

From: [Chris Bruce](#)
To: [NDE](#)
Cc: [REDACTED]
Subject: Welsh Government Proposed National Development Framework - Response
Date: 15 November 2019 16:11:03
Attachments: [WG NDE Submission Final 1.0.pdf](#)

Good Afternoon,

Please find attached my response to the Welsh Government Proposed National Development Framework, specifically the Renewable Energy Policy.

I am responding in a personal capacity. I have been resident in Wales for some 22 years.

I will be pleased to receive an acknowledgment from you of receipt of my submission. Thank you.

Chris

Copies to:

Jane Dodds, MP

James Evans, Powys County Council

Neil Hamilton, AM

Helen Mary Jones, AM

Eluned Morgan, AM

Joyce Watson, AM

Kirsty Williams, AM

Welsh Government Proposed National Development Framework

Renewable Energy Policy: Response

Chris Bruce
15 November 2019



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Welsh Government Proposed National Development Framework Renewable Energy Policy: Response

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Welsh Government Proposed National Development Framework Renewable Energy Policy: Response

1 Introduction

This is my response to Welsh Government's (WG) Proposed National Development Framework (NDF) published in August 2019. It focusses mainly on the Renewable Energy (RE) proposals in that framework. The main documents used were the *National Development Framework 2020-2040*¹ document (*pNDF*) and the *WALES NDF – Implications for the Natura 2000 network of Priority Areas of Solar and Wind Energy development across Wales – HRA Report*² (*Habitats Regulations*).

For clarity, I support renewables' development as part of climate change mitigation and for making our power supplies resilient, particularly with our potential "falling out" with our European neighbours due to Brexit. But the overall development needs to be properly planned, it needs to be integrated, and the individual developments need to be in the right place, taking many other factors into account, such as

- Efficiency ("bang for the buck");
- Resilience;
- Biodiversity;
- Tourism;
- Livelihoods;
- Landscape Impact.

And I would advocate proper direct Welsh Ownership of all future renewables' developments in our country, enabling profits from the sale of surplus electricity to be invested back into Wales' infrastructure.

I will, of course, be pleased to receive your responses to my questions and statements (and even misunderstandings!) in due course.

¹ National Development Framework.pdf

² appendix-b-habitats-regulations-assessment-report.pdf

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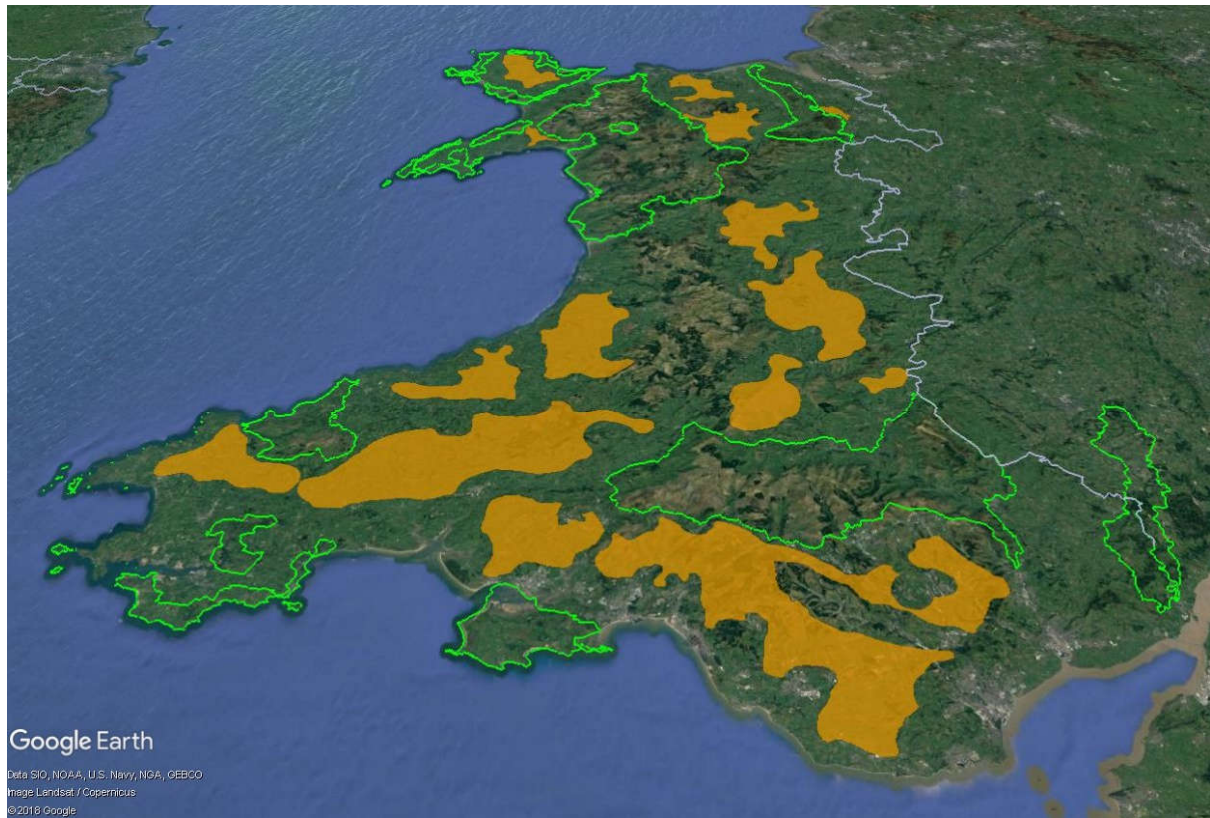


Figure 1: Wales: Its National Parks, AONBs and the Proposed Wind & Solar Priority Areas

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2 Summary

There are errors in some of the documents, for example:

- Protected birds omitted from Rhos Goch Special Area of Conservation buffer;
- Welsh towns relocated.

Some of the maps in the *Habitat Regulations* are unnecessarily confusing and are verging on unusable.

The consultation period had to be extended by two weeks due to out-of-date information in one of the documents seemingly improperly reviewed before publication³.

All in all, the proposed Renewable Energy Policy is a very poorly considered, researched and presented proposition: it is far far closer to a wish list than to a practical framework. It seems to be a simple list of “What we want” rather than the more important “What do we need?”, “Why do we need it?” and “How do we get to it?”.

It is not an integrated renewable energy policy: it completely ignores offshore wind and other marine-based electricity generation technologies and potential development locations such as Intensive Poultry Units and Warehouses. A renewable energy policy should be part of a Wales-wide Power Generation and Supply Policy and should also reference non-renewables such as nuclear and gas. There seems no mention of this. It should also sit within a UK-wide Energy Policy.

Given that a workable and practical Renewable Energy Policy is a fundamental requirement for securing our future, and for that of other species, on this planet and dealing with and mitigating climate change the proposed policy is not fit for purpose. Given its poor state, and the errors found, it also raises serious doubts in my mind as to the quality and integrity of the whole of the rest of the proposed National Development Framework.

And given the proposals for large-scale renewable energy generation in the PAs and the statement “*Outside the Priority Areas, large scale on-shore wind and solar energy developments may be appropriate*” in Policy 12 of the *dNDF* it seems that it is Welsh Government’s policy to industrialise almost the whole of the Welsh landscape with renewable energy projects.

It is a massive act of self-harm which can only benefit landowners and renewables developers.

³ [<https://gov.wales/written-statement-extension-consultation-draft-national-development-framework>]

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3 Methodology

All the spatial analysis was carried out using a Geographic Information System (GIS).

The Wind and Solar (W&S) Priority Areas (PAs) were digitised from the map *Wales Energy Priority Areas* on page 42 of the *dNDF* document. The map was carefully georeferenced before digitising the PAs.

A couple of other Priority Area Natural 2000 / Ramsar maps taken from *Habitats Regulations*. Similar care was taken with the georeferencing.

Other spatial data used or referred to during the analyses were datasets from:

- Natural Resources Wales (NRW) via the Lle Geo-Portal website;
- National Trust;
- Powys County Council (PCC) Local Development Plan (LDP);
- Ordnance Survey;
- RSPB;
- Cranfield University Soilscales;
- ourairports.com.

Appropriate copyright attributions for the maps herein are given in section 13.1.

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4 Clarity Needed from Confusion!

The proposed W&S PAs have been delineated across Wales in the *pNDF* document cited above. There also exist TAN 8 Strategic Search Areas (SSAs) for RE development which are similarly part of WG RE policy. Additionally, as far as Powys County Council (PCC) Local Development Plan (LDP) is concerned at least, there are Local Search Areas (LSAs) also for RE development. As can be seen from the map below (Figure 2) there is some overlap between these areas but some of these additional SSA and LSA areas lie wholly or partly outside the proposed W&S PAs.

One assumes that the other Wales Local Planning Authorities (LPAs) have similar LDPs also containing LSAs for renewables development⁴.

Are the TAN 8 SSAs and Powys and other counties' LSAs now defunct? Are they superseded by the proposed NDF PAs?

The proposed W&S PAs cover over 417,000 hectares, which is around 19.7% of Wales – almost one fifth of our country. This area is greater than the combined area of our National Parks (NPs). If we, quite reasonably, exclude the NPs and AONBs from the calculation the W&S PAs cover over 26% of Wales – over one quarter of Wales!

If the areas of the TAN 8 SSAs that are outside the new PAs are still included for renewable development there would be an extra 28,760 hectares of 'priority areas', another 1.8% of Wales outside of the NPs and AONBs.

If the TAN 8 SSAs and the county LDP LSAs are not superseded by the proposed W&S PAs we must be looking at an area of significantly over one quarter of Wales, perhaps approaching 30%, outside of the NPs and AONBs theoretically open for renewables' development of one sort or another *"...where there is a presumption in favour of development and where the principle of landscape change is accepted."*

If the SSAs and LDPs LSAs are superseded by the NDF W&S PAs the figure is still well over one quarter of Wales.

An utterly horrific thought.

I feel clarity is urgently needed as to the new interrelationships between the W&S PAs, the TAN 8 SSAs and the LDP LSAs, not only for residents of Wales but any developers eagerly waiting a development opportunity.

⁴ I do not have the LDP data to hand for LPAs other than Powys, consequently their LSAs, if any, are not shown on the map. However, I feel it very likely that a similar situation will apply.

