

**From:** [Jonathan Dean](#)  
**To:** [NDE](#)  
**Subject:** Re: to supplement my online response  
**Date:** 29 October 2019 09:25:10  
**Attachments:** [Draft NDF consultation feedback addendum v0.1.pdf](#)

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Please see the additional response to supplement my online response

Sent from my iPhone


On 9 Oct 2019, at 10:27, [NDF@gov.wales](mailto:NDF@gov.wales) wrote:

Thank you for contributing to the consultation on the draft National Development Framework. Your comments will be considered over the coming months.

Regards

NDF Team

Welsh Government

**From:** Jonathan Dean 

**Sent:** 07 October 2019 21:34

**To:** NDF <[NDF@gov.wales](mailto:NDF@gov.wales)>

**Subject:** to supplement my online response

FYI my response is not complete without the attached

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Dr Jonathan F Dean



<https://you.38degrees.org.uk/petitions/anglesey-says-no-to-pylons>

Sganiwyd y neges hon am bob feirws hysbys wrth iddi adael Llywodraeth Cymru. Mae Llywodraeth Cymru yn cymryd o ddifrif yr angen i ddiogelu eich data. Os cysylltwch â Llywodraeth Cymru, mae ein [hysbysiad preifatrwydd](#) yn esbonio sut rydym yn defnyddio eich gwybodaeth a sut rydym yn diogelu eich preifatrwydd. Rydym yn croesawu gohebiaeth yn Gymraeg. Byddwn yn anfon ateb yn Gymraeg i ohebiaeth a dderbynnir yn Gymraeg ac ni fydd gohebu yn Gymraeg yn arwain at oedi. On leaving the Welsh Government this email was scanned for all known viruses. The Welsh Government takes the protection of your data seriously. If you contact the Welsh Government then our [Privacy Notice](#) explains how we use your information and the ways in which we protect your privacy. We welcome receiving correspondence in Welsh. Any correspondence received in Welsh will be answered in Welsh and corresponding in Welsh will not lead to a delay in responding.

# Additional feedback on draft National Development Framework

## 1. Introduction

1. In the draft National Development Framework<sup>1</sup>, the Welsh Government presents a bold and ambitious picture of how Wales will develop between 2020 and 2040.
2. This feedback focuses on policies 10 – 13 and how these would impact Anglesey. The focus is on Anglesey due to the personal knowledge of the author, but the findings may well be applicable to other areas of Wales:
  - Policy 10 – Wind and Solar Energy in Priority Areas;
  - Policy 11 – Wind and Solar Energy Outside of Priority Areas;
  - Policy 12 – Wind and Solar Energy in National Parks and Areas of Outstanding Natural Beauty (AONB); and
  - Policy 13 – Other Renewable Energy Developments.
3. The areas selected for large scale wind power, including about of quarter of Anglesey, were selected following two reports by the consultants Arup<sup>23</sup>, but these contain significant differences to an earlier report by Arup<sup>4</sup> for Isle of Anglesey and Gwynedd County Councils.
4. While it is recognised that these reports were produced at different times, with differing objectives and constraints, some critical findings in the earlier report are glaring omissions in the later reports, calling into question the validity and/or motives of selecting Anglesey as a Priority Area for large scale wind energy.

## 2. Arup report for Anglesey & Gwynedd Councils, 2013

5. This report was produced to provide evidence in formulating land use strategies for the Anglesey and Gwynedd Joint Local Development Plan (JDLP). It covers many forms of renewable generation alongside wind and solar. It deals with wind energy on Section 3.2 pg15. Generation potential is considered at two scales:
  - commercial, using 2 MW turbines – these might typically be 130 m high
  - micro, using 6 kW turbines – these might typically be 13 m high

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<sup>1</sup> <https://gov.wales/sites/default/files/consultations/2019-08/Draft%20National%20Development%20Framework.pdf>

