

Hirfynydd Renewable Energy Park EIA Scoping Report

Final report

Prepared by LUC

October 2022



EDF

Hirfynydd Renewable Energy Park EIA Scoping Report

Project Number
12065

Version	Status	Prepared	Checked	Approved	Date
1.	Draft for issue to tech team	A Robinson	S Young	S Young	23.06.22
2.	Final Draft Report	A Robinson	D. McArthur	S Young	17.08.22
3.	Revised following changes to RLB and turbine layout	J. Pearce	K. Lyon	S. Young	07.09.22
4.	Final following client review	J. Pearce	S. Young	S. Young	14.10.22

Bristol
Cardiff
Edinburgh
Glasgow
London
Manchester

landuse.co.uk

Land Use Consultants Ltd
Registered in England
Registered number 2549296
Registered office:
250 Waterloo Road
London SE1 8RD

100% recycled paper

Landscape Design
Strategic Planning & Assessment
Development Planning
Urban Design & Masterplanning
Environmental Impact Assessment
Landscape Planning & Assessment
Landscape Management
Ecology
Historic Environment
GIS & Visualisation



FS566056



EMS566057



OHS627041



Contents

Contents

Hirfynydd Renewable Energy Park
October 2022

Chapter 1		Chapter 6	
Introduction	1	Cultural Heritage	38
The Applicant	2	Introduction	38
Document Structure	2	Existing Conditions	39
		Proposed Approach to Surveys and Assessment Methodology	40
Chapter 2		Potential Significant Effects of the Development	45
The EIA Process and Methodology	3	Effects Scoped Out	46
Introduction	3	Approach to Mitigation	46
Scoping	3	Questions	47
Baseline Conditions	4		
Assessment of Effects	4	Chapter 7	
Mitigation and Monitoring	6	Hydrology, Hydrogeology and Geology (including Peat & Mining)	48
Uncertainty	6	Introduction	48
Competent Experts	7	Existing Conditions	48
ES Introductory Chapters	7	Proposed Approach to Surveys and Assessment Methodology	50
Questions		Potential Significant Effects of the Development	53
		Effects Scoped Out	54
Chapter 3		Approach to Mitigation	54
Legislative Planning and Policy Context	8	Questions	54
Introduction	8		
		Chapter 8	
Chapter 4		Ecology	55
Site and Project Description	13	Introduction	55
The Site and Surrounding Area	13	Existing Conditions	55
Previous Application	14	Proposed Approach to Surveys and Assessment Methodology	56
Project Description	14	Potential Significant Effects of the Development	58
		Effects Scoped Out	59
Chapter 5		Approach to Mitigation	60
Landscape and Visual Amenity	18	Questions	60
Introduction	18		
Existing Conditions	18	Chapter 9	
Proposed Approach to Surveys and Assessment Methodology	30	Ornithology	61
Potential Significant Effects of the Development	36	Introduction	61
Effects Scoped Out	37	Existing Conditions	61
Approach to Mitigation	37		
Questions	37		

Contents

Hirfynydd Renewable Energy Park
October 2022

Proposed Approach to Surveys and Assessment Methodology	62
Potential Significant Effects of the Development Effects Scoped Out	64
Approach to Mitigation	65
Questions	66

Chapter 10 Noise and Vibration

Introduction	67
Existing Conditions	67
Proposed Approach to Surveys and Assessment Methodology	67
Potential Significant Effects of the Development Effects Scoped Out	70
Approach to Mitigation	70
Questions	71

Chapter 11 Access, Traffic and Transport

Introduction	72
Existing Conditions	72
Proposed Approach to Surveys and Assessment Methodology	73
Potential Significant Effects of the Development Effects Scoped Out	74
Approach to Mitigation	75
Questions	75

Chapter 12 Socio-Economics, Recreation & Tourism

Introduction	76
Existing Conditions	76
Proposed Approach to Surveys and Assessment Methodology	77
Potential Significant Effects of the Development Effects Scoped Out	80
Approach to Mitigation	80
Questions	80

Chapter 13 Other Issues

Introduction	82
Aviation	82
Solar Glint and Glare	85
Telecommunications and Utilities	86
Shadow Flicker	87
Climate Change	88
Major Accidents and Disasters	88
Population and Human Health	88
Land Use	88
Questions	89

Appendix A List of Scoping Questions

Appendix B Indicative ES Structure

ES Structure	B-1
--------------	-----

Appendix C Figures

Figure 1.1: Site Location	74
Figure 1.2: Indicative Site Layout	75
Figure 2.1: Cumulative Wind Farms within 33 km	75
Figure 5.1: Search Area and National Landscape Designations	76
Figure 5.2: Scoping Turbine Layout	76
Figure 5.3: National Landscape Character Areas	77
Figure 5.4: Proposed Landscape Reporting Units	80
Figure 5.5: Dark Skies	80
Figure 5.6: Special Landscape Areas within 10 km	80
Figure 5.7: Bareground ZTV to Turbine Tip (33 km)	80
Figure 5.8: Bareground ZTV to Turbine Tip (15 km)	80
Figure 5.9: Bareground ZTV to Turbine Hub (33 km)	80
Figure 5.10: Bareground ZTV to Turbine Hub (15 km)	80
Figure 5.11a: Bareground ZTV to Turbine Tip with Viewpoints (33 km)	80

Contents

Hirfynydd Renewable Energy Park
October 2022

Figure 5.11b: Bareground ZTV to Turbine Tip with Viewpoints (10 km)

Figure 5.12: Residential Properties within 2 km of Turbines

Figure 6.1: Historic Assets within 1 km of the Site

Figure 6.2: Designated Historic Assets within 5 km of the Site

Figure 6.3: Designated Historic Assets within 10 km of the Site

Figure 7.1: River Catchments

Figure 7.2: Pluvial and Fluvial Flood Risk

Figure 7.3: Peat Depths

Figure 8.1: Designated Sites

Figure 8.2: Habitats

Figure 8.3: Protected Species Survey

Figure 9.1: VP Locations

Figure 9.2: Bird Survey Area

Figure 11.1: Transport Route to Site

Figure 12.1: Areas of Benefit

Figure 13.1: Airspace Structures in the Vicinity of the Site
(CAA 1:250K Visual Flight Rule (VFR) Chart Extract showing
airspace up to 5000ft))

Chapter 1

Introduction

1.1 EDF Renewables (the 'Applicant') intends to apply to Welsh Ministers for permission to construct and operate Hirfynydd Renewable Energy Park (the 'Development') which would be located between the Vale of Neath and the Dulais Valley in Neath Port Talbot County Borough Council (NPTCBC), approximately 1.5 km north-east of the town of Crynant (nearest turbine) in South Wales.

1.2 Land within the red line boundary is referred to as the 'Site', and the location of the Site is shown in **Figure 1.1**. The Site was the subject of a previous planning application submitted to NPTCBC in 2007. Further information about the previous application is provided in **Chapter 4**.

1.3 The Development comprises the construction and operation of:

- up to seven wind turbines with a maximum blade tip height of up to 200 m (approximate installed capacity of 50 MW);
- circa 50 MW of solar photovoltaic (PV); and
- battery storage and associated infrastructure.

1.4 The Development will be a 'Development of National Significance' (DNS) as the combined installed capacity will be greater than 10 megawatts (MW). Indicative locations of the turbines are shown on **Figure 1.2**. The locations of the turbines, solar PV, battery storage and associated infrastructure will be subject to iterative design through the Environmental Impact Assessment (EIA) process once further information regarding Site constraints is known.

1.5 As the Development will exceed the threshold for wind developments set out in Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (as amended by the Environmental Assessments and Miscellaneous Planning (Amendment) (EU Exit) Regulations 2018) ('the Regulations'), and as it is a scheme that could potentially result in 'significant' environmental effects, the scheme is classified as an EIA development and an Environmental Statement (ES) is required.

1.6 The Regulations make provision for obtaining a Scoping Direction from Welsh Ministers on the information to be included in the ES. This Scoping Report accompanies the Applicant's written request to Welsh Ministers for a Scoping Direction. It provides details of:

- The proposed Development.
- Environmental desk and field-based survey undertaken to date.
- The potential significant environmental effects to be considered within the EIA.
- Proposed EIA survey and assessment methods.

1.7 In accordance with established guidance and good practice, the ES will focus on potentially significant effects only, partially or fully 'scoping out' topics from the EIA where significant effects are not anticipated. Proposals in this regard are set out in this Scoping Report.

1.8 Various EIA topic specialists have contributed to this Scoping Report, as detailed in **Table 1.1** below.

Table 1.1: EIA Scoping Team

Topic	Team
Landscape and Visual Amenity	LUC
Cultural Heritage	Headland Archaeology
Hydrology, Hydrogeology, Geology	Wallingford Hydro Solutions
Peat	East Point Geo
Mining	Yellow Sub Geo
Ecology and Ornithology	BSG Ecology
Noise and Vibration	Hoare Lea
Traffic and Transport	Pell Frischmann
Socio-Economics	Wavehill
Aviation	Wind Power Aviation Consultants (WPAC)
Glint and Glare	Pager Power
Telecommunications & Utilities	LUC
Shadow Flicker	LUC
Climate Change	LUC
Land Use	LUC
Major Accidents and Disasters	LUC
Human Health	LUC

The Applicant

1.9 EDF Energy Renewables Ltd (the Applicant), operates within the United Kingdom under the brand EDF Renewables

(hereinafter referred to as EDF-R). EDF-R is a joint venture between EDF Renewables Group (EDF's global renewable business) and EDF Energy (EDF's UK generation business). In the UK it currently operates 38 renewable energy sites including onshore and offshore wind with a total installed capacity of almost 1 GW. In addition, EDF-R is constructing the 450 MW Neart Na Gaoithe offshore wind farm off the east coast of Scotland, developing a pipeline of solar Photovoltaic (PV) projects and has completed the 177 MW Dorenell Wind Farm near Dufftown in the Scottish Highlands. EDF-R employs over 400 people throughout the UK in offices primarily located in London, Durham and Edinburgh. In addition, it operates and maintain its own renewable energy projects and has maintenance facilities throughout the UK, including Aberystwyth. In Wales, EDF-R currently operates two wind farms (Cemmaes and Llangwryfon) and has a 1 GW pipeline of onshore wind, solar PV and battery storage projects in the early stages of development.

Document Structure

1.10 The remainder of this document is structured as follows:

- **Chapter 2** provides information on the EIA process.
- **Chapter 3** summarises the legislative and planning policy context.
- **Chapter 4** provides a brief description of the nature and purpose of the Development.
- **Chapters 5 – 13** outline the topic areas to be considered in the EIA and the elements that are proposed to be scoped out of EIA.

1.11 **Appendix A** provides a consolidated list of all consultee questions raised in this document, **Appendix B** provides an outline structure of the ES and **Appendix C** presents the figures which are referenced throughout the Scoping Report.

Chapter 2

The EIA Process and Methodology

Introduction

2.1 EIA is the process of systematically evaluating and presenting all the likely significant environmental effects, both beneficial and adverse, of a proposed development, to assist the determining authority in making an informed decision on an application for consent to undertake a development. It enables the significance of effects to be clearly understood, incorporating consideration of mitigation (for adverse effects) and enhancement (for beneficial effects) measures. The final results of the EIA process are presented within an ES to accompany an application for consent.

2.2 EIA is an iterative process which takes place alongside and informs project design. As potential effects are identified, the design of the Development will be modified to reduce or avoid adverse effects and enhance beneficial effects, where possible.

Scoping

2.3 The purpose of EIA Scoping is to focus the EIA on the likely significant environmental effects of a proposal. Therefore, on the basis of the site work undertaken to date, desktop studies, the professional judgement of the assessment team and experience from other similar projects, as well as policy, guidance and relevant good practice, each topic-based section within this report outlines:

- Potentially significant effects associated with the construction and/or operation of the Development for detailed consideration within the ES.
- Mitigation measures likely to be required to ameliorate significant effects, or anticipated to be implemented through the design process.
- Effects considered unlikely to be significant and therefore scoped out of the EIA.

2.4 Additional objectives of this Scoping Report are:

- To establish the availability of baseline environmental data and their sources.
- To define a survey and assessment framework from which an appropriately comprehensive assessment can be produced.
- To invite comments on the proposed survey and assessment methodologies.

- To invite responses to specific topic-based questions.
- To put forward proposals and receive comments concerning the way in which the EIA findings are to be presented in the ES.
- To invite Ministers and consultees to draw the Applicant's attention to any matters that are likely to be key to any decision on the forthcoming DNS application.
- To provide and receive additional information relevant to the Development.

2.5 As mentioned above, key questions are included throughout the Scoping Report to help structure the feedback from Ministers and consultees and ensure realisation of the maximum value of the scoping process for all parties. A consolidated list of these questions is included in **Appendix A**.

Baseline Conditions

2.6 The Regulations require that the aspects of the environment which are likely to be significantly affected by a proposal should be defined within the ES.

2.7 To achieve this, it is necessary to gather information on environmental conditions in the absence of the Development (i.e. the environmental 'baseline') for each of the topics proposed for consideration as part of the EIA. This has already commenced for several topics in relation to the Development and will continue via a combination of consultation with stakeholders, field survey work and desk-based research, as detailed further below.