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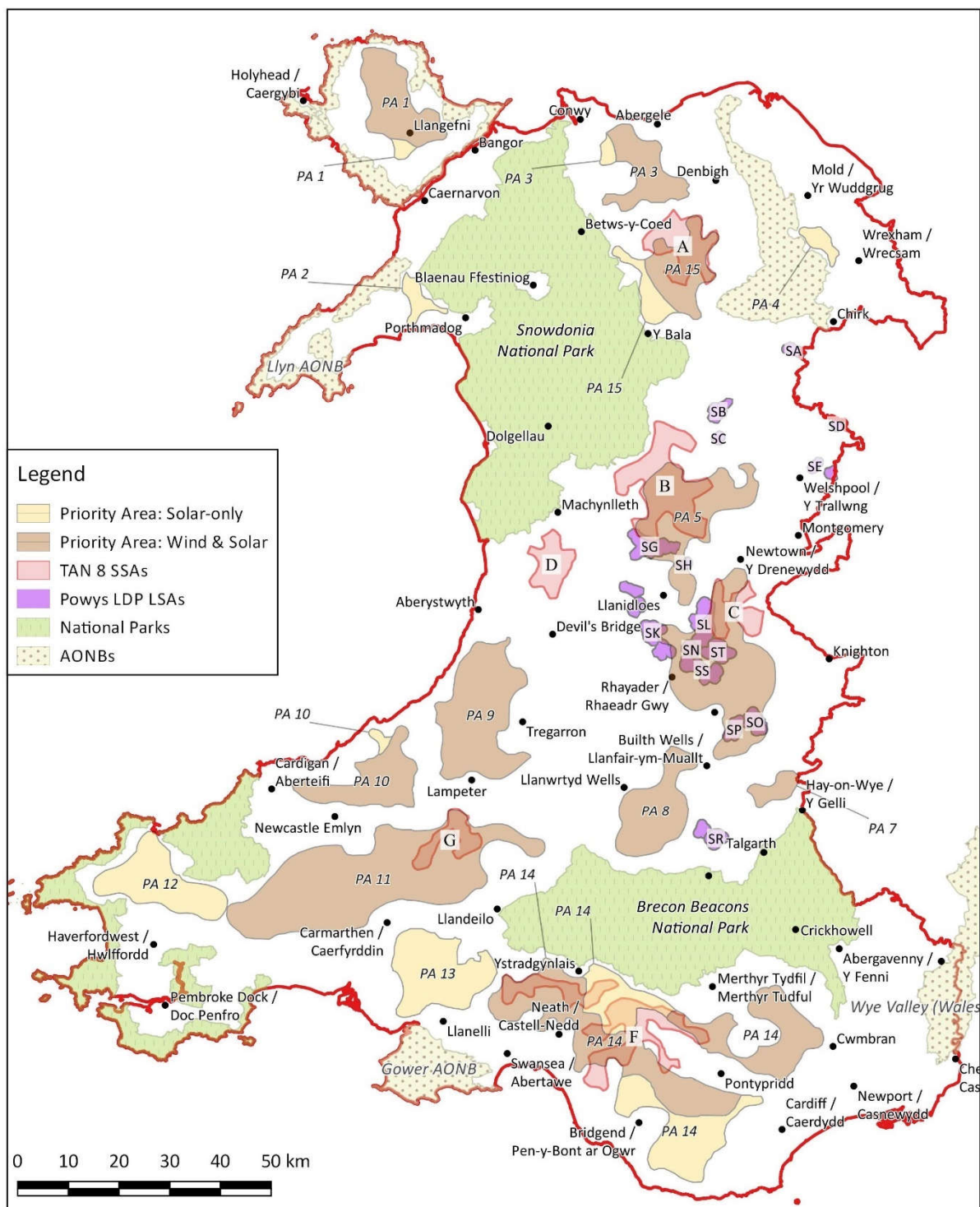


Figure 2: Wind and Solar Priority Areas with TAN 8 Strategic Search Areas and Powys LDP Local Search Areas

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5 Statistics

According to some preliminary analyses, **wholly or partly contained within** the 15 Solar and Wind Priority Areas alone, i.e. excluding the extra TAN 8 SSAs and any Powys LDP LSAs (for want of clarity – see section 4) are:

- 191 Sites of Special Scientific Interest (SSSIs);
- 10,115 areas of Ancient Woodland (AW);
- 1 Biosphere Reserve;
- 16 Natura 2000 areas;
- 1 Ramsar site (this is also one of the Natura 2000 sites);
- 4 Historic Landscape areas;
- 1 National Trail (included in two PAs);
- 7 National Nature Reserves (NNRs);
- 15 Special Areas of Conservation (SACs);
- 576 Scheduled Ancient Monuments;
- 2274 CADW Listed Buildings;
- 369 areas of CRoW⁵ / Open Access Dedicated Forests;
- 753 areas of CRoW / Open Access Open Country;
- 285 areas of CRoW / Open Access Open Access Common Land;
- 63 areas of Other Statutory Land (CRoW / Open Access);
- 12 Local Nature Reserves;
- 3 RSPB Reserves, 2 of which are in Wind & Solar PAs;
- 4 airfields, including an RAF one (RAF Mona on Anglesey) and Royal Glamorgan Hospital Heliport;
- Many many Public Rights of Way throughout Wales;
- Over 50 Forest Recreation Areas and a huge number of associated Points and Routes;
- 10 National Trust Properties comprising 7 Estates.

Many of these areas mentioned have statutory protection along with mandated impact buffer zones.

To reiterate, these areas cited are **within** the proposed Priority Areas.

Calculations also indicate that some 85% of the population of Wales is within 10KM of one or more PAs, and around 95% of the population is within 15KM of them.

⁵ Countryside Right of Way Act.

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6 The Priority Areas

6.1 Introduction

This section does not undertake an exhaustive critique of each of the proposed PAs but selects a couple to make the point about poor or incomplete analysis whilst the PAs were determined.

It also makes a couple of general comments about the PAs.

6.2 Priority Area 7

This area includes

- 446 hectares of National Trust property the Begwns;
- A couple of SSSIs one of which, Rhos Goch, is SSSI, a SAC and an NNR;
- Areas of CRoW / Open Access Common Land and Open Access Open Country;
- An airfield at Lane Farm; any wind turbines developed in the PA would present a danger to, and affect the flight path of, aircraft using the airfield.

11.6% of the PA belongs to the National Trust. Have they been formally consulted on these plans? What was their response?

6.2.1 Rhos Goch Special Area of Conservation

Page 10 of *Habitats Regulations* states:

“new Priority Area 7

*“...However, Rhos Goch SAC remains within the new Priority Area, so consideration will need to be given to whether or not this site could be affected (though it is very unlikely that any wind development would be consented within or close to this SAC, and distance effects are unlikely given that the qualifying features are all wetland habitats and not mobile species). Furthermore, the new Priority Area is also still within the buffer zone of the River Wye SAC; however, it is considered highly unlikely that this SAC would be significantly affected (especially **given that neither birds nor bats are part of the designation**).”* (my emphasis).

However, NRW documents⁶ state *“Rhos Goch also supports a good range of wetland breeding birds such as snipe and lapwing.” “The wet woodland supports populations of typical breeding birds, including water rail, snipe, sedge warbler and reed bunting.”*

Red Kites and Buzzards are also commonly seen in the area. Curlew are occasionally seen.

Given the above facts regarding the breeding birds I believe that the buffer around Rhos Goch SAC should therefore be 20KM, appropriate for protected birds. This would then rule out the whole of PA 7 and a significant part of PA 6 for wind farm development. As it is the 5KM buffer shown on the *pNDF* map along with that for the River Wye, and the comments in the paragraph cited above from the *Habitats Regulations*, virtually the whole of PA 7 should be removed as far as wind power development is concerned. And the area that remains is largely NT property anyway.

I conclude, as should any further future assessment of PA 7, that it is not suitable for wind farm development as part of the NDF and should be removed from the proposed Priority Areas.

⁶ [<https://naturalresources.wales/media/682684/rhos-goch-sac-core-management-plan-english.pdf>]

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Finally, to my knowledge this area has already had large commercial wind turbine planning applications refused on two occasions, once in the mid-90s and then again around 2013⁷, by Powys County Council for several reasons. No appeal was made by the applicant.

Given the previous planning refusals, the proximity of the Rhos Goch SAC, the airfield and the NT-owned Begwns in the PA, why has this area been proposed for the *pNDF*? As a favour?

⁷ Approximate location of proposed site: 319290, 246300, or SO192463. Search “Clyro Hill Wind Turbine”. Or search “Clyro Hill Wind Turbine”, “Cold Blow Wind Turbine” or “Wernoog Farm” on PCC Planning Portal for further information.

Wind & Solar Priority Area 7 with Special Areas of Conservation, National Trust Begwns and Airfields

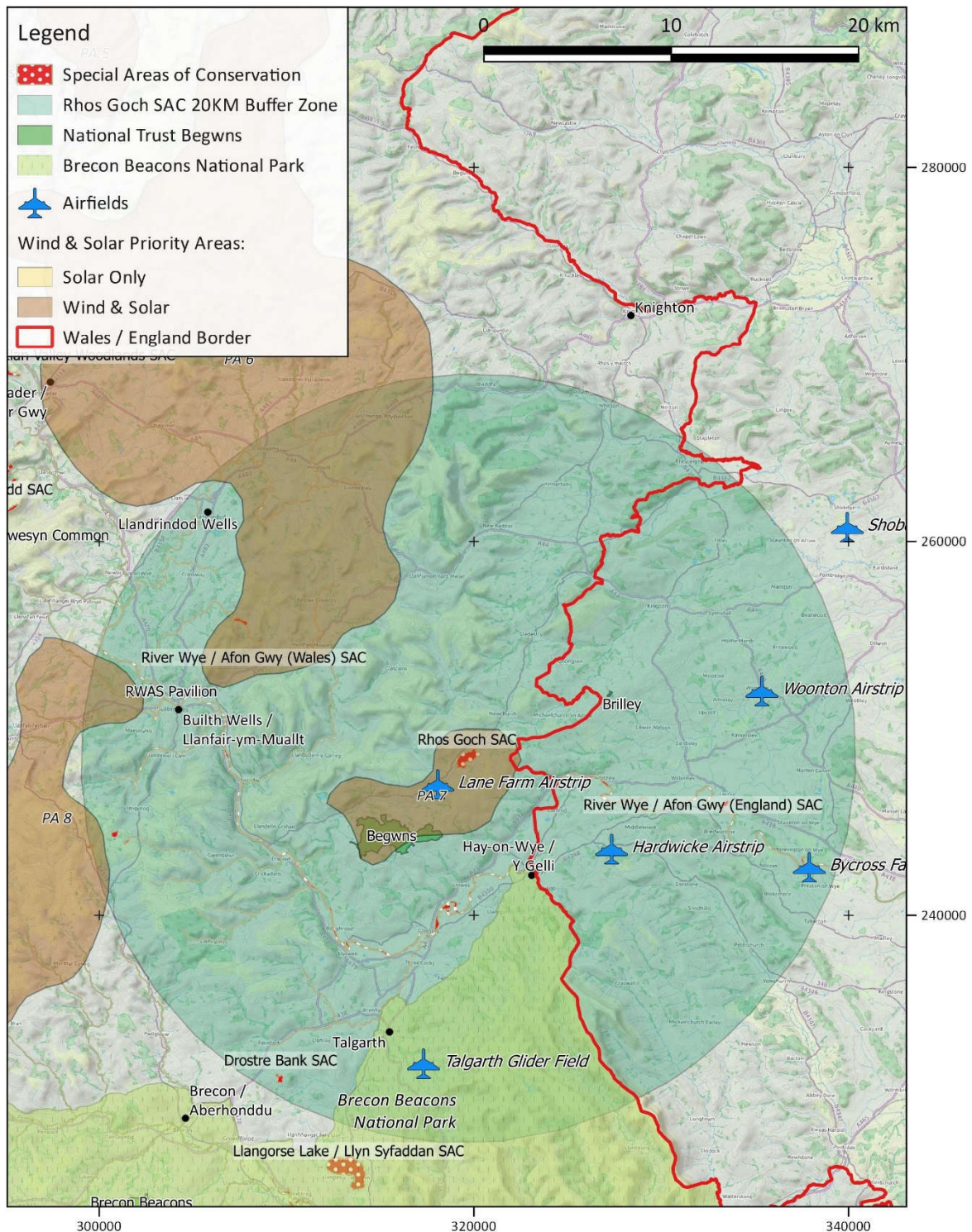


Figure 3: Wind & Solar Priority Area 7 with Special Areas of Conservation, National Trust Begwns and Airfields

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6.3 Priority Area 8

As well as containing several areas of Open Access Land, Ancient Woodlands and SACs Priority Area 8 consists mostly of *Mynydd Epynt*, an area owned by the military and known as the *Sennybridge Army Training Area* (SATA) and used for their exercises. This area – some 51% of the PA – belongs to the Ministry of Defence. Have they been consulted about your plans? What was their response?

