

Melin Court Wind Farm – Section 73 application to vary conditions

Environmental Statement Update

Further Environmental Information

March 2022

Tables

Table A1.1: Energy Generation Comparison	3
Table A1.2: Statement of Competencies	4
Table A2.1 Appraisal of Impacts of the Original ES Scheme Vs Proposed Tip Height Extension.....	5
Table A3.1: Nature of Visual Receptor (Definitions of Sensitivity) based on GLVIA3.....	7
Table A3.2: Nature of Effect (Magnitude of Change) based on GLVIA3.....	8
Table A3.3: Assigning Cumulative Nature of Visual Effect based on GLVIA3	8
Table A3.4: Significance Matrix	8
Table A3.5: Summary of Visual Baseline and Updates	9
Table A3.6: Comparison of the Consented Scheme Assessment and Updated Assessment	11
Table A3.7: Additional Cumulative Wind Farms since Melin Court original application.....	12
Table 4.1: Consented and Proposed Wind Farms in Close Proximity to Melin Court Wind Farm	16
Table 4.2: Candidate Turbine (Nordex N133) Sound Power Level Against Wind Speed (including uncertainty) .	17
Table 4.3: Candidate Turbine (Siemens SWT 3.0) Sound Power Level Against Wind Speed (including uncertainty)	18
Table 4.4: Candidate Turbine (Vensys 2.5MW) Sound Power Level Against Wind Speed (including uncertainty)	18
Table 4.5: ETSU R97 assessment; No. 9 Clyne Terrace (receptor ref 28 on Image 1)	19
Table 4.6: ETSU R97 assessment; Glyn Gwilym Farm (receptor ref 29 on Image 1)	19
Table 4.7: ETSU R97 assessment; Troed-y-rhiw (receptor ref 20 on Image 1).....	19
Table 4.8: ETSU R97 assessment; Old School, Abercregan (receptor ref 19 on Image 1).....	20
Table 4.9: ETSU R97 assessment; No. 5 Heol Mynydd (receptor ref 16 on Image 1).....	20
Table 4.10: ETSU R97 assessment; Llwyn-y-Ffynnon (receptor ref 15 on Image 1)	20
Table 4.11: ETSU R97 cumulative assessment; No. 9 Clyne Terrace (receptor ref 28 on Image 1)	21
Table 4.12 ETSU R97 cumulative assessment; Glyn Gwilym Farm (receptor ref 29 on Image 1)	21
Table 4.13: ETSU R97 cumulative assessment; Troed-y-rhiw (receptor ref 20 on Image 1).....	21
Table 4.14: ETSU R97 cumulative assessment; Old School, Abercregan (receptor ref 19 on Image 1)	22
Table 4.15: ETSU R97 cumulative assessment; No. 5 Heol Mynydd (receptor ref 16 on Image 1).....	22
Table 4.16: ETSU R97 cumulative assessment; Llwyn-y-Ffynnon (receptor ref 15 on Image 1)	22

Figures

Figure A1.1 – Typical Turbine Elevation
Figure A1.2 – 2015 Consented Site Layout
Figure A1.3 – Typical Turbine Elevation Comparison
Figure A3.1 – Zone of Theoretical Visibility to 15km
Figure A3.2 – Zone of Theoretical Visibility to 35km
Figure A3.3 – Viewpoint 2 Cover Sheet
Figure A3.4 – Viewpoint 4 Cover Sheet
Figure A3.5 – Viewpoint 5 Cover Sheet
Figure A3.6 – Viewpoint 11 Cover Sheet
Figure A3.7 – Viewpoint 19 Cover Sheet
Figure A3.8 – Viewpoint 2 Baseline View - 90° and Wireline
Figure A3.9 – Viewpoint 2 - 53.5° Wireline
Figure A3.10 – Viewpoint 2 - 53.5° Photomontage
Figure A3.11 – Viewpoint 4 Baseline View - 90° and Wireline

Figure A3.12 – Viewpoint 4 - 53.5° Wireline
Figure A3.13 – Viewpoint 4 - 53.5° Photomontage
Figure A3.14 – Viewpoint 5 Baseline View - 90° and Wireline
Figure A3.15 – Viewpoint 5 - 53.5° Wireline
Figure A3.16 – Viewpoint 5 - 53.5° Photomontage
Figure A3.17 – Viewpoint 11 Baseline View - 90° and Wireline
Figure A3.18 – Viewpoint 11 - 53.5° Wireline
Figure A3.19 – Viewpoint 11 - 53.5° Photomontage
Figure A3.20 – Viewpoint 19 Baseline View - 90° and Wireline
Figure A3.21 – Viewpoint 19 - 53.5° Wireline
Figure A3.22 – Viewpoint 19 - 53.5° Photomontage
Figure A3.23 – Cumulative Wind Energy Schemes within 10km
Figure A3.24 – Pen y Cymoedd & Ffynnon Oer Comparative ZTV
Figure A3.24A – Pen y Cymoedd Cumulative & Comparative ZTV
Figure A3.24B – Ffynnon Oer Cumulative & Comparative ZTV
Figure A5.1 – Designated Archaeological assets comparative ZTV

Appendices

Appendix A1A – Noise Assessment
 Appendix A1B – Cumulative Noise Assessment
 Appendix A2 – Abnormal Load Route Survey

Confidential Annex

Confidential Annex – Further Honey Buzzard Information

The full Environmental Statement Update is available on request at the following costs:

- Environmental Statement (Text, Figures and Technical Appendices) on CD in PDF format: £10
- Environmental Statement (Text, Figures and Technical Appendices) printed: £150;

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1 Background

1.1 Background

Neath Port Talbot County Borough Council (NPTCBC) granted planning permission on 15/05/18 under the Town and Country Planning Act 1990 and the Town and Country Planning (Development Management Procedure) (Wales) Order 2012 to Melin Court Wind Farm Limited to erect a wind farm of 5 turbines and associated infrastructure at land to the East of Melin Court, Resolven (NPTCBC Planning reference: P2014/0883).

That consent allows for turbines to be installed with a tip height of up to 145m from base to blade tip. The candidate turbine at the time of submission was 3.6MW in capacity. However, turbine technology has evolved and those that are currently available (March 2022) are capable of far higher energy yield. The result is that the same (or at least a similar) development to that originally proposed can produce far more energy with a greater contribution towards renewable energy targets.

The final turbine choice has not been confirmed and will be subject to availability and a tendering process but for the purpose of this application, the Nordex N133 with a 4.8 MW output, is used as a candidate. Whichever turbine is ultimately selected, it will fit within an increase to tip height of 4.9m, an increase of 3%. Figure A1.3 shows the relative difference in height of a 145m turbine and a 149.9m turbine.

This improvement would allow the energy production of the wind farm to increase by 88%. This would have corresponding increases in terms of homes powered and CO₂ to be offset. This increase would make a meaningful contribution to the Welsh Government's target of producing 70% of its electricity from renewable sources by 2030.¹

While it is not a material consideration, the community benefit fund will also increase significantly, from £90,000 to £120,000 a year. The developer has committed to award £5,000 per MW of installed capacity in community benefit and although the final sum will be dependent on the turbine installed over the lifetime of the windfarm, the community benefit fund could total £3,000,000. This money will be available for projects within the local communities closest to the wind farm, Resolven and Clyne & Melin Court.

Table A1.1: Energy Generation Comparison

	Original 2014 application	Nordex N133 4.8MW with updated assumptions *
Energy Produced	35.294 GWh/annum	66.646 GWh/annum
Homes Powered Equivalent (p.a.)	8,360 homes	17,626 homes
CO₂ Reductions	15,176 tonnes per year	30,657 tonnes per year

¹ Energy generation in Wales 2018, Welsh Government, September 2019. ISBN: 978-1-83933-191-6

² Average home consumption based on 3,781kWh (Accessed 05.07.2021. Available from URL:

<http://www.renewableuk.com/page/UKWEExplained>)

*Updated UK annual average domestic household consumption is 3,748kWh (previously 4,222kWh) and updated carbon dioxide per GWh of electricity supplied from 'fossil fuel' methods of generation such as coal, oil and gas is 440 tonnes (previously 460 tonnes).²

This application should be read in conjunction with the Environmental Statement dated 08/09/14, correspondence dated 09/10/14, the Supplementary Honey Buzzard Information dated September 2015 and Further Environmental Information dated 06/11/15.

1.2 Proposed Amended Condition

Following discussions with NPTCBC, Melin Court WF Limited is now seeking to alter condition 3 of the consent notice dated 15.5.18 via a Section 73 application.

"3. The development shall be carried out in accordance with the following plans:

Fig 4.1-UA005026 Issue 03 (Development Site Layout);

Drawing 0003 - UA005026 Issue 02 (Typical Wind Turbine);

Drawing 0004 - UA005026 Issue 01 (Typical Foundation Detail);

Drawing 0005 - UA005026 Issue 03 (Typical Meteorological Mast);

Drawing 0006 - UA005026 Issue 03 (Typical Substation Layout);

Drawing 0007 - UA005026 Issue 01 (Typical Cable Trench Details);

Drawing 0008 - UA005026 Issue 01 (Typical Access Track Details);

Drawing 0009 - US005026 Issue 02 (Typical Construction Compound Layout)"

The proposed wording for the amended condition is stated below. The varied condition would allow for the increase in tip height of 4.9m taking the consented tip height from 145m to 149.9m.

"3. The development shall be carried out in accordance with the following plans:

Fig 4.1-UA005026 Issue 03 (Development Site Layout);

Figure A1.1: Typical Turbine Elevation, dated 20th February 2019.;

Drawing 0004 - UA005026 Issue 01 (Typical Foundation Detail);

Drawing 0005 - UA005026 Issue 03 (Typical Meteorological Mast);

Drawing 0006 - UA005026 Issue 03 (Typical Substation Layout);

Drawing 0007 - UA005026 Issue 01 (Typical Cable Trench Details);

Drawing 0008 - UA005026 Issue 01 (Typical Access Track Details);

Drawing 0009 - US005026 Issue 02 (Typical Construction Compound Layout)"

1.3 Environmental Impact Assessment

As the application is being made under Section 73 of the Town and Country Planning Act 1990, the provisions of The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ('the 2017 EIA Regulations') apply to the proposals. On this basis, this report assesses the effects of the changes to the scheme under the 2017 EIA Regulations, and, together with the Environmental Statement (ES) which accompanied the original application for planning permission in 2014, forms the EIA Report.

Muirhall Energy has confirmed with Neath Port Talbot County Borough Council that, as the wind farm would be altered from the original consent only in relation to increasing the turbine tip height by 4.9m (an approximate 3% increase in tip height), the environmental effects to be assessed over and above those already assessed in the Environmental Statement (ES) submitted in support of the original application (P2014/0883) are as discussed in Chapter Two: Scope of Assessment.

The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 introduced the requirement to consider potential effects on a number of topic areas which were not required to be considered at the time the original ES was prepared. This includes:

- potential effects on climate change;
- potential effects on human health; and
- consideration of the vulnerability of projects to major accidents and/or natural disasters and any implications of this for the likelihood of significant effects on the environment.

1.3.1 Climate Change

A climate emergency was declared by the Welsh Government in 2019 in an attempt to tackle the issue of climate change. The Neath Port Talbot Council has since published the *Decarbonisation and Renewable Energy Strategy* which outlines the councils plans to meet the targets set by the Welsh Government. The Welsh Government plan to have 2 GW of onshore renewables installed by 2025 to help meet their targets of becoming Net Zero by 2050. While a specific and detailed assessment of effects on climate change has not been undertaken for the proposed Melin Court Wind Farm, it is, by its nature, providing mitigation for potential climate change by offsetting the need for fossil fuel electricity generation. The benefit of which is quantified in terms of energy production and Carbon Dioxide offsetting in Table A1.1.

1.3.2 Human Health

The potential effects of the proposed Melin Court Wind Farm are considered in relation to noise and visual effects and no significant effects on human health are considered likely to arise as a result of the proposed increase in turbine height. It is also important to note that the wind farm will be constructed and operated in accordance with health and safety legislation (as detailed in Section 1.3.3).

1.3.3 Risk of Major Accidents and Disasters

The proposed Melin Court Wind Farm is not located in an area with a known history of natural disasters such as extreme weather events.

Effects in terms of flooding have been considered within the ES for the original application. The footprint of the development and construction methods will remain the same for the proposed larger turbines. On this basis, it is not expected that the proposal will have any significant effects in terms of the risk of major accidents and disasters.

The construction and operation of Melin Court Wind Farm will be managed within the requirements of a number of health and safety related Regulations, including the Construction (Design and Management) Regulations 2015 and the Health and Safety at Work etc. Act 1974.

1.3.4 Statement of Competency

The 2017 EIA Regulations state that “In order to ensure the completeness and quality of the EIA report—

- (a) the developer must ensure that the EIA report is prepared by competent experts; and

- (b) the EIA report must be accompanied by a statement from the developer outlining the relevant expertise or qualifications of such experts.”

Table A1.2 outlines the expertise of the lead authors of all of the topics considered in detail within this report.