Assessment of Effects

2.8 The assessment of potentially significant effects, using a range of appropriate methodologies, will take into account the construction and operation of the Development in relation to the Site and its surroundings. At the end of the operational phase, the Development will be decommissioned; alternatively applications could be made to either extend the operational life or to replace the infrastructure with the latest technologies.

2.9 Decommissioning will involve the removal of all above ground infrastructure, including the turbines and solar panels. Access tracks are likely to be left in-situ, but this would be discussed with the landowners at that time. Decommissioning activities are in effect a reversal of the construction process; relevant effects are generally similar and decommissioning effects would be expected to be no greater than those associated with construction. The decommissioning effects will

however be considered under each topic, where deemed necessary.

2.10 An assessment will be made of the likely significant cumulative effects of the Development in combination with both onshore wind farms and other types of development including:

- Schemes which are subject to an application for planning consent, which has not yet been determined.
- Consented schemes.
- Schemes which are under construction or are operational (i.e. part of the existing baseline).

2.11 As the cumulative baseline is constantly evolving and the relevant cumulative schemes will vary by topic, the schedule of cumulative schemes to be included in the assessment will be finalised following consultation on this Scoping Report and with relevant consultees, in particular NPTCBC.

2.12 A list of wind farms known to lie within approximately 33 km¹ of the Site in **Table 2.1**. These projects are shown on **Figure 2.1**. There are no known solar developments within 5 km of the Site², and it is proposed that solar farms beyond 5 km would be excluded (as explained in the LVIA cumulative methodology in **Chapter 5**).

¹ This is based on guidance from NRW which suggests that the search area for structures 176 m to 225 m tall should be 26 to 33 km.

² Based on a review of the planning portal, Pencaerlan Solar/ Seven Sister Solar Farm is currently at the EIA screening stage (DNS 3272424) and has received a

Screening Direction. This solar farm is within 5 km of the Site and would be located on land to the South west of Seven Sisters (S10 9EP).

Table 2.1: Wind farm developments within 33 km of the Site

Development	No. of Turbines	Status	Distance from Site (km) ³	Tip Height (m)
Maesgwyn (and extension)	14	Operational	5.21	125
Melin Court	5	Application Submitted	6.32	149.9
Ffynnon Oer	16	Operational	7.72	93
Pen y Cymoedd	76	Operational	9.49	145
Mynydd y Gwrhyd	2	Operational	9.97	100
Foel Trawsnant	11	Consented	12.02	145
Llynfi Afan	12	Operational	13.88	118
Y Bryn	7	Design/Scoping	14.2	220
Mynydd Bwlfa	9	Operational	14.32	125
Mynydd y Betws	15	Operational	14.98	110
Upper Ogmore	7	Consented	15.04	149.9
Maerdy	8	Operational	15.05	145
Mynydd y Gwair	16	Operational	15.92	127
Abergorki	3	Consented	15.93	149.9
Mynydd Brombil	4	Operational	17.57	100
Pant y Wal Extension	8	Operational	19.53	125
Ferndale	8	Operational	19.72	74
Pant y Wal Extension 2	2	Application Submitted	20.34	125
Fforch Nest Rhondda	7	Operational	20.7	115
Pant y Wal	10	Operational	20.82	115
Fforch Nest Bridgend	4	Operational	20.83	115
Mynachdy Farm	2	Operational	24.58	68
Llwyncelyn Farm	2	Application Submitted	25.38	131
Taff Ely	20	Operational	25.66	53.5
Mynydd Portref	11	Operational	26.6	86
Pen March	7	Design/Scoping	27.17	178.5
Mynydd Portref Extension	6	Operational	27.31	110
Pen Bryn Oer	3	Operational	30.67	110

³ Distance between the developable turbine area of the proposed Development and the center of the cumulative scheme.

2.13 Study areas (including cumulative study areas) will be defined separately for each EIA topic to reflect the likely extent of potential significant effects.

2.14 The ES topic chapters will each provide a detailed assessment of potential effects (direct and indirect, beneficial and adverse, short term or long term), identify mitigation measures, and determine the significance of the residual effects (those remaining after the mitigation measures have been implemented). Chapters will be accompanied by technical appendices and figures, where relevant. All relevant policy, guidance and data sources used will be fully referenced, as required by Part 10 of Schedule 4 of the EIA Regulations.

2.15 A schedule of mitigation for significant effects will be included in a final chapter of the ES for ease of reference.

2.16 A standalone Non-Technical Summary (NTS) of the findings of the ES will also be produced (in English and Welsh) as required by Part 9 of Schedule 4 of the EIA Regulations.

Mitigation and Monitoring

2.17 Part 7 of Schedule 4 of the EIA Regulations notes that the ES should include: *“A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases”*. These measures will be termed ‘mitigation measures’ and will be included for each topic area, where appropriate.

2.18 The EIA will identify and assess potentially significant effects prior to mitigation and, where mitigation measures are proposed, their likely effectiveness will be evaluated, and the significance of the ‘residual’ effect then assessed. The Applicant will be committed to implementing all the mitigation measures identified in the ES, which will be delivered as conditions of consent.

2.19 It is important to note that, given both the prior experience of the Applicant in implementing accepted good practice during the construction and operation of schemes such as this, and the current regulatory context, there are a number of relevant measures which are more appropriately considered to be an integral part of the design/construction process rather than ‘mitigation’. For example the use of good practice construction measures in relation to pollution prevention and soil compaction etc. Such measures will be described within the outline Construction Environmental Management Plan (CEMP) / ES, where relevant, but taken into account prior to assessment of the likely effects of the Development (these measures would be delivered through a CEMP during construction). Following this,

site and location-specific management measures, which are not part of standard good practice, that may mitigate identified effects will then be considered prior to evaluation of the likely significance of residual effects and presented in each of the relevant technical chapters.

2.20 An outline CEMP will be prepared and submitted as a technical appendix to the ES.

2.21 It can be appropriate to scope out certain potential effects from an EIA on the basis that these will be avoided by standard good practice measures. Where appropriate, mitigation measures implemented will be monitored for effectiveness, as detailed in Regulation 25 (3) of the EIA Regulations. Proposed monitoring measures will be set out in the ES where relevant.

2.22 A Schedule of Mitigation will be included as an appendix to the ES and will provide a consolidated list of all proposed mitigation and monitoring measures identified in the EIA.

Uncertainty

2.23 The EIA process is designed to enable good decision-making based on the best possible information about the environmental effects of a proposed development. There will, however, always be some uncertainty as to the exact scale and nature of effects. This may arise through shortcomings in available information, or due to the necessary limitations of the professional judgement process. As required in Schedule 4, Part 6 of the EIA Regulations, it is important that such uncertainty is explicitly recognised and that the ES includes *“A description of the forecasting methods or evidence used to identify and assess the effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.”*

2.24 Each topic chapter of the ES will include details of the assumptions made and limitations identified before assessing the significance of effects.

Competent Experts

2.25 As per Regulation 17 (4)(a), the ES must be prepared by *“persons who in the opinion of the relevant planning authority or the Welsh Ministers, as appropriate, have sufficient expertise to ensure the completeness and quality of the statement”* with a clear statement outlining the relevant competencies of those undertaking the EIA. A statement of expertise will be provided in the introductory chapters of the ES for the lead EIA coordinator, and in each topic chapter for the assessment authors.

ES Introductory Chapters

2.26 In addition to its topic-specific chapters, the ES will contain a number of introductory chapters as indicated in **Appendix B**. These will include a Project Description chapter which will describe the evolution of the Development's specification and design and the relationship of the final development design to the ES: in particular, it will set out how and where design choices have been made in order to avoid potentially significant effects, thereby removing the requirement for further detailed assessment of such effects. This is discussed further in relation to particular ES topic chapters below. The Project Description chapter will also meet the requirements of the EIA Regulations with regard to the consideration of reasonable alternatives. In the case of an onshore wind and solar development, this involves the reasons for selecting the Site along with an explanation of the design iterations made during the EIA process to respond to the relevant environmental and technical constraints on the Site and surrounding area, before arriving at the final design.

2.27 The ES will contain a summary description of the relevant energy, climate change and planning legislative and policy framework. In the interests of a proportionate ES it is not proposed to include a separate planning policy context chapter within the ES. The relevant policies/guidance for each topic area will be outlined within the topic chapters, where relevant.

2.28 Furthermore, the application will be supported by a Planning Statement which will contain an assessment of the proposed development against the energy, climate change and planning legislative and policy framework. The Planning Statement will make reference to relevant provisions at the international, UK and Welsh Government levels, as well as the policy framework at the local planning authority level.

Questions

Question 2.1: Are consultees aware of other wind farms (in addition to those shown in **Table 2.1**), solar proposals, or other developments that should be added to list for consideration in the cumulative assessments?

Question 2.2: Several measures are considered to be an integral part of the design/construction process as part of good practice, and it is proposed that these will be taken into account prior to assessing the likely effects of the Development. Can consultees please confirm they are happy with this approach to mitigation?

Chapter 3

Legislative Planning and Policy Context

Introduction

3.1 This chapter provides an overview of the legislative context to the Development, and the national and local planning policy framework relevant to the application for the Development.

3.2 This chapter has been prepared by Barton Willmore.

Legislative Context

Developments of National Significance

3.3 As the Development comprises an electricity generating station with an installed generating capacity of between 10 and 350MW, it falls within the definition of a DNS section 4(1) of the Developments of National Significance (Specified Criteria and Prescribed Secondary Consents) (Wales) Regulations 2016 (as amended), for the purposes of s62(D) of the Town and Country Planning Act 1990, as amended by s19 of the Planning (Wales) Act 2015.

3.4 An application for planning permission will therefore be made to the Welsh Ministers instead of to NPTCBC as host local authority. In addition, in accordance with the EIA Regulations, a Scoping Direction is requested from the Welsh Ministers rather than NPTCBC.

3.5 An inception meeting was held with the Applicant, Barton Wilmore and Planning and Environment Decisions Wales (PEDW) on 11th August 2022 to introduce the project.

Climate Change, Sustainability and Renewable Energy

3.6 Since the Kyoto Protocol came into effect in 2005, it is widely accepted that greenhouse gas emissions need to be significantly reduced and that there is a need for international action. The United Kingdom, together with 37 other industrialised countries (called “Annex I Countries”), committed themselves to reducing greenhouse gas emissions by 5.2% from 1990 levels by the year 2012. The current policy stance on climate change has all stemmed from the context set by the Kyoto Protocol, which has led to the current international commitments and targets set by the Welsh Government today.

3.7 In April 2019, the Welsh Government declared a climate emergency and in March 2021, new legislation came into force in Wales⁴, amending the national emissions target, by setting a more ambitious target of net zero emissions no later than 2050. As well as amending the 2050 emissions target to net zero, new legislation amended the interim emissions targets⁵, with the 2030 target increasing from 45% to 63% below the 1990 baseline, and the 2040 target increasing from 67% to 89% below the 1990 baseline.

3.8 Delivery of renewable energy development at all scales to achieve these ambitious carbon emissions targets is evident as a key objective throughout Welsh Government plans and strategies including Prosperity for All: the national strategy (2017), Prosperity for All: A Climate Conscious Wales (November 2019), and Prosperity for All: economic action plan (2017).

3.9 Section 39 of the Environment (Wales) Act 2016 requires Welsh Government to prepare and publish a report for each budgetary period setting out their policies and proposals for meeting the carbon budget for that period. The Welsh Government published its most recent statutory decarbonisation plan (Net Zero Wales Carbon Budget 2) in October 2021. The plan includes many policies to support the delivery of renewable and low carbon energy development, in particular Policy 22 (Increasing renewable energy developments on land through our planning regime) which states that the Welsh Government “*will improve and unify the consenting of energy generation projects in Wales to provide a quicker and more proportionate consenting regime for energy infrastructure*”.

3.10 The latest version of Energy Generation in Wales (May 2022) (see Appendix C) estimates that only 33% of total electricity generation in Wales comes from renewable sources. In 2020, only 39 MW of renewable energy capacity was commissioned in Wales. This is the lowest annual deployment rate since 2010. With 4.4 MW of capacity commissioned from two projects, 2020 saw the lowest levels of onshore wind deployment in Wales in over a decade. This is in stark contrast to the 147 MW of capacity that was commissioned in the previous year, and the 205 MW commissioned during the peak of 2016. The May 2022 report confirms that in 2020, Wales was meeting the equivalent of 56% of its electricity demand from renewable sources which is significantly below the Welsh Government's target for 70% by 2030. Whilst the percentage has increased since 2019, the report concludes that this is due

to a reduction in electricity demand due to the Covid-19 pandemic and as such predicts that the increase will be temporary.

The Well-being of Future Generations (Wales) Act 2015

3.11 The Act is relevant to all public bodies in Wales and the Welsh Government has duties to secure sustainable development by improving the economic, social, environmental and cultural well-being of Wales to achieve the 7 “well-being goals”. All planning applications in Wales need to demonstrate how they align with the well-being goals.