PA 8 also consists of a large area of LANDMAP Special Landscape Areas of value 7 – 11, around half the area of the PA. (Section 7.2 discusses Special Landscape Areas in more detail.) Much of this is within the SATA but there remain areas of SLA outside of the SATA.

6.4 Habitat Networks and Biodiversity

To quote NRW (via the Lle-GeoPortal⁸) *“There is a growing emphasis on ecological connectivity in planning for effective biodiversity conservation and building ecosystem resilience. A major part of this is to counteract the negative impacts of habitat fragmentation... Patches of habitat and other intervening habitats through which many of their species are able to move are mapped as habitat networks.”*

And the Geo-Portal for LANDMAP Landscape Habitats Aspect states *“Semi natural habitats and vegetation cover influence landscape diversity, biological prosperity, land cover, utilisation and enjoyment of rural areas. Management of habitats and vegetation can affect these values and influence the landscape in many different ways. Any changes or loss of these habitats, vegetation patterns and associated features through lack of management, removal or changing policy affects both habitat diversity and landscape diversity, with resulting consequences for biodiversity values.”*

There are a massive number of both Level 1 and Level 2 Habitat Networks contained within the PAs. Developments within the PAs can only cause damage and further fragmentation of these networks and therefore negatively impact biodiversity. Increased biodiversity is a key factor in our attempts to mitigate the negative affect of climate change.

Policy 8 (*Strategic framework for biodiversity enhancement and ecosystem resilience*) on page 33 of the *dNDF* seems to address this need for biodiversity and, indeed, seems to me to rule out the PAs altogether!

Policy 9 (*National Forest*) is also laudable, but there are no stated plans for it. Wales has a huge number of areas of AW, over 10,000 of which are **within** the PAs, and these could possibly be components of the National Forest.

There is no reconciliation between these two policies and Policy 10, the RE Policy. Wind farm and solar farm development and their associated grid connections could fit together with the National Forest and biodiversity enhancement. But it needs an overarching policy before developing the individual policies, the strategy and then plan, and the NDF does not appear to provide one. It cannot be done in a temporally-spread and piecemeal fashion as a developer rocks up to build his or her wind farm.

The map below in Figure 4 shows the number of AWs within each PA, the total area of the AWs within the PA and the percentage of PA taken up by the AWs.

⁸ [<http://lle.gov.wales/catalogue/item/HabitatNetworks/?lang=en>]

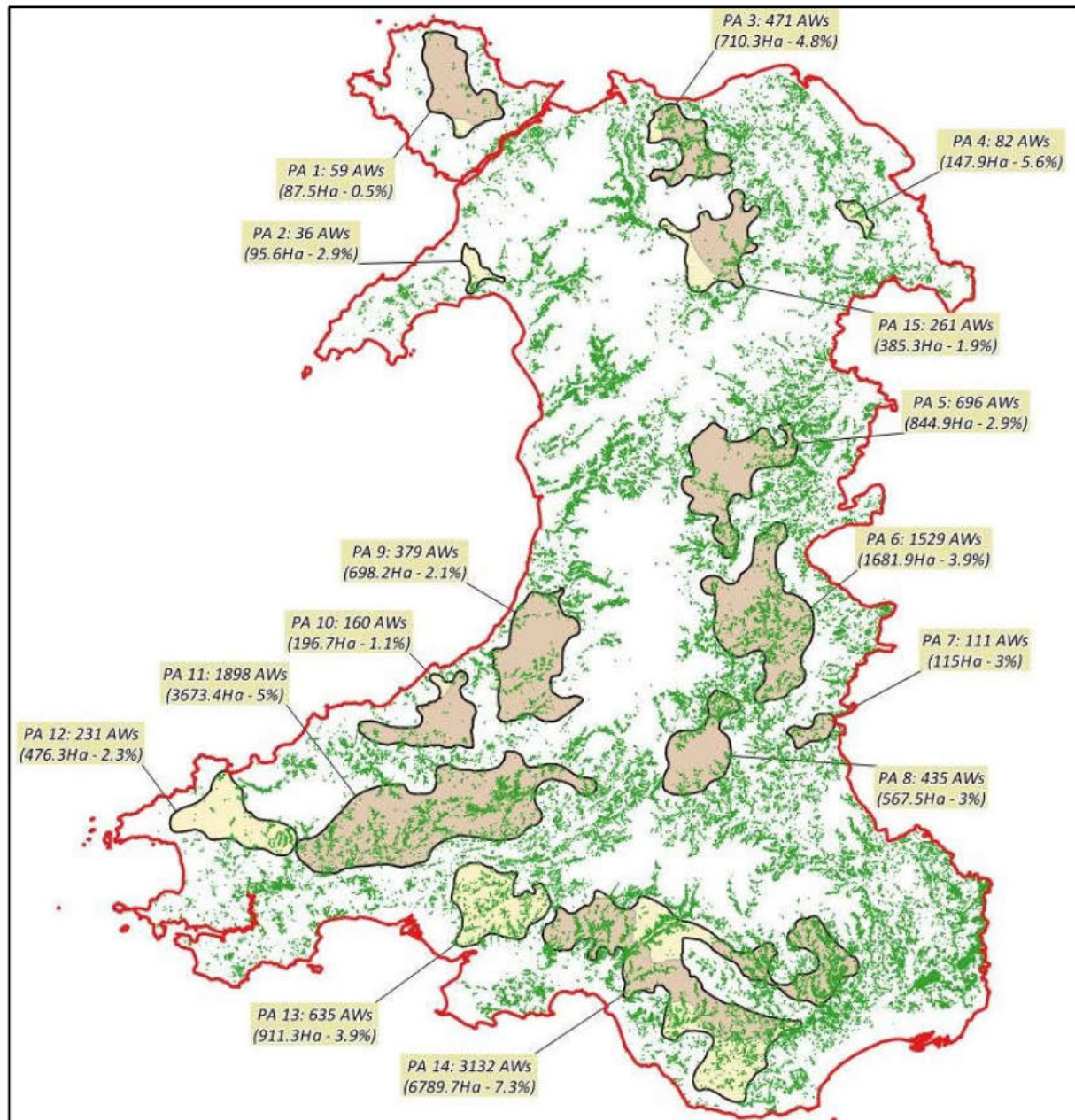


Figure 4: Wind & Solar Priority Areas and Ancient Woodlands

6.5 Solar Renewables Suitability

I calculated the suitability⁹ for solar farms for the 11 Solar-only areas. The calculated suitability of an area varies from 20% through to 88%. Not all these 'suitable percentage areas' will actually be 'suitable' for development: there will be terrain considerations other than slope or aspect (which is all I used in the calculations), e.g. Ancient Woodlands, SSSIs, CRoW Act / Open Access Land being in the way; and LANDMAP Outstanding¹⁴ and High Aspects, SLAs, etc. which will reduce this percentage. Also, some of the calculated suitable areas may be just 50m square or less within a given PA (as a consequence of the DTM used); some of the suitable areas may be difficult to get at

⁹ Solar suitability was calculated from a) Any Aspect with a Slope of 0-3 degrees, or b) Aspect of 135-225 degrees with a slope of 3-15 degrees. The Digital Terrain Model (DTM) used has a cell size of 50 metres.

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for construction or for grid connection purposes due to the surrounding slope and trivial matters such as access.

A significant part of the Solar-only area of PA 1 contains an RSPB Reserve (*Malltraeth Marsh*) and floods regularly (as can be seen in Figure 6).

Another example: inspection of the terrain of the large Solar-only area in the north of PA 14 shows it has a) a significant north-facing slope and b) is also riven by a steep-sided valley running northeast – southwest. The slopes in this valleyed area will return poor results from solar generation, and even more so in winter when the sun is low in the sky. My calculations indicate that only some 33% – one third – of this area being suitable for solar generation supports this view.

Why include these poor-quality generation areas as part of the PA?

The Solar-only PAs in the *pNDF* could be significantly reduced in size without affecting the potential percentage of useable area. And the small area on the northwest of PA 14 could be removed altogether as its suitability is 20% – just one fifth of the area!

I see this all as just more signs of the poor attention to detail made during development of the *pNDF*.

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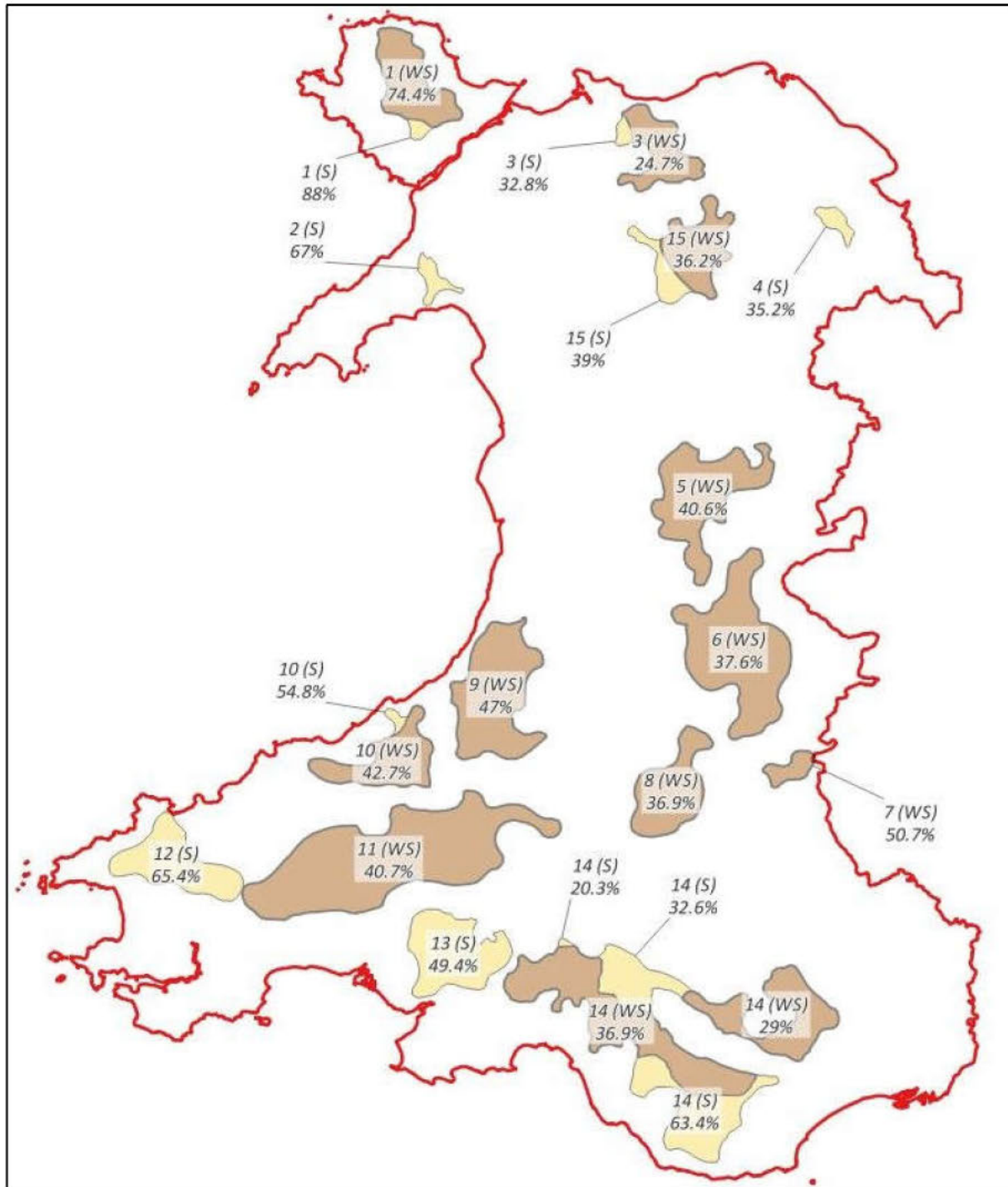


Figure 5: Wind & Solar Priority Areas and Solar Generation Suitability

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6.6 Flood Risk

According to the *Risk of Flooding from Rivers and Sea (RoFRS)* dataset from the NRW LLE Geo-Portal for Wales¹⁰ the PAs are riddled with areas likely to flood. The map below shows areas that have a likelihood of greater than 1 in 30 of flooding **each year**. Other flood risk datasets from the Geo-Portal paint a very similar or worse picture¹¹. Whilst the areas shown at risk of flooding are likely to be in valleyed areas of some degree, they could still easily impede access for development and maintenance of wind farms as they require large machinery, and perhaps also impact grid connections. Where the flood risks are in solar-only areas they could reasonably impact operation of the site too.