Table A1.2: Statement of Competencies

Topic	Expertise
Landscape and visual amenity	Andy Chester Andy has 12 years’ consultancy experience, working in single and multidisciplinary practices, with 8 years’ experience as a Chartered Landscape Architect. Andy undertaken both leading and supporting roles for the delivery of a range of technical landscape aspects. He has broad ranging experiences in Landscape and Visual Impact Assessments across a variety of sectors including energy (wind and solar), transport, infrastructure, and residential developments. Andy has the following qualifications: Bachelor of Arts (Hons) Landscape Architecture, BA (Hons); Bachelor of Landscape Architecture, BLA; Chartered Member of the Landscape Institute, (CMLI)
Ornithology	Howard Fearn MSc MCIEEM, Director Howard has over fourteen years of professional experience as well as 30 years ornithological experience. He has been involved in all EIA wind energy applications undertaken by the company. He has also provided information to Competent Authorities in support of Appropriate Assessments relating to a diverse range of wind farm projects, and is highly experienced in sensitive negotiations with regulators including SNH and NRW, and non-statutory bodies such as Royal Society for the Protection of Birds (RSPB). Dr Colin Bonnington DPhil MSc BSc MCIEEM, Senior Ecologist Colin has over seven years’ experience as a professional ecologist, including renewable energy developments. This has involved him leading on the ecological and ornithological elements of projects, planning and undertaking surveys, managing the dataset and writing reports to be incorporated into the ES chapter, for wind farm schemes.
Noise	Kevin Doyle Kevin has 12 years’ experience as an Acoustic Consultant within the Environment Sector and has acted as noise specialist on a range of transportation, industrial, construction and energy noise assessments. He is experienced in working on noise and vibration projects throughout the United Kingdom and Middle East with a sound working knowledge of British and International standards and legislation and is a corporate member of the Institute of Acoustics. He holds the following qualifications relevant to the assessment of noise and vibration MSc Applied Acoustics; IOA Diploma in Noise and Vibration; and Diploma in Audio Engineering
Transport	Gordon Buchan BEng(Hons), MSc, CMILT, MCIHT is a Divisional Director with Pell Frischmann and has over 23 years’ experience. He has worked on over 400 wind farm projects across the UK, Ireland, Poland and Scandinavia with turbines ranging from 15kw through to offshore machines at 8MW.
Overall Coordination and Quality Assurance	This report has been produced by Jamie Leslie BSc (Hons), AIEMA a registered Associate member of the Institute of Environmental Management and Assessment and reviewed by Kirstin Leckie , BSc (Hons), MSc.

2 Scope of assessment

Table A2.1 below provides an appraisal of the potential for significant environmental impacts to occur as a result of the proposed changes. The first column provides reference to the relevant Environmental Topic; the second column considers the environmental implications of the proposed changes; and the last column provides a comment on whether it has been appropriate to undertake further analysis.

Table A2.1 Appraisal of Impacts of the Original ES Scheme Vs Proposed Tip Height Extension

Original Environmental Statement Chapter	Potential for Material Change/ Significant Effects	Comments
Ecology	The footprint including turbine foundations has been considered and will be identical to the consented layout so there are no expected material changes in effects from the consented development to the terrestrial ecology. The findings from the scoping and desk survey found that the site was classified as “low risk” in relation to potential effects on bats. Further survey found no features within 200m of the application site that could support important bat roosts. Transect and static bat activity surveys were also conducted and confirmed the expected low levels of bat activity. The ES concluded that there were no significant effects expected for bats. This was based on an assessment of the sensitivity of the site and the layout of the wind farm which included a set back from forest edges and other mitigation measures. That assessment was accepted in the Officer’s Report (P2014/0883, dated 5th March 2018) and through the Consent Notice issued on 16th May 2018. That assessment was not based on turbine dimensions and so would not be altered by the proposed variation.	No significant change is predicted.
Ornithology	Further information was requested by the planning authority on the potential effect on Honey buzzards. In response, Surveys have been undertaken during the breeding period of May to August 2019 by UK expert Stephen Roberts and experienced consultancy Avian Ecology.	The findings of the surveys can be seen in the Confidential Annex – Further Honey Buzzard Information. The results of the 2019 honey buzzard surveys support the previous surveys completed in 2013 and 2014. No honey buzzard flights within the wind farm area were recorded during the 172 hours of onsite viewpoint watches and no flights were recorded within 500m of the consented turbine locations during the offsite surveys.
Landscape and Visual Impact Assessment	The change to the turbine tip height has the potential to affect the assessment as follows: • Change to the level of landscape and cumulative landscape effect; • Change to the level of and type of visual and cumulative visual effect; • Increased number and range of effected receptors due to an increased area of visibility. The change to the turbine dimensions could affect the type or nature of visual effects from some viewpoints, relating to the manner in which the proposed turbine would relate to the scale of the landscape in which they are located and viewed and in relation to the scale of other wind farms.	Given the potential for landscape and visual effects occurring as a result of the proposed changes, further assessment has been provided in Section 3: Landscape and Visual of this report.
Noise and Vibration	There is potential for changes to the operational noise character of the wind farm from the revised turbine dimensions.	Further assessment is provided in Section 4: Noise of this report.
Access, Traffic and Transport	The increase in tip height would mean that turbine components would be larger. Larger blades and tower sections have the potential to result in additional works on the surrounding road networks.	Further assessment is provided in Section 6: Transport .
Human Environment and land use	There are no expected material changes in effect in relation to Land use, Tourism, Socio-Economics and Recreation. While Community Benefit is not a material consideration of planning, an additional Community Benefit of £30,000 a year, totalling £3 million over the lifetime of the wind farm would be made available to the local communities surrounding the wind farm if the increase in tip height is achieved. The developer has committed to £5,000 per MW installed and offered Memorandums of Understanding confirming this to the local Community Councils.	No significant change is predicted.

Original Environmental Statement Chapter	Potential for Material Change/ Significant Effects	Comments
Hydrology and Surface water	The development footprint will remain as consented and so no material changes are expected.	No significant change is predicted.
Ground Conditions and Hydrogeology	The development footprint will remain as consented and so no material changes are expected.	No significant change is predicted.
Cultural heritage	The increase in tip height could allow new cultural heritage assets to gain visibility that previously had no visibility of the consented development.	Cultural heritage assets have been mapped and considered in Section 5 of this report.
Other Topics Carbon balance, Telecommunications, Air Quality and Ice Throw	The proposal is to install modern, more efficient turbines. The development footprint will remain the same but generation levels will increase. This should only improve the carbon balance as assessed within the EIA.	No further assessment is required.

3 Landscape and Visual

3.1 Introduction

The proposal for five 145m turbines at Melin Court Wind Farm (application reference P2014/0883) was consented by Neath Port Talbot County Borough Council in May 2018, following the production of relevant supporting documentation including an Environmental Statement containing a Landscape and Visual Impact Assessment. That assessment considered impacts proposed by 6 turbines, however the consented scheme omitted turbine T5 reducing the total turbines to 5 (T1-T4 and T6).

Following this consent the developers have reconsidered the proposals and are now looking to increase the tip height on all 5 turbines from 145 to 149.9m

This chapter presents the findings of the visual assessment undertaken by Arcadis Consulting (UK) Limited, formerly Hyder Consulting who prepared the Environmental Statement and undertook the Landscape and Visual Impact Assessment. It has been prepared by a Chartered Landscape Architect and reviews the previously reported visual effects and any potential changes as a result of this increase in overall turbine height.

The assessment of construction and decommissioning effects on visual amenity and landscape effects on all the development stages have been scoped out as it is considered that the nature of the proposed development on landscape and its associated construction activities would be similar to the approved scheme and therefore would not result in any significant effect that has not already been considered in the 2014 Environmental Statement.

The visual assessment focuses on five previously agreed representative viewpoints. The five representative viewpoints (VP’s 2, 4, 5, 11 and 19) were selected in consultation with the local planning authority, Neath Port Talbot County Borough Council as well as a result of their inclusion within the Officer’s Report for application reference P2014/0883. In addition, as part of this addendum an overview of any changes to cumulative visual impacts has been undertaken focusing on the description of the relationship between Pen y Cymoedd Wind Farm and Ffynnon Oer Wind Farm. Updated Zone of Theoretical Visibility (ZTV) mapping has been used to assess any new areas that will have visibility of only Melin Court as a result of the proposed increase in tip height.

The baseline visual conditions are described, together with a review of the previous assessed effects followed by the identification of the potential residual visual effects. This chapter should be read in conjunction with Figures A3.1 to A3.24B.

3.2 Updates to Planning Policy, and Relevant Guidance

3.2.1 Planning Policy

Planning policy has been updated since the previous assessment. Those policies previously highlighted which are relevant to matters of landscape and visual amenity and have been superseded are as follows:

- Planning Policy Wales (PPW) (2014) superseded by Planning Policy Wales (PPW) Edition 11 (2021);
- Neath Port Talbot County Borough Council (NPTCBC) Unitary Development Plan (UDP) (2008) superseded by Neath Port Talbot County Borough Council Local Development Plan (2011-2026);
- NPTCBC Supplementary Planning Guidance: Landscape (2008) superseded by NPTCBC Landscape and Seascape Supplementary Planning Guidance (May 2018); and
- NPTCBC Interim Planning Guidance: Wind Turbine Development (2008) superseded by NPTCBC Local Development Plan Renewable and Low Carbon Energy Supplementary Planning Guidance (July 2017).

- Future Wales: The National Plan 2040 (2021)

Other policy notably Welsh Assembly Government Technical Advice Note (TAN) 8: Renewable Energy (2005) remains the current policy.

3.2.1 Guidance

As per the consented schemes LVIA, the assessment process has been carried out based on Guidelines for Landscape and Visual Impact Assessment: Third Edition (Landscape Institute and Institute of Environmental Management and Assessment, 2013) (GLVIA3) which remains current.

Other previous considered wind energy specific guidance has been updated as follows:

- LANDMAP Information Guidance Note 3: Using LANDMAP for Landscape and Visual Impact Assessment of Onshore Windfarms (Natural Resources Wales, 2013), is no longer available, but has not been superseded;
- Siting and Designing Windfarms in the Landscape (Scottish Natural Heritage, 2009), has been superseded by Version 3a (Aug 2017); and
- Visual Representation of Wind Farms: Good Practice Guidance (Scottish Natural Heritage, 2006) has been superseded by Version 2.2 (Feb 2017), which has been used as the basis to represent the updated baseline imagery, wirelines and photomontages from the five representative viewpoints identified.

Other guidance notably Assessing the Cumulative Impact of Onshore Wind Energy Developments (Scottish Natural Heritage, 2012) remains current.

3.3 Methodology

The assessment process has been carried out with due regard to policy and best practice guidance, as set out in Section 2, specifically GLVIA3. The assessment methodology here follows that set out in Chapter 8 Landscape and Visual Impact Assessment of the original assessment, with updates as a result of the increased nature of receptor for Public Rights of Way (PROW), Public Open Space, and also users of Road and Rail transport networks. For completeness the criteria and methodology are set out below with relation to the visual assessment.

3.3.1 Baseline Analysis

Baseline conditions are defined by visual amenity (as represented by views) and the sensitivity of visual receptors (or potential viewers), generally in accordance with the criteria set out in Table A3.1. Since the original assessment methodology, the nature of the receptor has been reviewed, resulting in users of the landscape notably Public Rights of Ways and open spaces / visitor attractions, have been increased to high, and views from road and railways being increased to medium, in line with best practice.

Table A3.1: Nature of Visual Receptor (Definitions of Sensitivity) based on GLVIA3

Nature of Receptor (Level of Sensitivity)	Definition and Examples
High	Typically, nationally recognised/important (e.g. from landscape of national importance), including views from residential properties; where appreciation of affected views may be the principal activity, and views from Public Rights of Way, cycle trails, public open space and visitor attractions; where attention is primarily focused on an affected view.
Medium	Typically, regionally/ locally recognised/ important (e.g. from landscape of regional/local importance), including views from roads and railways which are transient due to travelling through the landscape; where attention may be focused on an affected view.

Low	Typically views not recognised/of importance, including views from places of work or commercial properties; where attention is unlikely to be focussed on affected views.
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3.3.2 Assessment of Impacts and Significance Criteria

The criteria and threshold matrices that guide judgements concerning the nature of effect (magnitude of change) and significance of visual effects are set out in Tables A3.2 to A3.4:

Table A3.2: Nature of Effect (Magnitude of Change) based on GLVIA3

Nature of Effect (Level)	Definition and Examples
High	Major change in existing view.
Medium	Partial change in existing view.
Low	Minor change in existing view such that view largely unchanged.
Negligible	Very inconspicuous change in existing view, approximating to the ‘no change’ situation.

