

Y BRYN WIND FARM

RESPONSE TO SCOPING REPORT IN RELATION TO LANDSCAPE AND VISUAL AND CULTURAL HERITAGE MATTERS

Final Report

for

Neath Port Talbot County Borough Council

Bridgend County Borough Council

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1. Introduction

- 1.1. White Consultants were commissioned by Neath Port Talbot and Bridgend County Boroughs (NPTCBC and BCBC) in January 2021 to review and advise on a scoping response to proposals for Y Bryn wind farm in relation primarily to landscape and visual impact assessment (LVIA) but also to cultural heritage matters. Govannon have been employed to take a brief overview of the latter.
- 1.2. The proposal is a Development of National Significance (DNS). The developers are Coriolis Energy and ESB. The LVIA related information has been prepared by Soltys Brewster Consulting Ltd and the cultural heritage information has been prepared by Headland Archaeology (UK) Ltd.
- 1.3. The purpose of this report is to provide background information and support for the boroughs' scoping responses to PINS.
- 1.4. A desk study has been carried out supplemented by a visit to the study area to scope viewpoints in early February.
- 1.5. Currently, the proposed wind farm consists of 26 turbines up to 250m to blade tip proposed in two clusters in forest plantation with associated access, battery storage and other infrastructure. It is noted that mapped information on the development other than wind turbines has not been provided. The southern cluster of turbines is located on Mynydd Margam and Mynydd Bach and the northern cluster lies east of Mynydd Penhydd. The South Wales coalfield plateau scarp lies on the edge of the coastal plain just to the south, the Afan valley lies to the north and west, the Llynfi valley lies to the east and the site is split by Cwm Farteg.
- 1.6. The information reviewed provided by the developer and available from the PINS website has included:
 - Scoping report by Natural Power (7 January 2021)
 - Figure 3.1 Regional context
 - Figure 3.2 Constraints to site design
 - Figure 12.1 Zone of Theoretical Visibility (ZTV)
 - Figures 14.1- 14.5 Designated and non-designated historic assets
- 1.7. In addition, GIS locations of the wind turbines have been obtained from the developer along with a table of viewpoint OS reference locations.
- 1.8. The report is structured to consider the policy context, identifying the key issues, responses to the LVIA and cultural heritage questions in the scoping report and then consideration of other considerations not included in the questions.

2. Policy context

- 2.1. The scoping report sets out the legal and policy context very briefly in section 6, page 8. The list of documents set out are relevant and should be taken into consideration in the assessment. Planning Policy Wales 10 (PPW 10) is a key consideration. This currently refers to TAN 8: Planning for Renewable Energy. It also refers to the historic environment, LANDMAP and associated landscape character assessments including the registered historic landscapes in Wales to

- inform local policies and decision-making. Its current and updated version (after publication Future Wales 2040/National Plan) should be taken fully into account.
- 2.2. TAN 8 has been the context for consideration of onshore wind energy development in Wales since 2005. It defines a series of strategic search areas (SSAs). The proposed site lies within Area F Coed Morgannwg. An Annex D refinement study for the area was carried out by Arup in 2006, assisted by White Consultants. Using multi-criteria analysis and review this identified two areas in which the proposed development lies as being potentially suitable for turbines up to a maximum of 100m high to blade tip (see **Appendix A**). Areas for higher turbines were identified to the north including the area in which Pen y Cymoedd wind farm now stands (around 145m high turbines). This is an indication that this location and landscape may not be appropriate for very large turbines.
- 2.3. The Future Wales 2040/National Plan is scheduled for publishing on 24 February 2021. This will replace TAN 8 as the national spatial strategy for wind farm development within the context of PPW 10. The current draft defines strategically pre-assessed areas although it is not known if these will be retained in the final published version. The northern cluster of the proposed development lies within pre-assessed area 9 for wind energy and the southern cluster lies outside. Draft Policy 17 currently states that in pre-assessed areas the Welsh Government has already modelled the likely impact on the landscape and found them to be capable of accommodating development in an acceptable way and there is a presumption in favour of large-scale development, subject to draft Policy 18.
- 2.4. Policy 18 currently states that a DNS will be permitted outside pre-assessed areas for wind development providing the proposal:
- Does not have an unacceptable adverse impact on the surrounding landscape (particularly on the setting of National Parks and Areas of Outstanding Natural Beauty).
 - The proposal is designed to minimise its visual impact on nearby communities and individual dwellings and a cumulative impact of the proposal with other existing or proposed development is acceptable.
 - There are no unacceptable adverse impacts on statutorily protected built heritage assets.
- 2.5. The above policies are an indication that at a strategic level the southern cluster may have an unacceptable impact and raises concerns.

Priority Areas for Solar and Wind Energy

- 2.6. The underpinning research relating to the National Plan wind farm pre-assessed areas was summarised in a report by Arup for Welsh Government ‘Priority Areas for Solar and Wind Energy’ (July 2019). This indicated that the analysis was carried out on a two-stage basis. The first stage involved initial definition of constraints and opportunities, the development of a digital tool, the identification of options and initial ‘priority areas’ followed by analysis of policy options. The second stage further analysed the broad priority areas identified considering high-level landscape and visual matters, centres of population and the historic environment along with vehicular access and ecosystem services. The summary indicates that partners and experts have been involved in the process. It should be noted that NPTCBC, BCBC and White Consultants have not been involved.
- 2.7. The report findings suggest that the areas are those of the ‘greatest opportunity’ in Wales (4) but make clear that the analysis and assessment were

carried out at a level appropriate to national decision making policy formulation and the map outputs are designed to be viewed at no more detailed level than 1:250,000 and are not designed to present site level accuracy. The summary recommendations indicate that local level constraints have not been taken into account and that robust policy on design guidance should be developed to accompany the priority areas within the NDF. This is not available even in draft form and is a gap in the current draft policy context. It is further recognised in the report recommendations that the priority areas still have constraints so appropriate evidence is required to inform decision-making at planning application stage. There is an apparent disconnect between these recommendations and study findings and Policy 17 as currently drafted which suggests that the study modelled the likely impact on the landscape and found them to be capable of accommodating development in an acceptable way. There are no comparative diagrams so it is our view that the study may not have fully engaged with this issue (see **Diagram A** in Section 4).

- 2.8. The Stage 2 report landscape and visual method involved:
- Consideration of the visual setting that nationally designated landscapes
 - Using LANDMAP to consider the potential sensitivity of landscapes
 - Review of sensitivity and capacity studies already undertaken
- 2.9. Intervisibility of turbines of 150m and up to 250m to blade tip was considered. The criteria for level of effects was derived from NRW's 'Stage I ready reckoner report' for offshore development (prepared by White Consultants) as medium magnitude of effect at 15km and 24km for 250m high turbines. (This level of effect would be highly likely to be significant on high sensitivity receptors.) The findings indicated that refining the priority areas to the extent that no turbines would be visible from national designations would reduce the areas to the level where they would be unlikely to deliver renewable energy targets. Therefore, priority areas should be refined to avoid the areas of greatest levels of intervisibility and design guidance developed to minimise visual effects. In terms of NPT and Bridgend, the key factor to note is that the effect on people i.e. existing communities has not been considered at a strategic level- it is assumed that 'sensitive design' can usually avoid significant impacts (4.2.3).
- 2.10. LANDMAP was considered in terms of relationship of priority areas with outstanding or high evaluations for different aspects. Picking out visual and sensory, the priority areas are stated as generally excluding land identified as outstanding or high value. However, in terms of Historic Landscape, the areas have at least 50% coverage of high or outstanding. The summary implication is that LANDMAP should be used as a secondary referencing refinement and used as an additional evidence layer rather than defining areas.
- 2.11. Existing landscape sensitivity and capacity assessments were also reviewed. Their limited coverage and slightly varying approaches meant that they were not used to refine the priority areas.
- 2.12. In relation to the historic environment, on Cadw advice, buffers of 3km were set around assets of great cultural significance (including historic parks and gardens such as Margam). For planning applications, a buffer of 5km was recommended by Cadw. Registered Historic Landscapes were also considered and Mynydd Margam was located in the then priority area 14. This was removed as part of the refinement process.
- 2.13. In addition, centres of population have been moved to fall just outside the priority areas.

Local policies

- 2.14. Policies on wind energy, landscape and heritage need to be taken into account and any conflict identified. There are a number of Special Landscape Areas in the study area, all of which should be considered. The closest in NPT are Margam and Foel Trawsant, and in Bridgend, Foel y Dyffryn. However, views from these areas such as Kenfig Burrows should also be considered.

3. General Matters

Question 2: Do consultees have any comments in relation to the approach to the environmental impact assessment (EIA).