It can be clearly seen from the map that a significant part of the Solar-only area of PA 1 is subject to flood risk (and I am informed floods regularly) and is part of the floodplain of the *Afon Cefni*.

As we have seen recently in Wales and elsewhere in the UK, we are starting to feel some of the possible impacts of climate change with our rainfall, and the flood risk illustrated here could quite possibly increase in both depth and extent within the near future.

¹⁰ [<http://lle.gov.wales/catalogue/item/Rofras/?lang=en>]

¹¹ The Risk of Flooding from Surface Water dataset paints a much worse picture at the > 1 in 30 annual flood risk. [<http://lle.gov.wales/catalogue/item/RiskOfFloodingFromSurfaceWater/?lang=en>]

Wind & Solar Priority Areas and Risk of Flooding from Rivers and Sea

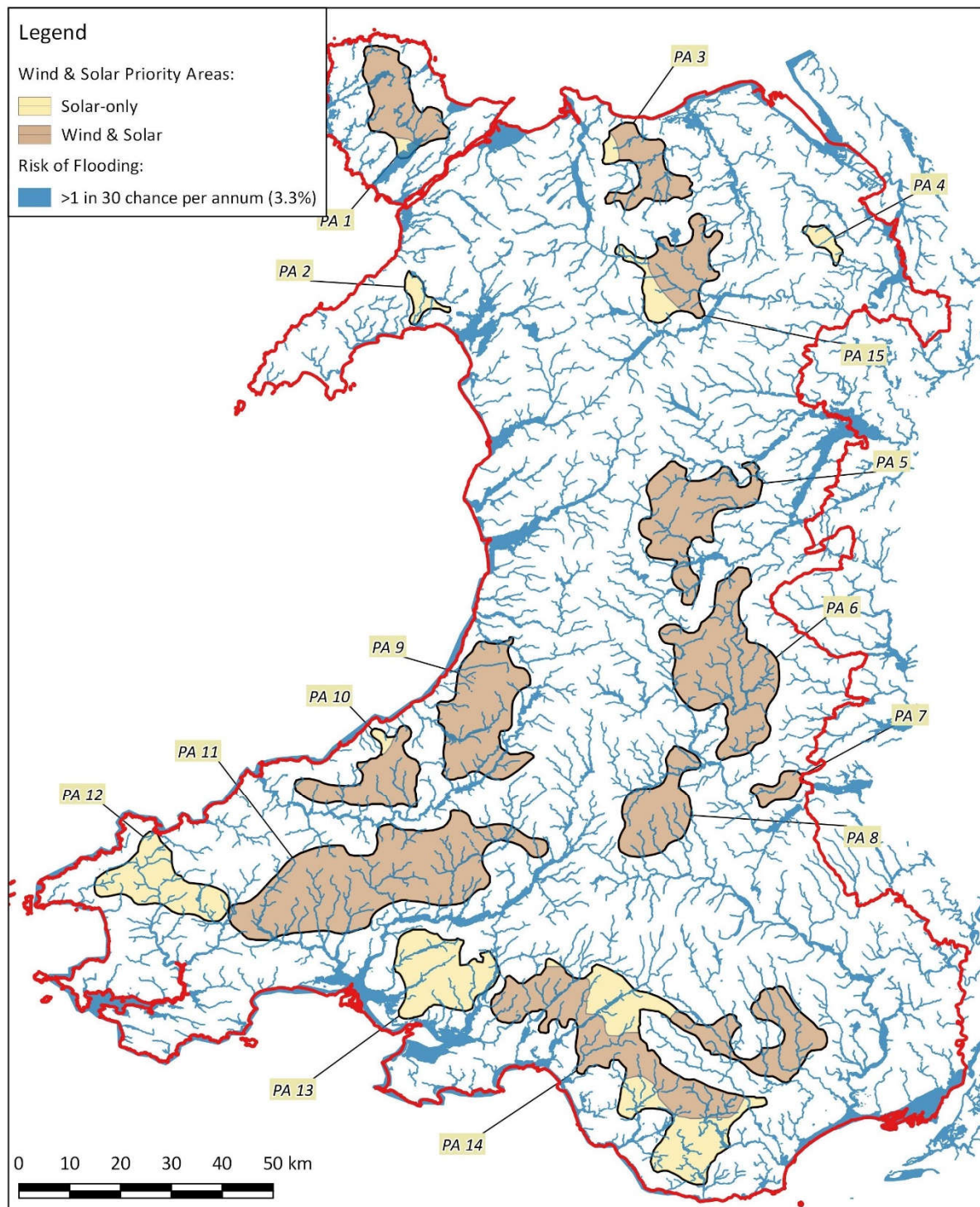


Figure 6: Risk of Flooding from Rivers and Sea

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6.7 Peat and Carbon Release

Many of the PAs contain areas of peat and peaty soils¹². Disturbance of these areas by construction of wind farms, solar farms or grid connections, or merely access roads to the developments will have the effect of unnecessarily releasing further carbon into the atmosphere, thereby adding to the effects of climate change – something you are trying to mitigate against by the development of RE production sites.

I believe that this is called shooting oneself in the foot.

¹² See also Cranfield University Soilsclapes map for further detail. [<http://www.landis.org.uk/soilsclapes/>]

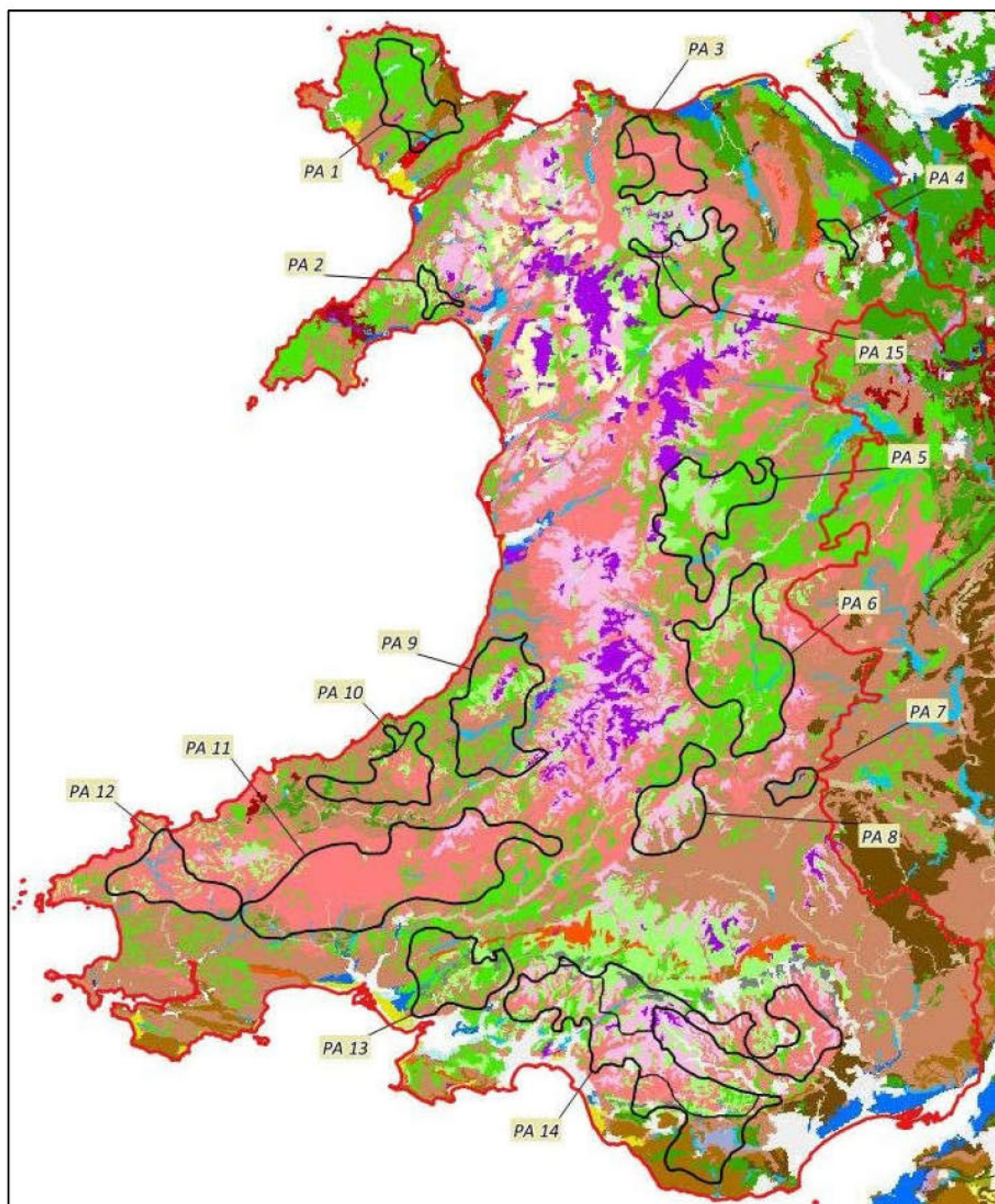


Figure 7: The Soilscapes of Wales

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Figure 8: The Soils of Wales – Legend

6.8 Questions

For example, during anticipated wind and solar farm development...

How will access to Public Rights of Way and the various areas under the CRow Act be managed?
What constraints will developers be placed under to ensure continued safe and legitimate access to the rights of way, including for those on horseback?

The same question applies to the NRW Forest Recreation Sites and Routes within the PAs.

What about the setting of the historic sites such as Scheduled Ancient Monuments and Listed Buildings? How will this be managed? How will the cumulative impact of multiple renewable developments on the setting be managed? Similarly, the cumulative impact on the homesteads, villages and towns of rural and urban Wales, along with that on our National Parks and AONBs?

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Who will decide “...where the principle of landscape change is accepted...” and who will decide what are “...unacceptable adverse effects...”?

- The Captain of the *Slug and Ferret Dominoes and Darts Team* in Llansomewhereorother?
- The local residents?
- The Local Planning Authority?
- A Welsh Government-appointed Planning Inspector (one of who’s recommendation of a windfarm refusal was recently completely overruled by a WG minister¹³)?
- The wind farm developers themselves?
- A Citizens’ Assembly?

