

From: [Rhodri Jones](#)
To: [NDE](#)
Subject: Consultation Response_NDF_Assessment of Onshore Wind energy potential in Wales.
Date: 24 October 2019 12:32:16
Attachments: [Consultation Response_NDF_Assessment of Onshore Wind Energy Potential in Wales.pdf](#)

Good afternoon,

Please find attached a response to the above consultation.

Please let me know if any further information or clarification is required.

Could you please send me an email acknowledging receipt.

Sincerely,

Rhodri Jones.



R. O. Jones

Consultation Response

National Development Framework.
- Assessment of Onshore Wind
Energy Potential in Wales.

23 October 2019

Contents

	Page
1 Introduction	1
2 Previous studies and Environmental Assessments	2
3. The Refinement Process	4
3.1 Refinement of the areas of greatest opportunity.	4
3.2 Consideration of wind speed	5
3.3 Tip height	6
4. Conclusion	7

Appendices

Figure A1. – Recommended extension of Priority Area 14 to include NPT Refined Strategic Search Area E

Figure A2. - TAN 8 Annex D study of Strategic Search Areas E and F: South Wales Valleys – Proposed Refined SSA boundary.

Figure A3. - NPT Renewable and Low Carbon Energy Supplementary Planning Guidance (July 2017) – Refined Areas SSA E.

Figure A4. - Drawing 3.23 Intervisibility -150m Brecon Beacons NP PARE 14

Figure A5. - Drawing 3.24 Intervisibility -250m Brecon Beacons NP PARE 14

1 Introduction

This document has been prepared as a consultation response to the National Development Framework - Assessment of Onshore Wind Energy Potential in Wales.

Its intention is to draw attention to apparent weaknesses in the refinement process to identify Priority Areas for wind energy as part of the assessment of onshore wind and solar energy potential in Wales.

The NDF does not state whether the new Priority Areas replace or coexist with the strategic search areas set out in Technical Advice Note 8 (TAN8) or the Neath Port Talbot Local Development Policy.

However, it is concerning that a region of SSA E that has been highlighted and promoted by Arup previously at National, Local and site development level studies appears to have been excluded from the new Priority Area 14 for wind development based on an overly simplistic and restrictive benchmark.

The turbine tip heights used in the study should be in the 150m -175m range. Setting the turbine tip height at a level far beyond what currently exists, and which may never exist in an onshore version, carries a very real risk of scoping out areas with excellent wind resource and very few constraints, for no valid reason. This would not preclude the deployment of larger turbines if site assessments concluded the impacts were acceptable

If onshore wind is to make it's required contribution to the Welsh Government's target of producing 70% of its electricity from renewable sources by 2030, it simply cannot afford to rule out sites of this quality by relying solely on areas unconstrained by 250m tip heights but are highly likely to be restricted by other environmental and practical factors.

2 Previous studies and Environmental Assessments

Focusing on Priority Area 14, the area identified by Fig A1 has been previously advocated as follows:

Report 1 – National Level.

Technical Advice Note 8 (TAN8). This Arup study identifies seven Strategic Search Areas (SSAs) where large scale onshore wind development should be focussed in Wales and provides further guidance in relation to land use planning considerations of renewable energy. This site forms part of SSA E.

Report 2 – Local Authority Level

TAN 8 Annex D study of Strategic Search Areas E and F: South Wales Valleys on behalf of Neath Port Talbot, Swansea and Bridgend

This Arup study was primarily a landscape and visual assessment exercise which sought 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 used a range of technical and other environmental data to inform its work. The Preferred Area is identified in Fig A2.

The report recommended that the site should form part of the Refined SSA boundary as it comprised the most environmentally acceptable areas.

The refinement of the SSAs within Neath Port Talbot was the subject of extensive discussion at the LDP Examination in Public in 2015, the outcome of which was that the Arup study undertaken to inform the refinement process was accepted by the Inspectors as being a '*thorough, robust and appropriate basis for the refined boundary*'. The amended boundaries were therefore formally adopted and included on the adopted LDP Proposals Map.

The NPT local development plan 2011-2026 Supplementary Planning Guidance concluded 'Since the refined SSAs have been defined following thorough landscape and visual sensitivity assessments, it is acknowledged in policy terms (as set out in TAN8) that significant change in landscape character as a result of wind farm developments can be accepted within their boundaries'.