The nature of visual effect is determined by the degree of change in view and the contrast or integration of new features or changes, which are influenced by factors which are listed below:

- **Distance** - The greater the distance from a feature/effect, the less detail is observable and the more difficult it is to distinguish the feature/effect from its background, thereby diminishing the visual impact.
- **Elevation** - Viewpoints lower than a feature/effect mean that it is more likely to be viewed against the sky, which typically increases its visual impact. Higher viewpoints mean that a feature/effect is more likely to be viewed against a backdrop, which diminishes the visual impact.
- **Size** - The greater the proportion of the view that is formed by new features and activities associated with a feature/effect, the greater the visual impact. Colour and form have an important role in reducing this impact.
- **Context** - The degree to which the feature/effect is in character with the context of the area, e.g. urban or rural, landform and vegetation.
- **Activity** - Effects such as the movement of vehicles, visible emissions (smoke and dust), and light reflections, highlight activity and draw the eye towards the effect.
- **Change** - The degree of change in the view and the speed of the process of change affect the degree of visual impact a feature/effect may present.

Table A3.3: Assigning Cumulative Nature of Visual Effect based on GLVIA3

Nature of Effect (Magnitude of Change)	Definition and Examples
High	The addition of the Scheme to other existing or proposed wind farms /other developments in the landscape would result in a major change in the view. The Scheme in combination with other wind farms would result in the perception of a ‘wind farm landscape’.
Medium	The addition of the Scheme to other existing or wind energy wind farms /other developments in the landscape would result in a partial but notable change to the view.

Low	The addition of the Scheme to other existing or proposed wind farms /other developments in the landscape would result in minor change to the view, or the Scheme would be one of the least apparent wind farms.
Negligible	The addition of the Scheme to other existing or proposed wind farms /other developments in the landscape would result in change that is very inconspicuous in the view. Equates to ‘no change’ situation.

The cumulative nature of effect (magnitude of change) can be judged through interpretation of a number of factors. As set out in Siting and Designing Windfarms in the Landscape, a windfarm, if located close to another and of similar design, may appear as an extension. This creates the impression of a larger single wind farm which has the potential to result in increased effects in the local area but may limit the extent of cumulative effects through the wider landscape. It is also generally the case that where there is considerable space between wind farms, the character of the underlying landscape prevails, limiting overall cumulative change. Generally, the greater the distance to the Scheme from a view, the lower the cumulative nature of effect as the Scheme would either form a relatively minor element in the landscape/view or constitute one of the least apparent wind farms such that there would not be significant additive effects.

A combined assessment of the nature of receptor (sensitivity) and nature of effect (magnitude) is undertaken to determine whether a significant effect would arise, using professional judgement informed by the matrix set out in Table A3.4. This illustrates that the judgement concerning significance is guided by the relationship between the two factors. Where more than one significance outcome is possible, professional judgement is used to determine that which is most appropriate, on a case by case basis and having regard to the precautionary principle.

Table A3.4: Significance Matrix

Nature of Effect	High	Moderate	Moderate / Major	Major
	Medium	Minor / Moderate	Moderate	Moderate / Major
	Low	Minor	Minor / Negligible	Moderate
	Negligible	Negligible	Negligible	Negligible
		Low	Medium	High
		Nature of Receptor		

Only those effects that are shaded in Table A3.4 are considered likely significant effects for the purposes of the EIA Regulations.

Effects can be positive or negative. Applying the precautionary principle, this assessment identifies potential effects as negative although it should be noted that the Scheme may not be regarded by all as having an adverse effect.

3.3.3 Limitations & Assumptions

- A site survey has not been undertaken as part of this update and therefore judgement from the receptor is based on the baseline conditions considered in the consented scheme.
- The original photography captured in 2013 has been used as the baseline imagery and for the preparation of the updated photomontages.
- Baseline photography has had Pen Y Cymoedd wind farm superimposed as this is now a component features of the baseline view.

- An update to the Landscape Impact Assessment (using the published LANDMAP data) has not been undertaken as it was not included in the agreed scope with Neath and Port Talbot Borough County Council.
- Relevant and referenced LANDMAP data considers the data collated from the previous application.
- A full review of updated planning policy has not been undertaken as part of this visual assessment; however updated policies are identified.

3.4 Visual Amenity

3.4.1 Summary of Previous Baseline and Updates

The following summarises the baseline at the timing of the previous assessment which considers the operational Ffynnon Oer wind farm. It does not consider the baseline condition with Melin Court which has consent for five 145m turbines, however since the consenting of the 5 turbines Pen Y Cymoedd wind farm have become operational. This wind farm consists of 76 turbines, 48 of which are 144.5m and 28, 143.5m to tip. To facilitate this consideration the wind turbines at Pen Y Cymoedd wind farm have been superimposed on the baseline photographs and these have been considered as part of the updated baseline.

As previously identified in the consented scheme assessment the area of maximum theoretical visibility extends northwards to the Black Mountains (within the Brecon Beacons National Park), eastwards and westwards to hilltops/hillsides of The Valleys (south of the Black Mountains), and southwards to coastal areas, including Swansea Bay. Near visibility is generally concentrated in the Vale of Neath area, with only pockets of visibility or distant views available beyond this.

Views to the application site from the area immediately to the north are obstructed by forestry. Beyond this, within the Vale of Neath, pockets of visibility occur from properties (including residential) in the Resolven area, including Rheola Registered Park and Garden, and Public Rights of Way (**High** natured visual receptors), and roads (**Medium** natured visual receptors). Further north, from the settlement and forested hillsides at the edge of the Vale of Neath, views out to the surrounding landscape are very limited, with some views towards the application site from higher ground. From all of these vantage points the application site is generally obscured by forestry. Further north again, from Open Access Land/Public Rights of Way in the Black Mountains, and within the Brecon Beacons National Park (**High** natured visual receptors), the broad location of the Scheme (the application site itself is obscured by forestry) forms part of a distant panorama over the Valleys between the Black Mountains and south coast of Wales.

Views to the application site from the area immediately to the east are also obscured by forestry. Beyond this, pockets of visibility occur from Open Access Land/Public Rights of Way on valley sides within the Corrwg Valley (**High** natured visual receptors) and from hilltops/hillsides further east, however in all cases views to the application site itself are prevented by forestry. Visibility from the bottom of the Corrwg Valley (including the settlement of Glynccorwyg) is prevented by intervening landform.

South and west of the Scheme, landform allows greater visibility of the application site, including sequential views from St Illtyd’s Walk (**High** natured visual receptors) as it traverses the hills between the Afan Valley and Vale of Neath, or vice versa. In these views the upland agricultural land that makes up the application site is framed by forestry plantation. Further south, areas of visibility are limited to distant valley sides and hilltops, with views from settlements within the Afan Valley prevented by landform. Areas of visibility do extend, however, along the Vale of Neath to the coast, including the A465 road corridor, settlements of Aberdulais/Cilfrew, more distant Neath and Swansea areas, and Gower AONB (**High** natured visual receptors). West of the Vale of Neath visibility is largely restricted to hill tops. From all of these distant vantage points the application site is generally obscured by forestry.

A summary of the reported baseline condition for the 5 representative viewpoints being reconsidered is summarised in Table A3.5 below together with the relevant Visual Sensory LANDMAP Evaluation. The nature of the visual receptor has been reviewed in accordance with the updated methodology.

Table A3.5: Summary of Visual Baseline and Updates

Viewpoint Ref	Orientation Height Distance (nearest turbine)	LANDMAP Visual Sensory Overall Evaluation & justification	Nature of Visual Receptor	Baseline View Description
2	South west 250m A.O.D 11,118m	BRCKNVS876 Nedd Fechan and Mellte Valleys - Outstanding . This area of upland has a high scenic quality due to its dramatic landform such as at Fan Frynych and Fan Fawr. These peaks are important parts of the Beacons skyline. The area has panoramic views and forms the backcloth to the lower valleys to the north and south. The area has consistent character throughout and a strong sense of place due to its topography and remoteness. It is popular for walking in its northern parts, along the escarpment, which indicates consensus on value.	High	<u>Comin Y Rhos, Brecon Beacons National Park, Looking South West</u> This view represents users of a minor road, together with nearby properties, Public Rights of Way and Open Access Land, within the Brecon Beacons National Park. Taking into account these considerations, overall the nature of the visual receptor is considered to be high. The foreground comprises open moorland. Beyond this, the backdrop is largely formed by the Vale of Neath, flanked by forested valley sides and hilltops, which obscure the application site. Maesgwyn wind farm and pylons fall within the middle ground, on the western side of the Vale of Neath. Wind turbines at Ffynnon Oer and Pen y Cymoedd are visible, protruding above the forestry plantations.
4	North 444m A.O.D 816m	NPTVS624 Carn caca - Moderate This simple exposed upland moorland landscape, contrasts with the afforested surrounding area and provides a significant sense of place. Waterfalls, streams and cultural relics along with the unspoilt character place additional interest on the area. The area has little impact on the surrounding areas being relatively inaccessible, both visually and physically.'	High (previously Medium)	<u>St Illtyd’s Walk/Coed Morgannwg Way, Looking North</u> This view represents users of the St Illtyd’s Walk and Coed Morgannwg Way Public Rights of Way. Taking into account these considerations, overall the nature of the visual receptor is considered to be high (previously Medium). The foreground comprises valley-side moorland. Across the valley, the upland pasture of the application site is framed by coniferous forestry plantations, with wider backdrop comprising the forested valley sides of the Vale of Neath and more distant hilltops. Maesgwyn wind farm sits within this wider background. Wind turbines at Pen y Cymoedd are visible to the north east on the upland pasture.

Viewpoint Ref	Orientation Height Distance (nearest turbine)	LANDMAP Visual Sensory Overall Evaluation & justification	Nature of Visual Receptor	Baseline View Description
5	North east 301m A.O.D 1,003m	NPTVS624 Carn caca - Moderate This simple exposed upland moorland landscape, contrasts with the afforested surrounding area and provides a significant sense of place. Waterfalls, streams and cultural relics along with the unspoilt character place additional interest on the area. The area has little impact on the surrounding areas being relatively inaccessible, both visually and physically.'	High (previously Medium)	<u>St Illtyd's Walk at Edge of Forest, Looking North East</u> This view represents users of the St Illtyd's Walk, together with Public Rights of Way on and in the immediate vicinity of the application site. Taking into account these considerations, overall the nature of the visual receptor is considered to be high (previously Medium). The foreground comprises valley-side moorland. Across the valley, the upland pasture of the application site is framed by coniferous forestry plantations, with the turbines of Ffynnon Oer situated on higher ground to the south. Wind turbines at Pen y Cymoedd are visible to the north east, beyond the ridgeline on the upland pasture and above the coniferous forestry plantations in the distance.
11	South east 21m A.O.D 2,946m	NPTVS431 Neath valley (bottom) – Moderate The combination of river, canal and hidden elements among the wooded/pastoral mosaic provide a strong scenic quality through sections of the valley. This is enhanced by the sense of enclosure. However, the presence of commercial developments and road corridor detracts from the area. Pleasant views are afforded to higher ground around.	High (previously Medium)	<u>Approach to Resolven at A465 Roundabout Junction, Looking South East</u> This view represents settlement (including residential properties), users of Public Rights of Way (including St Illtyd's Walk), and users of transport corridors within the Vale of Neath, at and in the surrounds of Resolven. Taking into account these considerations, overall the nature of the visual receptor is considered to be high (previously Medium). Beyond the immediate streetscape, the view is largely defined by the forested hillsides which lie to the east of Resolven. Wind turbines at Ffynnon Oer and Pen Y Cymoedd are visible, protruding above the forestry plantations. Intervening landform and vegetation obscure the application site. From within the settlement of Resolven itself, views to the surrounding landscape are largely interrupted or obscured by buildings.

Viewpoint Ref	Orientation Height Distance (nearest turbine)	LANDMAP Visual Sensory Overall Evaluation & justification	Nature of Visual Receptor	Baseline View Description
19	South East 27m A.O.D 3,288m	N/A Aspect area does not meet overall evaluation, scenic quality and character evaluation selection criteria.	High	<u>B4242, Abergarwed, Looking South East</u> This view represents settlement (including residential properties), users of Public Rights of Way, and users of the B4242 road at Abergarwed. Taking into account these considerations, overall the nature of the visual receptor is considered to be high. Beyond the immediate agricultural fields and woodland, the view is largely defined by the forested hillsides which lie to the east of Resolven. Wind turbines at Ffynnon Oer and Pen Y Cymoedd are visible, protruding above the forestry plantations. Intervening landform and vegetation obscure the application site.

3.5 Assessment of Visual Effects - Updated Assessment

With reference to Figures A3.1 & A3.2 (Zone of Theoretical Visibility for 15km and 35km) the ZTVs identify areas within the 15km and 35km study areas which will have visibility due to the increase in tip height. The overall extent of the ZTV has not materially changed from the consented scheme. The proposed tip heights would only show very marginally more, (worst-case) visibility than the consented scheme. This would be experienced from the same geographical areas as the consented scheme and is limited to minor increases in visibility at the outer edges of the areas previously identified. The increase in visibility is only theoretical and does not take into account vegetation, as this area surrounding the wind farm is highly forested it is unlikely that the effects will be as much as proposed and therefore the ZTV is viewed as a worst-case scenario. As summarised in Table A3.6 this will not result in the number of turbines visible at Melin Court increasing as a result of the increased turbine height.