What consultation will there be? What are the criteria? What controls will there be? How will nation-wide consistency in landscape damage assessment and decision making be managed? What democratic and public oversight will there be? What rights will there be to appeal against a contentious decision? What will be the process of appeal? Who will hear the appeal?

How much renewables’ development will there be outside the proposed PAs? Will Welsh Government decide these by fiat too? How many more *Hendys*¹³ will there be, developed outside of the PAs?

All these questions, and the many others I pose in this document, need to be answered before the proposed RE Policy in the NDF can be considered anywhere near fit for purpose. This is mandatory for clarity both for Wales’ residents and renewables developers.

¹³ After completing a multi-day comprehensive Public Enquiry into a wind farm development, the Planning Inspector appointed by Welsh Government recommended Refusal. This was overruled by Lesley Griffiths AM (Minister for Environment, Energy and Rural Affairs) on 25 October 2018. Search “Hendy Windfarm” or “Llandegley Windfarm”.

7 LANDMAP

7.1 Generally

As far as the landscape areas recorded by the various aspects of NRW's LANDMAP dataset the following areas were found wholly or partly included in the PAs. Note that the areas summarised and illustrated here are those classed as being of *Outstanding* or *High*¹⁴ importance only.

- Cultural Aspect: 174 areas (377,368 hectares)
- Geological Aspect: 186 areas (151,836 hectares)
- Historic Aspect: 427 areas (339,472 hectares)
- Landscape Habitats Aspect: 277 areas (130,563 hectares)
- Visual & Sensory Aspect: 183 areas (103,043 hectares)

The following series of 5 maps indicate the impact of the W&S PAs on the various Aspects of the LANDMAP dataset. As can be seen almost all, or at least significant parts of, the area of the PAs is taken up by *Outstanding* or *High* importance areas of the various Aspects.

In the maps the red indicates areas of *Outstanding*¹⁴ importance and fawn are areas of *High* importance.

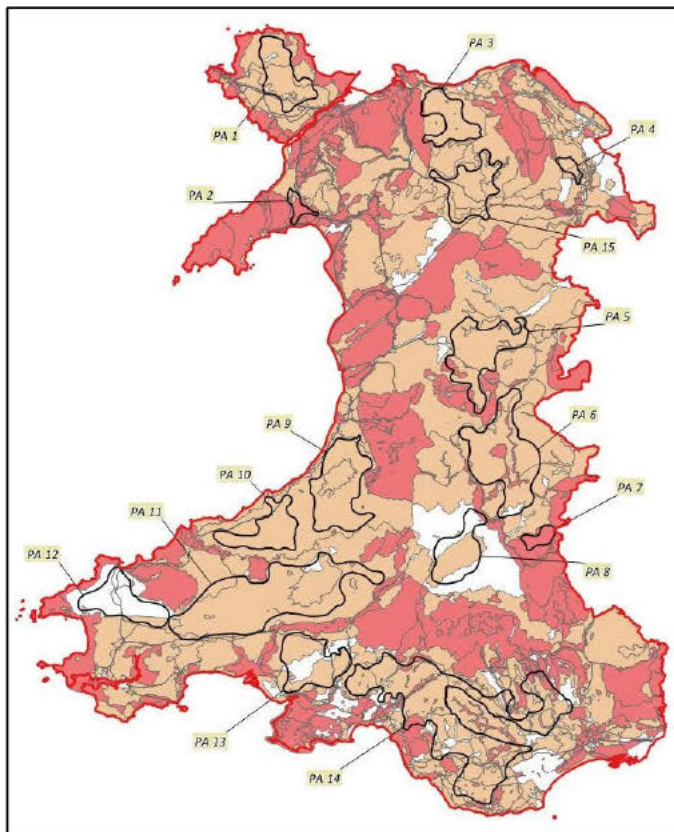


Figure 9: LANDMAP Cultural Aspect with Wind & Solar Priority Areas

¹⁴ LANDMAP evaluation: *Outstanding* means of International or National importance, and *High* means it is of Regional or County importance.

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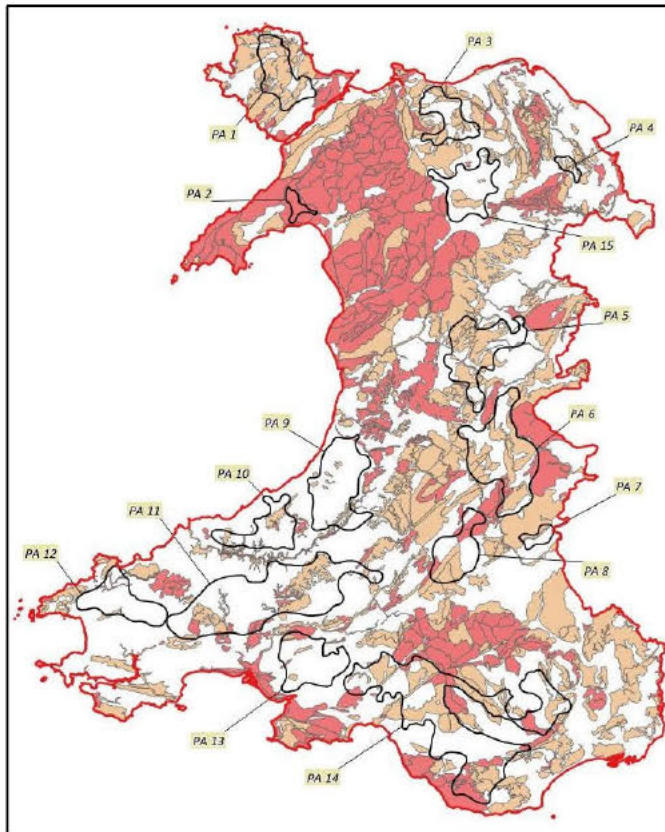


Figure 10: LANDMAP Geological Aspect with Wind & Solar Priority Areas

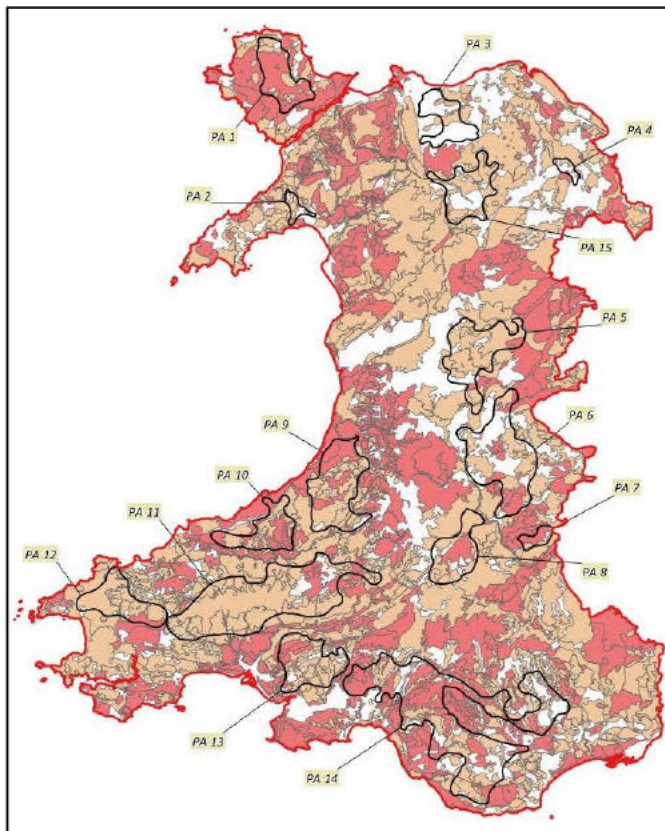


Figure 11: LANDMAP Historic Aspect with Wind & Solar Priority Areas

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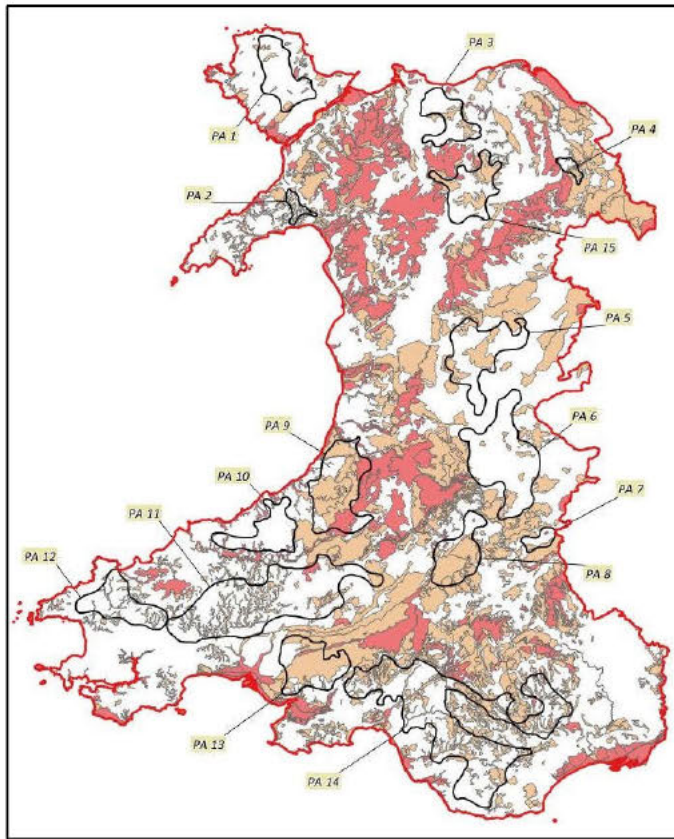


Figure 12: LANDMAP Landscape Habitats Aspect with Wind & Solar Priority Areas

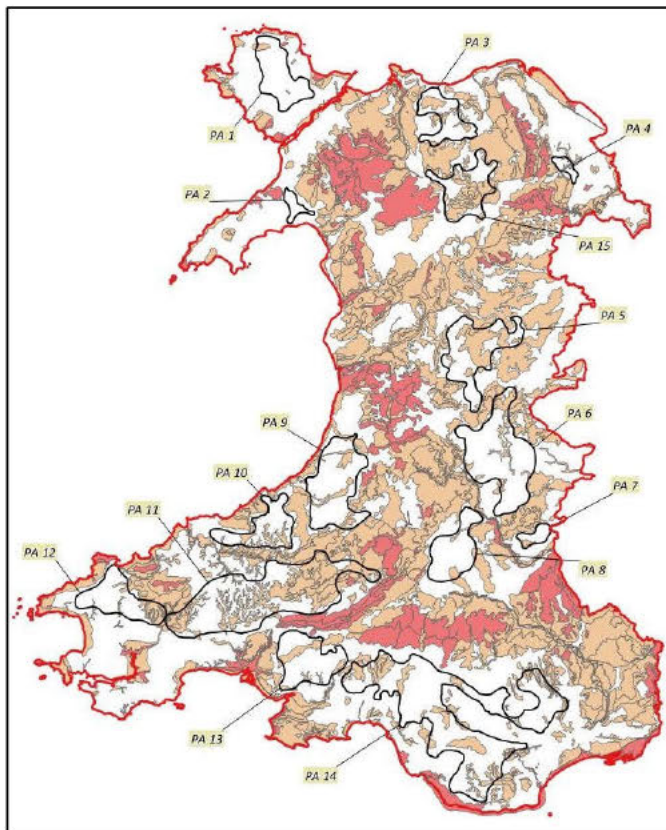


Figure 13: LANDMAP Visual and Sensory Aspect with Wind & Solar Priority Areas

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7.2 Special Landscape Areas (SLAs)

I carried out the Special Landscape Area analysis described in section 6 of *The approach for defining Special Landscape Areas* of NRW document *LANDMAP Guidance Note 1: LANDMAP and Special Landscape Areas 2017*¹⁵. I used the 13 evaluation criteria suggested in bold in table 2.1.