NPT Renewable and Low Carbon Energy Supplementary Planning Guidance (July 2017)

The refined boundaries were formally adopted through the Neath Port Talbot LDP process and are shown in Fig A3.

Report 3 – Site Level

Developer proposals within the refined SSA E which have been inspected at planning level.

Maesgwyn Wind Farm - The 17 turbines of Maesgwyn wind farm are already constructed and operational. These are situated at the most northern end of the Refined SSA E nearest the Brecon Beacons National Park and thus have the highest visual impact. This did not outweigh the benefits of the scheme; indeed, Brecon Beacons National Park Authority did not offer an objection to either Maesgwyn or the extension.

Hirfynydd Wind Farm - 9 Turbine proposal

This proposal was further to the south of the refined SSA E, more distant from the park. The application raised very little concern in terms of environmental impact. Indeed, an Inspector appointed by the Welsh Ministers concluded:

So far as the National Park is concerned, the appeal site lies several kilometres from its edge and would have no effect on the landscape in the National Park. Its visual impact would be at considerable distance,

and several viewpoints from the National Park were considered in the Appellant's Visual Impact Assessment. It concluded that views from the National Park would generally be from high ground and that viewers would be afforded an open and extensive view of the surrounding landscape and wind farms. In such distant views the appeal proposal would be only a minor element, and the cumulative effects of all of the wind farms were assessed as moderate or less.

*The Council's committee report concluded that the scheme **would not compromise the essential remote and exposed nature of the landscapes** within the National Park; nor would it affect their character. That is a **reasonable assessment**, and I have seen **no evidence to lead me to any other conclusion**.*

He also concluded

*I have taken into account the Environmental Statement and the additional environmental information submitted at both the application and appeal stages. **I have concluded above that environmental and community impacts would not be significant** and, with the proposed mitigation measures, would not count against the proposal.*

***All other potential impacts were considered by the Council**, as explained in the Council's report to committee, and **none were considered to be unacceptable**. No further evidence has been brought forward that might lead me to any different conclusions.*

The issue of concern in the above application was related to coal reserves. It should be noted that the planning environment for coal has changed significantly since PPW edition 10, with the considerable harm of coal use recognised in the planning system. Additionally, there is a straightforward legal solution identified by the Coal Authority QC which could not be pursued at the time due to the end of the CFD arrangements for onshore wind. The site is currently subject to an agreement and survey work which is recommencing the development process.

The Refinement Process

3.1 Refinement of the *areas of greatest opportunity*.

As would be expected, given the considerable advantages of the site, and the fact it has been promoted as an excellent location in each previous Arup study, the area is entirely within the first stage of the process; therefore, the flaw lies with the Stage 2 regiment:

In stage 2, we sought to carry out further analysis in the broad areas identified in order to further refine Priority Areas for Solar and Wind Energy, considering in further detail certain constraints, as follows:

- *Landscape and visual assessment*
- *Centres of population*
- *Vehicular access*
- *Ecosystem services and resilience*
- *Historic environment*

Given the existence of Maesgwyn, the Maesgwyn extension and the positive responses of the consultees, NPT Planning report and the Inspector appointed by the Welsh Ministers to the Arup Site Environmental Statement accompanying the Hirfynydd wind farm application. It can be comprehensively demonstrated that ***not even one*** of the above constraints apply to this area.

Indeed, **drawing 3.23 Intervisibility -150m Brecon Beacons NP PARE 14** [Fig A4.] of this study indicates the site is within the **1% to 25% range**. This is entirely acceptable within the conditions of *this* assessment and is in line with the earlier assessments. Therefore, for what reason is the area excluded?

The only reason apparent behind the area's exclusion appears to be the following statement:

Wind – Area 14

Areas with more than 50% visibility from the Brecon Beacons National Park have been removed from this Priority Area for Wind and Solar Energy for wind development resulting in two key areas available for wind development.

The evidence supporting this paragraph appears to be drawing 3.24 *Intervisibility -250m Brecon Beacons NP PARE 14*, [Fig A5.] which only considers turbines of 250m tip height.

Astonishingly, this refinement discounts the deployment of any turbines smaller than 250m.

A market analysis suggests that this would eliminate all onshore turbines that are currently available and in development. This surely must be an oversight? The above test is entirely arbitrary and represents an over-simplification of the complexities involved in the planning process.