- 3.1. Question 2 asks if consultees have any comments in relation to the intention to focus on significant effects and therefore propose to scope out likely non-significant effects. We have concerns about Table 5.2 on Significance of Effects which suggests that only residual adverse effects of major and major/moderate are regarded as being significant. In our view a series of moderate effects can be significant if related eg on a particular landscape receptor or a long distance trail or scenic route. Ignoring these effects is not in line with good practice as shown in GLVIA 3. Nevertheless, we appreciate that the most significant effects should be given most consideration and appropriate prominence within the EIA so as not to be lost amongst all the other effects.
- 3.2. The 50 years operational period (3.5.1, 5.2.1) is long and should be justified in terms of the effective operational life of the proposed turbines.
- 3.3. The information within the scoping report is not detailed enough to agree on the features and topics that are likely to experience a significant effect (5.1.6). For instance, the Zone of Theoretical Visibility (ZTV) map is at a very large scale and relatively low resolution and using bare ground data only. There is no information on the location or design of the access roads/routes or battery storage. The scoping report itself does not define where significant effects may occur. Therefore, the comments in this response on possible issues and significant effects are provisional subject to further information coming forward.

LANDSCAPE AND VISUAL IMPACT ASSESSMENT (LVIA) MATTERS

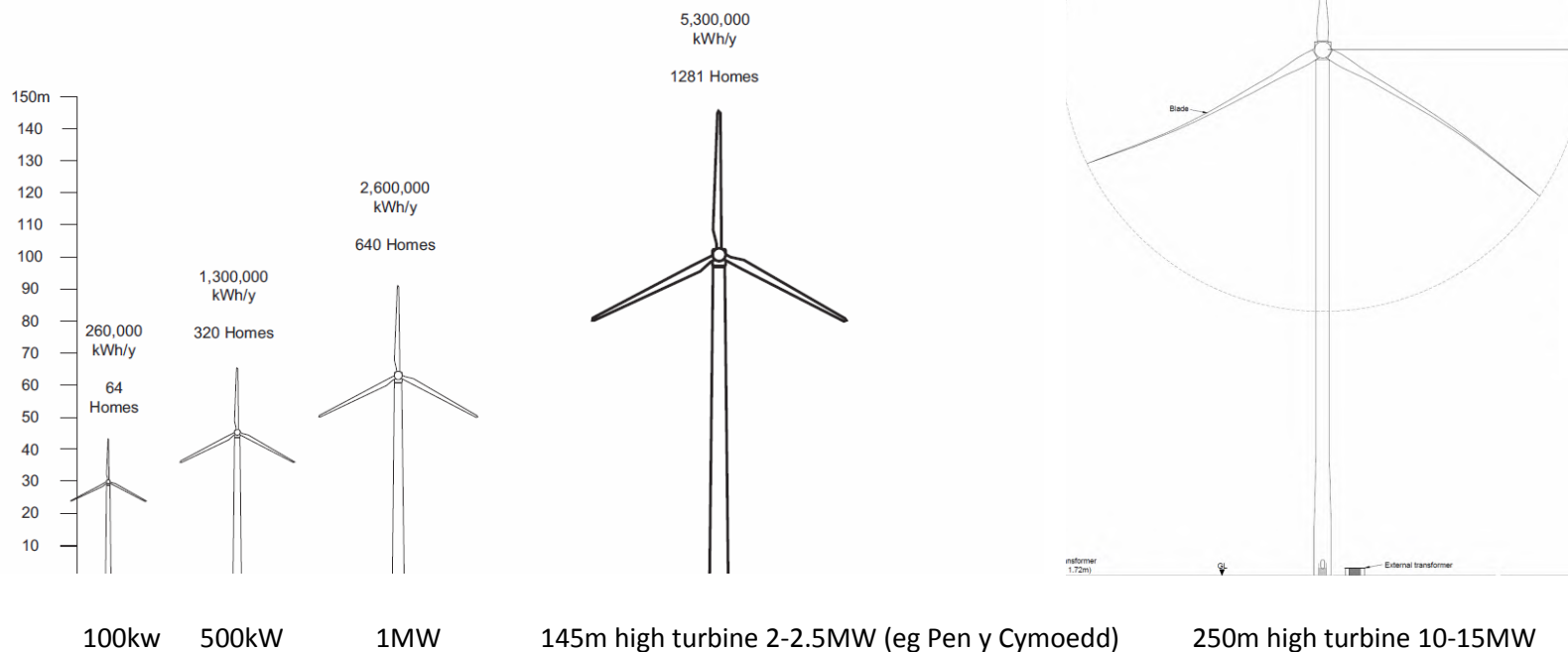
4. Key LVIA issues

- 4.1. The proposed major development on the site offers many challenges. Relevant key issues include:
- The proposed 250m height of the turbines (see **Diagram A**) is far larger than any other in Wales, and greater than the highest in the UK- 200m at Lethans which is located in Scotland in an area that is rural, larger scale and with far fewer settlements and apparently fewer sensitive receptors. Lethans was consented on a site where permission for smaller wind turbines had already been given.
 - The potential for turbines of this size to be out of scale with the landform on which they sit are of concern so close to well populated valleys, the coast and sensitive receptors.

Diagram A: Comparison of turbine size

Extract from TAN8 Annex C below with addition of 250m turbine size proposed to the right but **not** illustrated in report.

Figure 1: Approximate sizes of typical three-bladed turbines by installed capacity, also showing approximate annual energy output based on an average capacity factor of 0.3, the figure for the number of homes supplied is based on the average UK household consumption of 4100 kWh/year(OFGEM)



- The effect on the relationship between the large scale development on the relatively undeveloped forested coalfield plateau in the environs of the site, the nearby scarp slope, the coast and coastal plain and the related seascape of Swansea Bay.
- Starting from such a large scale proposed size, a reduction in height from 250m will not be considered as ‘minimising’ effects. Consideration of turbines only at 250m high may not be realistic and so consideration of significantly lower turbines should also form part of the assessment. The effects of any lower height development coming forward will have to be considered on their own merits.
- Local residents and communities are likely to undergo significant visual effects with dominant or prominent turbines and, in some cases, may suffer unacceptable effect on residential visual amenity.
- Cumulative effects in combination with existing and consented windfarms and wind turbines, especially those nearby including Foel Trawsant, Llynfi Afan, Mynydd Brombil and Pen y Cymoedd.
- The effect on the setting of Margam Historic Park and Garden and associated visitors to the country park.
- The effect on the landscape character including Special Landscape Areas.
- The potential for views to open up towards the windfarm over time as the forest is managed with clearance before replanting in places.
- The potential conflicts with national and local policy on the basis of the above.

5. Responses to landscape and visual questions

5.1. The following questions

Question 14: Do consultees agree that assessing the maximum hub height available for the tip height in question is appropriate.

- 5.2. The higher the hub height, the smaller the blade length and therefore blade sweep area. This means that the likely visual effect of a turbine 250m tall with a larger blade sweep is likely to be greater. It is suggested that the ZTVs are based on a maximum blade tip height and maximum hub height but that the visual impact assessment takes into account the maximum sweep area (as in the Rochdale envelope approach). It would be very helpful to have clear drawings illustrating the two types of turbines- one with the highest hub height and one with the largest blade length.
- 5.3. As mentioned above, our view is that the 250m high turbines are likely to be too large for this site and a more realistic alternative should also be considered to inform decision-makers. Preferably, an assessment of smaller sized turbines only should be taken forward.

Question 15: Do you agree with the proposed size of the study area?

- 5.4. The outer 45km study area appears to be reasonable for development of this scale. The concern of NPTCBC and BCBC is on the likely significant effects more locally and therefore sufficient detailed assessment should be carried out for an inner study area of 15km supported by mapping and information at a more detailed scale such as ZTVs, viewpoints and constraints.

Question 16: Do consultees agree with the number, location and receptor types that have been selected as the representative viewpoints in order to assess the effects on visual amenity within the study area?

- 5.5. The range of viewpoints located within NPTCBC and BCBC areas have been assessed through desk study and site visits. Overall, it is considered that most of the viewpoints are helpful but a fuller picture of effects on the Llynfi valley, coastal area, heritage assets and cumulative effects is needed to understand the impact of this very large development.
- 5.6. Detailed comments on the existing proposed viewpoints are as follows:

Table 1: Proposed LVIA viewpoints

LVIA scoping report ref	Location	Notes/comments
1	Evans Terrace, Caerau	Appears reasonable
2	Maesteg Golf Course	Appears reasonable
3	Bryn, play area	Appears reasonable
4	Brynna Road, Cymafan	Appears reasonable
5	Rhiwlas, Neath	Appears reasonable provided that structures and vegetation in the foreground are avoided.
8	Margam Park (Deer park)	Appears reasonable provided it is by the seat with clear view towards wind farm
10	St Illtyd's Way near Cynonville	Appears reasonable provided that vegetation in the foreground does not restrict view.
13	Junction of Heol Gelli Lenor and Brynllwarch, Maesteg	Appears reasonable
16	The Princess Margaret Way, Aberavon	Appears reasonable
17	Margam Park	Appears reasonable
19	Wales Coast Path, Rest Bay	Appears reasonable
20	Bridgend Circular Walk, Bryncoch	Appears reasonable- least important of the viewpoints selected but may demonstrate views from a representative distance.
21	Sarn Helen,	It is noted that the location is just outside the

	Aberdulais	open access land and to the side of Sarn Helen. Usually viewpoints on private land are not valid. Does the consultant consider the viewpoint represents the reasonable worst case of views from the above receptors?
22	Baxter Terrace, Glyncorrwg	Appears reasonable
Note: Where stated ‘appears reasonable’, the viewpoints cannot be finally verified/agreed until exact extent of turbines is defined on photos/visualisations.		