3.12 One of the well-being goals set in the Act is for a ‘globally responsible Wales’. Statutory guidance on the Act⁶ explains that action on climate change benefits both people and communities in Wales, whilst also contributing to the wider global effort to tackle the causes of climate change and reduce its effects.

3.13 Key matters highlighted in the guidance for bodies to focus attention are decarbonisation (including use of clean energy) and sustainable consumption and production.

Defining the Development Plan

3.14 In accordance with section 38(6) of the Planning and Compulsory Purchase Act 2004, an application for this Development should be determined in accordance with the Development Plan, unless material considerations indicate otherwise. Under Section 38(4) of the Act the Development Plan in Wales comprises the following:

- The National Development Framework for Wales.
- The Strategic Development Plan (SDP) for any strategic planning area that includes all or part of that area.
- The Local Development Plan (LDP) for that area.

3.15 The following section provides an overview of the planning policy relevant to the Development. It should be noted that, at the time the application was submitted, no SDP had been prepared for the NPTCBC area.

Relevant National Planning Policy

Future Wales: The National Plan 2040 (February 2021)

3.16 Future Wales is the Welsh Government's National Development Framework and is the highest tier of the

⁴ The Environment (Wales) Act 2016 (Amendment of 2050 Emissions Target) Regulations 2021

⁵ The Climate Change (Interim Emissions Targets) (Wales) (Amendment) Regulations 2021

⁶ Welsh Government (2016) SPSF1: Core Guidance - Shared Purpose: Shared Future, Statutory guidance on the Well-being of Future Generations (Wales) Act 2015

Development Plan in Wales. It states that “as set out in legislation, applications for Developments of National Significance must be determined in accordance with Future Wales.”

3.17 As the most recent expression of national planning policy, Future Wales is considered to have primacy in the planning policy hierarchy. Its purpose is to ensure the planning system at all levels is consistent with, and supports the delivery of, Welsh Government strategic aims and policies (including those in Planning Policy Wales (PPW), the Wales Infrastructure Investment Plan and Regional Economic Frameworks).

3.18 Future Wales provides the spatial direction for development in Wales and the policy framework for SDPs and LDPs at the regional and local level. These plans are required to conform to Future Wales and planning decisions at every level must be taken in accordance with the Development Plan.

3.19 Section 2 of Future Wales sets out how it has been informed by climate change issues, including projections showing an increased chance of milder, wetter winters and hotter, drier summers, rising sea levels and an increase in the frequency and severity of extreme weather events. It further states:

“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.”

3.20 Section 3 includes the Future Wales' Outcomes which are described as “collectively a statement of where we want to be in 20 years' time. Every part of Future Wales...is concerned with achieving the Outcomes.” The Outcome of principal relevance to the proposed Development is:

“A Wales where people live in places which are decarbonised and climate resilient: The challenges of the climate emergency demand urgent action on carbon emissions and the planning system must help Wales lead the way in promoting and delivering a competitive, sustainable decarbonised society.”

3.21 The key policies of relevance to renewable and low carbon energy developments within Future Wales are Policies 17 and 18. Policy 17 notes that the Welsh Government strongly supports the principle of renewable and low carbon energy development from all technologies and at all scales to meet our future energy needs. Furthermore it states (Barton Willmore's emphasis):

“In determining planning applications for renewable and low carbon energy development, decision makers must give significant weight to the need to meet Wales' international commitments and our target to generate 70% of consumed electricity by renewable means by 2030 in order to combat the climate emergency.”

3.22 Policy 17 also designates Pre-Assessed Areas for Wind Energy, where the Welsh Government has already modelled the likely impact on the landscape and has found them to be capable of accommodating development in an acceptable way. There is a presumption in favour of large-scale wind energy development (including repowering) in these areas, subject to the criteria in Policy 18. The Development is not located in a Pre-Assessed Area.

3.23 Policy 18 provides the criteria for assessing large scale proposals for renewable and low carbon energy and is required to be read together with Policy 17. It states:

“Proposals for renewable and low carbon energy projects (including repowering) qualifying as Developments of National Significance will be permitted subject to policy 17 and the following criteria:

- 1. Outside of the Pre-Assessed Areas for wind developments and everywhere for all other technologies, the proposal does not have an unacceptable adverse impact on the surrounding landscape (particularly on the setting of National Parks and Areas of Outstanding Natural Beauty);*
- 2. There are no unacceptable adverse visual impacts on nearby communities and individual dwellings;*
- 3. There are no adverse effects on the integrity of Internationally designated sites (including National Site Network sites and Ramsar sites) and the features for which they have been designated (unless there are no alternative solutions, Imperative Reasons of Overriding Public Interest (IROPI) and appropriate compensatory measures have been secured);*
- 4. There are no unacceptable adverse impacts on national statutory designated sites for nature conservation (and the features for which they have been designated), protected habitats and species;*
- 5. The proposal includes biodiversity enhancement measures to provide a net benefit for biodiversity;*
- 6. There are no unacceptable adverse impacts on statutorily protected built heritage assets;*

7. *There are no unacceptable adverse impacts by way of shadow flicker, noise, reflected light, air quality or electromagnetic disturbance;*
8. *There are no unacceptable impacts on the operations of defence facilities and operations (including aviation and radar) or the Mid Wales Low Flying Tactical Training Area (TTA 7T);*
9. *There are no unacceptable adverse impacts on the transport network through the transportation of components or source fuels during its construction and/or ongoing operation;*
10. *The proposal includes consideration of the materials needed or generated by the development to ensure the sustainable use and management of resources;*
11. *There are acceptable provisions relating to the decommissioning of the development at the end of its lifetime, including the removal of infrastructure and effective restoration.*

The cumulative impacts of existing and consented renewable energy schemes should also be considered”.

Planning Policy Wales (PPW) – Edition 11 (February 2021)

3.24 PPW provides the key principles for the planning system in Wales, in terms of what development plans and decisions must achieve and how development should deliver the best possible outcomes. However, PPW is not part of the Development Plan but it is a material consideration in the decision-making process.

3.25 The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental, and cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation.

3.26 Its key principles are:

- Growing our economy in a sustainable manner.
- Making best use of resources.
- Facilitating accessible and healthy environments.
- Creating & sustaining communities.
- Maximising environmental protection and limiting environmental impact.

Technical Advice Notes

3.27 A series of Technical Advice Notes (TANs) supplement PPW. Those of potential relevance to the Development are:

- TAN 5: Nature Conservation and Planning (2009).
- TAN 11: Noise (1997).
- TAN 12: Design (2014).
- TAN 15: Development and Flood Risk (2004).
- TAN 18: Transport (2007).
- TAN 24: The Historic Environment (2017).

3.28 Technical Advice Note 8 (Renewable Energy) has been superseded by Future Wales. It identified Strategic Search Areas (SSAs) as the most appropriate locations for large scale wind farm development. The Site is located within an area previously designated as SSA E, and the refinement study⁷ prepared on behalf of the South Wales Valleys Authorities identified a refined SSA boundary for very large wind turbines at the Hirfynydd ridge (and environs).

3.29 The relevant Local Development Plan policies prepared by the local authorities were prepared prior to the adoption of Future Wales, and therefore refer to SSAs, the policies will however be material considerations in the decision-making process.

Relevant Local Planning Policy

Neath Port Talbot Local Development Plan (2011 – 2026) adopted January 2016 (LDP)

3.30 The Neath Port Talbot LDP was adopted prior to the publication of Future Wales. This is an important consideration in the planning balance as LDPs are required to be in conformity with Future Wales. In light of this, the weight that can be applied to the LDP as the national policy context has changed, the policy expressed in Future Wales supersedes that in the LDP.

3.31 The LDP is supportive of the principle of the Development, with the most directly relevant policies for renewable and low carbon energy developments being Strategic Policy 18 (Renewable and Low Carbon Energy) and Policy RE1 (Criteria for the Assessment of Renewable and Low Carbon Energy Development).

⁷ Consortium of South Wales Valleys Authorities (December 2006) TAN 8 Annex D study of Strategic Search Areas E and F: South Wales Valleys – Final report

3.32 Strategic Policy 18 states that an “*appropriate contribution*” to meeting national renewable energy targets and energy efficiency targets will be made whilst balancing the impact of development on the environment and communities. Policy RE1 states that proposals for renewable and low carbon energy development will only be permitted subject to the following criteria:

- Large scale wind farm developments (>25 MW) will be expected to be located within the boundaries of the refined SSAs.
- Proposals for wind farms of any size outside the SSAs will only be permitted where it is demonstrated that there will be no unacceptable impact on visual amenity or landscape character through the number, scale, size, design and siting of turbines and associated infrastructure.
- All renewable energy or low carbon energy development proposals will be required to demonstrate that:
 - Measures have been taken to minimise impacts on visual amenity and the natural environment;
 - There will be no unacceptable impacts on residential amenity;
 - The development will not compromise highway safety;
 - The development would not interfere with radar, air traffic control systems, telecommunications links, television reception, radio communication and emergency services communications; and
 - There are satisfactory proposals in place for site restoration as appropriate.

3.33 As highlighted above, the Site is located within a refined SSA boundary.

3.34 NPTCBC are in the process of preparing a replacement LDP. The Delivery Agreement was approved by the Welsh Government in January 2022 including a target for adopting the replacement LDP in July 2025.

Chapter 4

Site and Project Description

The Site and Surrounding Area

4.1 The Site is located on land lying between the Vale of Neath and the Dulais Valley within NPTCBC area, approximately 1.5 km north-east of the town of Crynant in South Wales. Situated approximately 465 m Above Ordnance Datum (AOD) at its highest point, the Site slopes towards the south and west, and is typified by pasture and moorland land use divided by a small section of coniferous plantation. The eastern boundary of the Site is delineated by the route of the Sarn Helen Roman Road (a byway open to all traffic), which provides a link between the B4242 in the south and the A4109 to the north.

4.2 The Site is crossed by a number of small streams that drain towards the river Dulais. There are three designated historic assets on-site including a Roman fortlet, situated at the Site's north-eastern extent.

4.3 There are three areas of open access land on site, with public rights of way crossing a small section in the west. There are a number of footpaths in the surrounding area, one of which separates the Crynant Community Forest from the Site, located immediately east of the Site.

4.4 The Site is not located within any nationally designated landscapes; the Brecon Beacons National Park is situated approximately 4.5 km to the north of the Site. The Nant y Rhos Site of Special Scientific Interest (SSSI) is situated approximately 1.5 km to the north-west (refer to **Figure 8.1**). The Site is located on poor quality agricultural land (grades 4 and 5) with the character of the surrounding area being predominantly rural with town settlements including Seven Sisters to the northeast and Crynant to the west.

4.5 Coal mining is a predominant land use feature of the South Wales Valleys and open cast workings are present to the north and north-east of the proposed Site. The Aberpergwm underground drift coal mine was consented in January 2022, this is discussed further in the Previous Application section below.

4.6 The operational Maesgwyn Wind Farm and extension are 5 km to the northeast of the Site (**Figure 2.1**) and are located on the site of a former open cast mine. The Maesgwyn Wind Farm and extension consist of 14 turbines at 125 m to tip.

Previous Application

4.7 In 2007 a planning application was submitted by Acciona Energy UK Ltd for a 14-turbine wind farm on the Site. Wind Ventures subsequently acquired the Acciona portfolio and progressed the project through planning with a reduced 9 turbine scheme, 125 m to tip, wind farm at the Site in 2013. NPTCBC refused the application on the grounds of likely significant adverse effects on future mining operations and the project applicant appealed the decision. A Public Inquiry was held in 2014 and formally closed in 2015. The main issues discussed at the appeal were the following:

- The nature and degree of subsidence likely to be caused to the wind turbines by underground mining operations.
- The viability of designing and managing the wind turbines to accommodate the likely subsidence.
- Whether or not suitable arrangements could be put in place to indemnify the mining operator and the Coal Authority in respect of the statutory liabilities for damage caused by subsidence due to mining activities so that future mining operations would not be unduly restricted.
- Other effects caused by the proposed wind turbines, particularly landscape and visual impacts, ecological effects and effects on ancient monuments.
- The benefits of the renewable energy that would be produced.

4.8 The Planning Inspectorate concluded that *“environmental and community impacts would not be significant and, with the proposed mitigation measures, would not count against the proposal.”* However, it was stated that *“the key factor in this appeal is the effect on the prospects for the mining of coal beneath the site.”* Whilst it was not disputed that the coal mining operations would likely result in subsidence, it appeared to be the concerns around managing liability relating to subsidence and the potential sterilisation of mineral resource (due to constraints around coal extraction methods, which was contrary to policy) which resulted in the Planning Inspector dismissing the appeal in September 2015.

Project Description

4.9 The main elements of the Development are as follows:

- Up to seven turbines with a total installed capacity of circa 50MW. These will have a maximum tip height of up to 200 m, each with transformers, aviation lights, turbine foundations, crane hardstandings and laydown/storage areas.

