelines.

4.0 **CONTEXT – PLANNING POLICY**

- 4.1 A number of policy documents have been considered in the design of the Development including (but not limited to):

4.1.1 Planning Policy Wales 11 – February 2021

4.1.2 Future Wales: The National Plan 2040

4.1.3 Pembrokeshire County Council Local Development Plan 2013

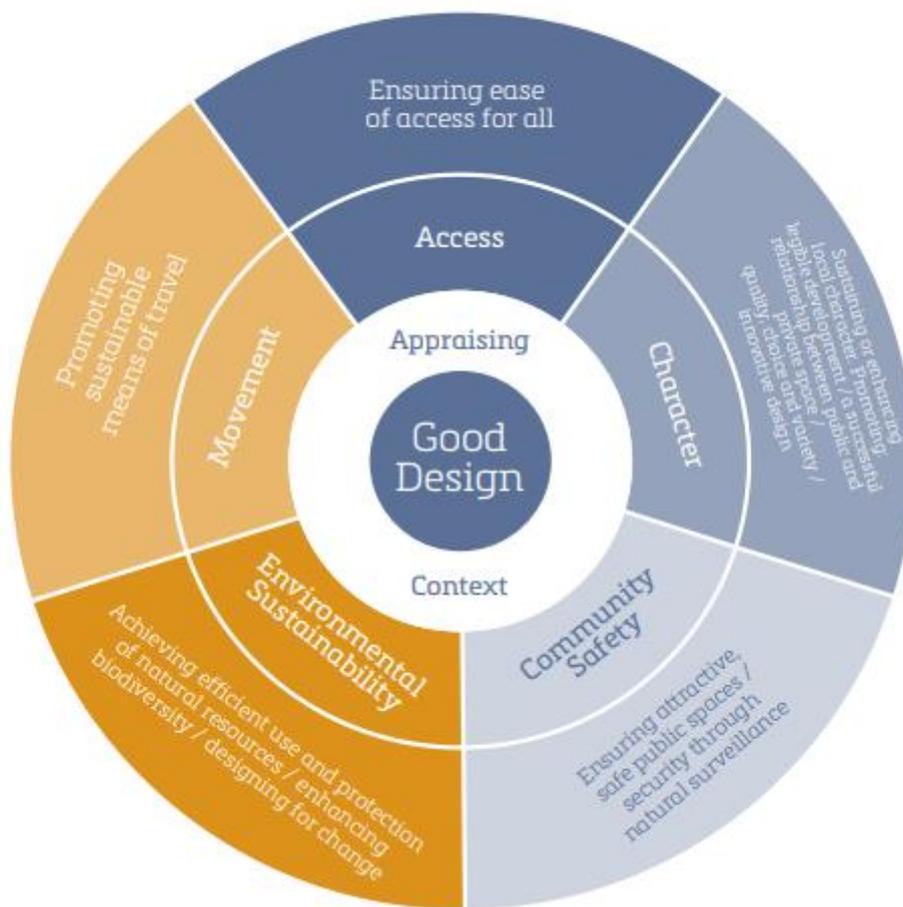
4.1.4 Technical Advice Note 12: Design

- 4.2 Paragraph 3.3 of PPW 11 states:

‘Good design is fundamental to creating sustainable places where people want to live, work and socialise. Design is not just about the architecture of a building but the relationship

between all elements of the natural and built environment and between people and places. To achieve sustainable development, design must go beyond aesthetics and include the social, economic, environmental, cultural aspects of the development, including how space is used, how buildings and the public realm support this use, as well as its construction, operation, management, and its relationship with the surrounding area.'

Figure 8: Objectives of Good Design



4.3 The commentary of Policy 18 to Future Wales: The National Plan 2040 states:

'Irrespective of location or scale, the design and micro-siting of proposals must seek to

minimise the landscape and visual impact, particularly those in close proximity to homes and tourism receptors.'

4.4 Policy GN2 Sustainable Development of the Pembrokeshire County Council Local Development Plan states that development will be permitted where relevant criteria are met including *'It is of a good design which pays due regard to local distinctiveness and contributes positively to the local context'*.

4.5 Paragraph 6.8 of TAN 12 states:

"The DAS is a communication tool which outlines how the design of the proposal has been considered from the outset of the development process and how the objectives of good design have been used to inform this. The benefit of the DAS to developers, applicants, local communities and local planning authorities is outlined in the above mentioned guidance."

5.0 DESIGN

5.1 The site is located south of the Valero Oil Refinery, in the Mildford Haven area, an area designated as an energy hub in the Haven Waterway Enterprise Zone. As well as the technical requirements, a number of other considerations, such as the character of the area (including the National Park) were taken into consideration.

5.2 Key factors taken into consideration during the design process included the following:

- i. Landscape and visual integration (including view from National Park);
- ii. Optimum installed capacity to ensure economic viability;
- iii. Availability of wind turbines;
- iv. Size of the site and current land use;
- v. Planning policy;

- vi. Statutory designations (including heritage);
- vii. Access;
- viii. Existing infrastructure;
- ix. Proximity to grid connection point and capacity availability
- x. Turbine separation of approximately 5 rotor diameters downwind and 4 rotor diameters crosswind to minimise wake losses ;
- xi. Ground conditions i.e. gradient and build-ability;
- xii. 50m buffers around all watercourses;
- xiii. Avoidance of prime bog active peat areas; and
- xiv. Minimum separation of 550m from all residential properties to nearest turbines.

5.3 The full design history is included in Chapter 2 of the Environmental Statement.

5.4 A number of different layouts and turbines were considered. The Applicant concluded that a layout with the turbines close to Valero Oil Refinery would reduce any impact on the National Park and the Church of St Decumanus, Rhoscrowther (Listed Building Grade I). The Applicant considered that a 135m turbine with a total installed capacity of 4.3MW (total of 12.9MW) would be the most suitable for the Development given the size of the nearby Valero chimneys.