The process I followed is that recommended by NRW to LPAs in order to identify special and important landscapes in their own areas.

The result of the analysis consists of **only** the areas rated as *High* or *Outstanding*¹⁴ across 13 evaluation criteria "summed", or "unioned", through all 5 LANDMAP Aspects. It is effectively a marker as to how important an area is overall across several categories and **through all 5 LANDMAP Aspects** rather than importance by individual LANDMAP Aspect.

As can be seen from the map below there are several high-value SLAs within the proposed W&S PAs. PA 8 has a large area of SLA, but I have already mentioned this PA in the context of MoD-owned land (in section 6.3). PAs 9 and 10 have vast coverage and PA 11 has significant coverage of SLAs.

As the purpose of determining SLAs from the LANDMAP database is for Local Planning Authorities "to define areas of high landscape importance within their administrative boundary" are they going to be consulted about their (potential) SLAs during any proposed renewables development? If so, how much weight will the LPAs' views be given during the RE development process? Will the public have sight of the decision-making process?

How does the negative affect on the SLAs caused by developments in the PAs fit with NDF Policy 8 (*Strategic framework for biodiversity enhancement and ecosystem resilience*) and the *Wellbeing of Future Generations Act*¹⁶?

A map showing the likely visual impact of wind farms on the SLAs can be found in Figure 16 in section 8.3.

¹⁵ From <https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/evidence-to-inform-development-planning/landmap-the-welsh-landscape-baseline/?lang=en>

¹⁶ "We have big ambitions for protecting our environment and the future generations in Wales and are leading the way with our Environment Act and Well-being of Future Generations Act", Sophie Howe, Future Generations Commissioner for Wales. [<https://futuregenerations.wales/about-us/future-generations-act/>]

Wind & Solar Priority Areas with Landmap Special Landscape Areas

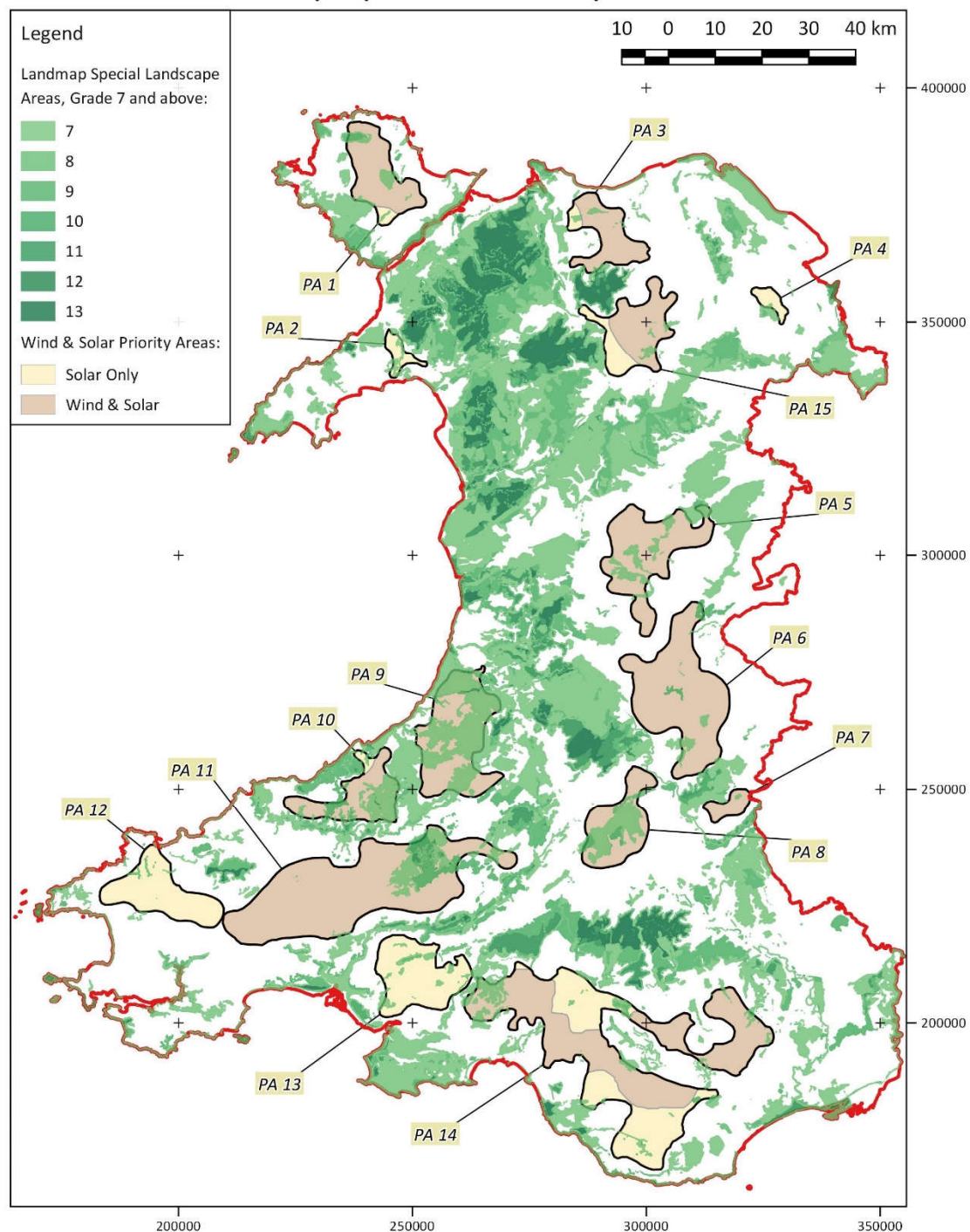


Figure 14: Wind & Solar Priority Areas with LANDMAP Special Landscape Areas of Grade 7 and Above

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7.3 Finally

LANDMAP is formally recognised in Planning Policy Wales (2012) as the starting point for landscape assessments in Wales.

According to NRW *“The LANDMAP database includes both objective and subjective information and **is designed to enable landscape quality to be taken into account in decision making.**”* (my emphasis).

If the *“...the principle of landscape change is accepted...”* for renewables’ development what is the point of LANDMAP at all? And if it is to be ignored for the renewable development NDF what is to stop other developers also challenging the use of LANDMAP if it inhibits their assault on our landscape? The same also applies to LPA developments.

I believe that this potential disregard of LANDMAP and LANDMAP SLAs sets a very dangerous precedent and feel that, should WG go ahead with its plans, in future WG and LPAs could possibly be open to legal challenge by developers wishing to start a project and finding themselves frustrated by being obliged to accept LANDMAP assessments either as part of planning conditions or for outright refusal.

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8 Visual Impact

8.1 Introduction

I carried out several terrain analyses to determine Zones of Theoretical Visibility (ZTVs) in order to identify the likely visual impact on the Welsh and English environment from the construction of wind farms in the PAs, map shown below (in Figure 15).

A single wind turbine was assumed at the approximate centre of each Wind & Solar Priority Area for the purpose of the calculations. The ZTVs were calculated using height to turbine hub: 80 metres¹⁷; height of eye (receptor): 1.5 metres; radius from assumed turbine: 35KM; curvature of the earth was taken into consideration.

The ZTV calculations and the map are indicative – a "**Best Case Scenario**" – with the calculations using **just 12 single small commercial turbines**, one in each Priority Area. In reality there will likely be several wind farms in each Priority Area, with significantly larger turbines than used for the calculations here, and the eventual visual impact on the environment will be much greater than that indicated here.

8.2 Zones of Theoretical Visibility

The results show that some 423,500 hectares (20% of Wales) will have sight of one or more wind farms in a PA. Almost 33,000 hectares of this will have sight of wind farms in two or more PAs.

The two Wales' National Trails and the Wales Coast Path will have sight of turbines for a good portion of their length.

Our AONBs and National Parks will be severely impacted, particularly the Brecon Beacons National Park: it will appear surrounded by wind farms.

And to LANDMAP again, specifically the Visual and Sensory Aspect: 563 areas classed *High* or *Outstanding* within which 199,000 hectares will have sight of wind turbines. Of the 563 areas 151 of them will have sight of turbines in 2 or more PAs.

The likely visual impact will stretch over the border into England. As can be seen from the map the turbines and wind farms will be seen deep into Herefordshire and into the Shropshire Hills AONB (over 35,000 hectares of Herefordshire - 16%, and 3,600 hectares of Shropshire, mostly in the Shropshire Hills AONB), with some sightings in Merseyside and Gloucestershire.

Has any discussion regarding the RE Policy in the NDF taken place with our neighbouring LPAs, and with the Shropshire Hills AONB Partnership¹⁸? And particularly so regarding grid connections, and the visual and environmental impact thereof of large pylons walking across the landscape, to our proposed renewables farms? If so, what was the outcome of these discussions?

¹⁷ The table on page 14 of the *Assessment of onshore wind and solar energy potential in Wales Stage 1 – Development of Priority Areas for Wind and Solar Energy* document of the *pNDF* uses a range of hub heights from 15m (small turbine) through to 170m (largest commercially available turbine). The hub height of 80 metres was chosen to give a "Best Case Scenario", i.e. the absolute minimum impact that is likely.

¹⁸ [<http://www.shropshirehillsaonb.co.uk/aonb-partnership/partnership/>]

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Zones of Theoretical Visibility for Wind & Solar Priority Areas