- 5.7. To give a fuller picture of the development in its context and to cover sensitive receptors as mentioned above the following additional viewpoints are proposed:

Table 2: Proposed additional viewpoints

Viewpoint reference	Eastings	Northings	Notes/justification
A	280106	185792	Margam Park visitor access road to explore range of visibility within HPG/residential receptors to south - to inform LVIA and cultural heritage assessments.
B	280160	181110	Kenfig Burrows registered historic landscape/ Kenfig visitors carpark/ Wales Coast Path- to inform LVIA and cultural heritage assessments.
C	281943	192051	Bryn- east- to explore effects on residents on this side of the village and inform RVAA and effects on St Illtyd's Walk and Cwm Farteg.
D	283680	187700	Ogwr Ridgeway Walk/ nearby Y Bwlwarcu hillfort and Roman Camp setting to inform LVIA and cultural heritage assessments
E	286171	195028	Cemetery/ view from eastern edge of Maesteg/ associated eastern Llynfi valley slopes to show development more fully in context of the Llynfi valley.
F	285704	188789	Llangynwyd Conservation Area (south of cross)- nearby heritage and visual receptor and distinctive hilltop village- to inform LVIA and cultural heritage assessments.
G	287620	199357	A4063 users/residents on southern edge of Croeserw/ open access land/ to explore cumulative effects with

			windfarms to east
H	289775	187495	Bettws- consider settlements at a medium distance with clear views of the development
Note: Tolerance of GPS references could be upto 10m- worst case viewpoint needs to be selected			

- 5.8. The Residential Visual Amenity Assessment (RVAA) study area at 1.5km is not illustrated in the scoping report. A review of this distance appears to show that it excludes part of Bryn, settlement on the east side of the Llynfi valley which is more likely to have views of turbines and some isolated rural properties that may have also have direct nearby views.
- 5.9. Guidance set out in TGN2/19 Residential Visual Amenity Assessment, Landscape Institute, March 2019 mentions wind turbines at 150m and taller (4.6) when discussing realistic buffers but these turbines at 250m are significantly larger. It goes on to state (4.7):
- ‘When assessing relatively conspicuous structures such as wind turbines, and depending on local landscape characteristics, a preliminary study area of approximately 1.5-2km radius may initially be appropriate in order to begin identifying properties to include in a RVAA.’ (This report emphasis).*
- 5.10. The public inquiry decision for Mynydd Marchywel wind farm in NPT found that its five turbines at 126.5 m high breached the RVA threshold of acceptability with wind turbines at a distance of 920m-2.4km from a property. The wind farm was refused.
- 5.11. Taking into consideration the above, our view is that distance of **2km** should be scoped for the RVAA. A mix of individual properties and groups of properties should be assessed as appropriate, depending on distance and arrangement.
- Question 17: Do consultees agree with the methodology used to determine which windfarms are to be included within the cumulative assessment and also agree with the list provided in Table 12.8?**
- 5.12. Cumulative impact assessments can be large and confusing and it is important that the most important cumulative effects are addressed clearly. Those that are most important are those with existing or consented turbines, at closer distances and juxtapositions, where there is a large sweep of turbines visible and where receptors (especially residential) have developments on two or more sides.
- 5.13. Additional viewpoints have been selected in this response to better reflect the potential for cumulative effects eg at Croeserw.
- 5.14. The list of windfarms to be considered in Table 12.8 appear to have one of two errors. It is understood that Foel Trawsant has been consented. The difference in size of turbine and the adjacency of this proposal are of particular concern.
- 5.15. The turbines on the coastal plain south of Margam and those east of Porthcawl (eg Stormy Down) appear to have been omitted. These affect perceptions in these areas and should be considered. To minimise work possibly all these turbines should be considered together in relation to the development.
- 5.16. The comments relating to the **sensitivity** of landscape to effects below (relating to Table 12.2) also apply to cumulative effects. The factors that make a landscape more or less susceptible to a series of developments, especially of

- different sizes and design, are not set out. This is important to understand how the judgements are reached. There are only three categories of sensitivity which means that there is a significant difference between the descriptors of high, medium and low with intermediate categories effectively being omitted. This does not reflect the complexity of most landscapes. Five categories are suggested.
- 5.17. The magnitude of cumulative landscape effects (Table 12.9) correctly identifies that the combined effects of the proposed development and other wind turbine developments should be considered. This should be assessed against the baseline of no wind turbines on the basis of the temporary nature of the development, albeit long-term. However, the contribution of Y Bryn to the cumulative effect should also be described in terms of relationship with other windfarms including relative size of turbine.
 - 5.18. The significance of cumulative landscape effects (Table 12.10) has a very high threshold of significance and the definitions for major and major/moderate are very similar. It is considered that the definitions will tend to lead to under estimation of significant effects.
 - 5.19. Magnitude of cumulative visual effects (Table 12.11), as with landscape effects, correctly identifies that the combined effects of the proposed development and other wind turbine developments should be considered. However, the contribution of Y Bryn to the cumulative visual effect should also be described in terms of the juxtaposition and relationship with other windfarms including relationship with the viewer (e.g. on either side), the percentage field of view etc.
 - 5.20. The significance of cumulative visual effects (Table 12.7) includes a definition of ‘the loss of some essential landscape features’ in the major/moderate category. This statement does not make sense as wind turbines usually do not lead to the ‘loss of features’, just substantial modification of the view.

Question 18: Do the consultees agree with the proposed approach to assess the effects on landscape character and visual amenity?

Guidance

- 5.21. The following comments are made on the guidance set out in 12.2.1
 - The Guide to Assessment of Cumulative Effects of Wind Farm Developments, ETSU (2000) is very dated and should be given little, if any, weight. The SNH 2012 guidance is more helpful in this regard.
 - LANDMAP Information Guidance Note 3 has been superseded by Natural Resources Wales Guidance Note 046 ‘Using LANDMAP in Landscape and Visual Impact Assessments (LVIA)’, January 2021. Note that Cultural Landscape Services succeeds Cultural landscape.
 - The Visual Representation of Development Proposals TAN 06/19 should be dated September 2019.
 - Seascape effects should be considered in line with the documents set out in the seascape section below.

Landscape

- 5.22. The **sensitivity** of landscape (Table 12.2) is not described as combining the susceptibility of a given landscape to a particular type of development with value in line with GLVIA3. The factors that make a landscape more or less

susceptible to a particular type and scale of development are not set out. This is important to understand how the judgements are reached. There are only three categories of sensitivity which means that there is a significant difference between the descriptors of high, medium and low with intermediate categories effectively being omitted. This does not reflect the complexity of most landscapes. Five categories are suggested.

- 5.23. The magnitude of landscape effects (Table 12.3) does not include the criteria of the proposed development becoming a dominant or key characteristic of an area. The definitions of high and high/medium are very similar with the latter being too high a threshold.
- 5.24. The significance of landscape effects (Table 12.4) appears to use the term ‘element’ where characteristic would be more appropriate and in line with standard guidance definitions. An element is the hedgerow or a tree etc. The combination of sensitivity and magnitude of effect should be in line with the IEMA diagram in **Appendix A**.

Seascape

- 5.25. The effects on seascape are not addressed in the assessment. The ZTV clearly indicates uninterrupted visibility across Swansea Bay, along the southern coast of Gower and across the Bristol Channel to Exmoor. The proposed heights of turbines are so large that they are likely to modify the coastal backcloth to the seascape.
- 5.26. The assessment should address the effects on seascape character areas at the appropriate scale. This may be the national marine character areas in Wales- 25, 26, 27 and 28, but consideration should also be given to using the local seascape character assessment for the Gower and Swansea Bay to inform qualities and potential effects, and possibly refine areas for assessment if required.
- 5.27. The method for assessing effects should take into consideration GLVIA 3 and ‘An Approach to assessing seascape sensitivity’, Marine Management Organisation, (MMO1204), 2020. NRW Stage 1- Ready reckoner of visual effects related to turbine size, report number 315 relates to research on offshore wind farms and views from the coast. However, it may be helpful in establishing yardsticks for likely effects the large-scale onshore developments relatively close to the coast.

Visual Amenity

- 5.28. The sensitivity of visual receptors (Table 12.5) does not mention visitors to the coast, heritage assets and country parks, all of whom would be high sensitivity. It is assumed that medium sensitivity receptors would include users of B roads. As with the landscape sensitivity, only three categories do not reflect the range of sensitivities of receptors and users of motorways and A roads may be considered medium/low, not low.
- 5.29. The significance of the visual effects (Table 12.7) indicates that defining visual elements would become subservient within the view. Presumably this means that the development would be a dominant feature?
- 5.30. It is agreed that some effects of moderate significance could be significant. The method does not mention that where a series of linked moderate effects occur (e.g. along the footpath) that this may make the combined views significant. The combination of sensitivity and magnitude of effect should be in line with the IEMA diagram in **Appendix A**.

