



TAN 8 RENEWABLE ENERGY CONSULTATION

DRAFT TECHNICAL ADVICE NOTE 8: RENEWABLE ENERGY CONSULTATION RESPONSE FROM THE WILDLAND GROUP

Wildland Group

The Wildland Group works to promote the recognition and appreciation of wild land; to protect and conserve the qualities of wildness; and to promote the establishment of complete ecosystems on a large scale; through research, advice, encouragement and education.

Summary

1. The minimal impact of wind turbines on carbon emissions needs to be balanced by their considerable impact on the landscape. We suggest that the loss of undeveloped landscapes and the sense of wildness is simply too high a price to pay for the marginal benefits of wind turbines.
2. The undeveloped wild tracts of Wales are an existing asset which are vital to the nation's economy. They should be invested in and not eroded.
3. As industrial structures, wind turbines should be subject to the same development controls as other industry, and targeted for industrial, not rural, landscapes. Decades of planning legislation and customary practice should not be reversed without considerable research and consultation nationally.
4. The mapping exercise in TAN 8 needs some modification to produce a final map of strategic areas for wind farms.
5. Given that wind generation will only ever play a minor role in reducing carbon emissions, government policy and investment measures should initially be directed to areas where major benefits can be realised: reduction of demand, and other renewable technologies.
6. Biomass energy production is a proven technology, well established in several countries, where the benefits are demonstrated.
7. Forestry Commission woodlands should be off limits for wind turbines. Renewable energy schemes involving wood are more suited to these woodland locations.
8. The Nant y Moch area is the subject of a landscape and biodiversity initiative, the Pumlumon Project. The presence of wind turbines would seriously conflict with the promotion of the area as a nature area, devastating the characteristics of remoteness and lack of man-made structures for which it is valued. We therefore request that the Nant y Moch area be removed from the map of Strategic Search Areas for onshore wind power.

Energy debate

9. We support the Welsh Assembly Government in its aim to minimise pollution from burning fossil fuels, by increasing renewable energy production and reducing overall consumption of energy.
10. There should be an integrated approach to energy, considering transport, heating and electricity as three significant parts of the energy question.
11. Policy should take a long-term view with the aim from the start of establishing very substantial reductions in fossil fuel burning.
12. Initial emphasis in government investment and policy should be on reducing energy consumption.
13. On-shore wind farms will only have a minimal impact on reducing fossil fuel burning. For example, the Welsh Assembly Government target for renewable energy production is 4 TWH by 2010¹. This compares with an annual increase in energy demand of 5 TWH.
14. Government subsidies should therefore be directed towards renewable energy solutions which will make a major contribution to our energy needs, but may be more complex and less profitable than on-shore wind turbines

Transport

15. Transport is a major source of pollution from fossil fuels. Without real reductions in miles travelled using fossil fuels, improvements in other energy areas will be severely compromised. Welsh Assembly Government needs to work closely with UK and EU governments on this issue.
16. Air travel must be reduced. 3 transatlantic flights release as much CO₂ as a wind turbine saves in 2 years. Current government policy promotes the increase of air travel. Aviation fuel should be heavily taxed, and airport expansion halted, to reverse this policy.
17. Welsh Assembly Government should promote reduction in car use. In urban areas, public transport offers efficient solutions with numerous examples from towns across Europe providing transferable solutions.
18. Many people live in rural areas in Wales. Car miles can be reduced by promoting working from home, using current technologies which enable this. Local authorities and Welsh Assembly Government can promote and enable this with their own staff: with over 50% of the working population of Wales working in the public sector, there is significant potential here.
19. Governments need to promote and invest in non-fossil fuel technologies for vehicles. Bio diesel, based on vegetable oil, is a readily available fuel for diesel engines. Non-fossil fuels such as this should be exempt from fuel tax.

¹ Welsh Assembly Government (July 2004) *Draft TAN 8: Renewable Energy*.

Heating

20. There is massive potential for reducing fossil fuel consumption through heating. UK and Welsh Assembly Government should be putting more resources into promoting and investing in space and water heating systems to reduce fossil fuel consumption: passive solar, wood energy, combined heat and power, district heating, etc.