3.5.1 Operation

The visual assessment for the operational phase of the updated Scheme is based on the 5 viewpoints, and since the Melin Court wind far proposal was approved, Pen y Cymoedd wind farm has become operational and therefore has been considered as part of the assessment below. Table A3.6 sets out the previous assessment conclusion together with the updated assessment conclusion which is supported by the subsequent explanations.

Table A3.6: Comparison of the Consented Scheme Assessment and Updated Assessment

Viewpoint Reference	Theoretical No. of Turbines Visible	Number of Turbines Visible increased from Consented Scheme	Nature of Visual Receptor	Consented Operational Assessment Conclusion		Scheme Visual	Changes to the Baseline View since the original application	Updated Operational Assessment Conclusion		Scheme Visual
				Magnitude Change	Significance of Effect			Magnitude Change	Significance of Effect	
2	5	No	High	Low	Moderate		Pen y Cymoedd scheme is now operational and is visible	Low		Moderate
4	5	No	High* ¹	Medium	Moderate		Pen y Cymoedd scheme is now operational and is visible	Medium		Moderate
5	5	No	High* ¹	Medium	Moderate		Pen y Cymoedd scheme is now operational and is visible	Medium		Moderate
11	5	No	High* ¹	Low	Moderate* ²		Pen y Cymoedd scheme is now operational and is visible	Low		Moderate
19	5	No	High	Medium	Moderate		Pen y Cymoedd scheme is now operational and is visible	Medium		Moderate

*¹ based on the updated methodology the nature of the visual receptor has been updated from a previously recorded medium.

*² based on the updated methodology and the updated nature of receptor (Sensitivity) for Viewpoint 11, this is concluded to experience a worst-case Moderate significance of effects, which has increased from a Minor significance of effect previously reported.

3.5.2 Viewpoint 2; Comin Y Rhos, Brecon Beacons National Park, Looking South West

With reference to Viewpoint 2, please refer to Figures A3.3, A3.8, A3.9, A3.10.

As previously reported the Scheme would continue to be seen as a minor element at the edge of the Vale of Neath, with Maesgwyn wind farm and pylons more obvious components within the middle ground of the 90° view.

From this distance (approx. 11,118m) the Schemes five turbines would be visible, and these would be visually associated with the multiple (and greater) number of wind turbines visible at the operational Pen y Cymoedd wind farm present on the skyline (seen to the south west of Melin Court). The Scheme would be visible to the foreground of the operational turbines occupying a small proportion of the wider view.

It is concluded that the increase in turbine height from this viewpoint would have no material change on the view from that reported in the original assessment and as a result, the nature of visual effect is considered to remain as **Low**. Taking into account high nature of the visual receptor, the overall significance of visual effect is considered to remain as **Moderate**.

3.5.3 Viewpoint 4; St Illtyd's Walk/Coed Morgannwg Way, Looking North

With reference to Viewpoint 4, please refer to Figures A3.4, A3.11, A3.12, A3.13.

The Scheme would be seen in the immediate context of upland pasture within the application site, framed by coniferous forestry plantations within the wider view available (beyond 90°), with the views backdrop comprising

the forested valley sides of the Vale of Neath, where Maesgwyn wind farm and Maesgwyn extension wind farm present, and more distant hilltops.

As previously concluded all five turbines of the Scheme would be visible in the 90° and 53.5° views, however this would occur against an updated baseline condition with the operational Pen y Cymoedd wind farm visible. Given the proximity of Pen y Cymoedd wind farm the Scheme would be visual associated with Pen y Cymoedd wind farm (seen to the north east). At this proximity (approx. 816m) to the Scheme it would be occupy a notable proportion of the view.

It is concluded that the increase in turbine height from this viewpoint would have no material change on the view from that reported in the consented Schemes assessment and as a result, the nature of visual effect is considered to remain as **Medium**. Taking into account high nature of the visual receptor and the considerations above, the overall significance of effect is considered to remain as **Moderate**.

3.5.4 Viewpoint 5 St Illtyd's Walk at Edge of Forest, Looking North East

With reference to Viewpoint 5, please refer to Figures A3.5, A3.14, A3.15, A3.16

The Scheme would be seen in the immediate context of upland pasture within the application site, framed by coniferous forestry plantations, with wind turbines of Ffynnon Oer situated on higher ground to the south east (approx. 1.2km), and Pen y Cymoedd to the north east (approx. 500m), visible on the immediate ridgeline.

As previously concluded all five turbines of the Scheme would be visible in the 90° and 53.5° views, however this would occur against an updated baseline condition with the operational Pen y Cymoedd wind farm now a visible landscape feature.

It is concluded that the increase in turbine height from this viewpoint would have no material change on the view from that reported in the consented Schemes assessment and as a result, the nature of visual effect is considered to remain as **Medium**. Taking into account high nature of the visual receptor and the considerations above, the overall significance of effect is considered to remain as **Moderate**.

3.5.5 Viewpoint 11 Approach to Resolven at A465 Roundabout Junction, Looking South East

With reference to Viewpoint 11, please refer to Figures A3.6, A3.17, A3.18, A3.19

The foreground view would continue to be formed by the immediate streetscape. The Scheme would be partially obscured by intervening landform and forestry, forming a minor element within the backdrop of forested hills, with Ffynnon Oer and Pen y Cymoedd visible nearby.

As previously reported the Scheme (located approx. 2.9km from the viewpoint) would result in the upper extent of all five turbines visible (upper hub and blades) in both the 90° and 53.5° views, being seen as sky lining features. This would however occur against an updated baseline condition with the operational Pen y Cymoedd wind farm visible to the east, and the former baseline of Ffynnon Oer wind farm visible to the south west of the Scheme. These schemes together result in a continuation of features along the ridgeline extending across and in excess of a 53.5° view, with the proposed Scheme turbines visible as slightly larger features due to their closer proximity to the viewpoint location.

It is concluded that the increase in turbine height from this viewpoint would have no material change on the view from that reported in the original assessment and as a result, the nature of visual effect is considered to remain as **Low**. Taking into account the updated methodology and the high nature of the receptor together with the considerations above, the overall significance of effect is considered to be **Moderate**.

3.5.6 Viewpoint 19 B4242, Abergarwed, Looking South East

With reference to Viewpoint 19, please refer to Figures A3.7, A3.20, A3.21, A3.22

The Scheme would be evident as part of wider views across the Vale of Neath to forested hillsides, in which Ffynnon Oer wind farm and the now operational Pen y Cymoedd wind farm are both currently visible.

As previously concluded all five turbines of the Scheme would be visible in both the 90° and 53.5° views, with these seen as sky lining features. Given the updated baseline condition and the proximity of the Scheme to Pen y Cymoedd wind farm the Scheme would be visually associated with the Pen y Cymoedd wind farm seen as a foregrounding feature and resulting in a slight extension and continuation of features along the ridgeline extending westwards.

It is concluded that the increase in turbine height from this viewpoint would have no material change on the view from that reported in the consented Schemes assessment and as a result, the at worst nature of visual effect is considered to remain as **Medium**. Taking into account high nature of the visual receptor and the considerations above, the overall significance of effect is considered to remain as **Moderate**.

3.6 Cumulative Effects

Committed wind farms (those consented or under construction) that are likely to influence the future baseline are taken into account through cumulative analysis. The cumulative assessment also considers schemes under consideration as part of the planning process. 32 wind energy schemes were identified within the consented Scheme application as part of the future baseline consideration.

All the cumulative wind energy schemes located within the 10km study area are shown on Figure A23. For completeness all wind energy schemes were included but further analysis of single turbine schemes, schemes which have been refused and schemes which are at scoping has not been included in this assessment. Table A3.7 identifies additional operational, consented or application wind farms since the previous assessment.

Table A3.7: Additional Cumulative Wind Farms since Melin Court original application

Wind Farms	Number of Turbines	Status
Foel Trawsnant (4)	11	Application
Maesgwyn Extension (10)	4	3 Consented, 1 operational

Given the previously reported limited overlaps and the non-significant cumulative effects reported together with the only minor changes to the consented scheme ZTV as a result of the increased turbine height, ZTV’s have not been prepared for the wind farms previously considered.

Furthermore, given the limited changes in the ZTV as a result of the increased tip height at Melin Court an assessment of the cumulative effects for those additional cumulative wind farms identified in table A3.7, has not been undertaken. It is considered that the assessments for each of the schemes will have considered Melin Court and that this will have been assessed as part of their future baseline (consented and to be operational).

The assessment of the increased turbine height for Melin Court has concluded that there would be no changes to the previous assessment conclusions, and the ZTV would only experience minor changes to the visual extent. It is therefore not considered that this would not affect the future baseline scenarios considered by these assessments, and therefore this addendum has not considered the cumulative impacts of these additional Schemes.

The original assessment highlighted the overlap in visibility between the ZTV of Melin Court and the other cumulative wind farms was limited. This is with the exception of the Scheme ZTV and Pen y Cymoedd wind farm ZTV and the Scheme ZTV with Ffynnon Oer wind farm which did experience a degree of overlap.

Figure A24 has been prepared to identify the extent of new areas experiencing visibility as a result of the proposed increase in turbine height to 149.9m, compared with visibility of the consented scheme, Ffynnon Oer wind farm and Pen Y Cymoedd wind farm. This shows (in orange) only very limited and marginal increases in the additional areas experiencing visibility of the Scheme. This area in orange shows an increase of 0.06% in visibility as a result of the proposed 4.9m increase in turbine height.

Cumulative ZTV’s for Pen y Cymoedd wind farm and Ffynnon Oer wind farm have been prepared and are shown on Figure A24A, and A24B.

Figure A24A shows the extent of increased cumulative visibility of the proposed tip height increase against the consented Melin Court scheme and Ffynnon Oer wind farm. This identifies a number of scenarios as follows:

- Theoretical Visibility of 1, 2, and 3 (Orange) identifies the cumulative visibility of the consented Melin Court scheme and identifies those area of cumulative visibility previously identified which have not changed as a result of the proposed increase in turbine height;
 - Theoretical Visibility of 1 only (Magenta) identifies the visibility of Ffynnon Oer wind farm in isolation which has slightly reduced from that previously identified;
 - Theoretical Visibility of 2, and 3 (Green) identifies the cumulative visibility of the consented Melin Court scheme and proposed height increase identifying those areas of visibility which have not changed as a result of the proposed increased turbine height;
 - Theoretical Visibility of 1, and 3 (Blue) identifies the cumulative visibility of Ffynnon Oer wind farm and the proposed increase in turbine height. This shows marginal increase in the areas of cumulative visibility as a result of the increase turbine height; and
- Theoretical Visibility of 3 only (Yellow) identifies the areas experiencing visibility as a result of the proposed increase in turbine height. This is a very marginal increase in visibility and shows only the areas where the new proposed tip heights would now have theoretical visibility without having visibility of Ffynnon Oer wind farm.

Figure A24B shows the extent of increased cumulative visibility of the proposed tip height increase against the consented Melin Court Scheme and Pen Y Cymoedd wind farm. This identifies a number of scenarios as follows:

- Theoretical Visibility of 1, 2, and 3 (Orange) identifies the cumulative visibility of the consented Melin Court scheme and identifies those area of cumulative visibility previously identified which have not changed as a result of the proposed increase in turbine height;
- Theoretical Visibility of 1 only (Magenta) identifies the visibility y Cymoedd wind farm in isolation which has slightly reduced from that previously identified;
- Theoretical Visibility of 2, and 3 (Green) identifies the cumulative visibility of the consented Melin Court scheme and proposed height increase identifying those areas of visibility which have not changed as a result of the proposed increased turbine height;
- Theoretical Visibility of 1, and 3 (Blue) identifies the cumulative visibility of Pen y Cymoedd wind farm and the proposed increase in turbine height. This shows marginal increase in the areas of cumulative visibility as a result of the increase turbine height; and
- Theoretical Visibility of 3 only (Yellow) identifies the areas experiencing visibility as a result of the proposed increase in turbine height This is a very marginal increase in visibility and shows only the areas where the new proposed tip heights would now have theoretical visibility without having visibility of Pen y Cymoedd wind farm.

3.6.1 Viewpoint 2; Comin Y Rhos, Brecon Beacons National Park, Looking South West

With reference to Viewpoint 2, please refer to Figures A3.3, A3.8, A3.9, A3.10 which identify the cumulative schemes with combined visibility.

Since the original application, Maesgwyn extension wind farm has been consented, and as part of the future baseline would be visible within the 90° view from this location. This would, however, form a backdrop to the operational Maesgwyn wind farms, and be seen as part of this previously considered Scheme. Pen y Cymoedd wind farm is also now operational.

As previously reported the Scheme would form a distant, inconspicuous element and would be barely distinguishable from Pen y Cymoedd wind farm, and this would not change as a result of the proposed increase in turbine height, or the change in composition of the hub height and rotor diameter. As a result, it is concluded that the increase in turbine height from this viewpoint would have no additional cumulative effect on the view from that reported in the original assessment and the at worst nature of visual effect is considered to remain as **Negligible**. Taking into account high nature of the visual receptor, the overall significance of cumulative visual effect is considered to be **Negligible**.

3.6.2 Viewpoint 4; St Illtyd's Walk/Coed Morgannwg Way, Looking North

With reference to Viewpoint 4, please refer to Figures A3.4, A3.11, A3.12, A3.13 which identify the cumulative schemes with combined visibility.