A contemporary planning application giving an idea of the capacity of the scale of turbine ruled out would be Melin Court in Neath Port Talbot. P2019/5344 which proposes a Nordex N133 with a tip height of 149.9m and a plate capacity of 4.8MW.

There is simply no possibility of meeting the Welsh Government's target of producing 70% of its electricity from renewable sources by 2030 if turbines such as the one above are scoped out of this study.

Successive Environmental Impact Assessments have comprehensively demonstrated that, in the words of Inspector appointed by the Welsh Ministers "*the appeal site lies several kilometres from its edge and would have no effect on the landscape in the National Park*" and the most visible turbines within the SSA are already operating.

The rationale behind the revision of this area is comprehensively refuted by the environmental evidence supporting its inclusion, and it should be reinstated.

3.2 Consideration of wind speed

From the refinement document:

*In the stakeholder consultation during Stage 1 of this project, it was agreed that priority areas **should not** be constrained by technical considerations such as **wind speed** and land topography because this did not allow developers the flexibility to adapt as technology changes over time.*

And

In order to provide continuity of policy position from TAN8, it is proposed that the Priority Areas for Refinement are extended to include SSAs, wherever the constraints are no greater than those for other areas included in the revised priority areas.

Wind resource, as broadly characterised by long-term mean wind speed, is a key driver of site selection and wind farm development as it defines the maximum potential energy yield. The consideration of wind speed should be essential in this study. The power output of a turbine is proportional to the cube of the wind speed and the swept area squared. Adaptation of speculative *technology changes over time* can only produce miniscule improvements compared to the cubic relationship between windspeed increases and power output. Put simply, doubling the windspeed increases the power output eight-fold.

Applying constraints whilst giving no weight to the advantages of an area in terms of wind resource will result in the promotion of unviable sites with lower wind speeds and lower energy yield at the expense of sites with a proven wind resource.

A constraint layer removing wind speeds below 5 metres per second should be applied to this study.

3.3 Tip height

Whilst ambitious, I consider setting the tip height at 250m to be excessively high for the following reasons:

- Setting the inter-visibility height of turbines at a tip height of 250m is letting great be the enemy of good. It arbitrarily removes locations which would be visually acceptable at around 150m but may cause issues at 250m.
- Onshore turbines of this scale are mainly at concept stage and basing the study on an such an unproven platform which may not be forthcoming represents an unnecessary degree of risk. The average turbine size in 2008 was 125m and in 2018 in was 145m. There is no purpose served in setting the tip height as high as 250m.
- The tip velocity of the blades of 250m turbines would be approximately 100 metres per second to maintain a high Coefficient of Power. Aerodynamic blade noise is generally one of the largest acoustic emissions from a wind turbine, and the magnitude of that noise is strongly dependent on the tip speed of the blades. This would result in increased offset distances and constrain the development areas.
- There is no proximity to housing layer on this study. The offset distances would be considerable for turbines of this scale, which would likely constrain development in much of the Preferred Areas.
- Considerable logistical difficulties were encountered in transportation of components at sites where the tip heights were 145m (around 3MW capacity with blade lengths of around 50m). Scoping out turbines of this type without having any evidence that considerably larger blades can be delivered is unhelpful. Selecting the optimum turbine should be left to the developer.

This does not preclude the use of larger turbines should the developer wish to propose them, and the construction and operational impact assessments conclude that the environmental impacts are acceptable.

5. Conclusion

I would recommend the following changes to the study:

- a) To maintain continuity of policy position between:
 - Technical Advice Note 8
 - The Neath Port Talbot local development plan 2011-2026 and the NPT Renewable and Low Carbon Energy Supplementary Planning Guidance (July 2017)
 - The National Development Framework.

The Preferred Wind farm area of Zone 14 should be extended slightly to the east to include the refined Strategic Search Area of SSA E of the NPT Local Development Plan as shown in Fig A1.