LVIA outputs

- 5.31. The following comments are made on the figures:

- All map figures should be prepared to cover the 45km study area and separate more detailed maps showing a 15km study area (possibly with the addition of the western edge of Swansea Bay and associated intervisible backcloth).
- It is assumed that the non-statutory landscape designations will include Special Landscape Areas.
- The access and movement figures should include access land.
- LANDMAP should include aspect areas in line with updated Natural Resources Wales Guidance Note 046 'Using LANDMAP in Landscape and Visual Impact Assessments (LVIA)', January 2021. The change to cultural landscape services should be noted.
- Character Areas- the method for defining these has not been identified or are they National?
- Blade tip and hub height ZTVs should be at 15km with a 1:25k OS base as well as 45km with a 1:50k base. They should include bare ground and landcover versions to accommodate possible changes in tree cover over the life of the development.
- Viewpoints should be shown as points to give an accurate indication of their location.
- Viewpoint visualisations should include the additional viewpoints suggested in **Table 2**.
- Photomontages should include a range of key views to be agreed. They should not necessarily be limited to 10 as such a large scale development is proposed and may necessitate more.
- The height of the turbines may necessitate the use of portrait photos in some locations to ensure that full of the height of the turbine is covered.
- Photomontages should include A3 single frame views where possible to allow for ease of printing by third parties and decision-makers and for taking on site. A good example is the Lethans A3 viewpoint pack (see sample in **Appendix B**).
- The cumulative ZTVs should also be carried out at 15km radius on 1:25k OS mapping for the closest wind turbine developments.

5.32. In addition, the following information is regarded as important in understanding effects:

- Seascape character areas at national and local level.
- Forestry resource/management plans are needed showing the phasing of removal and/or replanting of the forest plantation surrounding the proposed wind farm to clearly inform how this may open up or reduce views during the lifetime of the development, or at least 10 years. Expected tree growth rates for proposed species would be helpful.
- Proposed mitigation.
- Elevations of proposed turbines showing alternatives with highest hub height and with the largest blade circumference.
- Location and details of access roads, battery storage and other ancillary infrastructure.

- Though some of the above will not be part of the LVIA they should be part of the overall description of the development.

Question 19: Do consultees see value to any particular enhancement measures?

- 5.33. Landscape enhancement measures would need to be considered hand-in-hand with biodiversity enhancement and cultural heritage measures such as interpretation. The measures should take into consideration the effects of climate change and reinforce resilience to species loss and issues such as flooding. They should be in line with NRW advice on management of forests and general climate change guidance eg Communicating landscape change from adaptation and mitigation in a changing climate, Natural Resources Wales report no.396. The clearance of forest to accommodate the development may reduce the capacity of the area to reduce run-off and this should be compensated and enhanced if at all possible.
- 5.34. Whilst the above may be considered benefits they are likely to be very minor in comparison to the level of landscape and visual effects. Whilst they need to be set out clearly with appropriate commitments, they should not be used to obscure the overall residual effects.

OTHER MATTERS NOT INCLUDED IN QUESTIONS

Relevant Policy

- 5.35. Landscape related designations and policy (noted in 12.3.6) should also include consideration of:

Neath Port Talbot:

- Strategic Policy SP 18 Renewable and Low Carbon Energy
- Policy RE 1 Criteria for the assessment of renewable and low carbon energy development
- Strategic Policy SP 21 Built Environment and Historic Heritage
- Landscape and seascape supplementary planning guidance (May 2018)

Bridgend:

- Strategic policy SP 4- Conservation and enhancement of the natural environment
- Strategic policy SP 5- Conservation of the built and historic environment
- Strategic policy SP 8 Renewable energy
- Policy ENV 18 Renewable energy developments

Grid connection

- 5.36. A high-level summary description and appraisal of the potential landscape and visual effects associated with the grid connection is normal practice. However, the route should be clearly marked on maps at sufficient detail with illustrations of the type of poles, substations and related infrastructure.

CULTURAL HERITAGE MATTERS

6. Cultural heritage issues

- 6.1. For avoidance of doubt, the local archaeological trust is the Glamorgan Gwent Archaeological Trust (GGAT).
- 6.2. The proposed major development on the site offers many challenges. The key issues relating to cultural heritage include:
 - The effect on the setting of Margam Grade 1 Historic Park and Garden and associated Conservation Area, Grade 1 and other listed structures and scheduled monuments (at 1.4km from the park boundary with the whole of the southern cluster within 5km).
 - The effect on Mynydd Margam Landscape of Special Historic Interest and associated features (the southern cluster lies within the area and the northern cluster adjacent).
 - The effect on scheduled monuments in or close to the site such as Y Bwlwarcaw hillfort and Roman Camp.
 - The effect on other heritage features such as Llangynwyd Conservation Area.
 - The potential conflicts with national and local policy on the basis of the above.

7. Responses to cultural heritage questions

Question 22: Do consultees agree with the approach and scope of the heritage assessment?

- 7.1. The LVIA viewpoints and associated visualisations are mentioned in 14.2.8. These should include those mentioned as additional viewpoints in **Table 2** above and should be used to help inform the level of effects in addition to the study and site visits. If the final layout means any turbines are likely to be visible from Margam Conservation Area an additional worst-case viewpoint and visualisation should be located here. It is not possible to judge at this stage where that should be with the information provided.
- 7.2. The method appears to reference the key documents (14.3.1) although it should be noted that the *‘Guide to good practice on using the register of landscapes of historic interest in Wales in the planning and development process’*, 2007, is published by Cadw, CCW (now NRW) and Welsh Assembly Government, now Welsh Government.
- 7.3. It is not known if, (or agreed that), the inner study area (ISA) is low-medium in terms of archaeological potential (14.3.4).
- 7.4. The information cited in the baseline desk study (14.3.5) appears to be generally appropriate but has some omissions. In carrying out the ASIDOHL 2 assessment the historic landscape character areas (HLCAs) should be assessed. These are described by GGAT in the following website:
http://www.ggat.org.uk/cadw/historic_landscape/margam/english/mynydd_margam_summary.html
- 7.5. In relation to ASIDOHL2, past experience is that in assessing wind energy or any structure that is disproportionately tall in comparison to the extent of its physical footprint can affect findings. Under these circumstances, the ASIDOHL2

methodology can produce results that show a development having less impact than is really the case, because as the methodology stands, visual impacts are weighed up with physical impacts, which in the case of wind turbines are relatively small, especially in this case with very large turbines. The assessor should take this into account and give more weight to the visual impacts through use of ZTV data and likely adverse visual effects within each HLCA. These should take account of forest management and clearance due to the project as well as the overall Forest Management Plan.

- 7.6. Consideration should additionally be given to place-names as well as potential artistic or literary associations, sacred space, or local traditions and customs. Welsh language literary sources should be considered in this context, including early poetry associated with the Abbey and with the estate which followed it. Aeron Afan's *Cyfansoddiadau Buddugol yn Eisteddfod Iforaidd Aberafan Mehefin 23, 1853 (Caerfyrddin: William Thomas) captures the culture of the area in the early stages of industrialisation.*
- 7.7. The levels of heritage significance set out in Table 14.1 indicate that Conservation Areas are only of medium importance. In the case of Margam in particular, with its range of grade I and II* buildings etc, this is considered to be too low.
- 7.8. In relation to scope (14.4.3) it is suggested that the effects of the proposed grid connection would be scoped out if it used underground cable. This may have an adverse effect on archaeological remains in the ground and therefore this should not be scoped out.

Question 23: Do consultees see value to any particular mitigation and/or enhancement measures for any local or regional heritage features, whether referred to above or otherwise?

- 7.9. Mitigation and enhancement of cultural heritage assets should be put forward in line with good practice and national guidance. As with LVIA mitigation, whilst these may be considered benefits they are likely to be very minor in comparison to the level of cultural heritage effects. Whilst they need to be set out clearly with appropriate commitments, they should not be used to obscure the overall residual effects.

Appendix A

TAN 8 SSA F refinement study extract

Consortium of South
Wales Valleys Authorities

**TAN 8 Annex D study of
Strategic Search Areas
E and F: South Wales
Valleys**

Final report

Consortium of South
Wales Valleys Authorities

**TAN 8 Annex D study of
Strategic Search Areas
E and F: South Wales
Valleys**

Final report

December 2006

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		Name	Simon Power/Simon White	Simon Power	Janette Shaw
		Signature			
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		Signature			
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Executive Summary

Introduction and context

In July 2005 the Welsh Assembly Government (WAG) published the Ministerial Interim Planning Policy Statement (MIPPS) 01/2005: Planning for Renewable Energy¹ and *Technical Advice Note (TAN) 8: Planning for Renewable Energy*. This TAN indicates that there are only a few relatively unconstrained areas in Wales that are capable of accommodating large scale (>25MW+) wind power developments; these areas comprise 7 Strategic Search Areas (SSA). The availability of existing or planned electrical grid infrastructure was a significant factor in the identification of these unconstrained areas.

Two of these 7 areas are Area E “Pontardawe” and Area F “Coed Morgannwg” which the TAN suggests have an “indicative generating capacity” of 100 MW and 290MW respectively (approximately 50 and 150 modern wind turbines of 100m in height).

An extract from TAN 8 showing the extent of the published SSAs is included within the main report.