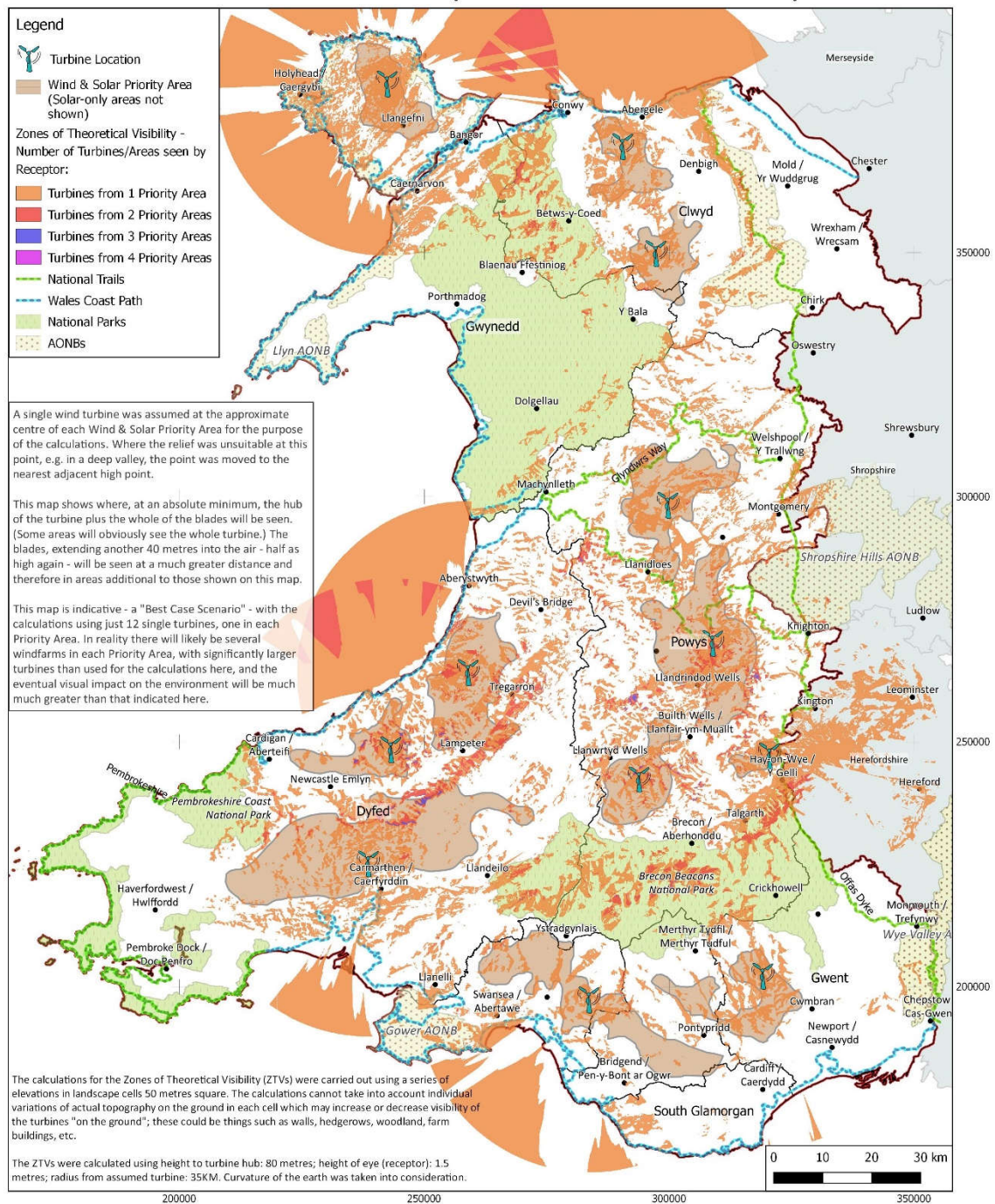


Figure 15: Zones of Theoretical Visibility for Wind & Solar Priority Areas

8.3 Special Landscape Areas

For a thorough overall picture LANDMAP Aspect areas should be considered together rather than individually. Therefore, the map at Figure 16 shows the ZTV impact on the high value SLAs (identified and described in section 7.2).

The following map shows the likely visual impact on the LANDMAP SLAs from the turbines sited as described above in section 8.1.

Wind & Solar Priority Areas with Zones of Theoretical Visibility and Landmap Special Landscape Areas

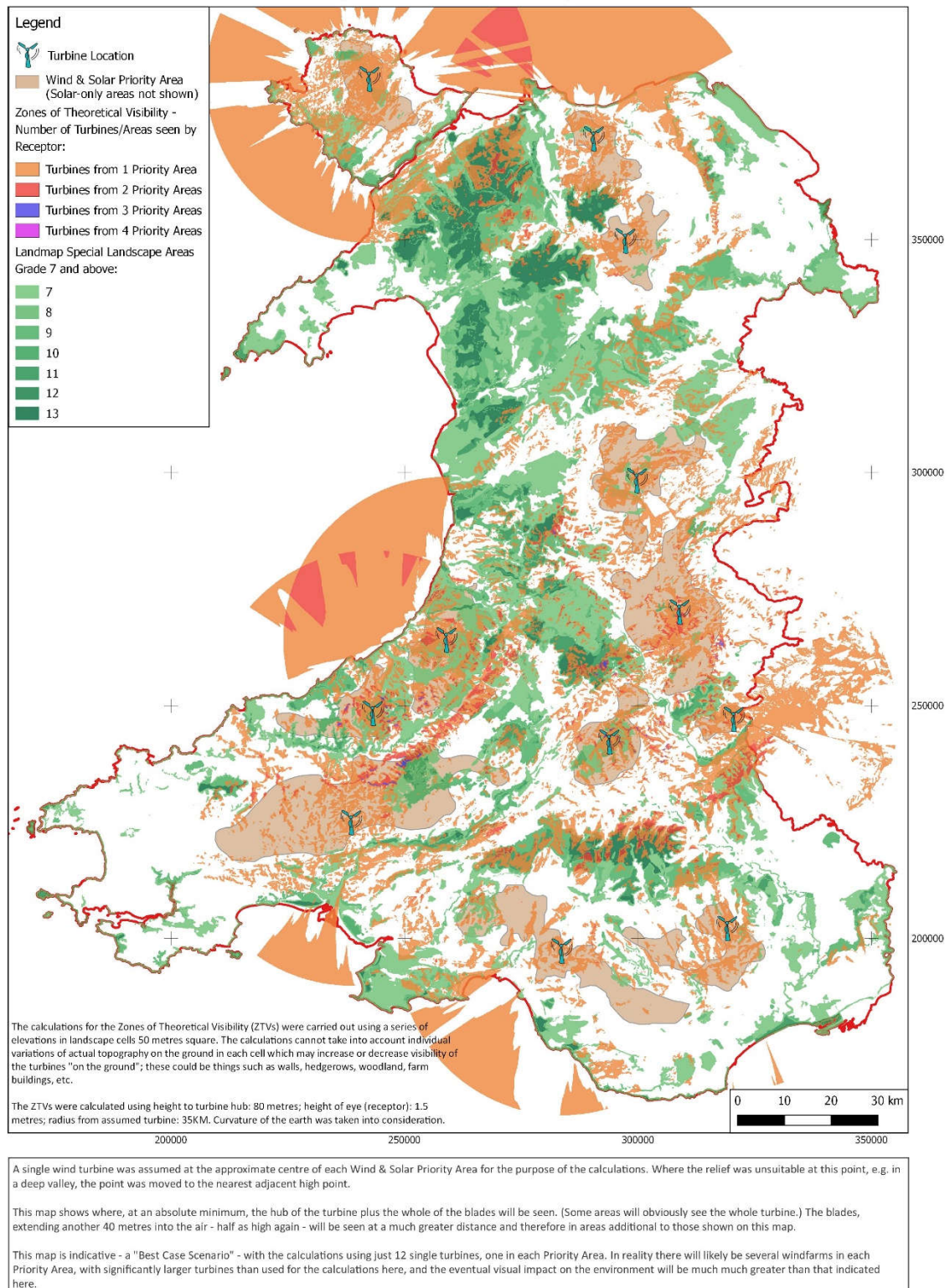


Figure 16: Wind & Solar Priority Areas with Zones of Theoretical Visibility and LANDMAP Special Landscape Areas

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8.4 Built Up Areas and Population

Some 85% of the area of Wales is within 15KM¹⁹ (just over 9 miles) of PAs. Querying the NRW *Built Up Area by Population Size* dataset²⁰ indicates that this 15KM area around the PAs accommodates some 95% of the population of Wales. And as can be seen from map most of the ZTV impacted areas are within 15KM of the PAs.

The statistics go on to show that in the built-up areas around 12% of the population of Wales will have sight of one or more turbines. Just over 5% of the population – that is more than 1 in 20 residents – will have close sight of the turbines, that is they are within the 15KM PA buffer area – just over 9 miles.

These statistics, of course, don't include those living in farmsteads and smaller settlements (i.e. less than 20 hectares) in Wales that may be impacted by developments in the PAs; these would indicate a small increase in the totals.

Nor do the statistics show the populations in Shropshire and Herefordshire clearly within the ZTVs of wind farm developments.

It should be reiterated that this is a "**Best Case Scenario**" – with the calculations using **just 12 single small commercial turbines**, one in each Priority Area. In reality there may be several wind farms in each PA with turbines perhaps twice the height of the one used in calculations here. The corresponding visual impact will therefore be significantly greater.

This following map (Figure 17) shows the likely impact on the built-up areas of the PAs and ZTVs in a *Best Case Scenario*.

¹⁹ According to *NRW LANDMAP Guidance Note 3* 15KM is within the LANDMAP Visual and Sensory study area for Landscape and Visual Impact Assessments for wind turbine siting. It also notes that "Significant landscape effects have been noted around 20km in places."

²⁰ "Built-up areas are defined as land which is 'irreversibly urban in character', meaning that they are characteristic of a village, town or city. They include areas of built-up land with a minimum of 20 hectares (200,000m²). Any areas with less than 200 metres between them are linked to become a single built-up area." [<http://lle.gov.wales/catalogue/item/LatestBuiltUpAreaSubDivisionPopulations2015AsAtMay2017/?lang=en>]

Wind & Solar Priority Areas with 15KM Buffers, Zones of Theoretical Visibility and Built Up Areas

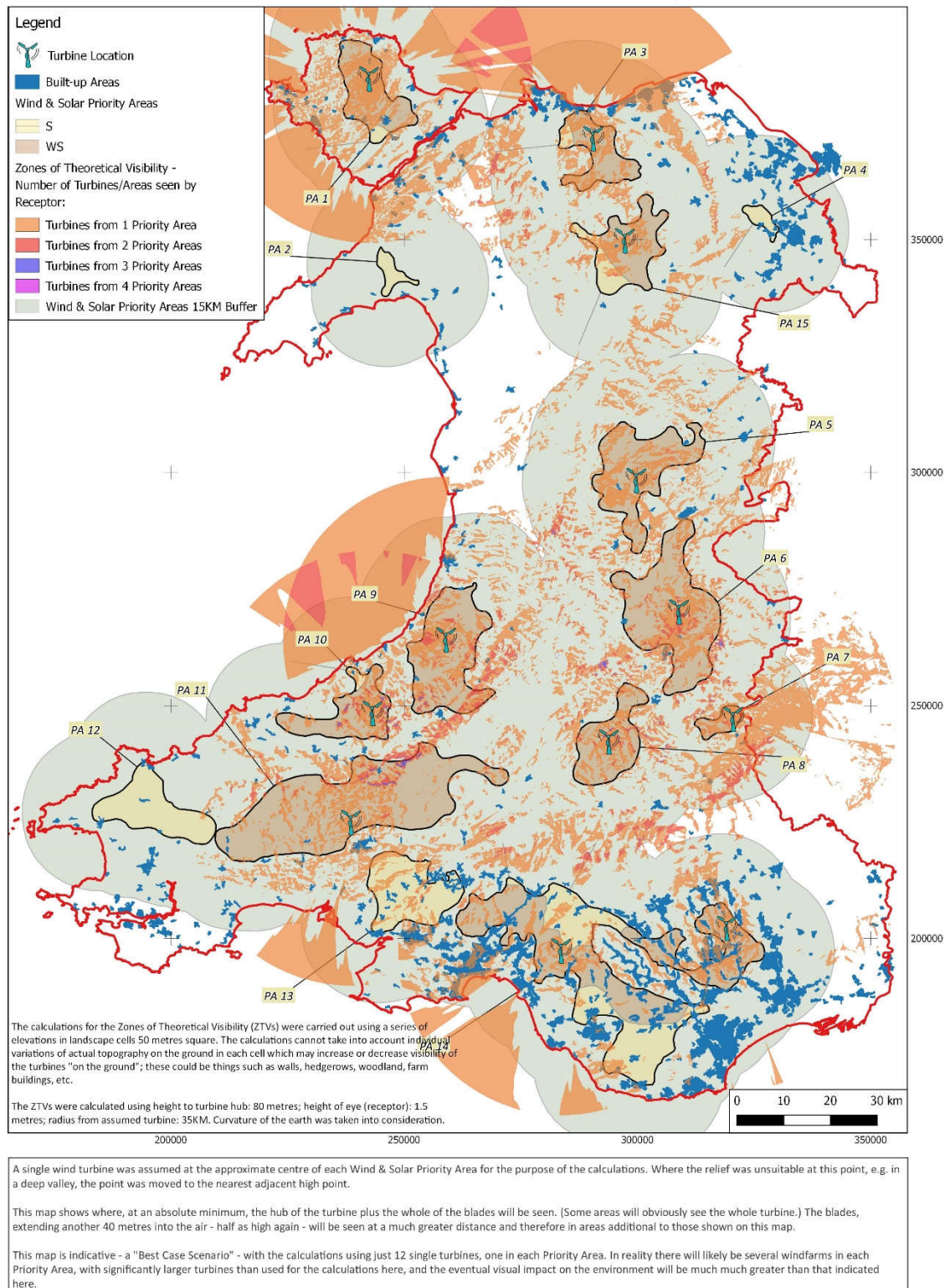


Figure 17: Wind & Solar Priority Areas with Zones of Theoretical Visibility and Built Up Areas

Welsh Government Proposed National Development Framework Renewable Energy Policy: Response

8.5 A Personal View

I counted over 120 wind turbines from the top of Pen-y-Fan a couple or so weeks ago, in a single field of view, i.e. without moving my head. With further wind farms planned for both south and north of the Brecon Beacons National Park as a result of the *pNDF*, visitors to our National Park will be "escaping" to the wild – to our countryside – from their cities and towns only to be surrounded by a forest of wind farms. Some National Park that will be. How does that fit with the *Wellbeing of Future Generations Act*?