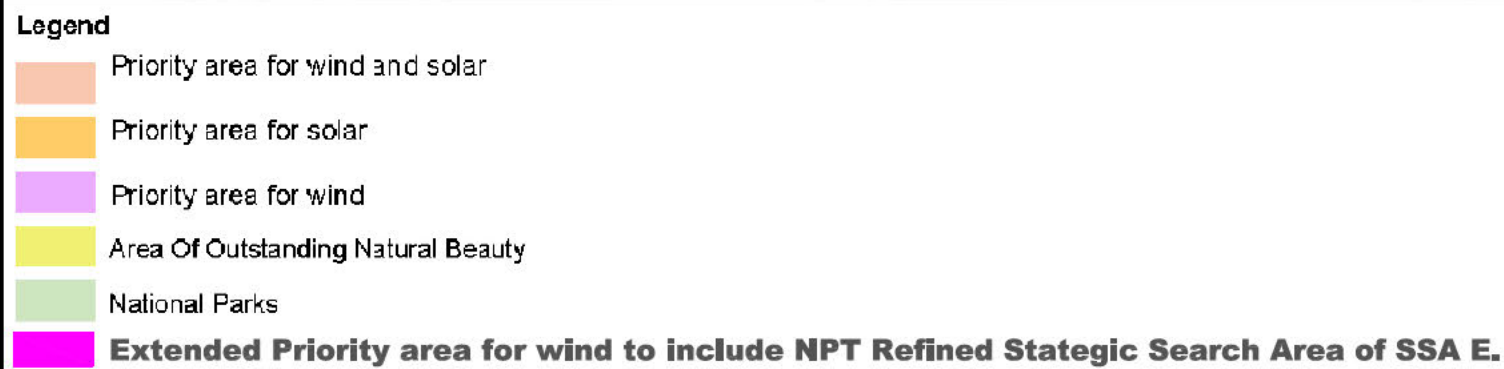
The reasoning behind the revision of this area of Area 14 between Stage 1 and Stage 2 is flawed. Applying a constraint which discounts the use of turbines less than 250m tip height is both needless and counterproductive.

The simple point is that this area has been scrutinised at a far more comprehensive level than the basic refinement exercise could hope to achieve, and it has been repeatedly identified as an