- Circa 50 MW of solar photovoltaic (PV) panels.
- Battery storage.
- New/upgraded access tracks and turning circles to provide access to turbine bases and other infrastructure.
- Electrical substation and control building.
- Power cables linking the turbines/ solar PV/ battery storage to the substation/ control building (laid underground in trenches along access tracks where possible).
- Temporary site construction compounds and associated infrastructure.

Wind Turbines

4.10 The proposed turbines will be three-bladed horizontal axis turbines. The turbine towers will be of tapering tubular steel construction, likely to be finished in a light grey semi-matt colour. EIA scoping is based upon a maximum tip height for turbines of up to 200 m, although the maximum turbine heights and turbine specifications in other respect will be considered further through the EIA process. The worst-case candidate turbine can differ across the EIA disciplines (for example noise, ornithology, transport etc.) therefore different candidate turbines may be specified in the ES where necessary to inform assessments of effects. It should be noted that the final choice of turbine will be made in accordance with the maximum tip height parameters assessed in the EIA and consented.

4.11 A transformer will be required for each turbine. Depending upon the type of turbine selected, the turbine's electrical transformers may be located within or adjacent to the turbines. For the purposes of this report, it has been assumed that the transformers will be located adjacent to each turbine within the hardstanding areas.

4.12 The turbines will be installed on foundations comprising both stone and steel-reinforced concrete. The detailed design, sizing and specification for each foundation will depend on the final turbine type and the specific ground conditions encountered at each turbine location, which will be confirmed during pre-construction surveys.

4.13 Adjacent to each turbine, an area of hardstanding will be constructed for use as a crane pad. The exact geometry and position of the crane pads will depend on the turbine supplier's specifications, the cranes selected for erection and detailed ground investigations prior to construction. In accordance with the turbine specification for the candidate turbine model, additional laydown and storage areas may be required adjacent

to the crane hardstanding. This will be detailed in the ES and fully assessed.

4.14 Figure 1.2 shows the indicative turbine layout and Table 4.1 presents the corresponding turbine coordinates for this layout. This layout will however be subject to change as part of the iterative EIA process.

Table 4.1: Turbine Co-ordinates

Turbine Number	X	Y
1	281006	206060
2	281405	205770
3	281606	205430
4	282097	205437
5	282074	205879
6	282187	206353
7	282747	206738

Solar PV and battery storage

4.15 It is proposed that circa 50 MW of solar panels will be installed on the site on an area of largely semi-improved grassland in southern area of the Site. A careful review of constraints will inform the location of the solar panels. For example, the solar panels will not be sited on any open access land or sensitive habitats.

4.16 The solar PV panels will consist of rows known as strings. The panels or modules are composed of photovoltaic cells and are designed to maximise the absorbency of the sun's rays and minimise solar glare. As a consequence, they are dark in hue and recessive in the landscape. Each string of panels will be mounted on a metal frame, with metal supports, pile driven into the ground to a depth of approximately 1 m to 2 m, depending on ground conditions. Alternatively, the frames could sit on concrete footings in the eventuality that pre-construction surveys reveal certain areas to have archaeological potential and will ensure that there is no impact on potential archaeological features. Between each frame there will be a distance of between 3 m and 6 m to avoid inter-panel shading and provide suitable access. Typically, the panels will be tilted between 15 to 25 degrees from the horizontal and will be orientated to face south towards the sun.

4.17 The panels will be electrically connected with low voltage cabling which will feed into central inverters and transformers before further underground cabling transports the electricity to the substation.

4.18 The battery storage facility (to be located adjacent to the substation compound) will be able to import power from the grid or wind turbines/solar PV and export to the grid as required, providing a 'security buffer' to cope with supply and demand events. The facility will house a number of batteries with the battery storage components contained in sealed units, associated air conditioning systems, an electrical room and a maintenance room.

Access and Vehicle Movements

Construction Traffic Route

4.19 It is anticipated that abnormal load vehicles carrying turbine components will travel to the Site from the port of entry at Swansea, along the A483, M4, A465 and A4109 to the south of Crynant and then on to the Site (see Figure 11.1).

Access Track

4.20 All access to the Site is proposed to be from the A4109, south of Crynant, via existing tracks on land managed by Natural Resources Wales (NRW).

4.21 The NRW access track is anticipated to have a typical running surface width of approximately 5 m (depending on the turbine supplier specifications) as necessary to facilitate the safe passage of Abnormal Indivisible Loads. An exception to this will be at bends where surface width will be widened, as required, to accommodate the 'swept path' of vehicles carrying long and wide loads.

On-Site Access Tracks and Cable Runs

4.22 The Development will be served by a new network of onsite access tracks to enable construction and maintenance once operational. These tracks are again anticipated to have a maximum running width of approximately 5 m and widening at bends, as necessary.

4.23 It is anticipated that cabling connecting turbines and the control building (see below) will be laid in trenches running alongside the access tracks. These will be excavated to an indicative maximum depth of 1 m and backfilled. The layout of the tracks will be determined by the final turbine positions and informed by consideration of relevant environmental receptors and effects, such as onsite ecology.

Control Building and Electrical Substation

4.24 The location of the control building/substation is not yet known and is influenced by several factors such as distance to the point of connection, and environmental constraints, all of

which will be considered further throughout the iterative design of the Development and EIA process.

Temporary Construction Compound

4.25 A temporary construction compound will be required to house temporary portable buildings to be used for site offices and welfare facilities, store fuels, tools, machinery and materials required during construction; provide parking space for cars and construction vehicles and a receiving area for incoming vehicles. The compound will be approximately 8,000 m².

4.26 The construction disturbance associated with the temporary construction compound is minimal. Typically, surface soils will be stripped and stockpiled and the surface then capped with geofabric and aggregate. Once construction is complete the stone is lifted and the surface soils re-spread allowing the area to regenerate.

Borrow Pits

4.27 The stone required for the tracks, turbine bases and hardstandings for the operation of cranes will be either sourced from a local quarry, from onsite borrow pit(s), or a combination of both. Whichever option is considered most appropriate will be fully assessed in the ES.

Aviation Lighting

4.28 Wind farms with turbine tip heights in excess of 150 m need to be illuminated at the hub of selected turbines with medium intensity red aviation obstruction lighting. The Applicant's aviation consultants, WPAC, will design a lighting layout which minimises the number of lit turbines whilst fulfilling flight safety requirements and gain approval for the lighting layout from the Civil Aviation Authority (CAA).

4.29 The results of the aviation lighting assessment will be reported within a technical appendix to the ES and describe the effect of aviation lighting on the environment. The report will also inform the Landscape and Visual Impact Assessment and articulate the mitigation techniques available taking into account the extant legislation and guidance.

4.30 An infra-red lighting layout to fulfil Ministry of Defence (MOD) requirements will also be designed and approval obtained from the MOD and reported in the ES.

Grid Connection

4.31 The Development has secured a grid connection into the Swansea North substation. Connection from the onsite substation to the wider electricity network is likely to be at 33

kilovolts (kV) and involve either underground cables, an overhead line on wooden poles, or a combination of the two.

4.32 An alternative private wire grid connection is also being investigated, should this become the chosen option the route will be fully assessed, along with the Site, under one DNS application, providing a decision notice on both the site and grid connection. If the Swansea North connection is the chosen grid option the ES will include a high-level assessment of the potential effects for each relevant topic and included as an appendix, the full assessment would be subject to a separate application.

Micro-siting

4.33 The requirement for a micro-siting allowance for the turbines and the other infrastructure elements will be ascertained as part of EIA assessment. At this stage it is anticipated that a micro-siting allowance of 50m will be sought. This will be made clear in the ES and will be assessed under each of the relevant topics.

Construction Phase

4.34 It is expected that the construction of the Development will be completed over a period of approximately 18 months and will consist of the following principal activities, although not necessarily in this order:

- Public road improvements and junction upgrades.
- Construction/upgrading of main site access track off A4109.
- Working of borrow pits (if suitable material is found to be present onsite).
- Construction of the temporary construction compound.
- Construction of all onsite access tracks.
- Design and construction of temporary and permanent drainage measures and cable trenches.
- Laying of electricity and communications cables in trenches.
- Construction of turbine foundations, crane hardstandings and laydown areas.
- Erection of solar panels.
- Construction of control building and substation.
- Delivery, installation, testing and commissioning of wind turbines and ancillary equipment.

- Installation of external turbine transformers and switchgear in enclosed kiosks.
- Installation of battery storage.
- Site reinstatement and restoration.

Operational Phase

4.35 It is proposed that planning permission will be requested to allow for an operational period of 35 years. Maintenance work will involve visiting the Site regularly to undertake scheduled maintenance and operational checks. Annual servicing will involve the undertaking of non-essential repairs on blades, gearboxes and generators.

Decommissioning

4.36 At the end of the operational period, the Development will be decommissioned, and the turbines, solar panels, battery storage and ancillary infrastructure removed.

4.37 Prior to decommissioning works commencing, a Decommissioning Environmental Management Plan will be prepared, in line with the regulatory and best practice requirements applicable at the time of writing and agreed with the relevant consultees.

4.38 Alternatively, a new application will be made to extend the Development's life or replace the installations.

Chapter 5

Landscape and Visual Amenity

Introduction

5.1 This chapter considers the scope of the Landscape and Visual Impact Assessment (LVIA) that will be undertaken for the Development.

5.2 The primary guidance for undertaking LVIAs is the Guidelines for Landscape and Visual Impact Assessment 3rd Edition (GLVIA3)⁸. In accordance with GLVIA3, the landscape and visual effects of the Development will be considered separately, with the landscape assessment considering the effects of the Development on the constituent elements of the landscape and its character (including aesthetic or perceptual qualities) and the visual assessment considering the change to views and visual amenity as experienced by people.

5.3 The assessment will also cover effects on the residential visual amenity of nearby private properties. The LVIA will focus on receptors which are likely to experience significant effects.

5.4 It is proposed that the 'Study Area' for the LVIA will initially cover a radius of up to 33 km from the outermost turbine as shown on **Figure 5.1**. This area is based on the guidance from NRW⁹ which suggests that the search area for structures 176 m to 220 m tall should be 26 to 33 km. However, the assessment will focus on receptors likely to experience likely significant effects within this radius.

5.5 This chapter has been prepared by LUC.

Existing Conditions

Information Sources

5.6 The following sources of information have been reviewed during the desk-based research for this Scoping Report and will be considered in the assessment:

- Natural Resources Wales (NRW) National Landscape Character Areas (NLCAs).
- NRW's LANDMAP maps and surveys (and associated guidance notes).

⁸ Landscape Institute and the Institute of Environmental Assessment (2013). *Guidelines for Landscape and Visual Impact Assessment*. 3rd Edition.

⁹ Natural Resource Wales Guidance Note 46 'Using LANDMAP in Landscape and Visual Impact Assessments'

- National and local landscape designations and associated designation statements/management plans, including the Brecon Beacons Management Plan¹⁰.
- NRW's Dark Skies and Light Pollution in Wales mapping.
- Ordnance Survey Maps and aerial photographs.

The Site and its Immediate Surroundings

5.7 The location of the Site and indicative turbine layout are shown in **Figure 1.1** and **Figure 1.2**.

5.8 A general description of the Site and surroundings is provided in **Chapter 4**, and an overview of the Site and surroundings in relation to LVIA is presented in this section.

5.9 The Site is located on the rising valley slopes of the river Dulais, with the Development (nearest turbine) located approximately 1.6 km north-east from the town of Crynant. Sections of the Neath and Brecon Railway adjoin the Site's western extent.

5.10 The Site is approximately 358 m AOD at its highest point and defined by stone cairns. The topography slopes towards the east, west and south, typified by pasture and moorland land use with an open character. A small area of woodland divides the Site, with the larger tract of conifer plantation at Hirfynydd delineating the Site's eastern extent (see **Figure 5.2**). In addition, the Site includes a number of watercourses that typically run parallel field boundaries.

5.11 Public access within the Site is provided by several Public Rights of Way (PRoW) which traverse the valley slopes or emerge from the settlements on the valley floor and connect the residential properties of Gelli-benuchel (onsite and derelict) and Coed-du. The Sarn Helen Roman Road bounds the Site to the east and the route of St Illtyd's Walk lies at the Site's south western extent. The eastern portion of the Site also falls within an area of open access land (open country).

5.12 A list of cumulative wind farms is presented in **Table 2.1** and presented on **Figure 2.1**. The nearest existing wind farm to the Site is Maesgwyn Wind Farm (and extension), which is approximately 5.2 km to the northeast and comprises 14 turbines in total (125 m to tip) (**Figure 2.1**). An application for five turbines at 145 m was consented for Melin Court, situated approximately 6.3 km from the Site. A further application was submitted in 2022 to amend the maximum height of these turbines from 145 m to 149.9 m. This application has yet to be

determined. Other operational wind farms located within 10 km of the Site include Ffynnon Oer (16 turbines, 93 m tip height), Pen y Cymoedd (76 turbines, 145 m tip height) and Mynydd y Gwrhyd (two turbines, 100 m tip height).

Landscape Character

National Landscape Character Areas (NLCAs)

5.13 NRW has published a series of NLCAs which form a broad landscape character assessment across Wales. The Site is located within the Cymoedd y De / South Wales Valleys NLCA¹¹, with several other NLCAs being located within the 33 km search area, as shown in **Figure 5.3**.