I'm sure that a similar "surrounded by wind farms" picture could easily be represented elsewhere in Wales with the existing wind farms scattered throughout our country.

Has the impact on Tourism been considered in any way, itself worth significantly more to the Welsh economy than Agriculture? According to the *NRW State of Natural Resources Report (SoNaRR) 2016* there is a value to the Welsh economy of £2,870 million from Tourism and £385 million from Agriculture. Additionally, *SoNaRR* suggests that there is "£18.2 million in health benefits to people from walking the Wales Coast Path". As can be seen from Figure 15 the Wales Coast Path will likely be impacted by sight of wind turbines for much of its length, as will our other National Trails, Offas Dyke and Glyndwr's Way.

Equivalent health benefits can surely be applied to the millions of visitor days each year to our National Parks and AONBs as to the Wales Coast Path.

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9 Grid Connections

There is no mention of Grid Connections for the PAs in the *dNDF*, other than some vague statement²¹.

Having a plan for Grid Connections would seem to me to be fundamental to identifying PAs in the first place. There's no use building a wind farm or two somewhere and finding that it is almost impossible or very expensive to connect it to the grid.

Has there been an impact analysis of and for grid connections, including the visual and biodiversity impact of grid connections and works to enable such? What about the cumulative visual impact of wind farms together with their pylon-based connections on our National Parks and AONBs? Has any consideration been given to this? How will these pylons affect our military, particularly the RAF with their low-flying exercises in Wales? How will they affect air traffic and safety for other airfields in Wales, over 40 of them?

If the grid connections are underground there will be an impact during development works on biodiversity and Habitat Networks, and perhaps carbon release due to peat disturbance and damage and removal.

Wales' electricity generation and use does not exist in isolation from the National Grid of Britain. Has there been any dialogue with England and our nearby counties re these grid connections? Has there been any dialogue with any power companies, Western Power and SSE for example, or the National Grid about any connections? What was the outcome?

Can existing grids entering Wales cope with additional generating capacity? How much capacity? Where are the connections? Do the Welsh RE generating plans complement those of Great Britain? Has this even been considered? Has the load balancing potentially required from new developments in Wales been considered together with other current and future RE projects throughout mainland Britain?

Probably not.

²¹ *dNDF* page 36: "The development of Priority Areas will assist in co-ordinating strategic action, bringing a critical mass of new renewables developments together to build the case for new or reinforced grid infrastructure."

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10 Some Final Comments

10.1 Generally

The maps 1 – 8 in figure 2 of *Habitats Regulations* are extremely complicated and difficult to comprehend clearly (perhaps by design²²?) by reviewers.

Whilst the *pNDF* states...

“Not all of the area within the Priority Areas for Solar and Wind Energy is suitable for the generation of renewable energy. Natura 2000 sites within the Priority Areas are excluded. Careful consideration will be given to the siting of schemes, particularly the cumulative impacts. Further guidance on the development of on-shore wind and solar energy schemes in Priority Areas will be produced to assist in the development process.”

...I feel that it is very poor to have drawn or determined the W&S PAs without reference to the likely impact on various important and protected sites currently included in the areas, including damage to their overall setting. This could have likely been relatively easily achieved by means of determining buffer zones around the sites whilst determining the PAs, as was apparently done for protected areas such as SACs. No criteria have been established to enable consistent and verifiable judgement across multiple sites of impact and cumulative impact of developments.

It should be remembered that modern Welsh Government came about as a result of Devolution²³ and Referendum yet it now seems to be removing power from our Local Planning Authorities and damaging local democracy by its progressive centralisation of planning decisions. It seems to be isolating itself from the “real Wales” outside Cardiff either by accident or by design.

10.2 Onshore v Offshore

Why is WG concentrating on onshore wind power developments in the *pNDF*, with the consequent impact on our landscapes, tourism and biodiversity, when UK Government Policy is to support offshore wind power developments? Your own wind strength map in the NDF shows that the PAs are not sited in optimum conditions for maximum wind.

Wind velocity is reduced through friction by hills, mountains, trees, man-made structures, etc. over land. This does not apply at sea meaning the offshore wind has a higher velocity and is less turbulent than over the land, and therefore is immediately more efficient producing more power from a given weather system.

The International Energy Agency has recently published a report²⁴ that offshore wind power can easily provide more than 10 times the electricity than the **whole world** needs by 2040 – the same timescale that the NDF is focussed on.

And the recent round of bidding²⁵ for offshore generation resulted in very low costs to the taxpayer / billpayer for electricity produced offshore.

²² How to Lie with Maps, Mark Monmonier.

²³ The transfer or delegation of power to a lower level, especially by central government to local or regional administration.

²⁴ [<https://www.theguardian.com/environment/2019/oct/24/offshore-windfarms-can-provide-more-electricity-than-the-world-needs>]

²⁵ [<https://www.theguardian.com/environment/2019/sep/20/new-windfarms-taxpayers-subsidies-record-low>]

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Is WG's proposal for onshore generation some "cunning plan" way of providing **some** farmers and landowners with an income alternative to farming subsidies post-Brexit at the expense of impacting many many residents and visitors alike?

Given the disregard for the more efficient, and now cheaper, offshore generation, the proposals for large-scale onshore renewable energy generation in the PAs and the statement "*Outside the Priority Areas, large scale on-shore wind and solar energy developments may be appropriate*"²⁶ it seems that it is Welsh Government policy to industrialise almost the whole of the Welsh landscape with renewable energy projects without any regard for electricity generation in the UK nationwide-context.

²⁶ See Policy 12 of the *dNDF*.

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11 The Solution

The solution to the many issues I have identified here with Welsh Government's proposed National Development Framework Renewable Energy Policy seems clear to me.

Welsh Government should initiate a *Wales Renewable Energy Policy Citizens' Assembly*.

This would not be the first time that Welsh Government has made use of a Citizens' Assembly.

This RE Policy they deliberate upon should be part of a Wales-wide and UK-wide Power Generation and Supply Policy which should address amongst other things

- Population Growth;
- Move to hybrid and electric-only vehicles;
- Current production and future needs according to the above;
- Grid connections;
- Non-renewable generation capacity as a secure baseline such as nuclear and gas;
- Decommissioning and removal or upgrading of current production units at end of life;
- All forms of renewable generation, onshore, coastal and offshore.

It is only by having a Wales-wide Power Generation and Supply Policy that you can determine the future needs and how much new renewables development is required.

Obviously this Wales-wide Energy Policy needs to be defined first within the UK-wide Policy.

11.1 Citizens' Assembly

The Citizens' Assembly will likely address, amongst other things:

- Whether any further renewables' development is necessary at all in Wales (as Wales already exports almost half of the electricity generated here), and considering Wales' anticipated population growth as a factor;
- If further development is decided upon whether to develop onshore or offshore wind farms, or a mix thereof, along with solar farms;
- Whether existing renewables sites should be extended, as these already have grid connections, or new sites should be developed;
- Where in Wales the new wind and solar renewable farms are to be located, that is "*...where the principle of landscape change is accepted...*" if that appears necessary;
- What the criteria are for acceptance of landscape change and how this will be controlled;
- Whether renewables' development will be permitted outside the proposed PAs (i.e. in existing TAN 8 SSAs and LPA LSAs and elsewhere);
- Who will own the new wind and solar farms, Wales itself (via a 'Trydan Cymru'?²⁷) or by third-parties;
- What other renewables technologies should or could be used.

The Citizens' Assembly should also consider, as part of their deliberations, the role of non-renewable electricity generation technologies such as nuclear and gas within an overall integrated and resilient power generation policy to take us through the next few decades.

11.1.1 Benefits

Amongst other things the benefits of a Citizens' Assembly will be:

The Citizens' Assembly won't be subject to lobbying by "consultants" and developers and will be

²⁷ See section 11.2 – Welsh Ownership.

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seen as impartial;

The outcome of the Assembly will be a Renewable Energy Policy that is **owned and agreed** by the lay representatives of the people of Wales; it will not be a divisive policy thrust upon them by Welsh Government edict and their “advisors”;

Welsh Government will be seen to be engaging with the people of Wales and initiating and supporting Local Democracy, not becoming more remote and autocratic.

A Citizens’ Assembly may not be the perfect solution (is there one?) but it seems a far better approach than the poorly considered and democracy-lite one currently thrust upon us here in the proposed National Development Framework.

11.2 Welsh Ownership

All future Wind and Solar Renewables farms should be owned by the electrical equivalent of *Dwr Cymru* – I suggest *Trydan Cymru* – a not-for-profit electricity generating company. Profits made by *Trydan Cymru* will be invested back into Welsh renewables’ development and maintenance, and surplus profits can be used to fund other resources in Wales such as libraries and schools and further infrastructure developments within the National Development Framework.

This has a number of advantages:

No development subsidies will be needed for third parties as development will be ‘in-house’; The profit from electricity generated here in Wales will stay here in Wales and will not be siphoned off by excessive bonuses for directors, and dividends for investors, pension funds and speculators elsewhere, many of whom may never have even visited Wales let alone live here. This itself should ameliorate some of the concerns felt by people living and working nearby to renewables farms.

If this Welsh Ownership – *Trydan Cymru* – proposal is not adopted by the Citizens’ Assembly then I believe that all renewables developers and owners should deposit a suitable inflation-linked sum, perhaps in escrow, which will cover the decommissioning and removal of their renewables farms at the end of their life, or if they are not used or working for a period of six months, a development condition often applied I believe. This should hopefully cover – as an ‘insurance premium’ – for the situation when the companies and / or their assets are sold on and then resold and then finally go into receivership just before decommissioning is necessary. Just having some “plans in place”²⁸ at the start of the project for the eventual decommissioning is quite simply not good enough.

Of course, my proposals in this section should also be presented to the Citizens’ Assembly for their consideration.

²⁸ Page 40 *dNDF*: “Plans must also be in place for the end of the development’s lifetime, including the removal of all infrastructure as soon as their use ceases and the appropriate after-use of the site.”

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12 Finally

Here endeth my submission. I hope that you will carefully consider the points I have made and the questions raised herein.

I will, of course, be pleased to receive your responses to my questions and statements (and even misunderstandings!) in due course.

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13 Appendices

13.1 Appendix 1 – Map Copyright Attributions

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²⁹ [<http://nationalarchives.gov.uk/doc/open-government-licence/version/2/>]