excellent site at both National and Local level and again by developers.

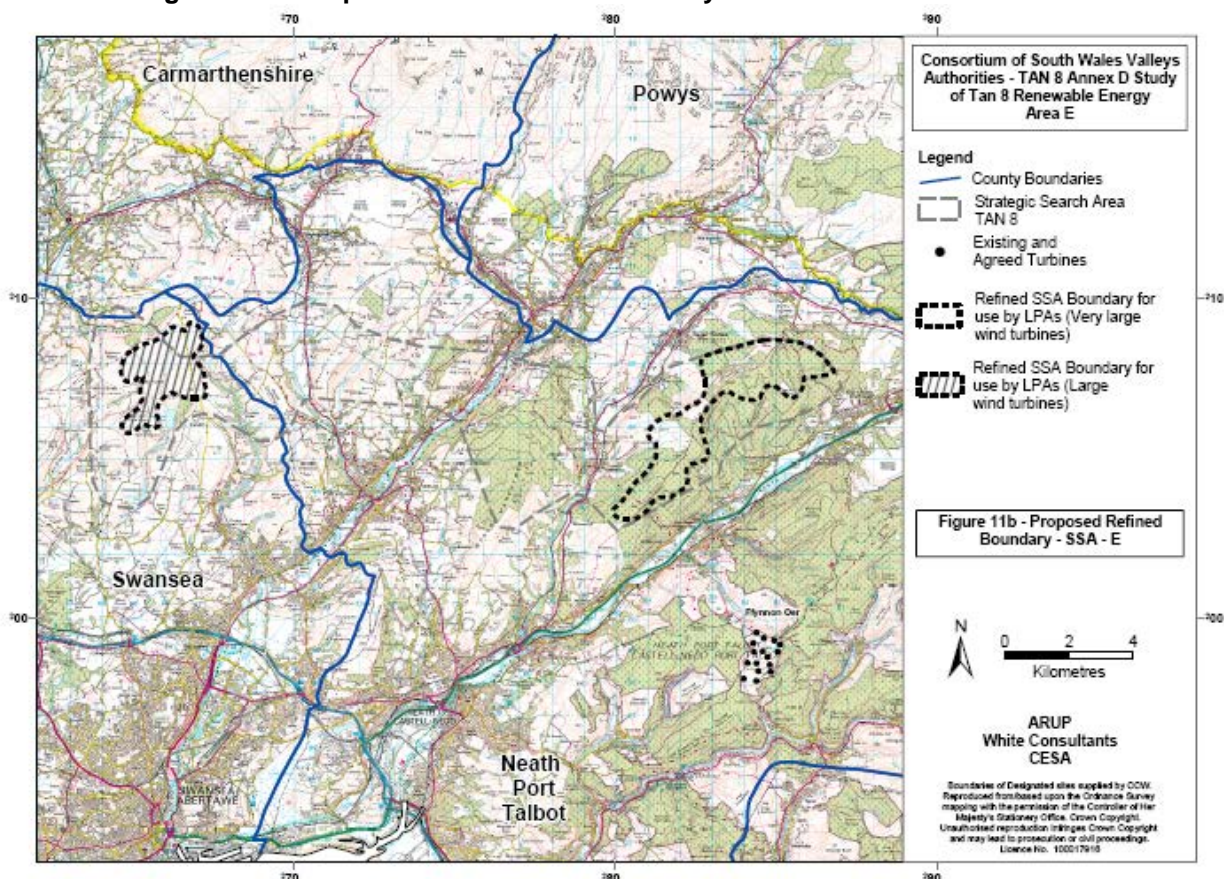
To re-emphasise, drawing 3.23 Inter-visibility -150m Brecon Beacons NP PARE 14 [Fig A4.] of the study indicates the site is within the **1% to 25% range**. This is entirely acceptable within the conditions of **this** assessment. The removal of the site solely based on 250m tip heights would appear to be entirely arbitrary and unnecessary.