5.14 The South Wales Valleys NLCA is described as 'many deep, urbanised valleys which dissect upland areas'. The area has significant industrial heritage and a distinct identity with ribbon settlement characterising the valley floor. The key characteristics of the NLCA are:

- **'Extensive Upland plateaux** – typically wild and windswept, often with unenclosed tracts, running roughly north-south as 'fingers' parallel between intervening deep valleys.
- **Numerous steep-sided valleys** – typically aligned in parallel, flowing in southerly directions, shaped by southward flowing glaciers, leaving behind distinctive corrie ('cwm') and crag features. Major rivers include the Tawe, Taff and Rhymney.
- **Ribbon urban and industrial areas in valleys** – in places extending up valley sides and to valley heads. The area is sometimes regarded as being part of a 'city region'. Middle and eastern valleys tend to be the most heavily and continuously developed, e.g. Rhondda Valley. The uplands by comparison have little or no settlement.
- **Extensive remains of heavy industry** – with a mix of derelict, preserved and largely redeveloped areas, notably for coal mining. Preserved as heritage (World heritage Site) at Blaenafon this typically includes old railway alignments, buildings and former tips.
- **Contrast of urban valley activity next to quiet uplands** – e.g. busy roads, new developments, traffic noise, night lighting, versus the adjacent wilder, remoter, quieter uplands.

¹⁰ Future Beacons: The Management Plan for the Brecon Beacons National Park (2022-2027)

¹¹ Natural Resources Wales (2014) National Landscape Character NLCA37 South Wales Valleys [online]. Available at:

<https://cdn.cyfoethnaturiol.cymru/media/682625/nlca37-south-wales-valleys-description-1.pdf?mode=pad&rnd=131550626700000000>

- **Large blocks of coniferous plantation and deciduous woodland fringes** – covering many steep hillsides and hilltops, most notably in the middle to western portion of the area, providing a softer contemporary landscape where there was once industry.
- Heather, rough grassland and steep bracken slopes – dominate many plateaux and are grazed mainly by sheep. Much is common land.
- Improved pastures on some lower valley sides – grazed by sheep and some dairy cattle.
- **Field boundaries** – dry stone walls mark the boundary of common land while fields on lower slopes are bounded by dense hawthorn hedges, interspersed with swathes of broadleaved woodland.
- **Transport routes restricted to valleys** – the intervening topography makes valley to valley travel difficult, except at heads and bottoms of valleys. Occasionally there are roads that climb steeply over passes with dramatic views and ‘hair pin’ bends.
- **Iconic cultural identity** – many popular images of a tough, rugby-playing, religious, radically-minded society still remain associated with the South Wales Valleys, however today’s post-industrial, internet-connected reality is somewhat different.’

5.15 The Site displays many of the key characteristics of the wider NLCA, with upland plateau landform and steep sides, sheep grazed grassy moorland, improved pastures on lower valley sides, dry stone walls and blocks of coniferous forestry covering sections of the valley slopes.

Local Landscape Character

5.16 Published in 2004, the Neath Port Talbot Landscape Assessment¹² was undertaken alongside a LANDMAP assessment with 53 character areas derived based on the analysis of aspect areas. The Site itself is located predominantly within **Landscape Character Area (LCA) 21: Hirfynydd (Figure 5.4)**, characterised by an extensive upland plateau overlain by coniferous plantation. The combination of woodland and elevated landform form a prominent feature along the Neath Valley, contrasting with localised areas of upland grazing and moorland. The key characteristics of this LCA are:

- Upland plateau rising from the Neath and Dulais Valley to 481 metres AOD.
- Large expanse of coniferous plantation.
- Remote nature enhanced by minimal access and lack of dwellings.
- Evidence of prolific Bronze Age funerary and ritual activities across the high ground.
- The Sarn Helen Roman Road formed part of a longer communication route to North Wales.
- Disturbance from opencast mining to the north east of the plateau.

5.17 Encompassing the western portion of the Site, land stretching along the Dulais Valley from Seven Sisters to the river’s confluence with the Neath is described as **LCA 24: Dulais Valley (Figure 5.4)**. Characterised by a rolling and pastoral valley character, the LCA exhibits a settled rural quality comprising the former mining village of Crynant. The key characteristics of this LCA are described below:

- Valley ranging from approximately 50 m AOD to 223 m AOD.
- River corridor with strong riparian vegetation.
- Settled and sheltered valley.
- Significantly wooded pastoral landscape in valley floor.
- Strong outgrown hedge field boundary.
- Historical industrial relics present through the valley, including the Cefn Coed Colliery Museum.

5.18 The Brecon Beacons National Park Landscape Character Assessment¹³ provides a geographic reference for landscape character, special qualities and issues of landscape change across the National Park. Developed in accordance with the holistic approach to landscape set out in the European Landscape Convention and utilising the LANDMAP database, the document describes the landscapes to the north of the Study Area. The landscape of the National Park is classified into five broad Landscape Character Types and further sub-divided into 15 LCAs.

5.19 Figure 5.4 displays the boundaries of the LCAs available from published landscape character assessments within the Study Area, which will be used as the landscape reporting units for the LVIA.

¹² Neath Port Talbot County Borough Council and Countryside Council for Wales (2004) *Neath Port Talbot LANDMAP Landscape Assessment*

¹³ Brecon Beacons National Park Authority (2012) *Brecon Beacons National Park Landscape Character Assessment*

LANDMAP

5.20 LANDMAP provides an all-Wales landscape resource where landscape characteristics, qualities and influences are recorded and evaluated. LANDMAP data was used as the basis for the identification of LCA boundaries as part of the Brecon Beacon Landscape Character Assessment, informed by the geographic extents of the Visual and Sensory aspect layer. A LANDMAP methodology was also followed in the development of the Neath Port Talbot Landscape Character Assessment.

5.21 LANDMAP visual and sensory aspect area boundaries will be used as landscape reporting units where gaps exist in the coverage of LCAs within 10km of the Proposed Development, as shown in **Figure 5.4**.

5.22 Although LANDMAP information has already been used to inform published landscape character assessments for Neath Port Talbot and the Brecon Beacons National Park, descriptive and evaluative LANDMAP information will be used to supplement the published landscape character information for the areas not covered by the published LCAs.

5.23 The landscape 'reporting units' within 10 km of the turbines will be assessed. Beyond 10 km, it is not anticipated that there would be significant effects upon landscape character. However, the Zone of Theoretical Visibility (ZTV) output between 10 km and 28 km will be reviewed at a high level to identify any potential for significant effects on landscape character that may require assessing in detail.

Designated Landscapes

National Landscape Designations

5.24 Nationally designated landscapes are shown in **Figure 5.1**. The Brecon Beacons National Park is situated approximately 4.5 km from the Site at its nearest point. Special qualities of the nationally important landscape are highlighted within the Brecon Beacons Management Plan (Consultation Draft)¹⁴ and those relevant to this assessment are as follows:

- A National Park offering peace and tranquillity with opportunities for quiet enjoyment, inspiration, relaxation and spiritual renewal.
- The Park's sweeping grandeur and outstanding natural beauty observed across a variety of harmoniously connected landscapes, ... and prominent hilltops with extensive views in all directions.

- A working, living "patchwork" of contrasting patterns, colours and textures comprising well-maintained farmed landscapes, open uplands, lakes and meandering rivers, punctuated by small-scale woodlands, country lanes, hedgerows and stone walls and scattered settlements.
- Enjoyable and accessible countryside with extensive, widespread and varied opportunities to pursue walking, cycling, fishing, water-based activities and other forms of sustainable recreation or relaxation.
- A National Park offering dark night time skies, peace and tranquillity with opportunities for quiet enjoyment, inspiration, relaxation and spiritual renewal.

5.25 The National Park is also designated as an International Dark Sky Reserve. **Figure 5.5** shows dark skies information across the wider 33 km search area.

5.26 The Gower Area of Outstanding Natural Beauty (AONB) occupies land at the south western extent of the Study Area (**Figure 5.1**), approximately 22 km from the Site. The AONB is characterised by a limestone coastline, rich natural environment and dramatic scenery. The management plan¹⁵ for the AONB outlines the actions required to conserve and enhance the special qualities for which it has been designated. These special qualities are grouped into four themes: Natural, Cultural, Environmental and Recreation.

5.27 Effects on the special qualities of these landscapes will be assessed in the LVIA. However, effects from the Gower AONB will be scoped out of the assessment due to the distance from the Site.

Local Landscape Designations

5.28 Special Landscape Areas (SLAs) are a non-statutory designation which are generated by local planning authorities to enable landscapes that are unique, exceptional or distinctive in the local authority context to be defined.

5.29 The NPTCBC Local Development Plan (2011-2026) identifies six locally designated SLAs. The Site lies within one of these SLAs, Dulais Valley SLA, and borders a further SLA at the Site's eastern extent, as shown on **Figure 5.6**. The relevant primary landscape qualities and features of this SLA are listed below:

- The Dulais Valley SLA stretches from the outskirts of Aberdulais in the south to Seven Sisters in the north. The SLA covers the valley sides to reinforce its visual context and therefore includes the unforested uplands of Mynydd

¹⁴ Future Beacons: The Management Plan for the Brecon Beacons National Park (2022-2027)

¹⁵ Swansea Council (2017) *Gower Area of Outstanding Natural Beauty: Management Plan*

Hirfynydd and Mynydd Marchywel as the backdrop to the valley. Areas of forestry plantation are included on both valley sides for coherence as it forms the same land mass and recognising that the appearance and biodiversity of this landcover can be enhanced through management. To the south-east the SLA links to the Vale of Neath SLA via a contiguous boundary.

- The Dulais is a typical upland u-shaped glacial river valley creating a wide valley floor and predominantly open landscape on the valley sides. The north east – south west running ridge along the Dulais valley is important for its Pennant sandstones and coal measures.
- It is a wide, rolling, pastoral valley with significantly treed field boundaries, many of these contain grown out hedges which are a strong element in this landscape on the lower ground whereas drystone walls are a landscape feature of the upper reaches of the valley sides.
- Tranquillity is a key feature of the upper ridge areas supported by lack of development. It should be noted that whilst the tranquillity indices for the upper slopes indicate that they are “undisturbed” there has been a degrading of the valley floor from zone C to Zone B.
- It is an evolved landscape containing evidence from prehistory, important Roman remains, open cast and forestry. The edges of the woodland are often regular and geometric, forming an abrupt edge to the surrounding open areas, which reduces the sense of place in the upper valley sides.
- The ridge of Mynydd Hirfynydd has been a significant route through the landscape from the prehistoric period through into the medieval period, which is now used as an historic walk (Sarn Helen). It is also crossed by the long distance footpath St Illtyd’s Way.

5.30 The key policies and management issues of the Dulais Valley SLA are listed below:

- Preserve the tranquillity of the area by restricting development.
- Prevent encroachment by open cast mining activity or other development that will detract from the landscape quality.
- Maintain grazing regime on lower slopes to retain open aspect and biodiversity.
- Maintain field patterns and appropriate boundaries dependent upon altitude.

- Manage forestry to enhance scenic quality through selective thinning felling and planting of deciduous.
- Maintain outgrown hedges and mature deciduous field trees.
- Enhance edge of forestry to improve integration with open landscape.

5.31 Land bordering the Site to the east, delineated by the route of the Sarn Helen Roman Road, is located within the Vale of Neath SLA. The relevant primary landscape qualities and features of this SLA are listed below:

- The Vale of Neath is similar to the south-east valley side of the Dulais Valley with its north-east to south-west fault controlled U-shaped broad glacial valley floodplain and channel, flanked by steep valley slopes. The area is a pastoral and deciduous mosaic providing diversity within the valley and contrasting with the heavily coniferous wooded nature of the upper slopes.
- The broad floodplain makes the Neath valley distinctive from the Tawe or the Dulais. The topography and woodland cover on the northern and southern slopes of the Neath valley is a significant and dominant feature and provides coherence and integrity to the SLA.
- The landscape contains many examples of prehistoric land use alongside the Roman camps and fortlets. The high ridge conveys the sense of the terrain having formed the ancient tribal frontier between the Silures and Demetae. Although now heavily forested in the east, open cast mining in the north demonstrates a geological “frontier” between surface outcrops and the deep mines of the Tawe, Dulais and Neath Valleys. To the north-east of the SLA it is geologically and topographically dominated by sundry small rivers and waterfalls, suggesting a natural boundary between the County Borough and the high moorland of the Brecon Beacons National Park.
- The upper reaches of the valley have a tranquil and remote feeling, removed from settlements and dwellings although this contrasts significantly with the valley floor which is an important communications corridor.
- The unforested areas of the valley sides are primarily sheep grazed, and there is evidence of relict post-medieval fieldscapes within the forested areas. Footpaths, long distance paths to include St Illtyd’s Way and bridleways facilitate views across the valley.
- Cut into the hillslopes of the valley, on both the north and south sides, are many small collieries, levels and quarries

and Ffynnon Oer Wind Farm lies to the south east of the SLA.