Since the original application Maesgwyn extension wind farm has been consented, and as part of the future baseline would be visible within the 90° view from this location. This would however form a backdrop to the operational Maesgwyn wind farm and be seen as part of this previously considered Scheme. Pen y Cymoedd wind farm is also now operational.

As previously reported the Scheme would be immediately apparent, however the proposed wind turbines would appear as part of the immediately adjacent Pen y Cymoedd wind farm such that the additive change would result in a minor alteration to the characteristics of the view. Furthermore, the backdrop already contains distant wind turbines, and overall this would not change as a result of the proposed increase in turbine height. It is also considered that the change in composition of the hub height and rotor diameter given the presence of the Scheme in the foreground of the view would not affect the relationship between the two wind farms.

As a result, it is concluded that the increase in turbine height from this viewpoint would have no additional cumulative effect on the view from that reported in the consented Schemes assessment and the at worst cumulative nature of visual effect is considered to remain as **Low**. As a result of the updated methodology and taking into account the high nature of the visual receptor and the considerations above, the overall significance of cumulative effect is considered to be **Moderate** (previously Minor).

3.6.3 Viewpoint 5 St Illtyd's Walk at Edge of Forest, Looking North East

With reference to Viewpoint 5, please refer to Figures A3.5, A3.14, A3.15, A3.16 which identify the cumulative schemes with combined visibility.

As previously reported the Scheme would be immediately apparent, however the proposed wind turbines would appear as part of the immediately adjacent Pen y Cymoedd wind farm such that there would be minor additive change to the characteristics of the view, which already includes Ffynnon Oer wind farm to the south and with which the Scheme would not appear to coalesce.

This would not change as a result of the increased turbine height with the Scheme being in the foreground of Pen y Cymoedd wind farm. Furthermore, it is also considered that the change in composition of the hub height and rotor diameter given the presence of the Scheme in the foreground of the view would not affect the relationship between the two wind farms, and it is concluded that the increase in turbine height from this viewpoint would have no additional cumulative effect on the view from that reported in the consented Scheme assessment.

At worst the cumulative nature of visual effect is considered to remain as **Low**. As a result of the updated methodology and taking into account the high nature of the visual receptor and the considerations above, the overall significance of cumulative effect is considered to be **Moderate** (previously Minor).

3.6.4 Viewpoint 11 Approach to Resolven at A465 Roundabout Junction, Looking South East

With reference to Viewpoint 11, please refer to Figures A3.6, A3.17, A3.18, A3.19 which identify the cumulative schemes with combined visibility.

As previously reported the Scheme would be partially obscured by intervening landform and forestry and would appear as part of Pen y Cymoedd wind farm located within the backdrop. Coalescence would occur between Pen y Cymoedd and Ffynnon Oer wind farms given the siting of Pen y Cymoedd turbines either side of those at Ffynnon Oer; the Development would sit amongst these turbines thus resulting in a more coherent group.

This would not change as a result of the proposed increase in turbine height, or composition of the of the hub height and rotor diameter given the Scheme being in the foreground of Pen y Cymoedd and Ffynnon Oer wind farms. As a result, it is concluded that the proposed increase in turbine height from this viewpoint would have no additional cumulative effect on the view from that reported in the consented Schemes assessment. At worst the cumulative nature of visual effect is considered to remain as **Low**. As a result of the updated methodology and taking into account the high nature of the visual receptor and the considerations above, the overall significance of cumulative effect is considered to be **Moderate** (previously Minor).

3.6.5 Viewpoint 19 B4242, Abergarwed, Looking South East

With reference to Viewpoint 19, please refer to Figures A3.7, A3.20, A3.21, A3.22 which identify the cumulative schemes with combined visibility.

As previously reported the Scheme would appear as part of Pen y Cymoedd wind farm which occupies a much greater proportion of the backdrop than the Scheme. This would not change as a result of the proposed increase in turbine height or composition of the hub height and rotor diameter with the Scheme being in the foreground of Pen y Cymoedd wind farm. As a result, it is concluded that the proposed increase in turbine height from this viewpoint would have no additional cumulative effect on the view from that reported in the consented Schemes assessment. At worst the cumulative nature of visual effect is considered to remain as **Low**. Taking into account high nature of the visual receptor and the considerations above, the overall significance of cumulative visual effect is considered to be **Moderate**.

3.7 Summary & Recommendations

With reference to Figures prepared, specifically A3.1 and A3.2, the coverage of the ZTV for the proposed scheme, due to the increased turbine height shows marginal increases in the theoretical visibility of the Scheme. The site locality is made up of a landscape dominated by exposed upland agriculture/moorland and surrounding forestry, and as previously concluded the Scheme will not result in significant visual effects and the proposed increase in turbine height will not result in these conclusions changing. Considering the proposed turbine height of 149.9m all representative viewpoints considered are concluded to experience at worst Moderate significance of effect.

Although the Scheme would result in changes to the local landscape and would be evident in views, this change should be considered in the context of the adjacent operational Pen y Cymoedd wind farm, which the Scheme would appear a part of. Having reviewed the Scheme in the context of the landscape context and visual influences (aided by ZTV and wireline perspective images) it is considered that the proposed increase in turbine height will not affect this coherence or interaction with the adjacent wind farms, specifically the Pen y Cymoedd wind farm.

As a result of the proposed turbine height increase and change in composition of the hub height and rotor diameter it is not considered that the unifying nature of the Scheme and Pen y Cymoedd previously reported would be weakened from the view angles and distances considered. Furthermore, it is considered the association (as previously reported) will continue to provide a simplifying effect when compared to the potential for development of a number of smaller wind farms across the local area.

In views from the Brecon Beacons National Park and Gower AONB, the Scheme would continue to constitute a distant and very minor element such that change would be inconspicuous. Taking these considerations into account, visual effects as a result of the increased turbine height are not considered to be significant for the purposes of the EIA Regulations.

4 Noise

4.1 Introduction

The proposal for five 145m turbines (tip height) at Melin Court Wind Farm (application reference P2014/0883) was consented by Neath Port Talbot County Borough Council in 2018, following the production of relevant supporting documentation including an Environmental Statement containing a Noise and Vibration Assessment. The original Noise and Vibration Chapter (9) of the ES contained the assessment of a 6 turbine scheme, however the consented scheme omitted turbine T5 reducing the total turbine numbers to 5 (T1-T4 and T6 as per the layout plans).

Following the 2018 consent the developers have reconsidered the proposals and are now looking to increase the tip height on all 5 turbines from 145m to 149.9m. A final choice of turbine has not yet been decided but for this assessment the Nordex N133 with a rotor diameter of 133m and hub height of 83m has been proposed as a 'worst case' candidate turbine; based upon the information supplied by the developer that the N133 represents the largest dimensions possible for this site, and produces the greatest sound power levels of the current turbines which are available with a tip height of 149.9m.

This addendum presents the findings of the update to the noise assessment undertaken by Arcadis Consulting (UK) Limited, previously Hyder Consulting who prepared the original Environmental Statement. The assessment focusses on the operational impacts of the following changes:

- Reducing the hub height of the turbines;
- Changing the candidate turbine specification;
- Reducing the number of turbines in the development (to 5 from 6, by the omission of Turbine T5); and,
- Consideration of cumulative sites in the area.

Based upon the information provided to support this addendum the assessment of construction and decommissioning effects of noise and vibration would be unchanged from that presented in the original 2014 ES (Chapter 9) for the approved scheme; and therefore, should be referenced therein.

The planning authority have been consulted on and have agreed to the scope of this noise assessment. The methodology follows the scope of the 2014 ES Chapter, as was agreed with Neath Port Talbot County Borough Council.

This addendum should be read and considered wholly in association with Chapter 9: Noise and Vibration Assessment of the 2014 Environmental Statement (ES).

4.2 Updates to Planning Policy, and Relevant Guidance

4.2.1 Legislation

The legislation referenced in Section 9.2 of Chapter 9 of the 2014 ES remains unchanged. Namely:

- The Control of Pollution Act 1974;
- The Environmental Protection Act 1990; and,
- The Noise and Statutory Nuisance Act 1993.

4.2.2 Planning Policy

Some of the Policy documents referenced in Section 9.2 of Chapter 9 of the 2014 ES have subsequently been updated. These are listed below.

Planning Policy Wales

Edition 6 as referenced in the 2014 ES has now been superseded by a Planning Policy Wales (PPW) Edition 11, dated February 2021.

As with Edition 6 referenced in the 2014 ES noise and its influence on amenity form a theme throughout the policy document. However, specific sections relevant to Wind Power developments are presented covering:

- Large Scale Wind Energy Development; and,
- Development Management and Renewable and Low Carbon Energy.

These sections of the PPW contain advice relative to both noise and cumulative effects.

Technical Advice Notes

Changes to the Welsh Assembly Government Technical Advice Notes (TAN) appropriate for noise and wind power developments:

- **TAN 11: Noise** remains unchanged as an October 1997 version as referenced in the ES. As such the reference to TAN 8 remains relative to "noise from wind turbines and wind farms".

4.2.3 Guidance

Consideration has also been given within the scope of this addendum to changes in specific noise Guidance relative to wind power developments. Specifically, this is limited to guidance relative to the operational phase of the Melin Court Wind Farm site as this is the only revision addressed within the scope of this addendum.

- **ETSU-R-97: The Assessment and Rating of Noise from Wind Farms (Department of Trade and Industry, 1996)** remains valid and unchanged from the 2014 ES; and,
- **The Institute of Acoustics (IOA) Good Practice Guide to the Application of ETSU-R-97 (IOA, 2013)** remains valid and unchanged from the 2014 ES.

4.3 Methodology

The methodology for assessment of noise and vibration impacts associated with the Melin Court Wind Farm remains unchanged from that agreed with Neath Port Talbot County Borough Council and presented within Section 9.3 of the 2014 ES.

Primarily the methodology used follows that outlined in the following documents, although further specifics of these should be referenced within Section 9.3 of the 2014 ES.

- ETSU-R-97: The Assessment and Rating of Noise from Wind Farms; and,
- The IOA Good Practice Guide to the Application of ETSU-R-97.

4.3.1 Cumulative Study Parameters

With regard to the consideration of cumulative schemes in the area the IOA Good Practice Guide provides the following advice:

'For new wind farm development consideration should be given to cumulative noise impacts from any other wind farms in the locality. If the proposed wind farm produces noise levels within 10 dB of any existing wind farm/s at the same receptor location, then a cumulative noise impact assessment is necessary.'

In accordance with the IOA Good Practice Guide to the Application of ETSU-R-97 a cumulative assessment has therefore been undertaken for receptors where predicted noise levels from the Development are within 10dB of the predicted noise levels from existing, consented or proposed wind farms in the area.

Given their proximity to the Development’s turbine locations, the wind farms presented in Table 1 have been considered to determine whether they should form part of any cumulative assessment.

Table 4.1: Consented and Proposed Wind Farms in Close Proximity to Melin Court Wind Farm

Wind Farm Development	Status	Description
Pen y Cymoedd	Operational	76 Turbines, Siemens SWT 3.0 MW
Ffynnon Oer	Operational	16 Turbines, Repower MM82
Mynydd y Gelli (Llynfi Afan)	Operational	12 Turbines, Gamesa G80
Maesgwyn (+ extension)	Operational	13 Turbines, Vestas V90
	Consented	4 Turbines (Vensys V90 2.5MW)

As detailed further in Section 3.6, the 2014 cumulative assessment included Hirfyndd Wind Farm which has since been refused planning permission.

4.3.2 Baseline Data

As with the 2014 ES the Baseline data established for the Pen Y Cymoedd wind farm has been used. Further details relating to this can be found in the 2014 ES.