Furthermore, the removal of this area from the zone based on visual impact from the National Park alone will in practice achieve little as the most visible turbines in the SSA are already operating.

- b) A constraint layer removing wind speeds below 5 metres per second should be applied to this study.
- c) The turbine tip heights used in the study should be in the 150m -175m range. Setting the turbine tip height at a level far beyond what currently exists and, may never exist in an onshore version, carries a very real risk of scoping out areas with excellent wind resource and very few constraints, for no valid reason. This would not preclude larger turbines if site assessments conclude the impacts are acceptable but ruling out areas that cannot accommodate 250m turbines is counterproductive and would be letting great be the enemy of good.



Drawing No.	Issue
10.16	E3

Figure 11b - Proposed Refined SSA boundary

The refined boundary comprises two areas with the following estimated capacities for development;

- Mynydd y Gwair (and environs) – 35-40 MW
- Hirfynydd ridge (and environs) – 60-65 MW

5.4.3 Other comments

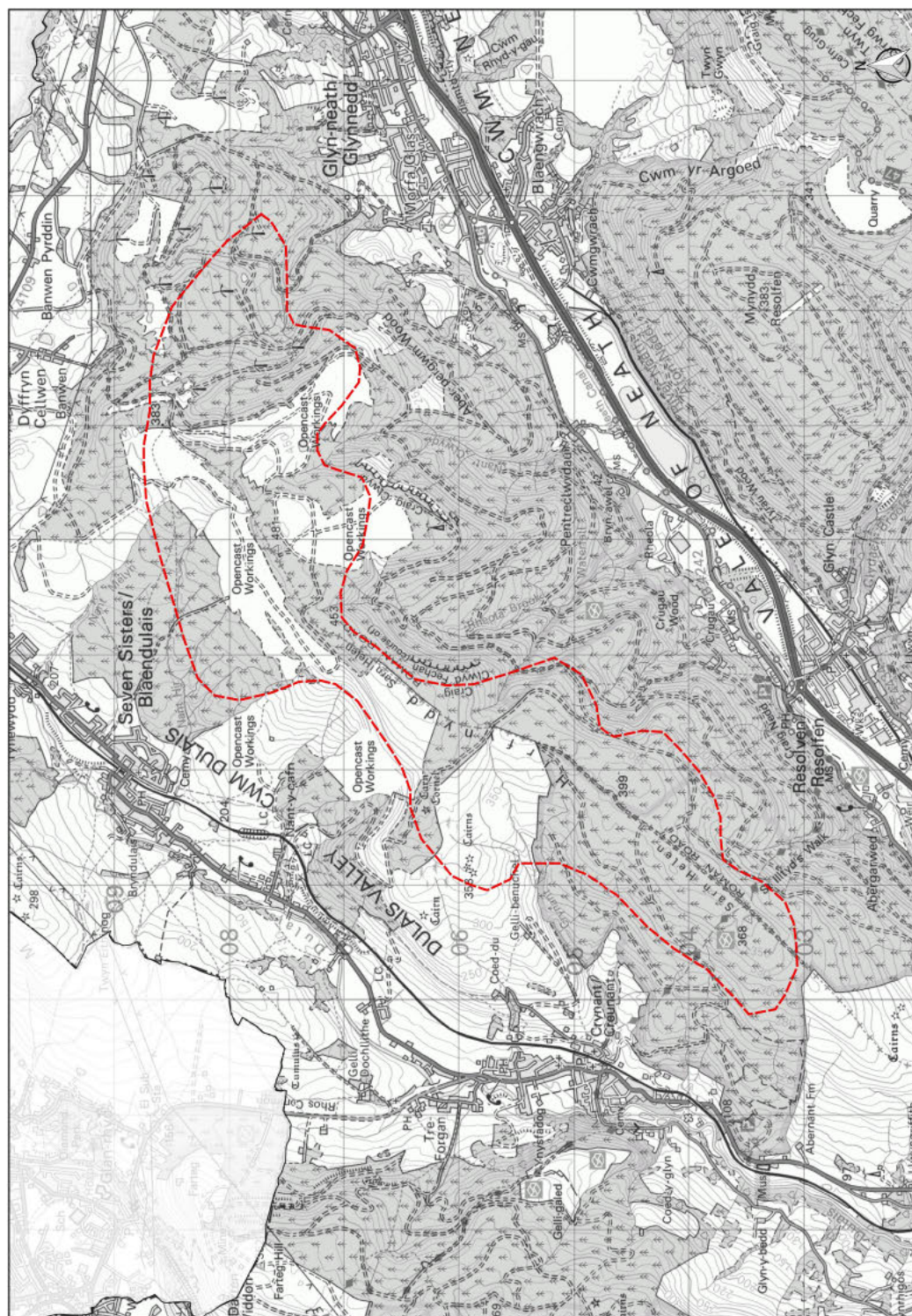
With reference to Section 4.3 of this report (landscape sensitivity and typology), it is considered that whilst it has been demonstrated that a refined SSA boundary for E can support around 100MW of wind turbines, the scale and type of landform within the refined SSA boundary is not ideal for large scale wind farms. This is as demonstrated by most landscape sensitivity ratings being high or medium-high. Zone E13/E14 [with medium sensitivity] is best able to accommodate larger turbines as it comprises plateaux rather than ridge and is a very simple landform, although it is of relatively small extent/scale. The Hirfynydd Ridge (Zones E1,2,3,4 and 16 in part) is a single ridge with complex topography to the east, only partially masked by the presence of the coniferous forestry. Nevertheless, it is the largest landform within SSA E and of a height (400m+AOD) and scale (7km in length) that could accommodate some of the largest turbines, although the ridge makes the landform far from ideal.