5.32 The key policies and management issues of the Vale of Neath SLA are:

- Encourage sensitive felling and forest management and enhance edges of forest to improve integration with adjacent open landscape.
- Ensure protection of rare habitats of fauna and flora especially in relation to the SSSI.
- Prevent encroachment by open cast mining activity or other developments that will detract from the landscape quality.
- Enhance field pattern of hedges and stone walls maintaining altitudinal distinction between them.
- Maintain grazing regime to retain open aspect and biodiversity.
- Ensure historic and cultural landscape context, such as views, representations and history are properly addressed in considering any management proposals.

5.33 Effects on the primary landscape qualities and features of the two SLAs outlined above will be assessed in the LVIA. Other SLAs within 10 km of the turbines are shown on **Figure 5.6**. Based on the results of the ZTV, effects on the primary landscape qualities and features of Mynydd y Garth will also be assessed due to the availability of pockets of potential visibility, as indicated by the ZTV. The western extent of Hirwaun Common, Cwm Dare and Cwm Aman SLA falls within 10km of the turbines. However, effects on this SLA will be scoped out of the assessment due to the combination of the results of the ZTV output and viewing distance. Located beyond 10km of the turbines, effects on Rhondda Fawr Northern Cwm & Slopes SLA, Mynydd y Gelli SLA and Foel Trawsant SLA will also be scoped out due to viewing distance.

Registered Historic Landscapes

5.34 Registered Historic Landscapes are shown on **Figure 6.3** and effects on these landscapes will be addressed within the Cultural Heritage assessment (refer to **Chapter 6**).

Visual Receptors

5.35 Visual receptors are the people who would be affected by changes in views, and they are usually grouped by what they are doing at those places, for example:

- people within settlements (local communities).
- people travelling on railways and roads.

- people using open access land and on footpaths.
- people visiting areas of interest, such as promoted viewpoints and popular hill summits.

5.36 The turbines would have the most widespread visual impact, but the onsite solar arrays and ancillary features (including tracks between turbines) could also affect views and will be assessed.

5.37 **Figures 5.7** and **5.8** indicate the ZTV for the scoping turbine layout with a maximum turbine blade tip height of 200 m. **Figures 5.9** and **5.10** show the ZTV for the turbines with a maximum hub height of 119 m. The data indicates that, not surprisingly, areas of high ground would have the greatest visibility of the Development, including Mynydd Resolfen, Mynydd Marchywel and the upland plateau of Hirfynydd itself. There would be more limited visibility of a smaller number of turbines from the valleys in close proximity, including the slopes of the Dulais Valley and the steep wooded valley sides of the Vale of Neath.

5.38 Theoretical visibility is also available from the Brecon Beacons National Park, located approximately 4.5 km from the Site. Visibility extends across most of the National Park's southern edge with intermittent visibility available further beyond, including from the slopes of the Black Mountains and Fforest Fawr. Theoretical visibility is also indicated from the slopes of Swansea Valley as well as the low-lying landform at Swansea Bay.

5.39 Once the location and extent of solar panels are known, a separate ZTV will be produced (as part of the LVIA).

Local Communities

5.40 The pattern of settlement within the Study Area is typically defined by linear towns and villages located on the valley floor. Settlements within 5 km that fall, wholly or partially, within the ZTV of the turbines (moving clockwise from the north) are listed below:

- Seven Sisters.
- Onllwyn.
- Coelbren.
- Dyffryn Cellwen.
- Glyn-neath.
- Blaengwrach.
- Cwmgwrach.
- Glyn Castle.

- Resolven.
- Melincourt.
- Abergarwed.
- Clyne.
- Crynant.
- Tre-Forgan.
- Ystalyfera.
- Glan-rhyd.
- Ystradgynlais.
- Penrhos.

5.41 Larger villages/ settlements that fall, wholly or partially, within the ZTV of the turbines between 5 km and 15 km are listed below:

- Hirwaun.
- Tonna / Aberdulais.
- Neath.
- Clydach.
- Pontardawe.
- Cwm-twrch Isaf.
- Cwm-twrch Uchaf.
- Cwmllynfell.

5.42 Abercrave, Treherbert, Glyncorrwg, Croeserw, Cymmer, Maesteg, Cwmafan, Baglan, Bryn Coch, Gwaun Cae Gurwen, and Glanaman are not in the ZTV and so will be scoped out of the LVIA.

5.43 Although some theoretical visibility would exist within settlements lying mostly outside the ZTV, the extent of the Development likely to be visible combined with the presence of screening means turbines are extremely unlikely to affect the visual amenity of these local communities. Therefore, the assessment of effects at Glyntawe, Penderyn and Brynamman will also be scoped out of the LVIA.

People Travelling on Railways and Roads

5.44 The assessment will consider the effects on sequential views experienced by road users on the key roads within 15 km of the turbines where theoretical visibility is indicated. Many of the roads follow valleys where visibility is less, but the following roads will be assessed as they fall within the ZTV:

- A4107.

- A4067.
- A4069.
- A4109 / A4221.
- A4059.
- A474.
- A465.

5.45 The corridor of the M4 and key road network within Neath has been scoped out due to viewing distance and the transient nature of the view glimpsed through intervening features (i.e. not likely to be significant).

5.46 Consideration will also be given to the pattern of visibility and how this would affect views from minor roads within 5 km of the turbines. An assessment of views from the B4242 and B4434 will be undertaken.

5.47 The LVIA will assess the effect on views from the Neath and Brecon Railway which abuts sections of the Site's western boundary. An assessment of visual effect on the Vale of Neath Railway will also be considered.

Recreational Users

5.48 The assessment will consider the visibility of turbines from open access land, focussing on:

- Open access land at Hirfynydd (a combination of public dedicated forest and open country) within and immediately surrounding the Site.
- Tracts of open access land (common land and open country) within land to the north of the Study Area; including Mynydd y Drum and Swansea Valley.
- Land to the east of the Study Area defined as open access land; including Hirwaun Common and Merthyr Common (open country) and Mynydd Resolfen (public dedicated forest).
- Tracts of open access land (public dedicated forest) to the south of the Study Area, including Pelenna Forest.
- Areas of open access land at Mynydd Marchywel (public dedicated forest), Mynydd Allt-y-grug (common land), Farteg Hill (open country) and Mynydd y Garth (common land) to the west of the Study Area.
- Celtic Way (long distance footpath) accommodated partially on the route of the Sarn Helen Roman Road which borders the Site to the east.

- Routes of the St. Illtyd's Walk, the Brecon Beacons Way, the Cambrian Way and Cwm Clydach Walk (long distance footpaths) within 15 km of the turbines.

5.49 The Sky to Sea Walk (long distance footpath) is mostly outside the ZTV for the turbines. A short section of the Wales Coast Path is also afforded theoretical visibility at a 15 km viewing distance. However, effects on visual amenity experience by recreational users of the path are unlikely to be significant, so the receptor has been scoped out.

5.50 Consideration will also be given to the pattern of visibility and how this would affect views from public footpaths within 5 km of the turbines.

People Visiting Areas of Interest, such as Promoted Viewpoints and Popular Hill Summits

5.51 The assessment will also consider effects on people visiting areas of interest, such as heritage features, promoted viewpoints (such as those depicted with a blue viewpoint symbol on the 1:50,000 OS map base) and popular hill summits up to 20 km from the turbines (up to 28 km within the Brecon Beacons National Park). Notable receptor locations are:

- Henrhyd Falls (views from this location are likely to be enclosed by trees, but this will be checked during the assessment).
- Triangulation points across the Study Area, including: the summit of Bryn Mawr, the look-out tower at Abergwynfi, summit of Mynydd Pwll-yr-Iwrch and Werfa.
- Craig-y-nos Country Park and Craig Y Nos Castle.
- Gnoll Estate Country Park.

Assessment Viewpoints

5.52 Assessment viewpoints aim to provide a representation of the range of receptors, including views from settlements, points

Table 5.1: Provisional LVIA Viewpoint Locations

VP no.	Viewpoint Location	X	Y	Approximate Distance from nearest turbine (km)	Receptor / Reason for Selection
1	A4109 at Nant-y-cafn	280961	207713	1.7 km from Turbine 1	Representative of views experienced by the local community of Nant-y-cafn, as well as road users on the A4109 Dulais Road
2	Heol Heddwch, Seven Sisters	282187	208623	2.09 km from Turbine 7	Representative of views experienced by the local community at Seven Sisters

of interest and sequential views along routes. The viewpoints are all publicly accessible and include:

- Locations selected to represent the experience of different types of receptor.
- Locations at different distances to provide a representative range of viewing angles and distances (i.e. short, medium and long distance views).
- Locations which represent a range of viewing experiences (i.e. static views and points along sequential routes).
- Specific viewpoints selected because they represent promoted views or viewpoints within the landscape.
- Illustrative viewpoints chosen specifically to demonstrate a particular visual effect or specific issue (which could include restricted visibility in particular locations).

5.53 The proposed assessment viewpoint locations are set out below in **Table 5.2** and mapped on **Figures 5.11a** and **5.11b**.

5.54 These viewpoints have been informed by a list of those included as part of the ES submitted with the previous 2007 planning application (application reference P2008/0024 – see **Chapter 4**), albeit reviewed to reflect the parameters of the current Development. The Landscape and Visual Amenity chapter within the 2007 ES states that the selection of the viewpoints were determined following site visits and extensive consultation with Countryside Council for Wales (CCW) (now NRW) and NPTCBC. Potential visual receptors of the Development and which viewpoints these are represented by are shown in **Table 5.3**. Where no specific viewpoint exists, wirelines can be used to indicate the extent of potential visibility.

VP no.	Viewpoint Location	X	Y	Approximate Distance from nearest turbine (km)	Receptor / Reason for Selection
3	Station Road, Coelbren	285127	211369	5.2 km from Turbine 7	Representative of views experienced by the local community at Coelbren
4	Hill summit near Carreg Cadno	287411	216125	10.5 km from Turbine 7	Representative of views from recreational receptors within the Brecon Beacons National Park, and those travelling along the Brecon Beacons Way.
5	Cambrian Way, Fforest Fawr	288093	218511	12.9 km from Turbine 7	Representative of recreational users of the Cambrian Way and wider tracts of open country at Fforest Fawr within the Brecon Beacons National Park
6	Longmede Park, Rhigos	292228	206040	9.5 km from Turbine 7	Representative of views experienced by the local community at Rhigos
7	Merthyr Common	306978	209908	24.4 km from Turbine 7	Representative of long-distance views from recreational users of open access land (open country) at Merthyr Common. The viewpoint also lies within close proximity to Brecon Mountain Railway.
8	A465, Resolven	283162	203131	2.5 km from Turbine 6	Representative of views of road users travelling south-westwards on the A465 through the Vale of Neath and residential receptors on the north western edge of Resolven.
9	St. Illtyd's Walk, Cefn Ffordd	284365	199671	6.2 km from Turbine 6	Representative of recreational users of St. Illtyd's Walk at Cefn Ffordd
10	Celtic Way and St Illtyd's Walk	282216	201402	4.0 km from Turbine 6	Representative of views from recreational receptors on two long distance trails, the Celtic Way and St Illtyd's Walk. The view is also representative of residential receptors within Melincourt, Vale of Neath.
11	Mynydd Pwll-yr-lwrch	286791	192856	13.4 km from Turbine 6	Representative of recreational receptors at the summit of Mynydd Pwll-yr-lwrch
12	Cimla, Neath	276278	196186	10.7 km from Turbine 5	Representative of views experienced by the local community at Cimla to the east of Neath
13	Oak View (near Bryn-caws Farm)	277349	201838	5.6 km from Turbine 5	Representative of views from residential receptors on the western slopes of the Dulais Valley.
14	Gellionnen Road, Pontardawe	270773	204240	10.4 km from Turbine 1	Representative of views experienced by the local community of the more elevated parts of Pontardawe as well as recreational users of open access land at Mynydd Gellionnen
15	Junction of A4109 / Nant Celyn, Crynant	279346	205808	1.7 km from Turbine 1	Representative of short-range views experienced by the local community within Crynant. Located in a

VP no.	Viewpoint Location	X	Y	Approximate Distance from nearest turbine (km)	Receptor / Reason for Selection
					LANDMAP cultural aspect area with an 'outstanding' evaluation.
16	Bryn Mawr (St. Illtyd's Walk)	269061	208770	12.2 km from Turbine1	Representative of recreational users of St. Illtyd's Walk at Bryn Mawr
17	Deri Road, Pen-Rhiw Fawr	274732	210867	7.9 km from Turbine 1	Representative of views experienced by the local community at Pen-Rhiw Fawr
18	Bryn Road, Cwmllynfell	274469	212417	9.1 km from Turbine 1	Representative of views experienced by the local community at Cwmllynfell
19	A4069, Brecon Beacons National Park	272476	215738	12.9 km from Turbine 1	Representative of views experienced by travellers on the A4069 and wider recreational users at the southern fringe of the Brecon Beacons National Park
Proposed night-time viewpoints					
N1	Craig-y-nos Country Park	284725	215856	9.3 km from Turbine 7	Representative of views from the Brecon Beacons Dark Sky Reserve
N2	Junction of A4109 / Nant Celyn, Crynant	279346	205808	1.7 km from Turbine 1	Representative of short-range views experienced by the local community within Crynant. Located in a LANDMAP cultural aspect area with an 'outstanding' evaluation.