Amount

5.5 The number of turbines proposed for the site seeks to optimise the technical capacity of it whilst minimising any potential environmental impacts. The optimum number of turbines for the site has been determined as three, taking account of all known environmental and technical constraints. This is discussed in Chapter 2 of the ES.

5.6 In addition to the turbines the Development includes:

- 3 standing areas/foundations for the turbines;
- 2 new site entrances;
- c. 1.3km of access tracks (including underground cabling);
- Temporary construction site compound; and
- On-site substation including a control building.

Layout

5.7 The layout has gone through a number of revisions to ensure that the potential adverse environmental effects, such as visual impact, were minimised while maintaining the operation capacity of the wind farm. This is discussed, and the alternative layouts are shown, in Chapter 2 of the Environmental Statement.

Scale

5.8 The appropriate scale of the turbines is found by balancing the impact of the turbines in terms of receptors such as the landscape, aviation and ornithology, and the generating capacity of the turbines.

5.9 The scale has been influenced by the both the technical requirements, and the capacity of the landscape to absorb the Development.

Appearance

5.10 The appearance of the Development as a whole, and the individual elements, determines the visual impact of the Development on the surrounding area. This is discussed in more detail in Chapter 5 of the ES, and is summarised below.

Turbines

- 5.11 The exact make and model of the wind turbines will not be finalised until the construction phase, however the following has been used as a worst case scenario in the EIA:
- Hub height 76.5m
 - Blade diameter 117m
 - Total height to tip 135m
 - Three rotor blade design.
- 5.12 The finish and colour of the turbines will be off-grey with a semi-matt finish, to reduce their potential contrast with the background sky and reduce their reflectivity in conditions when the sunlight is at a low angle i.e. earlier and/or late in the day.

Substation and Control Building

- 5.13 The development will include a pitch-roofed control building, containing switch gear and a meter room as well as welfare facilities for site staff and a control room for the turbines. This building is located adjacent to an existing track to the south of the site, close to an existing building to minimise the visual impact. The control building's exterior materials will be selected to reflect those commonly used in the area and subject to approval by the local planning authority.

Temporary Construction Compound

- 5.14 The construction compound will be located adjacent to the easternmost site entrance. The area will be defined using Herras-type fencing and will be stoned to allow traffic by service and personnel vehicles. Office, storage and staff welfare facilities would be provided in modular-type accommodation within the compound. Topsoil in the area would be stripped and stockpiled until it is re-spread and re-seeded at the end of the construction phase, following removal of the construction compound.

Community Safety

- 5.15 Rhoscrowther Windfarm Ltd. is committed to ensuring their wind farms are designed and developed to avoid any unacceptable risks to people, surrounding infrastructure or the environment.
- 5.16 All turbines are located in excess of 500m from all dwellings to minimise any potential impacts on their amenity.
- 5.17 Two byways and a bridleway pass through the site. These rights of way will be maintained throughout the construction and operational periods to ensure there will be no safety risk to members of the public.
- 5.18 A comprehensive health and safety assessment will be carried out prior to construction by the selected contractor in accordance with legislation.
- 5.19 In order to effectively prevent the risk of accidents, a clear system of identifying hazards and implementing effective control measures would be put into place. This is discussed in Chapter 14 of the ES.

Environmental Sustainability

- 5.20 As discussed previously, the Welsh Government has set ambitious targets of generating 70% of its electricity consumption from renewable energy by 2030.
- 5.21 Wind energy is recognised as one of the most viable, and technology advance, forms of renewable energy. The UK Renewable Energy Strategy, has estimated that in order for the UK to meet its EU Renewables Energy Directive requirements, 30% of electricity shall have to come from renewable sources, as there are difficulties in providing significant elements of fuel and heating from renewables.
- 5.22 The Development is a 12.9MW installation, which will produce up to 12.9MW per year of electricity. This is enough electricity to supply the average electricity needs of

approximately 9,900 homes each year.

5.23 This development will clearly contribute to the UK's abilities to meet its targets.

6.0 ACCESS

6.1 A full traffic and access impact assessment has been conducted and is discussed in Chapter 12 (Traffic & Transportation) of the ES and in more detail in the accompanying Transport Assessment document. It is also summarised briefly below.

Construction and Decommissioning

6.2 The site would be accessed from an existing field access located within a large lay-by and a new entrance point, both to the south of the entrance into the Valero Oil Refinery. Pembrokeshire County Council agreed in principle that two junctions could be located at this locations subject to further detailed design and discussions. The new access junctions would be constructed within the grass island of the lay-by and would link directly into the field access and onsite track that would continue to the proposed turbine locations.

6.3 Much of the proposed construction route between Pembroke and the site access is currently traversed by HGVs accessing the Valero Oil Refinery. The road network is not observed to be under any capacity pressures and is constructed to accommodate the movement of all vehicle classes.

6.4 With the exception of the turbine elements, the vast majority of traffic will be normal construction plant and most will arrive on site on low loader transporters. The turbine elements will arrive on specialist transport vehicles. A large scale self-propelled crane and supporting ballast vehicles would be used to erect the turbines.

6.5 An assessment of the likely trip generation concluded at its peak the highest flow of traffic will equate to approximately 56 movements per day (28 trips in and 28 trips out).

6.6 The decommissioning stage will involve similar access requirements as the construction

phase though the number of HGV movements is likely to be lower as it is unlikely that the cast in-situ turbine foundations would be removed.

Public Rights of Way

6.7 There are no public rights of way, existing footpaths within the site, nor footways alongside the carriageway adjacent to the site.