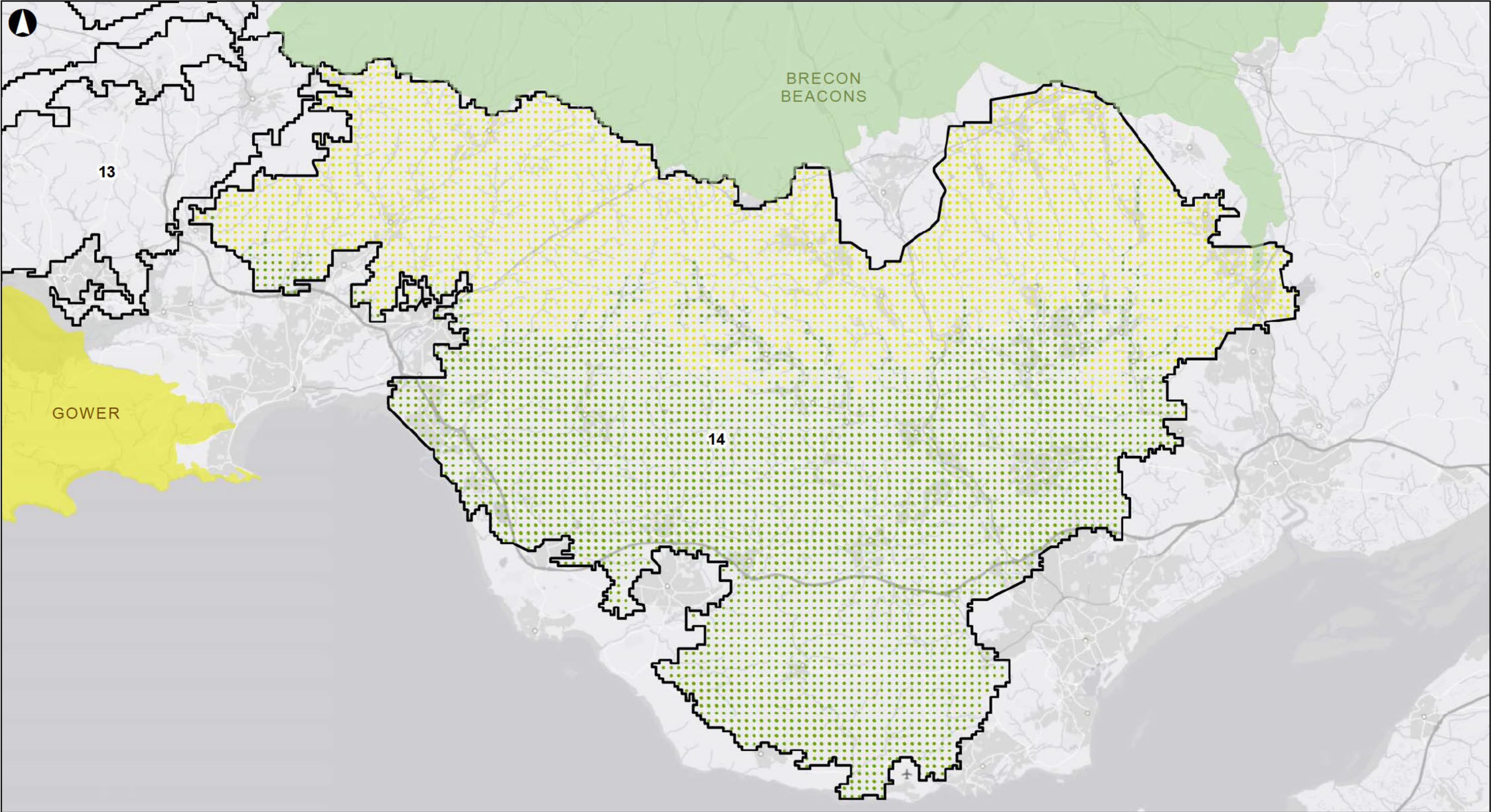
This differentiation is reflected on **Figure 11b**.

Particular attention should also be given in any EIA for development in Zone E14 to ensure that the setting of the Upper Lliw Reservoir is protected as far as is possible. It is for this reason that only part of Zone E14 is shown as encompassing the refined boundary.

Appendix A: Refined Strategic Search Areas

Figure A.1 Refined Areas: SSA E





Legend

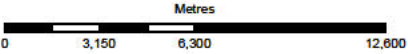
- Area Of Outstanding Natural Beauty (AONB) Coverage of National Park / AONB
- National Park
- Priority Areas for Solar and Wind Energy
- 0%
- 1% - 25%
- 25% - 50%
- 50% - 75%
- 75% - 99%
- 100%

Contains OS data © Crown Copyright and database right 2018

F1	2019-04-30	FH	CE	AC
Issue	Date	By	Chkd	Appd

ARUP

4 Pierhead Street
Cardiff CF10 4QP
(T) +442920473727 (F) +442920473727



Client
Welsh Government

Job Title
Assessment of onshore wind and solar
energy potential in Wales - Stage Two