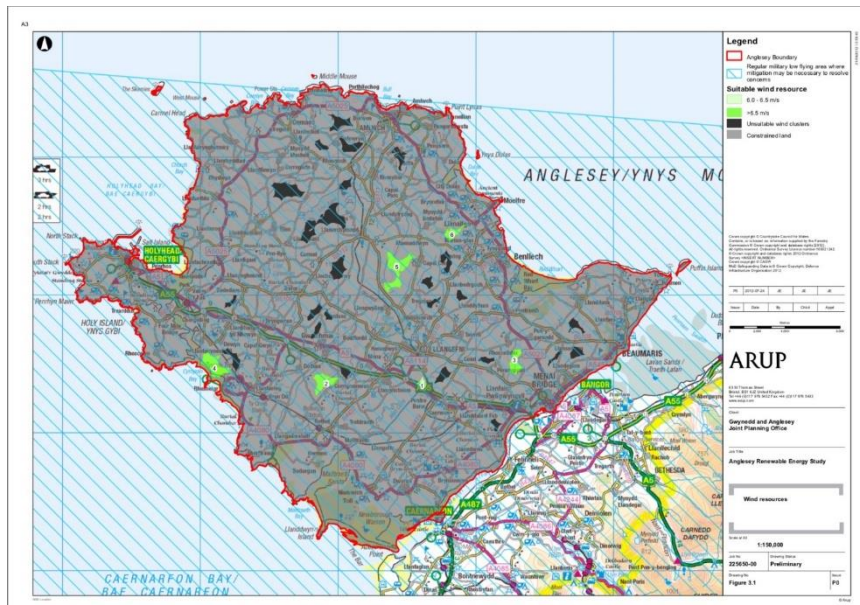
<sup>2</sup> <https://gov.wales/sites/default/files/publications/2019-08/stage-1-development-of-priority-areas-for-wind-and-solar-energy.pdf>

<sup>3</sup> [https://gov.wales/sites/default/files/publications/2019-08/stage-2-refinement-of-priority-areas-for-wind-and-solar-energy\\_0.pdf](https://gov.wales/sites/default/files/publications/2019-08/stage-2-refinement-of-priority-areas-for-wind-and-solar-energy_0.pdf)

<sup>4</sup> [https://www.gwynedd.llyw.cymru/en/Council/Documents---Council/Strategies-and-policies/Environment-and-planning/Planning-policy/Supporting-documents/Renewable-Energy-Capacity-Study-Anglesey-\(DC.013\).pdf](https://www.gwynedd.llyw.cymru/en/Council/Documents---Council/Strategies-and-policies/Environment-and-planning/Planning-policy/Supporting-documents/Renewable-Energy-Capacity-Study-Anglesey-(DC.013).pdf)

6. Applying various constrains for turbine location, such as maintaining a 500 m buffer zone with any residence, and only considering areas with sufficient wind speed, six locations were identified for siting commercial scale turbines (see the bright green areas in Figure A). Note: although referred to in the report, this figure is missing from the report copy on file and had to be obtained directly from Gwynedd County Council.

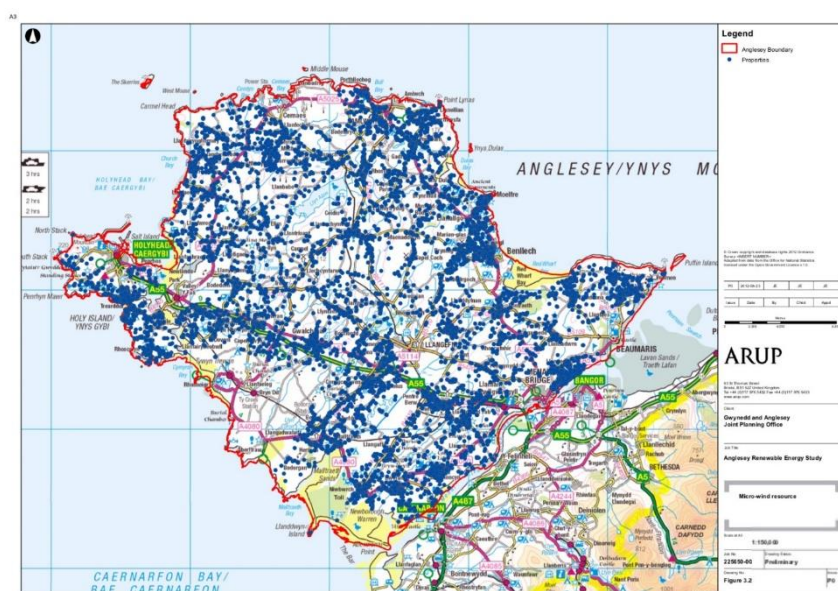
**Figure A (3.2 in original report) Potential location for commercial scale turbines**



7. The total generation potential of these areas was estimated at (see Table 15 in original report):
- 77.8 MW installed capacity
  - 39 turbines
  - 184 GWh (0.2 TWh) annual production
8. However area number 4 is placed directly on top of the base at RAF Valley, while number 2 is on a direct line with the runway at Mona used for emergency landing (and training for emergency landing) so is unlikely to be permitted. With these removed the generation potential is:
- 45.1 MW installed capacity
  - 23 turbines
  - 107 GWh (0.1 TWh) annual production
9. It can only be assumed that these “errors” were introduced due to lack of local knowledge and were not identified in an earlier draft.
10. The black areas on Figure A are areas a suitable distance from residences, but there is insufficient wind speed for this scale of turbine.