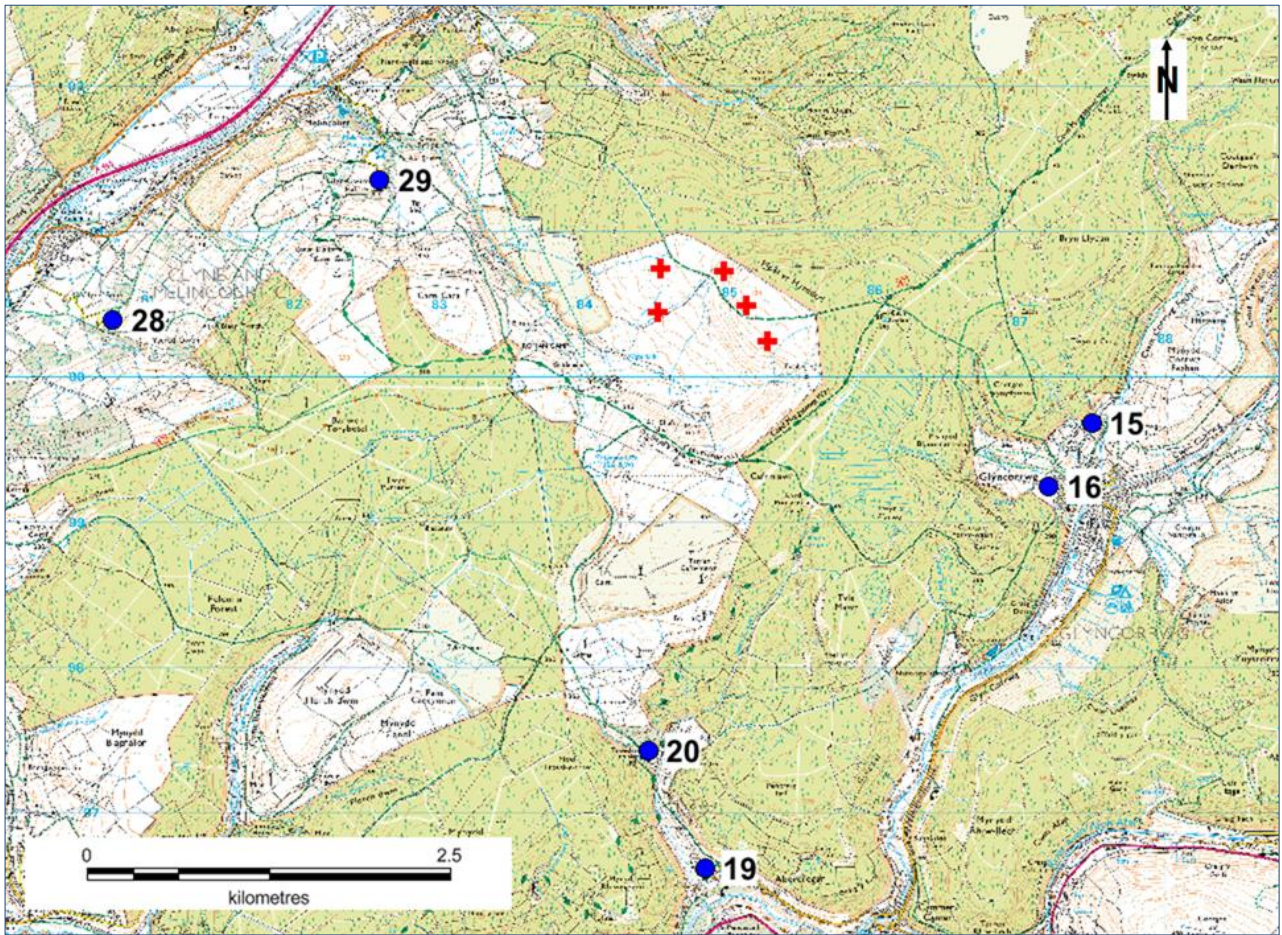
“Background noise surveys were undertaken in 2008 for the Pen y Cymoedd wind farm ES (Ref 9-15³) at 30 locations to establish noise criteria in accordance with ETSU (Ref 9-6) The background noise data collection in 2008 is shown in Table 9-2. Many of the locations used in this assessment are in close proximity to the Development.”

As with the 2014 study, not all of the data from the 30 locations has been used within the scope of this re-assessment. The following locations used in 2014 are also used herein:

- Receptor ID 28: No. 9 Clyne Terrace;
- Receptor ID 29: Glyn Gwilym Farm;
- Receptor ID 20: Troed-y-rhiw;
- Receptor ID 19: Old School, Abercregan;
- Receptor ID 16: No. 5 Heol Mynydd; and,
- Receptor ID 15: Llwyn-y-Ffynnon.

These locations are presented graphically on Image 1 below.

Image 1: Baseline and Assessment Locations: (Source: Pen Y Cymoedd Noise Assessment)



4.3.3 Assessment of Impacts and Significance Criteria

As the main guidance with regards to the prediction and assessment of noise and vibration associated with wind power development remains unchanged, Section 9.5: Assessment and Significance Criteria presented in the 2014 ES remains consistent into this addendum.

4.3.4 Wind Farm Operational Noise Propagation Model

The sound propagation over distance, including the effect of atmospheric absorption, has been calculated in accordance with ISO 9613-2 Acoustics – Attenuation of Sound during propagation outdoors (1996).

The primary prediction values used were as follows, as recommended under the IOA Guidelines:

- Ground absorption (the attenuation of sound due to absorption of sound energy by the ground) has been assumed to be mixed (G=0.5); and,
- For the purposes of the assessment, all noise level predictions have been undertaken using a receiver height of four metres above local ground level and an air absorption based on a temperature of 10°C and 70 % relative humidity.

4.3.5 Limitations & Assumptions

The limitations and assumptions qualified and embodied within the 2014 ES remain constant.

³ The reference numbers quoted relate to the References Section within the main 2014 ES.

Specifically, within the assessment of cumulative impacts:

- Parity has been assumed between hub height wind speeds across all cumulative sites. This is particularly the case with regard to the Pen Y Cymoedd wind farm which employs similar hub heights to the Melin Court Wind Farm presented herein; and,
- The noise levels presented are a worst case downwind predicted noise level from all applicable wind farms.

In reality there are only limited circumstances where this would occur (when a receptor is actually downwind of all turbines in the area) which in reality would be a very rare occurrence. Therefore, the actual turbine levels predicted in most receptor cases would be lower than those predicted.

4.3.6 Variations from the 2014 ES

As detailed in Section 1 this addendum considers the implications on operational noise (including cumulative) relating to the following scheme changes. All other aspects of the 2014 ES remain relevant to the determination of the scheme.

Reducing the Hub Height of the Turbines

Within the scope of the modelling supporting the 2014 ES the hub height used for all Melin Court wind turbines in the calculations was 100m above ground level. Within the scope of this addendum, noise predictions have been undertaken assuming a new hub height of 83m above ground level.

The tip heights of the Melin Court Wind Farm turbines have also been changed from that reported in the ES. Within the 2014 ES all turbines were modelled with tip heights of 145m, within the scope of this addendum this has been revised to 149.9m.

Changing the Candidate Turbine Specification

Within the scope of the modelling supporting the 2014 ES the candidate turbine used for all Melin Court wind turbines in the calculations was a Nordex N90, with sound emissions as specified within Table 9-7 of Chapter 9 of the 2014 ES.

Within the scope of the variations dictating this addendum the candidate turbine has been changed to a Nordex N133 specified as below.

Sound power level information for the Nordex N133 is as detailed in Table 2. This has been implemented for all turbines within the Melin Court Wind Farm site.

In the absence of any measurement uncertainty in the information supplied a maximum +2dB correction has been added to the provided sound power levels, incorporated into the numbers presented in Table 2.

Table 4.2: Candidate Turbine (Nordex N133) Sound Power Level Against Wind Speed (including uncertainty)

dB(A) re: 10 ⁻¹² W		Octave Band Centre Frequency (Hz)							
Ref Wind Speed (m/s)	L _{WA}	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
3	97.0	68.4	78.5	85.5	90.0	91.3	91.1	88.6	82.9
4	97.7	69.1	79.2	86.2	90.7	92.0	91.8	89.3	83.6
5	103.2	72.5	83.2	90.3	95.1	97.5	98.1	95.6	88.1
6	107.4	76.7	87.4	94.5	99.3	101.7	102.3	99.8	92.3
7	109.5	78.8	89.5	96.6	101.4	103.8	104.4	101.9	94.4
8	109.5	81.4	91.0	96.8	100.0	102.4	104.3	103.4	98.0
9	109.5	81.4	91.0	96.8	100.0	102.4	104.3	103.4	98.0
10	109.5	81.4	91.0	96.8	100.0	102.4	104.3	103.4	98.0
11	109.5	81.4	91.0	96.8	100.0	102.4	104.3	103.4	98.0
12	109.5	81.4	91.0	96.8	100.0	102.4	104.3	103.4	98.0

Reducing the Number of Turbines in the Development

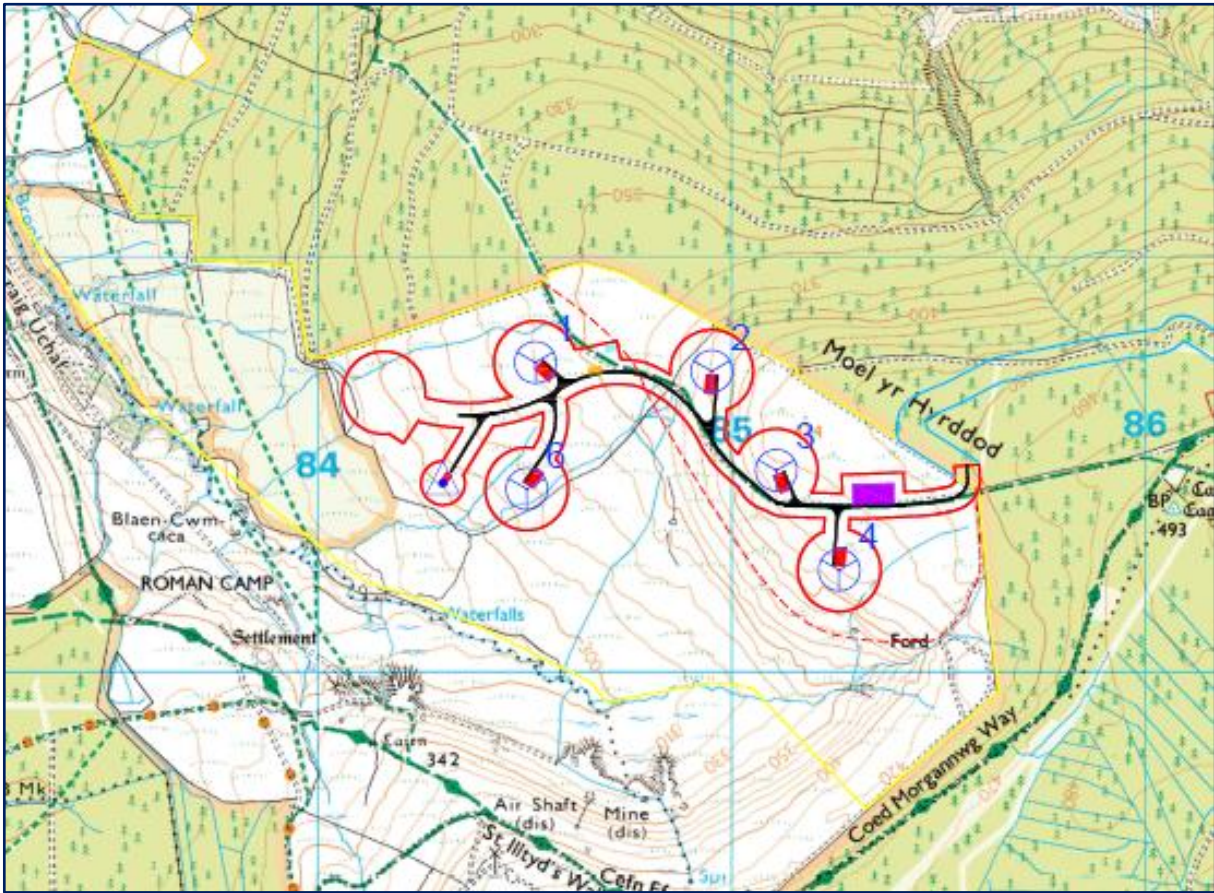
Since the 2014 ES and before the wind farm was consented in May 2018 the total number of turbines was reduced from 6 to 5. This will be completed by the removal of turbine T5.

It is noted that the geographical positions of turbines T1 to T4, and T6 have not changed since the 2014 ES. These are positioned in the noise model at:

- Turbine T1: 284521, 200748;
- Turbine T2: 284947, 200727;
- Turbine T3: 285103, 200488;
- Turbine T4: 285255, 200247
- Turbine T5: removed from Scheme; and,
- Turbine T6: 284500, 200443.

The layout of the proposed Melin Court Wind Farm is as detailed on Image 2 below.

Image 2: Melin Court Wind Farm Revised Layout



Consideration of Cumulative Sites in the Area

In the interim time period between the 2014 ES and the date of this addendum (April 2019), changes have occurred associated with the other wind farms in the area. The surrounding sites covered in the scope of this addendum are listed in Table 1, however, the variations from the assumptions made in the 2014 ES are qualified below.

- Pen Y Cymoedd Wind Farm
 - Turbine locations and specifications remained constant, although revised noise generation data for the Siemens SWT 3.0 turbine was released in 2014 and this has been incorporated into the revised modelling.
 - Hub heights have been reduced from 100m to 88/89.5m above ground.

Sound power level information for the Siemens SWT 3.0 turbine is as detailed in Table 3. This has been implemented for all turbines within the Pen Y Cymoedd Wind Farm site. In the absence of any measurement uncertainty in the information supplied for the Siemens turbines a maximum +2dB correction has been added to the provided sound power levels, incorporated into the numbers presented in Table 3.