Intervisibility - 150m
- Brecon Beacons NP
PARE 14

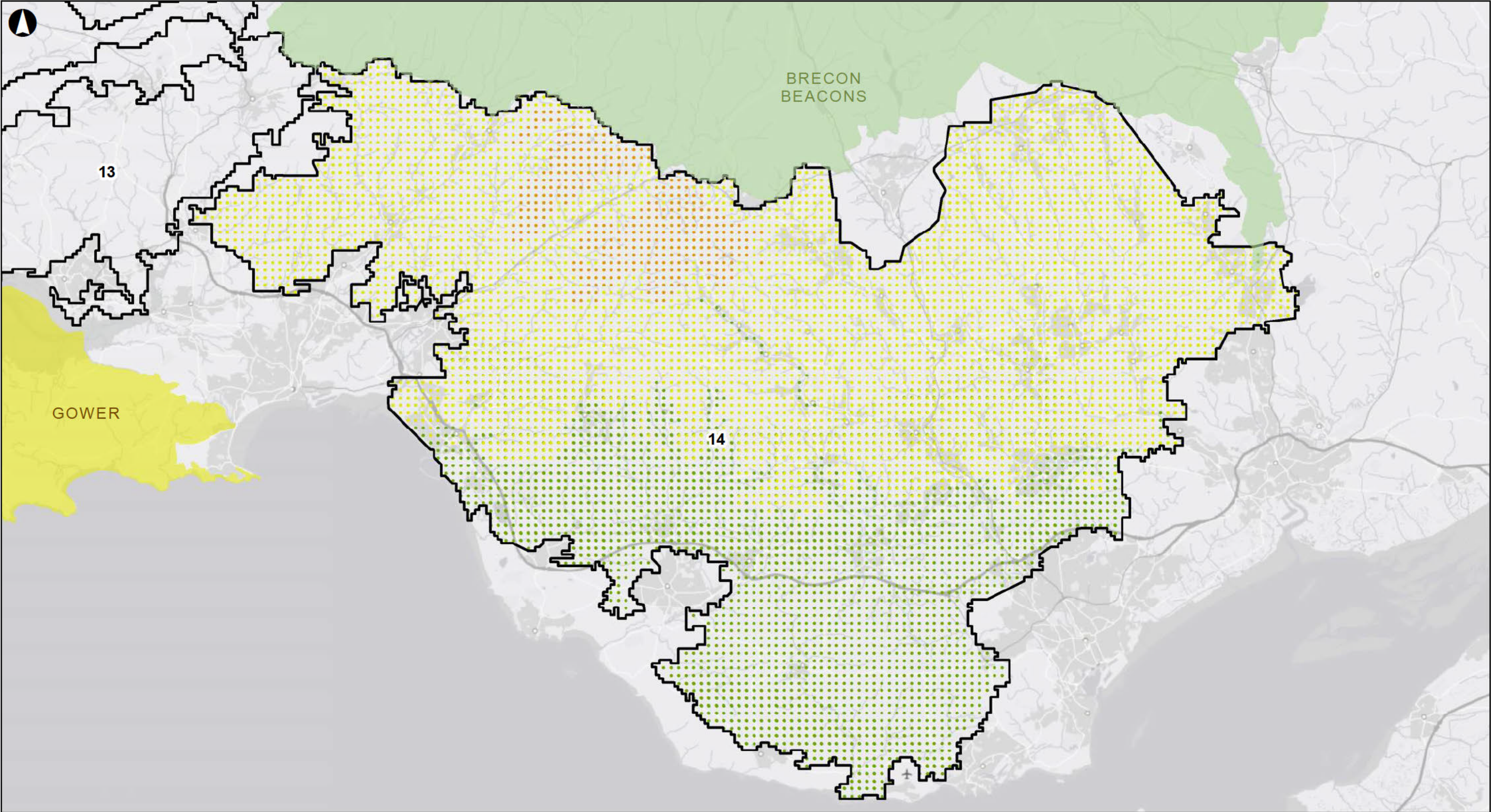
Scale at A3
1:250,000

Job No
263184-00

Drawing Status
For Issue

Drawing No
3.23

Issue
F1



Legend

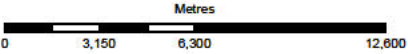
- Area Of Outstanding Natural Beauty (AONB) Coverage of National Park / AONB
- National Park
- Priority Areas for Solar and Wind Energy
- 0%
- 1% - 25%
- 25% - 50%
- 50% - 75%
- 75% - 99%
- 100%

Contains OS data © Crown Copyright and database right 2018

F1	2019-04-30	FH	CE	AC
Issue	Date	By	Chkd	Appd

ARUP

4 Pierhead Street
Cardiff CF10 4QP
(T) +442920473727 (F) +442920473727



Client
Welsh Government

Job Title
Assessment of onshore wind and solar
energy potential in Wales - Stage Two

Intervisibility - 250m
- Brecon Beacons NP
PARE 14

Scale at A3
1:250,000

Job No
263184-00

Drawing Status
For Issue

Drawing No
3.50

Issue
F1