11. It is noted that the entire island is a regular military low flying area and that “mitigations may be required to resolve concerns”. One such concern was raised by the Safeguarding Officer MOD<sup>5</sup> to a planning application for a single 79 m turbine in Rhosgoch due to unacceptable interference with ATC radar and unacceptable effects on military activities in already congested airspace. The planning application was not granted.
12. For micro scale generation a total of almost 20,000 residential and non-residential buildings were deemed suitable to use this scale (6 kW, 13 m) of turbine, with the locations shown in Figure B. Note: again this figure is missing from the report copy on file and had to be obtained directly from Gwynedd County Council.

**Figure B (3.2 in original report) Potential location for micro scale turbines**



13. The total generation potential was estimated at (see Table 16 in original report):
  - 120 MW installed capacity
  - 20,000 turbines
  - 105 GWh (0.1 TWh) annual production
14. At least half of the suggested locations are within the Anglesey AONB so may not be approved should applications be made. A small number are aligned with the runways at Valley and Mona and applications are known to have been not granted due to concerns raised by the MOD.

### 3. Arup reports for the Welsh Government, 2019

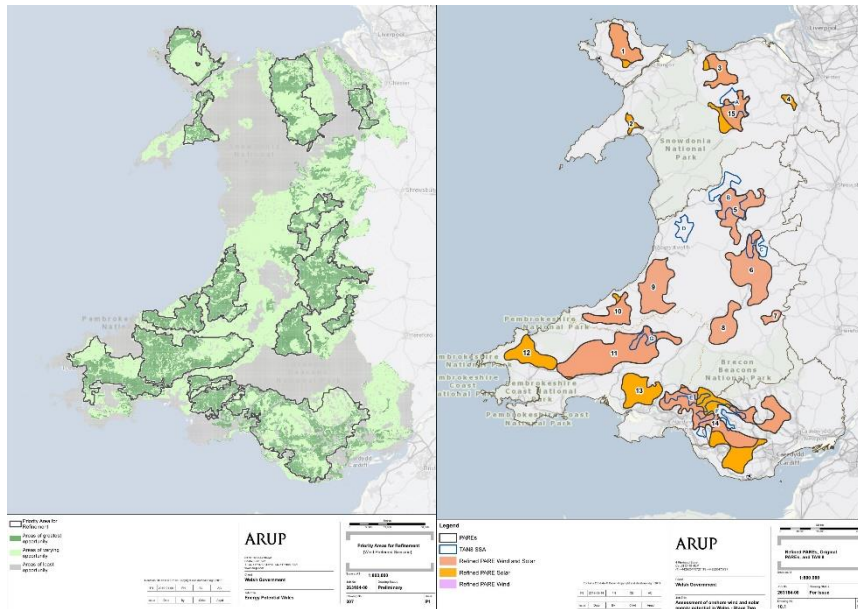
15. These reports were produced for the Welsh Government in 2019 to identify Priority Areas for large scale wind and solar power generation for the National Development Framework. The work is presented in two stages:

<sup>5</sup> Letter dated 8 May 2013 to IoACC re planning application number 38C292C



- Stage 1 – March 2019 - this identified a number of Priority Areas for Refinement throughout Wales, considering wind turbines of between 150 – 250 m high (up to 12 MW), based on factors such as wind speed, average solar radiation and high level constraints such as designated landscapes (see Figure C, dark green areas are high potential, light green areas lower potential)
- Stage 2 – June 2019 – this refined the Priority Areas by considering factors such as grid connections, impact on listed buildings, proximity to urban areas, impact on designated landscapes. The areas identified in stage 1 were generally “trimmed down” (see Figure C)

**Figure C – Priority Areas selected in stage 1 (left) and stage 2 (right)**



- Some of the Arup personnel involved in producing these reports had also been involved in the earlier work for Anglesey and Gwynedd Councils.
- The main focus of this work was selecting the areas of Wales to be designated for large scale energy production. The size of wind turbines considered is quite different to those in the earlier report. Although landscape impacts have been addressed at macro scale, no consideration has been given to micro (within each area) scale.
- In the stage 2 report, Appendix E, page E1, a table is presented showing the energy generation target and potential of each of the Priority Areas. This appendix is referenced from Section 5 – Grid Connection, pages 37-38 of the main report. No information is provided how these figures were arrived at.
- For Anglesey, Priority Area 1, the figures are:
 