Table 5.2: Relationship between Visual Receptors and Representative Viewpoints

Visual Receptor Group	Visual Receptor	Representative Viewpoint(s)
Local Communities		
Local Communities (within 5 km)	Seven Sisters	Viewpoint 2 at Heol Heddwach, Seven Sisters
	Onllwyn / Coelbren	Viewpoint 3 at Station Road, Coelbren
	Dyffryn Cellwen	Viewpoint 3 at Station Road, Coelbren is located 1.1 km to the north. No specific viewpoint proposed (due to lack of opportunities for clear views from the settlement) - wirelines/ models can be used to assess
	Glyn-neath, Blaengwrach and Cwmgwrach	No specific viewpoint but Viewpoint 8 A465, Resolven is representative of receptors through the Vale of Neath
	Glyn Castle and Resolven	Viewpoint 8 at A465, Resolven
	Melincourt, Abergarwed and Clyne	Viewpoint 10 at Celtic Way and St Illtyd's Walk
	Crynant and Tre-Forgan	Viewpoint 15 at the junction of A4109 / Nant Celyn, Crynant

Visual Receptor Group	Visual Receptor	Representative Viewpoint(s)
	Ystalyfera	Viewpoint 17 at Deri Road, Pen-Rhiw Fawr can be used as a proxy due to lack of direct views from Ystalyfera itself.
	Glan-rhyd, Ystradgynlais and Penrhos	No specific viewpoint proposed (due to lack of opportunities for direct views from the settlement) – wirelines / models can be used to assess
Larger Settlements (5-15 km)	Hirwaun	Viewpoint 6 Longmede Park, Rhigos is nearest. Wirelines/ models can be used to assess
	Tonna / Aberdulais and Neath	Viewpoint 12 at Cimla, Neath
	Clydach and Pontardawe	Viewpoint 14 at Gellionnen Road, Pontardawe
	Cwm-twrch Isaf, Cwm-twrch Uchaf, and Cwmllynfell	Viewpoint 18 at Bryn Road, Cwmllynfell
Road users		
Road users on main roads within 15 km	A4067	No specific viewpoint proposed - wirelines/ models can be used to assess effect on sequential views
	A4109 / A4221	Viewpoint 1 at A4109 at Nant-y-cafn Viewpoint 15 at Junction of A4109 / Nant Celyn, Crynant
	A4059	No specific viewpoint proposed but Viewpoint 6 at Longmede Park, Rhigos is within close proximity
	A465	Viewpoint 8 at A465, Resolven
	A4069	Viewpoint 19 at A4069, Brecon Beacons National Park
	A474	No specific viewpoint proposed but Viewpoint 16 at Bryn Mawr within close proximity
	A4107	No specific viewpoint proposed but Viewpoint 12 at Cimla, Neath within close proximity
Road users of minor roads within 5 km	B4242 and B4434	No specific viewpoint proposed - wirelines/ models can be used to assess effect on sequential views
Travellers on Railways		
Rail lines within 15 km	Neath and Brecon Railway	Viewpoint 1 at A4109 at Nant-y-cafn, Viewpoint 2 at Heol Heddwch, Seven Sisters and Viewpoint 15 at Junction of A4109 / Nant Celyn, Crynant provide representative views from the Dulais Valley which accommodates the rail corridor
	Vale of Neath Railway	Viewpoint 8 at A465, Resolven provides representative views from the Vale of Neath

Visual Receptor Group	Visual Receptor	Representative Viewpoint(s)
Recreational users		
National Trails / long distance footpaths within 15 km	Celtic Way	Viewpoint 10 at Celtic Way and St Illtyd's Walk
	St. Illtyd's Walk	Viewpoint 10 at Celtic Way and St Illtyd's Walk Viewpoint 9 at St. Illtyd's Walk, Cefn Ffordd Viewpoint 16 at Bryn Mawr (St. Illtyd's Walk)
	Brecon Beacons Way	Viewpoint 4 at hill summit near Carreg Cadno
	Cambrian Way	Viewpoint 5 Cambrian Way, Fforest Fawr
Open access land and local footpaths within 5 km of the turbines	Common land at Mynydd y Drum	No specific viewpoint proposed – wirelines / models can be used to assess
	Public dedicated forest at Mynydd Resolfen and Hirfynydd	Within close proximity of Viewpoint 10 Celtic Way and St Illtyd's Walk
	Public dedicated forest at Mynydd Marchywel	Viewpoint 13 at Oak View (near Bryn-caws Farm)
	Open country at Farteg Hill	No specific viewpoint proposed – wirelines / models can be used to assess
Visitor attractions, promoted viewpoints and popular hill summits within 20 km		
Visitors to attractions and promoted viewpoints	Henrhyd Falls	No specific viewpoint proposed due to existing tree cover – wirelines / models can be used to assess
	Trig points across the Study Area; including the summit of Bryn Mawr, look-out tower at Abergwynfi, summit of Mynydd Pwll-yr-lwrch and Werfa	Viewpoint 11 at Mynydd Pwll-yr-lwrch Viewpoint 16 at Bryn Mawr (St. Illtyd's Walk) Viewpoint 4 at Hill summit near Carreg Cadno
	Craig-y-nos Country Park	Viewpoint N1 at Craig-y-nos Country Park
	Gnoll Estate Country Park	Within close proximity to Viewpoint 12 at Cimla, Neath

Residential Receptors

5.55 There are three residential properties contained in the OS residential property data within 1 km of the turbines and another 1,216 within 1-2 km of the turbines, as shown in **Figure 5.12**. Those closest to the turbines are typically isolated farmsteads that lie on the mid-slopes of the valley landform and have varying levels of screening provided by surrounding vegetation.

5.56 Other residential receptors within 2 km comprise clusters of properties typified by ribbon development on the urbanised valley floor of the Dulais Valley and the Vale of Neath.

Characterised by a linear settlement pattern, Crynant is situated approximately 1.6 km south-west from the nearest turbine forming part of the Development. The settlement is bound to the west by the meandering channel of the river Dulais and to the east largely by the route of the Neath and Brecon Railway. This pattern of development along the valley floor is also evident within the Vale of Neath, characterised by the presence of settlements at Clyne, Melincourt, Resolven, Blaengwrach and Glyn-neath which are centred on both the channel of the river Neath and the corridor of the A465.

Proposed Approach to Surveys and Assessment Methodology

Legislation, Policy and Guidance

5.57 This section presents a summary of the legislation, policy and guidance that will inform the approach to the design and assessment of the Development.

Legislation

5.58 Nationally important landscapes (such as the Brecon Beacons National Park) have protection through the law under the National Parks and Access to the Countryside Act 1949 and the CROW Act 2000.

5.59 The European Landscape Convention (ELC)¹⁶ is a Convention of the Council of Europe and treaty between states that seeks to influence governments. It sets out the importance of protecting, managing and planning Europe's landscapes for their future prosperity. The UK Government became a signatory to the ELC in 2006.

5.60 The ELC advocates the importance of landscapes, not just for their visual quality but the range of ecosystem services they provide both culturally, socially and environmentally. The ELC defines landscape as *"an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors."* Wales' LANDMAP Information System was developed as a direct response to the ELC, providing an integrated resource across Wales where landscape character, qualities and influences can be recorded and evaluated.

Policy

5.61 The following policy documents will inform the LVIA:

- Future Wales: The National Plan 2040 (2021).
- Planning Policy Wales Edition 11 (PPW).
- National Policy Statement for Energy (NPS-EN1) – or its update.
- National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) – or its update.
- NPTCBC LDP (2011-2026).
- NPTCBC Replacement Local Development Plan (RLDP) 2021-2036.

- Landscape and Seascape Supplementary Planning Guidance (SPG) (adopted April 2017).
- Renewable and Low Carbon Energy SPG (adopted July 2017).

Guidance

5.62 The following guidance documents will inform the design and assessment of the Development:

- Design Commission for Wales (2014) Designing Wind Farms in Wales.
- The Planning Inspectorate (2019) Advice Note 17: Cumulative Effects Assessment Relevant to Nationally Significant Infrastructure Projects.
- Landscape Institute and the Institute of Environmental Assessment (2013) Guidelines for Landscape and Visual Impact Assessment. 3rd Edition.
- Landscape Institute (2019) Residential Visual Amenity Assessment (RVAA) Technical Guidance Note 2/19.
- Landscape Institute (2019) Visual Representation of Development Proposals Technical Guidance Note 06/19.
- Natural Resources Wales (undated) Using LANDMAP in Landscape and Visual Impact Assessments GN46.
- NatureScot (2021) Assessing the cumulative landscape and visual impact of onshore wind energy developments.
- Scottish Natural Heritage (2017) (now NatureScot) Siting and Designing Windfarms in the Landscape. Version 3a.
- Scottish Natural Heritage (2017) Visual Representation of Wind Farms Guidance. Version 2.2.

Proposed Study Area

5.63 An initial 'search area' for the LVIA covers a radius of up to 33 km from the outermost turbine as shown on **Figure 5.1**.

5.64 This is based on the guidance from NRW which suggests that the search area for structures 176 m to 220 m tall should be 26 to 33 km. However, the assessment will focus on receptors likely to experience potentially significant effects within this radius. It is proposed that the focused Study Area for effects on landscape character is 10 km from the outermost turbines and the focused Study Area for visual effects is 20 km from the outermost turbines. Receptors beyond these distances

¹⁶ Council of Europe (2000) European Landscape Convention - European Treaty Series - No. 176

will be assessed, as set out above – in particular, effects on the Brecon Beacons National Park.

Proposed Desk Study

5.65 Baseline studies will be undertaken, supported by GIS mapping and 3D visualisation tools including Google Earth Pro and Resoft Windfarm.

Proposed Field Surveys

5.66 Field survey work will be undertaken to provide background knowledge on the existing character of the landscape and record views from representative viewpoints in summer and winter. An indication of differences between seasonal views will be included in the assessment, in accordance with the guidance set out in GLVIA3.

Consultation

5.67 The approach to the LVIA, including the identification of assessment viewpoints and the inclusion of other wind energy developments within the cumulative assessment, will be undertaken in consultation with NRW (as part of this Scoping exercise) and local planning authorities within 20 km of the turbines, including:

- NPTCBC.

- Rhondda Cynon Taf County Borough Council.
- Merthyr Tydfil County Borough Council.
- Powys County Council.
- Carmarthenshire County Council.
- Swansea Council.
- Bridgend Council.
- BBNPA.

Assessment Methodology

5.68 The assessment will determine the significance of landscape and visual effects with reference to the nature of the receptor, which is commonly referred to as the sensitivity of the receptor, and the nature of the effect, which is commonly referred to as magnitude.

Sensitivity

5.69 The sensitivity of a landscape receptor to change will combine professional judgements on susceptibility and value, using the principles set out in **Table 5.4** (more detailed separate tables for sensitivity and value with definitions across three levels will be provided in the LVIA).

Table 5.3: The Principle of Judging Landscape Sensitivity

	Higher	↔	Lower
Susceptibility	The landscape is less able to accommodate wind energy development without undue negative consequences to the baseline situation. Attributes that make up the character of the landscape offer very limited opportunities for the accommodation of change without key characteristics being fundamentally altered by wind energy development, leading to a different landscape character.	↔	The landscape is more able to accommodate wind energy development without undue negative consequences to the baseline situation. Attributes that make up the character of the landscape are more resilient to being changed by wind energy development.
Value	Landscapes with higher scenic quality, conservation interests, recreational value, cultural associations or rarity or uniqueness. Areas designated at a national level e.g. National Parks or AONBs with national policy level protection. LANDMAP aspect areas with higher overall evaluation scores.	↔	Landscapes of limited aesthetic qualities, low conservation interest, little recreational value, few cultural associations or of character that is frequent/ widespread. Areas or features that are not formally designated. LANDMAP aspect areas with lower overall evaluation scores.

5.70 Visual sensitivity will combine professional judgements on susceptibility and value as illustrated in **Table 5.5**.

Table 5.4: The Principle of Judging Visual Sensitivity

	Higher	↔	Lower
Susceptibility	Viewers whose attention or interest is focused on their surroundings including communities/ individual residential receptors/ people engaged in outdoor recreation/ visitors to heritage assets or other attractions where views of the surrounding area are an important contributor to experience.	↔	People whose attention is not on their surroundings (and where setting is not important to the quality of working life) such as commuters/ people engaged in outdoor sports/ people at their place of work.
Value	Views recorded in management plans or guidebooks. Views associated with nationally designated landscapes; notable views from a National Trail or promoted route; or designed views (vistas) recorded in citations for historic parks, gardens/scheduled monuments etc.	↔	Views which are not documented or protected. Views which are more incidental, and less likely to be associated with somewhere people travel to or stop.

