

From: [Robin Barlow](#)
To: [NDE](#)
Subject: Response to NDF Consultation
Date: 29 October 2019 16:40:17

Dear Sirs

I am responding in a personal capacity to your NDF Consultation Documents listed here

<https://gov.wales/sites/default/files/consultations/2019-08/draft-national-development-framework-consultation-document.pdf>

I am
Dr Robin Barlow



I only have knowledge on renewable energy and carbon emission reduction and will therefore limit my comments to these areas of the NDF and supporting documentation.

1) The documents sets no targets or range for the amount of electricity to be consumed (think electric cars, heat pumps) or the amount to be generated from wind power. Yet this influences greatly the amount of land taken, and the amount of industrial structures (turbines, power lines, substations) to be imposed on our countryside. In other areas such as housing the NDF seems quite happy to set targets.

2) Targets on production are particularly important if the welsh government considers an independent Wales to be an option in the lifetime of the plan. The current 1GW exported to England might fall away under such conditions - as economics change, or if England might refuse all fossil fuel based electricity.

3) The NDF considers only onshore based wind farms and although it acknowledges that a separate study is looking at offshore generation, surely on- and offshore must be considered together to provide the best solution to meet targets. It is well known that offshore wind is a steadier (less gusty) and a more reliable generation source, and that offshore is more suitable for very large wind turbines (eg 250 metres at Dogger Bank). These advantages of offshore over onshore are clear in the sizes of the current offshore wind farms: offshore Gwynt y Mor @576MW compares to about 230MW of the largest onshore wind farm in Wales; and even Gwynt y Mor fades into insignificance compared with the 3-6GW offshore wind farms under construction at Dogger Bank and Hornsea.

I refer you to excellent analysis in "Zero Carbon Britain" by the Centre for Alternative Technology in Machynlleth which summarised wind energy with "putting **onshore** wind in all suitable places could produce 60TWh per year (the same as per nuclear in 2010),whereas fixed **offshore** could produce around 400TWh" ie 7 times as much.

3) The UK currently has an electricity demand of around 30-40GW and a wind farm capacity of 21GW rising to more than 30GW by 2025. Any further capacity increases will result in significant wasted electricity **unless** coupled with storage facilities (battery, or hydrogen generation, or even synthetic fuels) at the site or elsewhere. Thus further wind farm consents need to be linked to the provision of storage for a significant amount of the power generated. Note that this storage argument applies even more to solar farms, though here it would only be necessary to store the days production for use overnight.

This point is also made in "Zero Carbon Britain".

4) Onshore wind proposals are mostly in hilly areas remote from grid facilities. Thus, in addition to the industrialised area around the wind farm a long stretch of

pylons is needed to transport the electric to the grid. I say pylons, as although underground cables are an option (and according to the NDF Arup report not significantly more expensive) the national and regional electricity companies prefer to go overground and introduce a further element of the industrial world into our valuable landscape. In contrast offshore wind farms are linked to land by underground cable and operators have mostly been happy to continue underground to the substation. A surprise to me was that farmers much prefer underground cables, as once in place they are not in the way.