Paragraph 2.3 of TAN 8 indicates that “*Local Planning Authorities are best placed to assess detailed locational requirements within and outside SSAs in the light of local circumstances*” and that (Para 2.10) “*Local Planning Authorities should take an active approach to developing local policy for SSAs in order to secure the best outcomes. Further advice is contained within Annex D [of TAN 8]*”. A consortium of South Wales Valley Planning Authorities² have therefore jointly commissioned consultants (Arup (with sub-consultants)) to undertake such a refinement exercise of SSA E and F with a view to providing an evidence base for subsequent planning policy formation and decision-making.

This Arup study is primarily a landscape and visual assessment exercise which seeks to identify a ‘Preferred Area or Areas’ for large-scale wind farms broadly within the boundaries of the Strategic Search Area(s), working within the context of the indicative capacity targets for the SSAs (identified in TAN 8 in Table 1 Page 5). The study however also uses a range of technical and other environmental data to inform its work.

No formal consultation has been undertaken with statutory bodies as part of the study; the only discussions that have taken place have been with the Planning Authorities that commissioned the study.

Approach

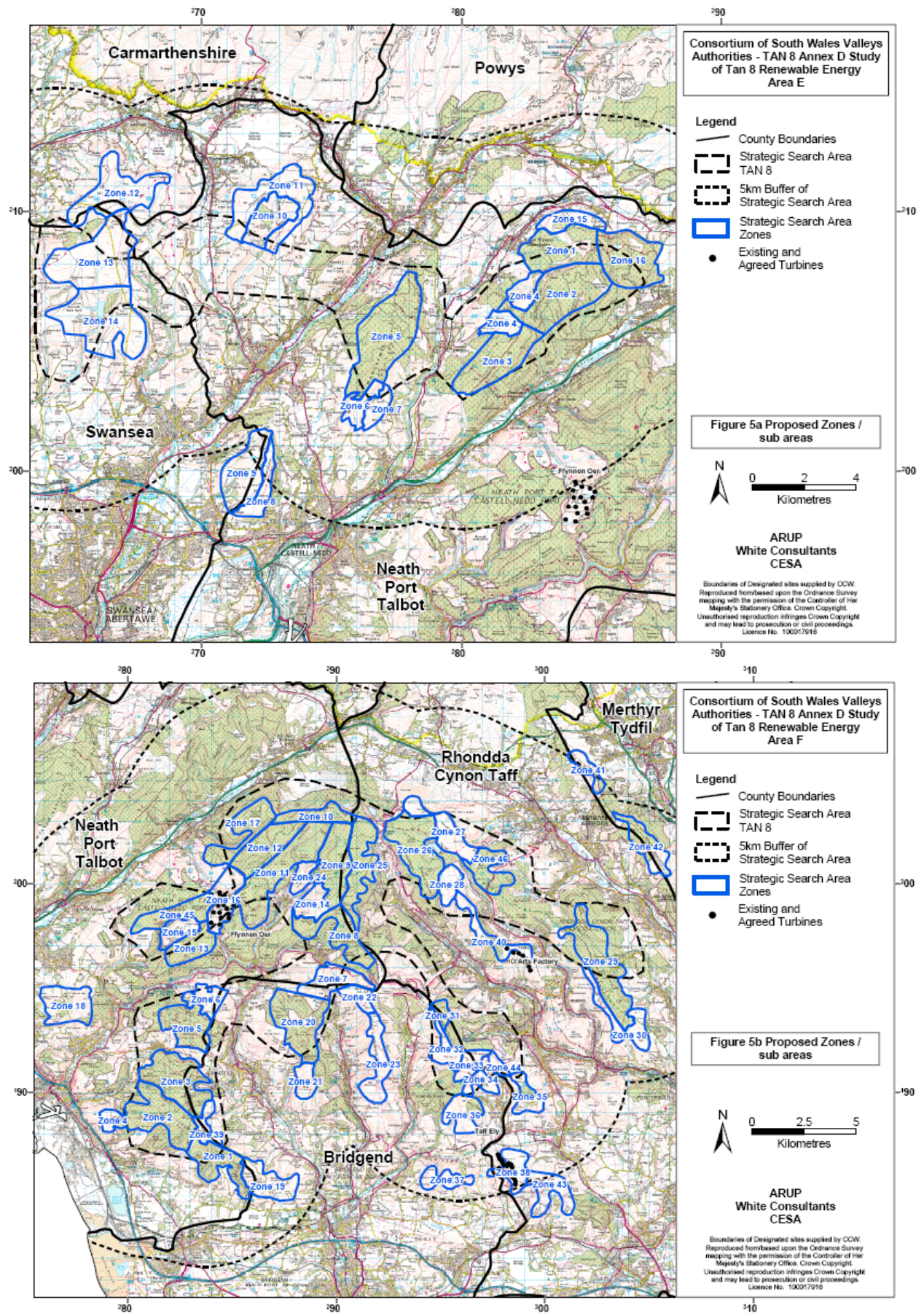
In order to assist in the discrimination of the environmental performance of the SSA as defined, the technically feasible parts of the SSA and its margins up to 5km were sub-divided into smaller spatial units, termed *zones*. The zones were derived so that they can enable discrimination between parts of the SSAs in landscape and visual terms. It follows therefore that each zone should have similar landscape and visual characteristics (i.e. they are homogeneous landscape units where possible) and are therefore based upon the units published in existing landscape assessment studies such as LANDMAP. By virtue of an initial constraint analysis, the zones coincide with areas considered both “technically feasible” for the development for larger scale wind farms and largely free of other environmental constraints. The range of constraints considered included wind speed, slopes, residential properties, Sites of Special Scientific Interest and Scheduled Ancient Monuments; the presence or absence of settlement and/or suitable wind resource has been shown to have the greatest influence on the available areas for further study.

Some 62 zones were derived, and these are shown on **Figure A** below.

¹ The MIPPS amends Sections 12.8 to 12.10 of Planning Policy Wales (PPW) (2002).

² Led by Neath Port Talbot County Borough Council, the consortium also comprises the City and County of Swansea, Carmarthenshire County Council, Bridgend County Borough Council and Rhondda Cynon Taff County Borough Council.

Figure A - SSA Zones derived for the study, SSAs E and F



The study first reviews the defined zones as to whether they are broadly acceptable in accordance with the following TAN 8 criteria (Para 2.9 p 6):

- Comprise an extensive area with a good wind resource
- Be an upland area (typically over 300m above ordnance datum) which contains a dominant landform that is flat (plateau) rather than a series of ridges.
- Be generally sparsely populated.
- Be dominated by conifer plantation and/or improved/impoverished moorland.
- have a general absence of nature conservation or historic landscape designations.
- Be of sufficient area to accommodate developments over 25MW, or at least in combination with other contiguous SSA parts be able to accommodate developments over 25MW

TAN 8 Annex D Para 8.6 indicates that at the local level, accepted thresholds of change, having regard to nationally developed capacity targets, can be established by more detailed assessments.

Therefore, in addition, the defined zones have been reviewed for broad acceptability in accordance with the following criteria (developed specifically for this study):-

- To have a LANDMAP visual and sensory Value aspect rating of less than 'Outstanding'
- To have a landscape sensitivity that is less than is considered 'High'
- To have visual impacts upon residential dwellings that would not cause 'dominance'
- Not to cause cumulative landscape or visual impact upon settlements within the SSA

These criteria and their explanation/justification are set out within Chapter 4 of this report : Landscape and visual analysis.

The study then ascertains the *relative* environmental and landscape performance of the SSA zones which pass the above tests (those which are "environmentally acceptable ") with respect to the following criteria:

- **LANDMAP Visual and sensory value.** This is derived largely from desk study based upon published landscape assessments. The Visual & Sensory aspect of LANDMAP identifies those landscape qualities within the zone that are perceived through the senses. It deals with the individual physical attributes of landform and land cover, as well as their visual patterns of distribution and sensory characteristics, and the relationships between them in a particular area
- **Landscape "capacity"** to large scale wind farms i.e. a physical property relating to the zone which considers whether the landform/landcover is of scale/character and thus of low enough landscape sensitivity to could accommodate large wind turbines i.e. it has a higher landscape capacity than other areas within the SSA. This factor has been derived specifically for this study following fieldwork and desk study in accordance with published landscape best practice techniques for the assessment of wind farms in the UK and a methodology developed specifically for this study
- **The potential for additional visual impact** i.e. the wider visual effects that developing a zone might have, and the degree to which sensitive receptors such as settlement, roads, National Parks, National Trails (where appropriate) and AONBs are influenced by any additional visual effects. The additional visual effects have been determined from 3-D computer modelling. The results are presented in terms of the theoretical visual effects (ZTV) of hypothetical wind turbines (located on a uniform layout within each zone) in the strategic search area when compared to any visual effects arising from existing large wind farms in and around the SSA. The results have been broadly validated by fieldwork. The detailed methodology has also been developed specifically for this study.
- **Presence/absence of designated Historic Landscape** (as defined by Cadw) and thus degree of the total historic landscape resource potentially affected within any given zone.
- **The likelihood of major effects upon visual amenity and setting, particularly cumulative effects upon valley communities.** i.e. the visual effects that developing a zone might have upon adjacent villages and settlement in terms of dominance and sense of enclosure. These visual effects (as above) have been determined from 3-D computer modelling.