Magnitude

5.71 The nature of the effect is commonly referred to as magnitude and takes into account a combination of judgements including size/scale, geographical extent, duration and reversibility, as shown in **Table 5.6**. More detailed tables for size/ scale of change and overall magnitude, across four levels, will be provided in the LVIA.

Table 5.5: The Principle of Judging the Nature of the Landscape Effect (Magnitude of Landscape Change)

	Higher	↔	Lower
Size/scale	Extensive loss of landscape features (and) or elements, and/or change in, or loss of key landscape characteristics, and/or creation of new key landscape characteristics.	↔	Some loss of landscape features (and) or elements, and/or change in or loss of some secondary landscape characteristics.
Geographical extent	Larger area across which there would be a change in landscape features and/or character.	↔	Smaller area across which there would be a change in landscape features and/or character.
Duration	Changes over a longer period.	↔	Changes over a shorter period.
Reversibility	Change to features, elements or character which are not reversible.	↔	A landscape change which is reversible.

5.72 The magnitude of visual change will be judged according to the principles set out in **Table 5.7** below. More detailed tables for size/ scale of change and overall magnitude, across four levels, will be provided in the LVIA.

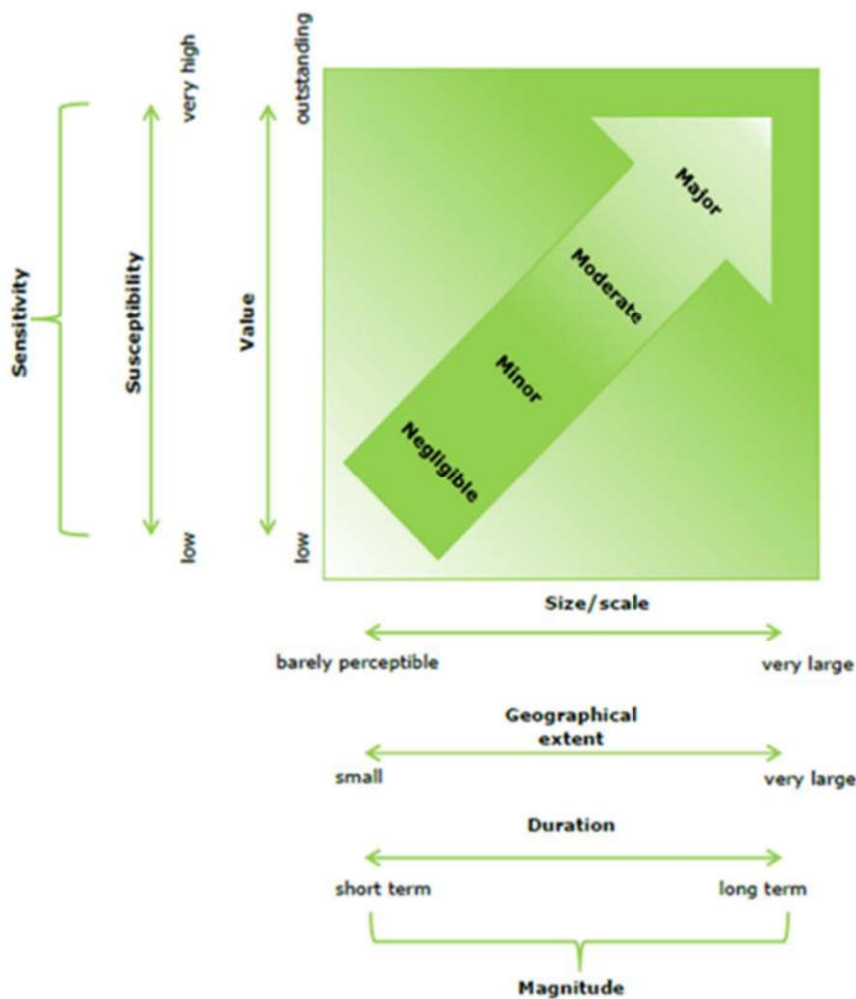
Table 5.6: The Principle of Judging the Nature of Visual Effects (Magnitude of Visual Change)

	Higher	↔	Lower
Size/scale	A large visual change resulting from the development is the most notable aspect of the view perhaps as a result of the development being in close proximity, or because a substantial part of the view is affected, or because the development introduces a new focal point and/or provides contrast with the existing view and/or changes the scenic qualities of the view.	↔	A small or some visual change resulting from the development as a minor or generally unnoticed aspect of the view perhaps as a result of the development being in the distance, or because only a small part of the view is affected, and/or because the development does not introduce a new focal point or is in contrast with the existing view and/ does not change the scenic qualities of the view.
Geographical extent	The changes would be visible over a large area/ affect a large part of the receptor/ a large number of people.	↔	The changes would be visible over a small area/ affect a small part of the receptor/ affect a few people

Duration	Visual change experienced over 10 years or more.	↔	Visual change experienced over a short period of up to 5 years.
Reversibility	A permanent visual change which is not reversible or only partially reversible following decommissioning of the development.	↔	A temporary visual change which is reversible following the completion of construction or decommissioning of the development.

Significance

5.73 Sensitivity and magnitude will be considered together, to form a judgement regarding the overall significance of effects, guided by the principles set out in the diagram below:



Source: LUC

5.74 The levels of effects will be identified as Negligible, Minor, Moderate or Major (or the intermediate levels of minor-moderate and moderate-major). Effects of 'moderate' and above are typically considered to be significant in the context of the EIA Regulations. Where effects are considered to be minor-moderate, professional judgement will be exercised to determine if the effect is considered to be significant.

Cumulative Assessment Methodology

5.75 Existing wind energy developments and those under construction will form part of the LVIA as they already form part of the baseline landscape.

5.76 The cumulative landscape and visual impact assessment (CLVIA) will assess the additional cumulative effects that would arise when adding the Development to a baseline containing consented but unbuilt wind farms, and those that are the subject of a valid planning application within the 33 km search area (these equate to 'Tier 1' projects as set out in the Planning Inspectorate Advice Note 17).

5.77 The criteria which will be used to determine which wind turbines and wind farms will be included in the CLVIA are as follows:

- Start with all operational, under construction, consented schemes and schemes for which planning applications have been submitted within 33 km.
- Scope out all turbines that are less than 20 m to blade tip in height across the whole Study Area.
- Scope out any single turbines of any size beyond 10 km.
- Scope out any turbines that are less than 50 m beyond 10 km unless they are in groups of 10 or more.

5.78 All operational, under construction, consented and in planning wind energy developments within the landscape and visual search area (33 km from the turbines), filtered as per the criteria above, are shown on **Figure 2.1** and set out in **Table 2.1**. Other wind energy projects on the Welsh Government's register of DNS that have not yet been submitted (i.e. 'Tier 2' projects) but are likely to be submitted before the Development will also be reviewed for inclusion at the appropriate stage.

5.79 In addition, any solar farms on the Welsh Government's register of DNS located within 5 km of the Site (and likely to be submitted before the Development application is made) will be included in the cumulative assessment.

Assessing Additional Cumulative Effect Across Two Scenarios

5.80 In accordance with SNH guidance¹⁷ the assessment will consider two scenarios for the additional cumulative assessment:

- Scenario A is a more certain scenario (which also adds consented schemes to those included in the LVIA baseline); and

- Scenario B is a less certain scenario (which also adds undetermined planning applications and consented schemes to those included in the LVIA baseline).

5.81 The susceptibility and value of the landscape and visual receptors remain the same as for the LVIA. The magnitude of change is judged using the same criteria as for the LVIA (taking into account the size/scale of additional effect, the geographical extent of the additional effect and the duration). The cumulative landscape assessment will consider:

- the position of the cumulative developments within the landscape, e.g. in similar landscape or topographical context.
- the relationship between the scale and layout of the cumulative developments including turbine size/proportion/number of turbines.
- the distances between cumulative developments, and their distance and direction from the receptor.
- the cumulative effect of ancillary development, e.g. access tracks.

5.82 The cumulative visual assessment will consider:

- the arrangement of cumulative developments in the landscape or view e.g. developments seen in one direction or part of the view (combined views), or seen in different directions (successive views in which the viewer must turn) or developments seen sequentially along a route.
- the relationship between the scale and layout of the cumulative developments, including turbine size/proportion/number of turbines.
- the position of the cumulative developments within the landscape, e.g. in similar landscape or topographical context; or within the view, e.g. on the skyline, against the backdrop of land.
- the distances between cumulative developments, and their distance and direction from the viewer.
- in the case of routes, the relative duration of views of cumulative developments from routes.

5.83 Intervisibility of the Development and other existing and future wind farms within the Study Area will be illustrated through combined cumulative ZTV (CZTV) maps demonstrating the key relationships with existing or proposed wind farms close to the Site. The CZTVs will then be used to assess the cumulative visual effects, alongside computer-generated wirelines.

¹⁷ Scottish Natural Heritage (2012) Guidance: Assessing the Cumulative Impact of Onshore Wind Energy Developments

5.84 As for the LVIA, judging the significance of cumulative landscape and visual effects requires consideration of the sensitivity (nature of the receptor) and the magnitude of effect on those receptors (nature of the effect), guided by the same principles as set out in the LVIA methodology.

5.85 Cumulative landscape and visual effects will be described as negligible, minor, moderate or major (or the intermediate levels of minor-moderate and moderate-major) where cumulative landscape or visual effects of 'moderate' and above they are typically considered significant in the context of the EIA Regulations.

Total (Combined Cumulative Effect)

5.86 The assessment of total (also referred to as combined) cumulative effect (i.e. the effect on landscape and views if all current, and future proposals, including the Development itself, are implemented when compared to the existing baseline) will be addressed through a commentary. It is not the responsibility of one developer to assess all other developers' projects (this is recognised in paragraph 7.13 of GLVIA3: *"the assessor will not have assessed the other schemes and cannot therefore make a fully informed judgement"*), but the total effect can be judged in broad terms for both landscape and visual amenity.

Proposed Approach to the Visualisations to accompany the LVIA and CLVIA

5.87 Wirelines and photomontages will be utilised to illustrate the predicted change to views.

5.88 Photomontages for the proposed 19 representative viewpoints (see **Table 5.2**) will be produced by overlaying computer-generated perspectives of the Development on photographs of the existing baseline. Viewpoint photography will be undertaken in accordance with LI (2019) guidance¹⁸. All visualisations will be prepared in accordance with LI (2019)¹⁹ and SNH (2017)²⁰ visualisation guidance. Wirelines will include existing and proposed wind farms identified within the cumulative assessment to provide a representation of the cumulative effects of wind energy development within the Study Area.

Proposed Approach to Residential Visual Amenity Assessment (RVAA)

5.89 The effects on residential visual amenity become a public rather than a private matter when properties become regarded as unattractive places to live.

5.90 A Residential Visual Amenity Assessment (RVAA) will be undertaken for all properties within a 2 km radius from the proposed turbine locations (grouping properties where views are similar, especially for properties in the settlements) in accordance with the Landscape Institute's Technical Guidance Note²¹.

5.91 For each property or group of properties, the assessment will be informed by ZTVs, representative viewpoints (as listed in **Table 5.2**), aerial photography, wirelines and field work undertaken from publicly accessible locations within the vicinity to determine the scale of visual effects.

5.92 The RVAA will aim to determine whether visual effects on the property are considered to breach the 'residential visual amenity threshold'.

5.93 The methodology can be summarised as follows:

- Step 1: Identification of properties to be considered (defining the Study Area and scope).
- Step 2: Evaluation of baseline visual amenity from each property/ property group.
- Step 3: Assessment of likely change to visual amenity of properties.
- Step 4: Forming the RVAA judgement (the Residential Visual Amenity Threshold).

5.94 Forming the RVAA judgement will be in line with the Residential Visual Amenity Assessment (RVAA) Technical Guidance Note 2/19.

Proposed Approach to the Aviation Lighting Assessment

5.95 Structures, including wind turbines, that are greater than 150m currently require visible aviation lighting²². This typically consists of 2000 Candela red lights mounted onto the turbine's nacelle and intermediate 32 Candela lights mounted on the wind turbine tower. As the proposed wind turbine model for this Site is being scoped on a 200m to tip height model, a night-time visual assessment of visible turbine lighting will be undertaken. This will be carried out in accordance with the current approach being advocated by NatureScot²³. It will include preparation of lighting ZTVs and night-time visualisations.

Lighting ZTV Mapping

5.96 A lighting ZTV will be prepared to illustrate the extent of theoretical visibility of the aviation lighting installed on the turbine nacelles seen in isolation; and in combination with the

¹⁸ Landscape Institute Technical Guidance Note 06/19 (2019) *Visual Representation of Development Proposals*

¹⁹ Landscape Institute Technical Guidance Note 06/19 (2019) *Visual Representation of Development Proposals*

²⁰ Scottish Natural Heritage (2017) *Visual Representation of Wind Farms Guidance, Version 2.2*.

²¹ Landscape Institute (2019) Residential Visual Amenity Assessment (RVAA) Technical Guidance Note 2/19

²² Civil Aviation Authority (2016) CAA Policy and Guidelines on Wind Turbines – CAP 764

²³ NatureScot (2020) General pre-application and scoping advice for onshore wind farms: Guidance, Annex 2