• renewable energy target	701,606 MWh	0.7 TWh
• low coverage	743,796 MWh	0.7 TWh
• medium coverage	3,718,980 MWh	3.7 TWh

- high coverage 7,437,961 MWh 7.4 TWh

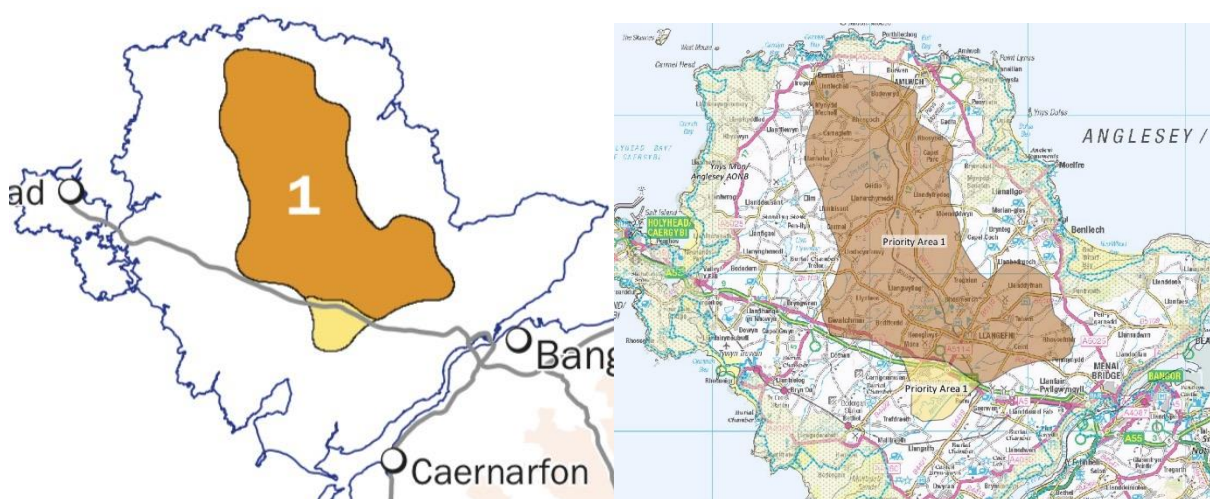
20. In the absence of any explanation, it can only be assumed that these figures are a combination of both wind and solar, and represent the degree with which the selected area is covered with energy infrastructure. The target is presumably the additional renewable generation required to bring generation up to the NDF target of 70% of demand. The target for the whole of Wales is 9.1 TWh while the high coverage estimate is 95.9 TWh – enough to provide approx. one third or the entire UK with renewable power at the 2030 demand estimate!<sup>6</sup>

## 4. Issues with the Arup reports

### Target and generation potential

21. A rough estimate of the generation potential is possible if high level benchmarks are used. The area selected on Anglesey is roughly 65 square miles (see Figure D) based on about a quarter of the island being selected.<sup>7</sup>

**Figure D Priority Area 1 (left from Welsh Government, right from CPRW)**



22. A benchmark "power density" figure<sup>8</sup> for wind power is 2-3 W/m<sup>2</sup>. The London Array produces 2.5 W/m<sup>2</sup>. Using this figure, Anglesey could produce 3.7 TWh from Priority Area 1 using about 70 turbines of 250 m high.
23. Benchmark power density figures for PV solar range from 5 W/m<sup>2</sup> in Germany to 20 W/m<sup>2</sup> in open desert. Using a figure of 5 W/m<sup>2</sup>, Anglesey could produce 7.4 TWh.
24. If both wind and solar are used, Anglesey could generate over 10 TWh. This is a similar order of magnitude to the slightly lower figure arrived at in the Arup report which is based on far more rigorous analysis of high and lower potential areas.

<sup>6</sup> <http://fes.nationalgrid.com/fes-document/>

<sup>7</sup> <https://en.wikipedia.org/wiki/Anglesey>

<sup>8</sup> <https://www.energycentral.com/c/ec/future-energy-why-power-density-matters>

25. This suggests that the term “high coverage” does mean that all of the available land in Priority Area 1 would be covered with generation infrastructure - 65 square miles of solar park and 70 wind turbines. This would generate x10 of the target allocated to Anglesey and almost the entire target for Wales.