Table 4.3: Candidate Turbine (Siemens SWT 3.0) Sound Power Level Against Wind Speed (including uncertainty)

dB(A) re: 10 ⁻¹² W		Octave Band Centre Frequency (Hz)							
Ref Wind Speed (m/s)	LWA	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
3	92.7	78.5	82.1	85.2	85.3	86.3	85.5	82.1	72.9
4	97.1	82.9	86.5	89.6	89.7	90.7	89.9	86.5	77.3
5	101.7	87.5	91.1	94.2	94.3	95.3	94.5	91.1	81.9
6	106.5	92.3	95.9	99.0	99.1	100.1	99.3	95.9	86.7
7	108.0	93.9	96.5	99.8	100.4	102.0	101.1	97.7	88.8
8	108.0	93.9	96.5	99.8	100.4	102.0	101.1	97.7	88.8
9	108.0	93.9	96.5	99.8	100.4	102.0	101.1	97.7	88.8
10	108.0	93.9	96.5	99.8	100.4	102.0	101.1	97.7	88.8
11	108.0	93.9	96.5	99.8	100.4	102.0	101.1	97.7	88.8
12	108.0	93.9	96.5	99.8	100.4	102.0	101.1	97.7	88.8

- Maesgwyn Wind Farm
 - The site has been granted an extension accounting for an additional 4 Vensys 2.5MW.

Sound power level information for the Vensys turbine is as detailed in Table 4. This has been implemented for all turbines within the Maesgwyn Wind Farm site. In the absence of any measurement uncertainty in the information supplied for the Vensys turbines a maximum +2dB correction has been added to the provided sound power levels, incorporated into the numbers presented in Table 4.

Table 4.4: Candidate Turbine (Vensys 2.5MW) Sound Power Level Against Wind Speed (including uncertainty)

dB(A) re: 10 ⁻¹² W		Octave Band Centre Frequency (Hz)								
Ref	Wind	LWA	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
Speed (m/s)										
3		94.6	80.0	84.0	86.6	88.8	89.5	85.1	78.8	71.2
4		97.6	83.0	87.0	89.6	91.8	92.5	88.1	81.8	74.2
5		101.8	87.2	91.2	93.8	96.0	96.7	92.3	86.0	78.4
6		104.8	90.2	94.2	96.8	99.0	99.7	95.3	89.0	81.4
7		105.7	91.1	95.1	97.7	99.9	100.6	96.2	89.9	82.3
8		106.0	91.4	95.4	98.0	100.2	100.9	96.5	90.2	82.6
9		106.0	91.4	95.4	98.0	100.2	100.9	96.5	90.2	82.6
10		106.0	91.4	95.4	98.0	100.2	100.9	96.5	90.2	82.6
11		106.0	91.4	95.4	98.0	100.2	100.9	96.5	90.2	82.6
12		106.0	91.4	95.4	98.0	100.2	100.9	96.5	90.2	82.6

- Hirfyndd Wind Farm
 - The development was refused planning permission so has been removed from model.

All other parameters for the cumulative assessment remain consistent with that assumed and used in the 2014 ES modelling. The full list of cumulative sites is presented within Table 1 of Section 3.1.

4.4 Assessment of Noise - Updated Assessment

The following assessment considers noise from the Melin Court Wind Farm alone. The variations to the scheme as detailed within Section 3.5 relating to candidate turbine, hub height and layout have been incorporated into the results.

In accordance with the 2014 ES, assessment has been undertaken to 6 receptor locations as detailed in Section 3.1 and Image 1.

4.4.1 Construction and Decommissioning

This addendum proposes no change to the construction noise assessment presented within the 2014 ES.

As such information relating to the noise and vibration assessment associated with the construction and decommissioning of the Melin Court Wind Farm should be references within Section 9.5 of the 2014 ES.

4.4.2 Operational assessment

Tables 5 to 10 below detailed the results of the ETSU R97 assessment of the Melin Court Wind Farm at each of the identified receptors. As detailed in Section 3.2 baseline noise information informing this assessment has been taken from the Pen Y Cymoedd ES and has been used to define appropriate ETSU R97 noise limits.

The ETSU R97 Graphical plots supporting the tables below are presented within Appendix A.

Receptor ID 28: No. 9 Clyne Terrace

The specific location of this receptor is presented on Image 1.

Table 4.5: ETSU R97 assessment; No. 9 Clyne Terrace (receptor ref 28 on Image 1)

Receptor Location: 9 Clyne Terrace, 28	Standardised Wind Speed (ms ⁻¹)									
	3	4	5	6	7	8	9	10	11	12
Predicted Wind Turbine Noise L _{A90} – Melin Court	13.0	13.7	18.4	22.6	24.7	24.1	24.1	24.1	24.1	24.1
Daytime Consent Level from Pen y Cymoedd	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Night-time Consent Level from Pen y Cymoedd	43.0	43.0	43.0	44.0	44.0	45.0	45.0	45.0	45.0	45.0
dB Under/Over Daytime Consent Level	-32.0	-31.3	-26.6	-22.4	-20.3	-20.9	-20.9	-20.9	-20.9	-20.9
dB Under/Over Night-time Consent Level	-30.0	-29.3	-24.6	-21.4	-19.3	-20.9	-20.9	-20.9	-20.9	-20.9

Reference to the assessment presented within Table 5 above concludes that the noise generation of the Melin Court Wind Farm at receptor 28 (No. 9 Clyne Terrace) would be assessed as:

- Below a level of 35dB(A) L₉₀ at wind speeds of up to 10m/s; as defined within the ETSU R97 guidelines as being sufficient to protect amenity; and,

- Significantly below the ETSU R97 derived wind speed dependant noise limits from the Pen Y Cymoedd Wind Farm planning permission for this receptor.

Receptor ID 29: Glyn Gwilym Farm

The specific location of this receptor is presented on Image 1.

Table 4.6: ETSU R97 assessment; Glyn Gwilym Farm (receptor ref 29 on Image 1)

Receptor Location: Glyn Gwilym Farm, 29	Standardised Wind Speed (ms ⁻¹)									
	3	4	5	6	7	8	9	10	11	12
Predicted Wind Turbine Noise L _{A90} – Melin Court	19.4	20.1	25.2	29.4	31.5	30.7	30.7	30.7	30.7	30.7
Daytime Consent Level from Pen y Cymoedd	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Night-time Consent Level from Pen y Cymoedd	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
dB Under/Over Daytime Consent Level	-25.6	-24.9	-19.9	-15.7	-13.6	-14.3	-14.3	-14.3	-14.3	-14.3
dB Under/Over Night-time Consent Level	-25.6	-24.9	-19.9	-15.7	-13.6	-14.3	-14.3	-14.3	-14.3	-14.3

Reference to the assessment presented within Table 6 above concludes that the noise generation of the Melin Court Wind Farm at receptor 29 (Glyn Gwilym Farm) would be assessed as:

- Below a level of 35dB(A) L₉₀ at wind speeds of up to 10m/s; as defined within the ETSU R97 guidelines as being sufficient to protect amenity; and,
- Below the ETSU R97 derived wind speed dependant noise limits from the Pen Y Cymoedd Wind Farm planning permission for this receptor.

Receptor ID 20: Troed-y-rhiw

The specific location of this receptor is presented on Image 1.

Table 4.7: ETSU R97 assessment; Troed-y-rhiw (receptor ref 20 on Image 1)

Receptor Location: Troed-y-rhiw, 20	Standardised Wind Speed (ms ⁻¹)									
	3	4	5	6	7	8	9	10	11	12
Predicted Wind Turbine Noise L _{A90} – Melin Court	16.2	16.9	21.7	25.9	28.0	27.3	27.3	27.3	27.3	27.3
Daytime Consent Level from Pen y Cymoedd	44.0	44.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Night-time Consent Level from Pen y Cymoedd	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
dB Under/Over Daytime Consent Level	-27.8	-27.1	-23.3	-19.1	-17.0	-17.7	-17.7	-17.7	-17.7	-17.7
dB Under/Over Night-time Consent Level	-28.8	-28.1	-23.3	-19.1	-17.0	-17.7	-17.7	-17.7	-17.7	-17.7

Reference to the assessment presented within Table 7 above concludes that the noise generation of the Melin Court Wind Farm at receptor 20 (Troed-y-rhiw) would be assessed as:

- Below a level of 35dB(A) L_{90} at wind speeds of up to 10m/s; as defined within the ETSU R97 guidelines as being sufficient to protect amenity; and,
- Below the ETSU R97 derived wind speed dependant noise limits from the Pen Y Cymoedd Wind Farm planning permission for this receptor.

Receptor ID 19: Old School, Abercregan

The specific location of this receptor is presented on Image 1.

Table 4.8: ETSU R97 assessment; Old School, Abercregan (receptor ref 19 on Image 1)

Receptor Location: Old School, Abercregan, 19	Standardised Wind Speed (ms^{-1})									
	3	4	5	6	7	8	9	10	11	12
Predicted Wind Turbine Noise L_{A90} – Melin Court	13.5	14.2	19.0	23.2	25.3	24.7	24.7	24.7	24.7	24.7
Daytime Consent Level from Pen y Cymoedd	44.0	44.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Night-time Consent Level from Pen y Cymoedd	44.0	44.0	44.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
dB Under/Over Daytime Consent Level	-30.5	-29.8	-26.0	-21.8	-19.7	-20.3	-20.3	-20.3	-20.3	-20.3
dB Under/Over Night-time Consent Level	-30.5	-29.8	-25.0	-21.8	-19.7	-20.3	-20.3	-20.3	-20.3	-20.3

Reference to the assessment presented within Table 8 above concludes that the noise generation of the Melin Court Wind Farm at receptor 19 (Old School, Abercregan) would be assessed as:

- Below a level of 35dB(A) L_{90} at wind speeds of up to 10m/s; as defined within the ETSU R97 guidelines as being sufficient to protect amenity; and,
- Below the ETSU R97 derived wind speed dependant noise limits from the Pen Y Cymoedd Wind Farm planning permission for this receptor.

Receptor ID 16: No. 5 Heol Mynydd

The specific location of this receptor is presented on Image 1.

Table 4.9: ETSU R97 assessment; No. 5 Heol Mynydd (receptor ref 16 on Image 1)

Receptor Location: No. 5 Heol Mynydd 16	Standardised Wind Speed (ms^{-1})									
	3	4	5	6	7	8	9	10	11	12
Predicted Wind Turbine Noise L_{A90} – Melin Court	18.4	19.1	24.1	28.3	30.4	29.6	29.6	29.6	29.6	29.6
Daytime Consent Level from Pen y Cymoedd	40.0	40.0	40.0	41.0	41.0	41.0	42.0	42.0	42.0	42.0
Night-time Consent Level from Pen y Cymoedd	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0

dB Under/Over Daytime Consent Level	-21.6	-20.9	-16.0	-12.8	-10.7	-11.4	-12.4	-12.4	-12.4	-12.4
dB Under/Over Night-time Consent Level	-24.6	-23.9	-19.0	-14.8	-12.7	-13.4	-13.4	-13.4	-13.4	-13.4

Reference to the assessment presented within Table 9 above concludes that the noise generation of the Melin Court Wind Farm at receptor 16 (No. 5 Heol Mynydd) would be assessed as:

- Below a level of 35dB(A) L_{90} at wind speeds of up to 10m/s; as defined within the ETSU R97 guidelines as being sufficient to protect amenity; and,
- Below the ETSU R97 derived wind speed dependant noise limits from the Pen Y Cymoedd Wind Farm planning permission for this receptor.

Receptor ID 15: Llwyn-y-Ffynnon

The specific location of this receptor is presented on Image 1.

Table 4.10: ETSU R97 assessment; Llwyn-y-Ffynnon (receptor ref 15 on Image 1)

Receptor Location: Llwyn-y-Ffynnon 15	Standardised Wind Speed (ms^{-1})									
	3	4	5	6	7	8	9	10	11	12
Predicted Wind Turbine Noise L_{A90} – Melin Court	17.9	18.6	23.6	27.8	29.9	29.1	29.1	29.1	29.1	29.1
Daytime Consent Level from Pen y Cymoedd	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Night-time Consent Level from Pen y Cymoedd	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
dB Under/Over Daytime Consent Level	-27.1	-26.4	-21.5	-17.3	-15.2	-15.9	-15.9	-15.9	-15.9	-15.9
dB Under/Over Night-time Consent Level	-27.1	-26.4	-21.5	-17.3	-15.2	-15.9	-15.9	-15.9	-15.9	-15.9

Reference to the assessment presented within Table 10 above concludes that the noise generation of the Melin Court Wind Farm at receptor 15 (Llwyn-y-Ffynnon) would be assessed as:

- Below a level of 35dB(A) L_{90} at wind speeds of up to 10m/s; as defined within the ETSU R97 guidelines as being sufficient to protect amenity; and,
- Below the ETSU R97 derived wind speed dependant noise limits from the Pen Y Cymoedd Wind Farm planning permission for this receptor.

4.4.3 Cumulative Effects Assessment

Tables 11 to 16 below detailed the results of the cumulative assessment of the Melin Court Wind Farm noise in this locality at each of the identified receptors.

As detailed in Section 3.2 baseline noise information informing this assessment has been taken from the Pen Y Cymoedd ES and has been used to define appropriate ETSU R97 noise limits.

The cumulative sites considered within the scope of this assessment are presented within Section 3.1 of this report.

The notes made within Section 3.5 relating to the methodology for the cumulative assessment are also referenced.

The ETSU R97 Graphical plots supporting the tables below are presented within Appendix B.

Receptor ID 28: No. 9 Clyne Terrace

The specific location of this receptor is presented on Image 1.