The results of the *relative* environmental and landscape performance of the zones or sub-areas of SSA are then brought together in the report within a summary matrix which includes the approximate estimated capacities³ (in MW) for the respective zones.

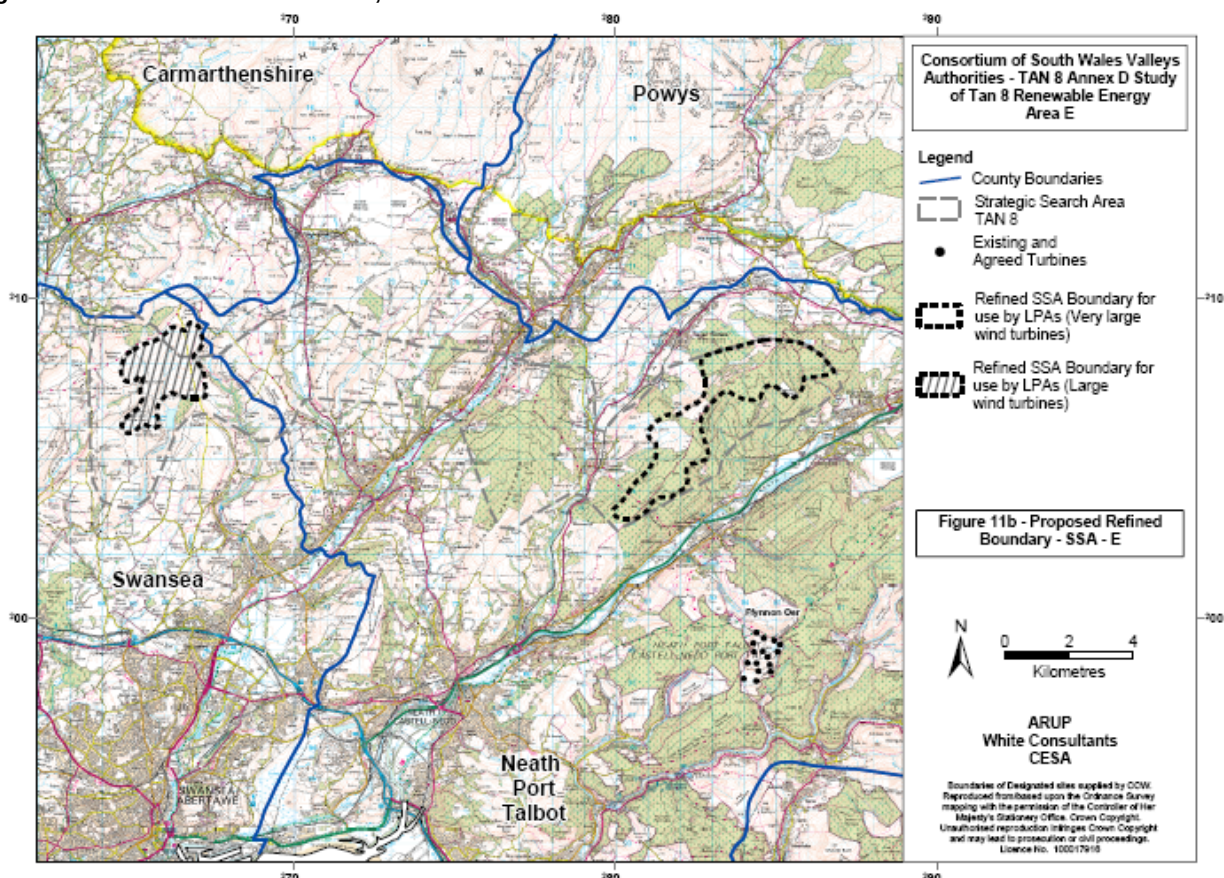
The study then goes on to consider how many "environmentally acceptable" zones are required to deliver the TAN 8 indicative targets for each strategic search area. It then develops a refined SSA boundary that encompasses these zones, making recourse in the derivation of this boundary to the constrain data prepared previously.

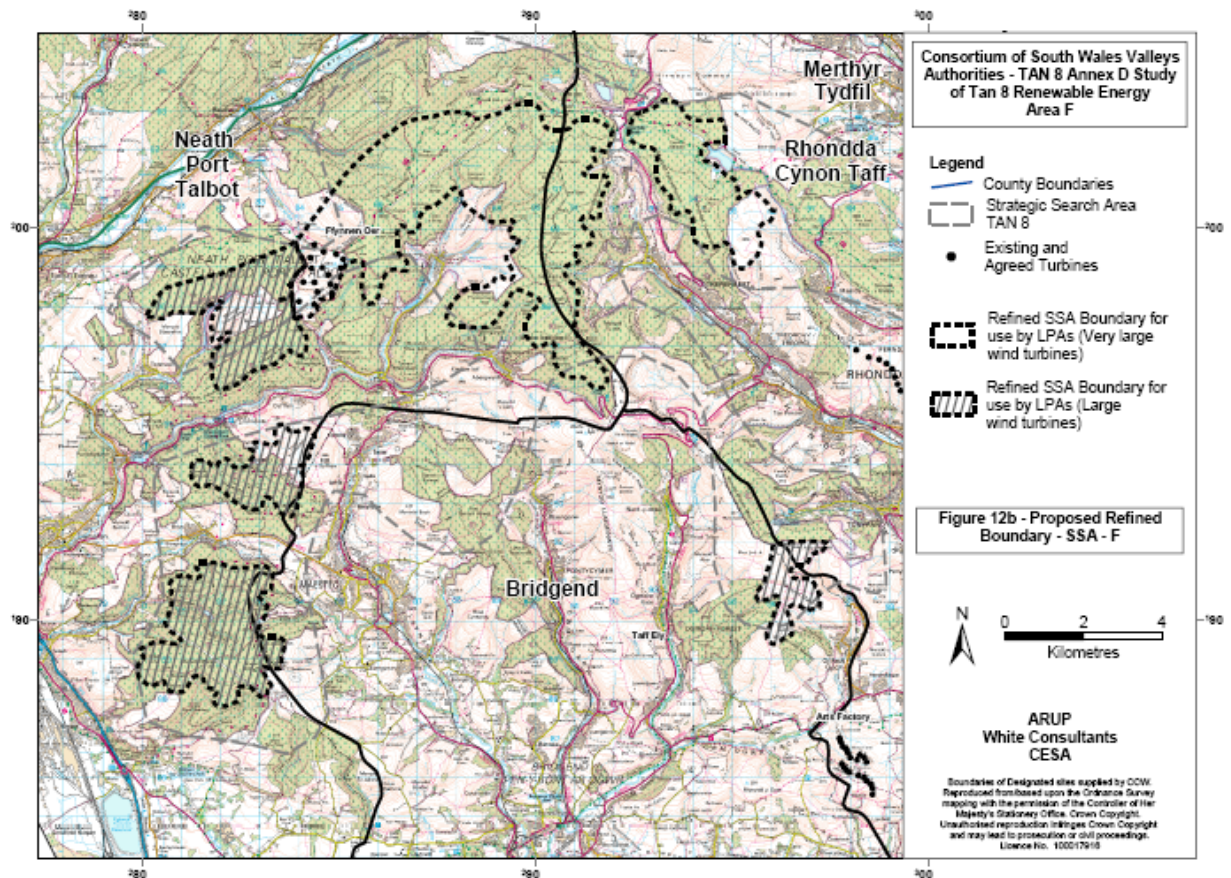
³ The study has considered the "developable capacity" of the defined zones in terms of the amount of Megawatts (MW) of wind energy that may be possible in each, based upon a average yield of 7.5MW per sq. km (typically around 3-5 modern wind turbines) where the areas are not constrained.

Results for the SSAs

It is recommended that the TAN 8 SSA boundaries are therefore refined to remove the environmentally worst performing areas and any additional land not needed to deliver the TAN 8 indicative capacities. The recommended refined boundaries are shown on **Figure B** overleaf. The recommended refined boundaries do not accord fully with the full extent of the earlier recommended zones. This is because the opportunity has been taken, following further desk study and field work, to draw the boundaries back slightly from the zone boundaries in some cases. This is to better reflect local topography and the inherent landscape and visual benefits that this offers. This has been possible without undermining the estimated developable capacities of the zones used in the first stage of the analysis as the changes are small and at the margins of the zones.