### **Micro-siting issues**

26. Figure A shows the small number of areas where turbines of up to 2 MW, ca 130 m high, could be located allowing for a 500 m buffer zone around properties. Presumably for turbines almost twice as high this buffer zone would be greater, say 1,000 m. This would then reduce the available area for locating them (potentially removing them altogether).
27. Applying the same location constraints as used in the 2019 Arup stage 2 report, to the locations identified in the 2013 Arup report, only area 5 falls within Priority Area 1 along with a number of areas excluded due to low wind speed. Assuming that these areas became viable due to the larger turbines (wind speed is higher at greater altitude), and that the buffer zone was not increased, at least 90% of Priority Area 1 cannot be used for wind energy unless the buffer zones are removed entirely.
28. It is not clear why the knowledge and experience gained by Arup in the 2013 report has not been used to better inform the conclusions in the 2019 reports.

## **5. Discussion and conclusions**

29. The Welsh Government have proposed an area on Anglesey that has the potential to almost meet the entire renewable energy target for Wales. This would require about 65 square miles of central Anglesey being turned into a solar park, with in addition, about 70 wind turbines of up to 250 m high.
30. All buffer zones between energy infrastructure and residences would have to be removed. A significant number of homes (thousands) and communities would be surrounded. However, in the draft NDF<sup>9</sup> on page 36 it states “*Communities will be protected from significant cumulative impacts to avoid unacceptable situations whereby, for example, smaller settlements could be potentially surrounded by large wind schemes*”. This statement is incompatible with the proposal of Priority Area 1 for wind and solar.
31. The inconsistency between the area on the maps from 2013 and 2019, and the words in the draft NDF, raises a number of questions for which there are currently no answers:
- Has the work by Arup been rushed in order to meet a political deadline, and with further time and effort the Priority Areas could be better refined such that developers stood a chance of bringing forward proposals that could both gain consent and would be optimal for energy generation?
  - Why has the knowledge clearly available within Arup not been fully utilised to provide a better quality output?

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<sup>9</sup> <https://gov.wales/sites/default/files/consultations/2019-08/Draft%20National%20Development%20Framework.pdf>

- Do the Welsh Government genuinely intend standing by their word to bring forward guidance to protect communities, or are the promises simply to sooth the anticipated anger raised by the proposals? Without such guidance it is difficult to assess the local impact
- Do the Welsh Government intend removing all buffer zones around energy developments? This would be necessary for Priority Area 1 to be a credible selection
- Is the intention to allow many small developers to “randomly scatter” turbines of varying scale around the Priority Area rather than a small number of large scale, coherently designed developments?
- What input has there been from the wind and solar industry – are the proposed areas the kind of developments they are seeking? Individual negotiations would need to be successfully concluded with hundreds of farms on Anglesey alone. The approach<sup>10</sup> used by the Crown Estate may be a model to follow
- Is the NDF simply a threat, aimed at reducing local opposition to currently proposed solar parks or wind turbines (which are almost exclusively outside the proposed area)?
- Is the aim of the NDF to encourage far greater installation of micro-generation with the Priority Area acting as a fall back?
- Is selecting central Anglesey simply being done to give the appearance of doing the right thing, safe in the knowledge of knowing that an offshore windfarm is likely to remove any need for onshore generation?
- Are the Welsh Government making a political point, drawing attention to their lack of control over development at sea?
- Why have such large areas of Wales been selected when Anglesey alone (or several other Priority Areas) has the potential to supply all of Wales (Ynni Môn Mam Cymru)?
- Why have the lower potential areas been included at all when the total area selected is vastly in excess of requirements?
- Are the Welsh Government aware of plans, or planning to instigate, the closure of the RAF base at Valley and Mona?
- Is the selection of Anglesey a knee jerk reaction to the suspension of the Wylfa Newydd project? This has created a huge void in the economic plans for North Wales, and the Welsh Government has no control over it. A large scale wind and solar project gives the appearance of taking action to fill that void

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<sup>10</sup> <https://www.thecrownestate.co.uk/en-gb/what-we-do/on-the-seabed/offshore-wind-leasing-round-4/offshore-wind-potential-new-leasing/>



- What is the Welsh Government doing to create the demand that the over specified wind and solar power developments can supply. A switch to EVs and heat pumps would create that demand, but the demand and supply need to be developed together, unless the aim is to “dump power” into the grid using England as a power soak until Welsh demand develops
- Is the aim to use renewable power as a cash cow or bargaining tool in future negotiations with Westminster post Brexit?
- The combined pressures of Brexit/subsidies and dietary change will be putting strain on Welsh livestock production, itself a large producer of greenhouse gases (methane from ruminants). Is converting central Anglesey into an energy park intended to help some farmers leave the land?

32. With so many, wide ranging, questions unanswered, while the creation of the NDF is laudable, the section on renewable power generation covered by policies 10-13 seems out of place. The motives for the policies are superficially clear and transparent, but digging just a little bit into the detail leaves the impression that the renewable energy policies are just not ready yet.