Table 4.11: ETSU R97 cumulative assessment; No. 9 Clyne Terrace (receptor ref 28 on Image 1)

Receptor Location: 9 Clyne Terrace, 28	Standardised Wind Speed (ms ⁻¹)									
	3	4	5	6	7	8	9	10	11	12
Predicted Wind Turbine Noise L _{A90} – Melin Court	13.0	13.7	18.4	22.6	24.7	24.1	24.1	24.1	24.1	24.1
Predicted Wind Turbine Noise L _{A90} – Cumulative	19.6	23.2	28.5	32.3	33.5	33.8	33.9	34.0	34.0	34.0
Daytime Consent Level from Pen y Cymoedd	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Night-time Consent Level from Pen y Cymoedd	43.0	43.0	43.0	44.0	44.0	45.0	45.0	45.0	45.0	45.0
dB Under/Over Daytime Consent Level	-25.4	-21.8	-16.5	-12.7	-11.5	-11.2	-11.1	-11.0	-11.0	-11.0
dB Under/Over Night-time Consent Level	-23.4	-19.8	-14.5	-11.7	-10.5	-11.2	-11.1	-11.0	-11.0	-11.0

Reference to the assessment presented within Table 11 above concludes that the contribution of the Melin Court Wind Farm to the overall wind turbine noise at receptor 28 (No. 9 Clyne Terrace) would be assessed as:

- Within 10dB of the total turbine noise contribution at this receptor (at low wind speeds), and therefore the Melin Court Wind Farm would contribute to the wind turbine noise levels of the receptor.
- The cumulative wind turbine noise predicted at this receptor does not breach the ETSU R97 derived wind speed dependant noise limits from the Pen Y Cymoedd Wind Farm.

Receptor ID 29: Glyn Gwilym Farm

The specific location of this receptor is presented on Image 1.

Table 4.12 ETSU R97 cumulative assessment; Glyn Gwilym Farm (receptor ref 29 on Image 1)

Receptor Location: Glyn Gwilym Farm, 29	Standardised Wind Speed (ms ⁻¹)									
	3	4	5	6	7	8	9	10	11	12
Predicted Wind Turbine Noise L _{A90} – Melin Court	19.4	20.1	25.2	29.4	31.5	30.7	30.7	30.7	30.7	30.7
Predicted Wind Turbine Noise L _{A90} – Cumulative	23.3	26.3	31.6	35.4	36.8	36.9	37.0	37.1	37.1	37.1
Daytime Consent Level from Pen y Cymoedd	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Night-time Consent Level from Pen y Cymoedd	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
dB Under/Over Daytime Consent Level	-21.7	-18.7	-13.4	-9.6	-8.2	-8.1	-8.0	-7.9	-7.9	-7.9

dB Under/Over Night-time Consent Level	-21.7	-18.7	-13.4	-9.6	-8.2	-8.1	-8.0	-7.9	-7.9	-7.9
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Reference to the assessment presented within Table 12 above concludes that the contribution of the Melin Court Wind Farm to the overall wind turbine noise at receptor 29 (Glyn Gwilym Farm) would be assessed as:

- Within 10dB of the total turbine noise contribution at this receptor, and therefore the Melin Court Wind Farm would contribute to the wind turbine noise levels of the receptor.
- The cumulative wind turbine noise predicted at this receptor does not breach the ETSU R97 derived wind speed dependant noise limits from the Pen Y Cymoedd Wind Farm.

Receptor ID 20: Troed-y-rhiw

The specific location of this receptor is presented on Image 1.

Table 4.13: ETSU R97 cumulative assessment; Troed-y-rhiw (receptor ref 20 on Image 1)

Receptor Location: Troed-y-rhiw, 20	Standardised Wind Speed (ms ⁻¹)									
	3	4	5	6	7	8	9	10	11	12
Predicted Wind Turbine Noise L _{A90} – Melin Court	16.2	16.9	21.7	25.9	28.0	27.3	27.3	27.3	27.3	27.3
Predicted Wind Turbine Noise L _{A90} – Cumulative	29.5	33.5	39.4	42.7	43.8	44.4	44.6	44.7	44.7	44.7
Daytime Consent Level from Pen y Cymoedd	44.0	44.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Night-time Consent Level from Pen y Cymoedd	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
dB Under/Over Daytime Consent Level	-14.5	-10.5	-5.6	-2.3	-1.2	-0.6	-0.4	-0.3	-0.3	-0.3
dB Under/Over Night-time Consent Level	-15.5	-11.5	-5.6	-2.3	-1.2	-0.6	-0.4	-0.3	-0.3	-0.3

Reference to the assessment presented within Table 13 above concludes that the contribution of the Melin Court Wind Farm to the overall wind turbine noise at receptor 20 (Troed-y-rhiw) would be assessed as:

- Greater than 10dB below the total turbine noise predicted at this receptor, and therefore the Melin Court Wind Farm would **not** contribute to the wind turbine noise levels of the receptor.
- The cumulative wind turbine noise predicted at this receptor does not breach the ETSU R97 derived wind speed dependant noise limits from the Pen Y Cymoedd Wind Farm.

Receptor ID 19: Old School, Abercregan

The specific location of this receptor is presented on Image 1.

Table 4.14: ETSU R97 cumulative assessment; Old School, Abercregan (receptor ref 19 on Image 1)

Receptor Location: Old School, Abercregan, 19			Standardised Wind Speed (ms ⁻¹)									
			3	4	5	6	7	8	9	10	11	12
Predicted Wind Turbine Noise LA90 – Melin Court			13.5	14.2	19.0	23.2	25.3	24.7	24.7	24.7	24.7	24.7
Predicted Wind Turbine Noise LA90 – Cumulative			25.0	28.7	34.3	37.9	39.0	39.4	39.6	39.7	39.7	39.7
Daytime Consent Level from Pen y Cymoedd			44.0	44.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Night-time Consent Level from Pen y Cymoedd			44.0	44.0	44.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
dB Under/Over Daytime Consent Level			-19.0	-15.3	-10.7	-7.1	-6.0	-5.6	-5.4	-5.3	-5.3	-5.3
dB Under/Over Night-time Consent Level			-19.0	-15.3	-9.7	-7.1	-6.0	-5.6	-5.4	-5.3	-5.3	-5.3

Reference to the assessment presented within Table 14 above concludes that the contribution of the Melin Court Wind Farm to the overall wind turbine noise at receptor 19 (Old School, Abercregan) would be assessed as:

- Greater than 10dB below the total turbine noise predicted at this receptor, and therefore the Melin Court Wind Farm would **not** contribute to the wind turbine noise levels of the receptor.
- The cumulative wind turbine noise predicted at this receptor does not breach the ETSU R97 derived wind speed dependant noise limits from the Pen Y Cymoedd Wind Farm.

Receptor ID 16: No. 5 Heol Mynydd

The specific location of this receptor is presented on Image 1.

Table 4.15: ETSU R97 cumulative assessment; No. 5 Heol Mynydd (receptor ref 16 on Image 1)

Receptor Location: No. 5 Heol Mynydd, 16			Standardised Wind Speed (ms ⁻¹)									
			3	4	5	6	7	8	9	10	11	12
Predicted Wind Turbine Noise LA90 – Melin Court			18.4	19.1	24.1	28.3	30.4	29.6	29.6	29.6	29.6	29.6
Predicted Wind Turbine Noise LA90 – Cumulative			25.5	29.0	34.3	38.2	39.4	39.6	39.7	39.8	39.8	39.8
Daytime Consent Level from Pen y Cymoedd			40.0	40.0	40.0	41.0	41.0	41.0	42.0	42.0	42.0	42.0
Night-time Consent Level from Pen y Cymoedd			43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0
dB Under/Over Daytime Consent Level			-14.5	-11.0	-5.7	-2.8	-1.6	-1.4	-2.3	-2.2	-2.2	-2.2
dB Under/Over Night-time Consent Level			-17.5	-14.0	-8.7	-4.8	-3.6	-3.4	-3.3	-3.2	-3.2	-3.2

Reference to the assessment presented within Table 15 above concludes that the contribution of the Melin Court Wind Farm to the overall wind turbine noise at receptor 16 (No. 5 Heol Mynydd) would be assessed as:

- Within 10dB of the total turbine noise contribution at this receptor, and therefore the Melin Court Wind Farm would contribute to the wind turbine noise levels of the receptor.
- The cumulative wind turbine noise predicted at this receptor does not breach the ETSU R97 derived wind speed dependant noise limits from the Pen Y Cymoedd Wind Farm.

Receptor ID 15: Llwyn-y-Ffynnon

The specific location of this receptor is presented on Image 1.

Table 4.16: ETSU R97 cumulative assessment; Llwyn-y-Ffynnon (receptor ref 15 on Image 1)

Receptor Location: Llwyn-y-Ffynnon, 15			Standardised Wind Speed (ms ⁻¹)									
			3	4	5	6	7	8	9	10	11	12
Predicted Wind Turbine Noise LA90 – Melin Court			17.9	18.6	23.6	27.8	29.9	29.1	29.1	29.1	29.1	29.1
Predicted Wind Turbine Noise LA90 – Cumulative			25.7	29.5	34.5	38.7	39.9	40.0	40.1	40.1	40.1	40.1
Daytime Consent Level from Pen y Cymoedd			45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Night-time Consent Level from Pen y Cymoedd			45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
dB Under/Over Daytime Consent Level			-19.3	-15.5	-10.5	-6.3	-5.1	-5.0	-4.9	-4.9	-4.9	-4.9
dB Under/Over Night-time Consent Level			-19.3	-15.5	-10.5	-6.3	-5.1	-5.0	-4.9	-4.9	-4.9	-4.9

Reference to the assessment presented within Table 16 above concludes that the contribution of the Melin Court Wind Farm to the overall wind turbine noise at receptor 15 (Llwyn-y-Ffynnon) would be assessed as:

- Within 10dB of the total turbine noise contribution at this receptor, and therefore the Melin Court Wind Farm would contribute to the wind turbine noise levels of the receptor.
- The cumulative wind turbine noise predicted at this receptor does not breach the ETSU R97 derived wind speed dependant noise limits from the Pen Y Cymoedd Wind Farm.

4.5 Summary & Recommendations

With reference to the variations proposed and assessed within the scope of this addendum the following is concluded.

- The proposed changes to the operational parameters of the Melin Court Wind Farm would not result in any material change in the conclusions drawn in the consented 2014 ES Noise and Vibration Chapter (Chapter 9).
As such the changes proposed to the Melin Court Wind Farm would be acceptable on the grounds of noise.
- The proposed changes to the Melin Court Wind Farm and the changes to the surrounding wind power development qualified within this report do not result in a material change in the conclusions drawn in the consented 2014 ES Noise and Vibration Chapter (Chapter 9).

The wind turbine noise in the area remains dominated by the Pen Y Cymoedd Wind Farm, with the Melin Court Wind Farm only contributing to the overall turbine noise at certain receptors, but in no way being the dominant wind farm.

As such the changes proposed to the Melin Court Wind Farm would be acceptable on the grounds of cumulative turbine noise within the area.

5 Cultural Heritage

5.1 Introduction

This section should be read in conjunction with the respective chapter within the original ES 14 – Cultural Heritage and Archaeology. The update in Legislation, Policy and supporting best practice guidance since the Environmental Statement was submitted is noted, though it is not anticipated to impact on this application.

5.2 Approach to Assessment

In order to establish whether the proposed increase in tip height is likely to result in any effects on the setting of cultural heritage, the following assessment has been undertaken:

- A review of the blade tip height Zone of Theoretical Visibility (ZTV) for the proposed increase in tip height of 149.9m; with assets overlain to establish if any new designated assets will have visibility as a consequence of the increase in tip height;

5.3 Analysis and conclusion

A Zone of Theoretical Visibility (ZTV) has been produced showing scheduled monuments within a 5km radius and the tip height comparison. This can be seen in Figure A5.1.

Only 1 scheduled monument would gain theoretical visibility, 7 - GM538 - Bryn Llydan Round Barrow, as a result of the increase in tip height. This is only theoretical visibility as a ZTV assumes a bare earth scenario and vegetation screening is not accounted for. Bryn Llydan Round Barrow is located within forestry and is therefore unlikely to have actual visibility. The asset is also located within the adjacent 76 turbine Pen y Cymoedd wind farm. Therefore, its setting is already characterised by extensive wind farm development. The increase in height of the Melin Court turbines which are more distant, and which are unlikely to be seen while the forestry stands, will not have a significant effect on the scheduled monument.

6 Transport

Due to the potential for larger turbine components as a result of the increased tip height, an Abnormal Load Route Survey update has been undertaken. This assessment has been based on the largest possible components currently available within the tip height limit of 149.9m. The report is provided in **Technical Appendix A2**.

There is no proposed change in the number of vehicles movements from that stated in the original ES during the construction, operational or decommissioning stages of the development.

The proposed delivery route has not changed from the original 2014 application and is the same route used by adjacent Pen y Cymoedd Wind Farm.

There are no areas which, as a result of the larger turbine dimensions, require upgrading to such an extent that the acceptability of the development might be altered.