Figure B - Refined SSA Boundaries, SSAs E and F

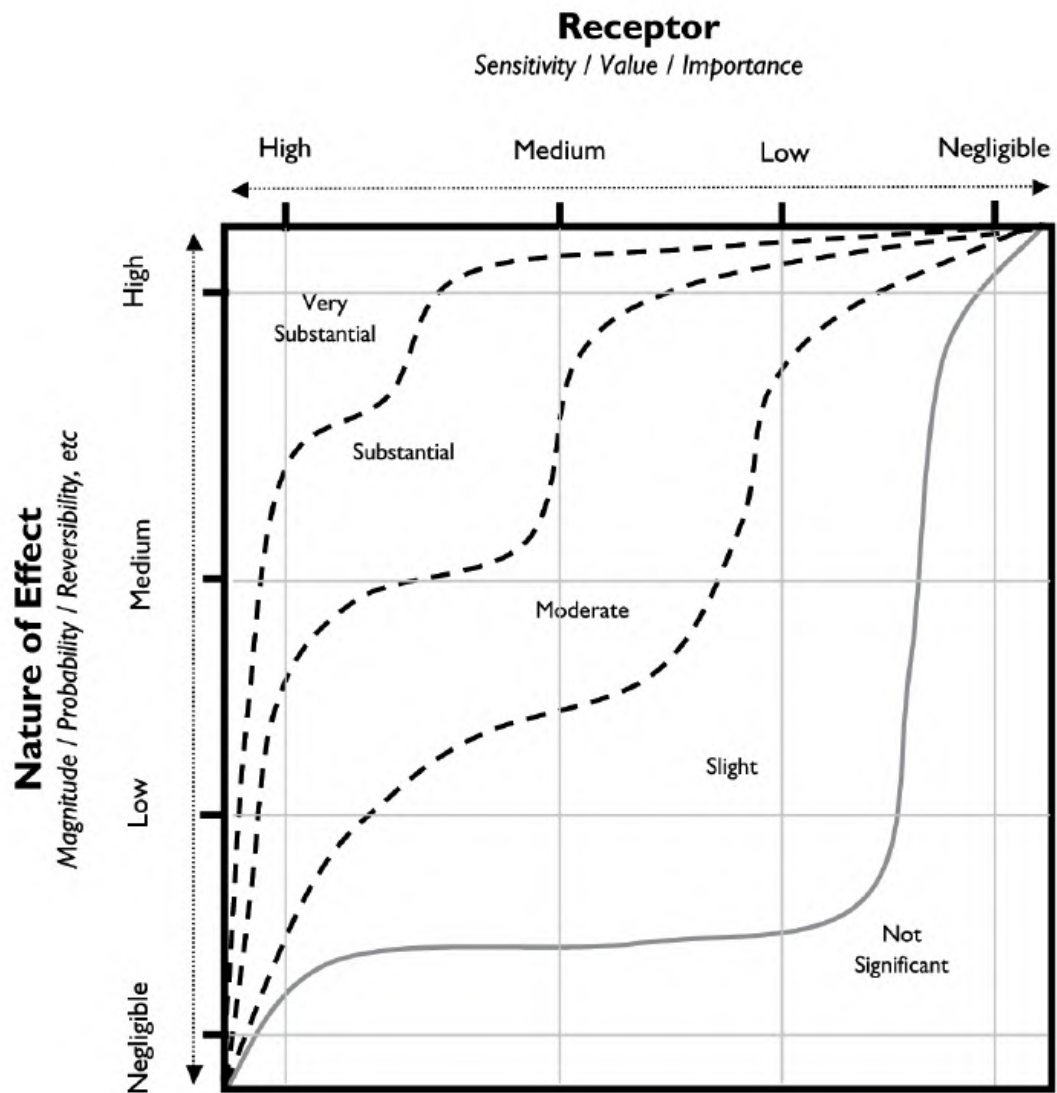




The refined boundaries are for subsequent transposition into the appropriate Local Development Plan(s) or any interim Supplementary Planning Guidance. They may also be used in the interim to inform development control decisions with respect to large scale wind farms in the area.

Appendix B

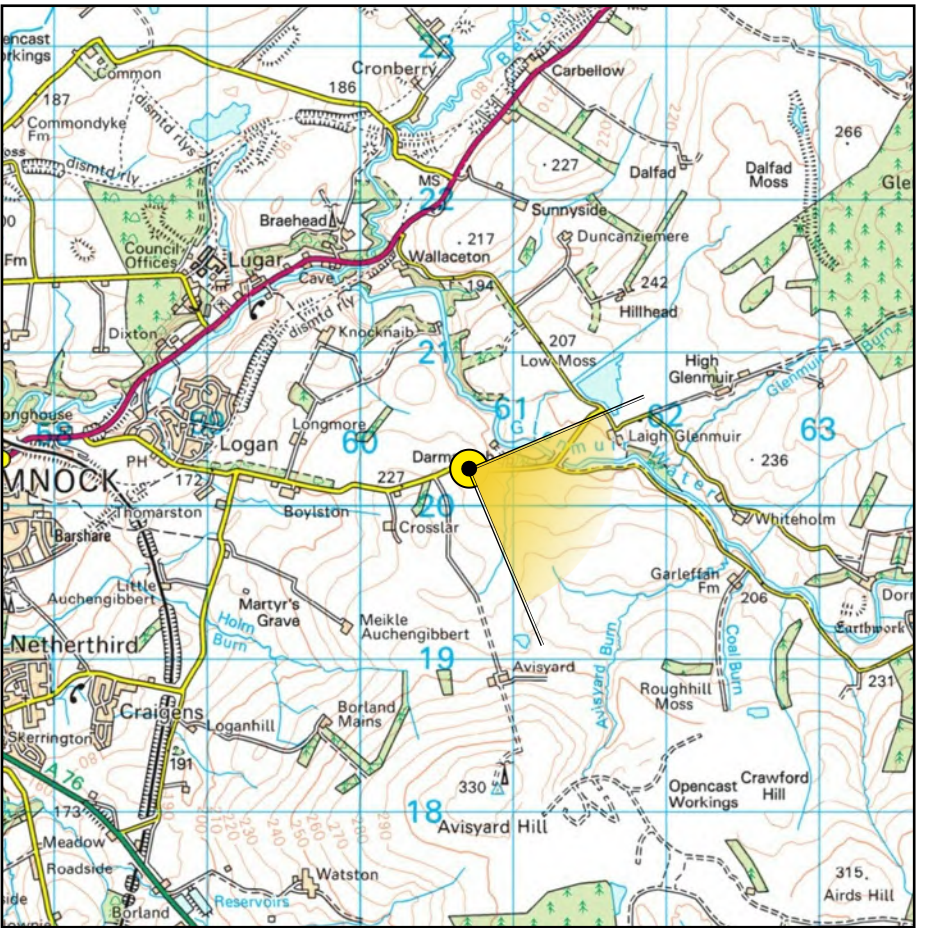
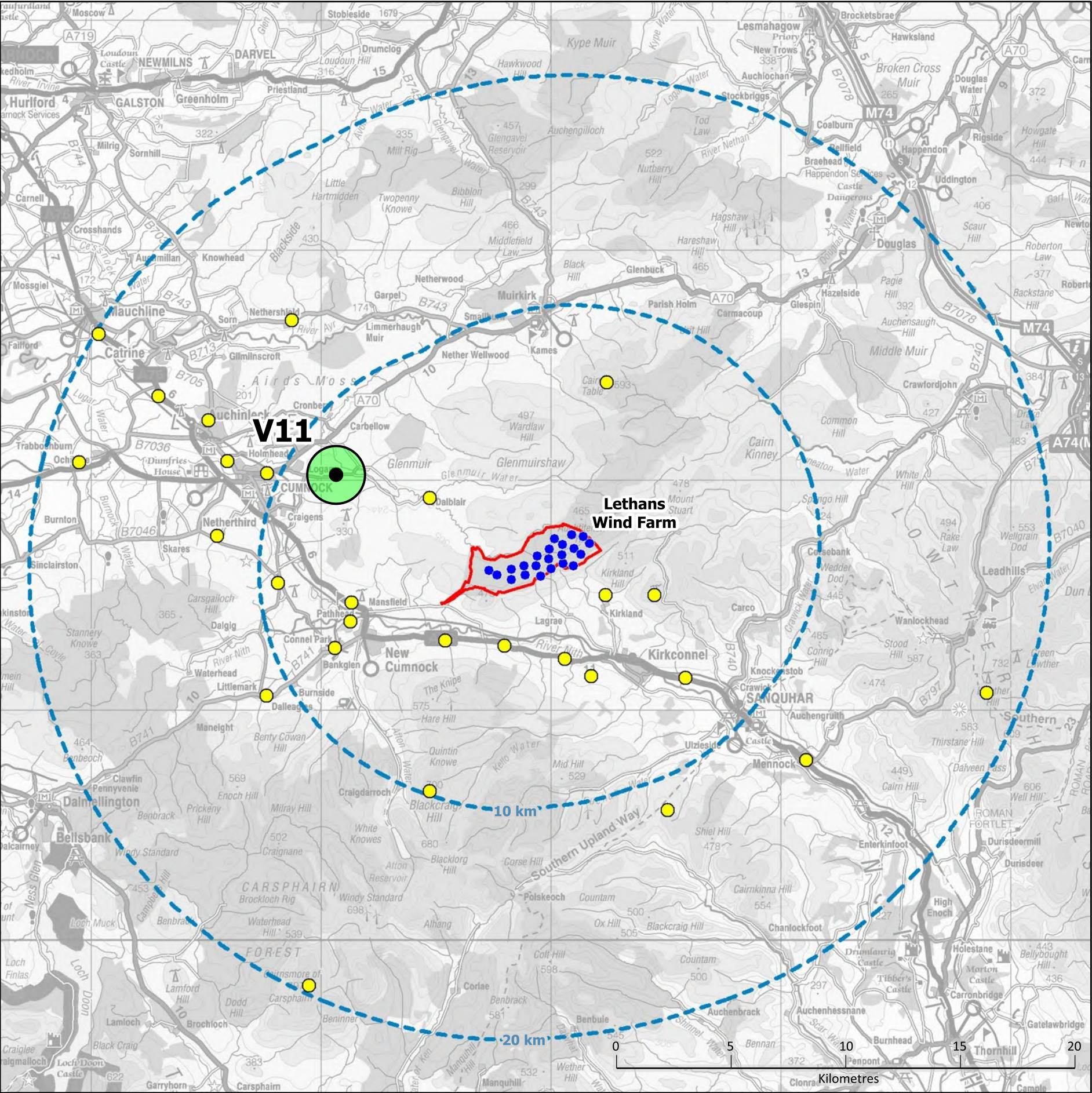
IEMA significance diagram



Derived from Figure 6.3, page 61- IEMA Special Report – The state of environmental impact assessment practice in the UK, 2011.

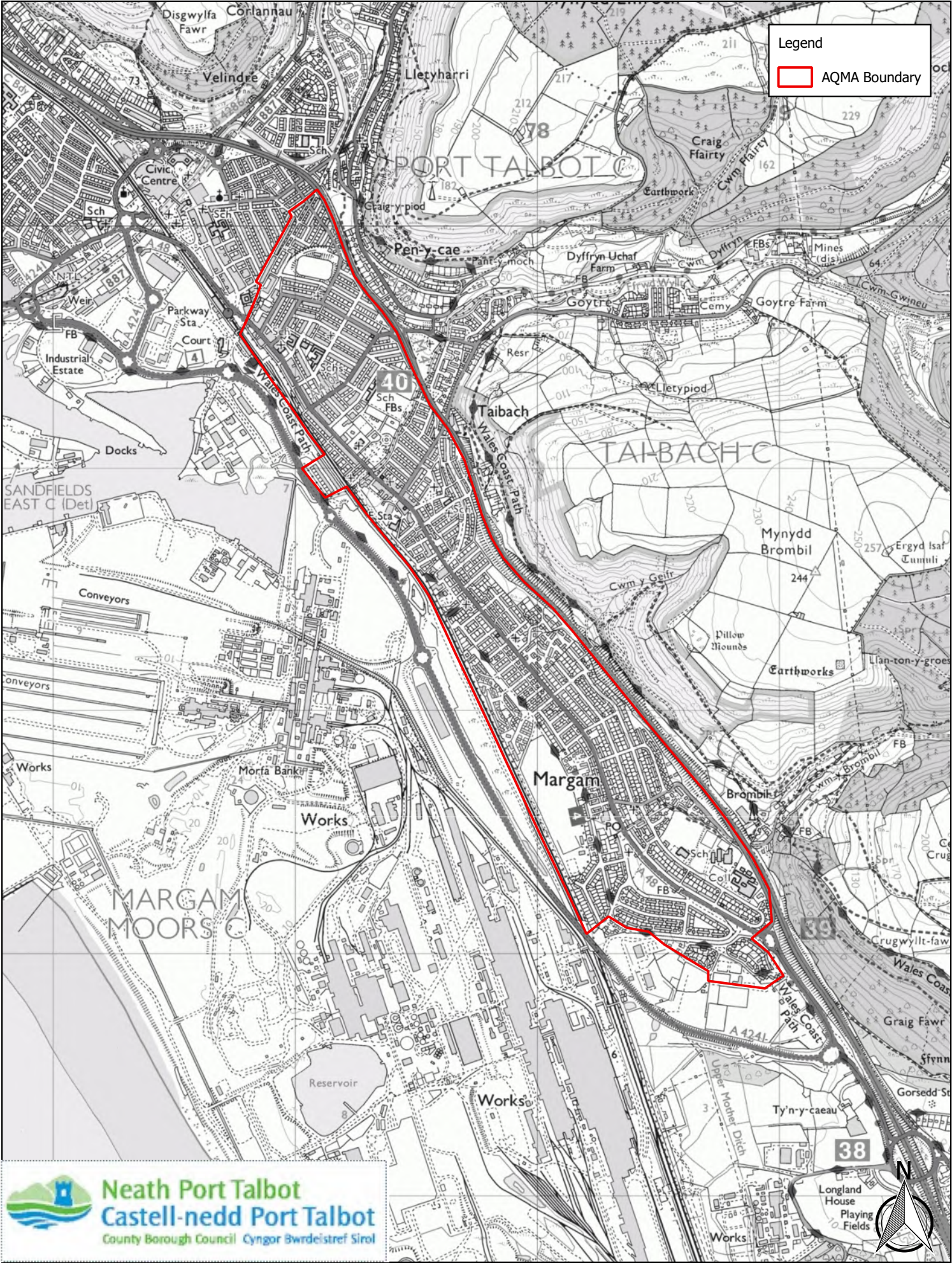
Appendix C

Lethans wind farm A3 single frame visualisation sample



 	ID	Title	Easting	Northing	Elevation	View bearing	Nearest WT	FEI Figure 9.49 Viewpoint Pack
	V11	Glenmuir Water Road	260658	620251	217 m	114°	7.86 km	

Margam / Taibach - AQMA





COUNTRYSIDE AND WILDLIFE

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Drawing Title: P2021/0057

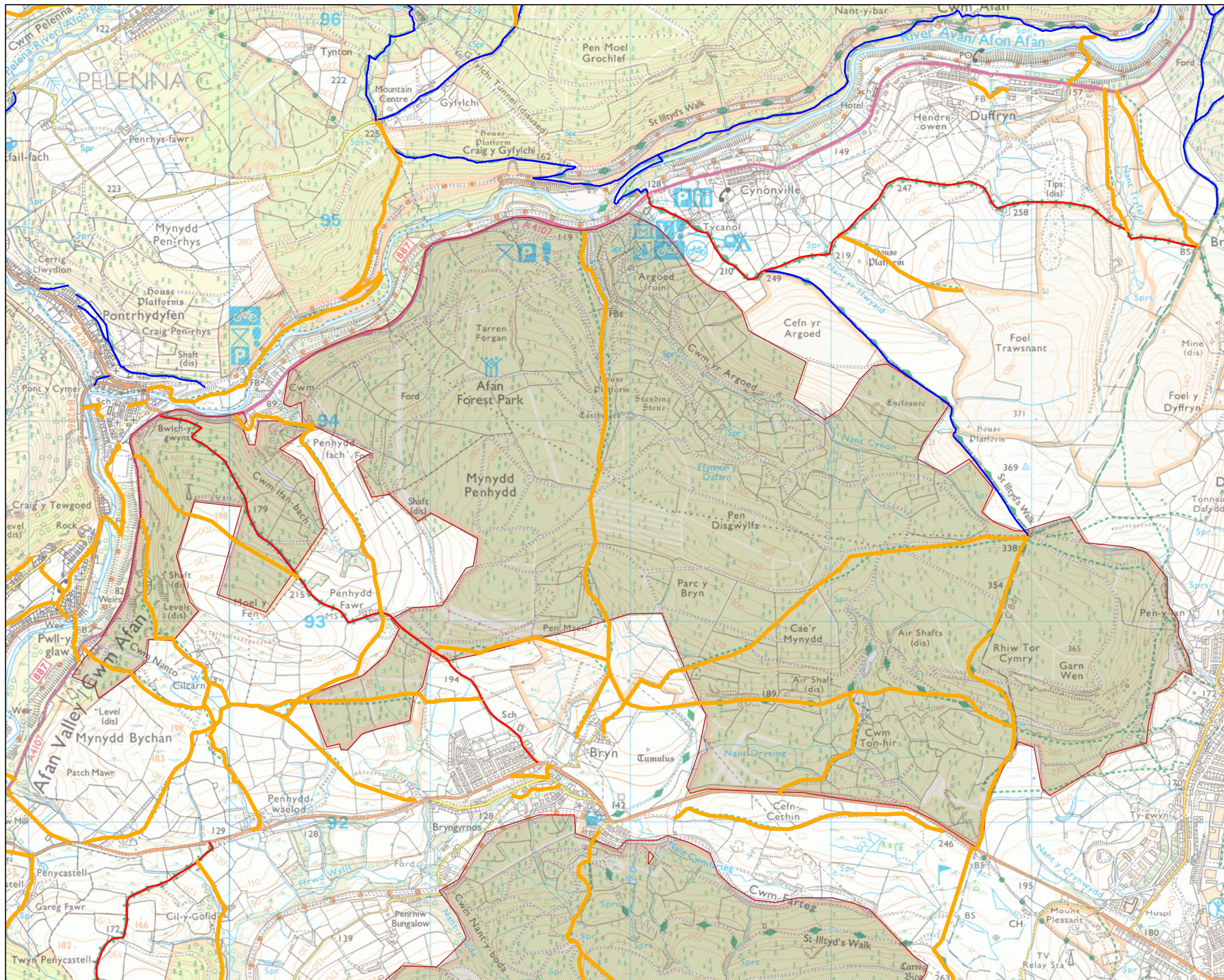
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Land At Bryn &
Penhydd Forest,
Located between
Port Talbot &
Maesteg.

Date: 16th February 2021

Key

- Footpath
- Byway
- Bridleway
- Planning App Area

0 500 m





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Plot Ref: Map 2 of 2,
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- Bridleway
- Planning App Area

0 500 m