Electricity

21. The main drive should be to reduce demand for electricity. Every home and every business can significantly reduce its consumption of electricity by establishing intelligent practices. Welsh Assembly Government can promote targets with advice to organizations and householders.
22. Street lighting is a colossal waste of energy, and creates light pollution: communities should be empowered by local authorities to choose to decommission streetlights in their locality.
23. Significant amounts of energy are dissipated in the distribution network². Much of the national grid system needs to be replaced or refurbished. Steady establishment of locally based generators serving the nearest community will eventually render the national grid redundant, with advantages for energy security and big increases in efficiency.³
24. It is right that we make use of our renewable resources in Wales to generate electricity, as discussed in TAN 8: wind, wood fuel, solar, hydro, tidal and wave. However, this must not be at the expense of our other assets, including biodiversity and the landscape.
25. Small-scale and community based generation schemes should provide the basis of our electricity production, and should be targeted for government subsidies. These are far more in line with the objectives of sustainable development than the large-scale wind farms being proposed.
26. It is not true, as implied in paragraphs 6 and 15 TAN 8, that onshore wind is the only proven renewable technology. Biomass generation is well established in several countries: the technology is proven and the benefits demonstrated⁴. Furthermore, biomass has the potential to be our most significant supply of renewable energy in the short to medium term⁵.
27. A ready source of wood fuel is available in Wales, in the form of low value timber and forestry residues. Establishing a market for these forestry by-products would also improve the economics of forestry, and enable better management of our woodlands, giving landscape and biodiversity benefits and helping to fulfil the aims of the Woodland Strategy for Wales.
28. Wood fuel or biomass generation is well suited to Combined Heat and Power systems. These are necessarily small-scale or community based plants, requiring a heat distribution system, and will therefore fulfil many of the criteria of sustainable development, with the potential to bring economic and social benefits to local communities.

² Figures requested from National Grid.

³ See http://www.fuelcellmarkets.com/article_default_view.fcm?articleid=964&subsite=847 for more information.

⁴ Royal Commission on Environmental Pollution (2004). *Biomass as a Renewable Energy Source*.

⁵ Royal Commission on Environmental Pollution (2004). *Energy – The Changing Climate*.

Wind farms

29. Wind turbines can obviously make a contribution to our generating capacity. It is important however that society takes a measured approach in balancing the perceived benefits with the negative impact of ill-sited and large-scale wind farms.
30. The target for renewable energy production is 4 TWH by 2010⁶, primarily with on-shore wind turbines. When compared with an annual *increase* in energy demand of 5 TWH, the contribution of wind farms appears unimpressive. Put another way, a five-fold increase in wind turbines would only replace 1/1000th of total fossil fuel use in the UK⁷.
31. Seminal reports have suggested that wind-power's contribution to overall UK CO2 emissions will be minimal at best and might even be negative.⁸
32. Because of the intermittent nature of wind, turbines in Wales are generating electricity only 30% of the time, and any wind generating capacity needs to be backed up with generating capacity from other sources of energy. This requires an increased footprint of generating facility, with the additional use of energy and materials and the environmental impact of construction.
33. As industrial structures, wind turbines should be subject to the same development controls as other industrial constructions. Rural areas that have so far been protected from development should remain free of industry.
34. As in Germany, wind farms should be sited in industrial landscapes. In Wales, there are potential sites on the Severn Estuary and Deeside.⁹
35. To fulfil the provisions of sustainability, wind farm developments should only be approved where there is clear support from and clear benefits for the local community.

Role of Forestry Commission

36. Forestry Commission Wales is entrusted with the management and safekeeping of public woodlands on behalf of the citizens of Wales. The construction of wind farms on Forestry Commission land is contrary to this remit, involving the felling of large areas of woodland, and disrupting many of the qualities for which woodlands are valued: tranquillity, absence of industrial developments, beautiful landscapes, *etc.* No developments should take place on Forestry Commission land without the full backing of the owners, that is the residents of Wales, and in particular the communities local to the FC sites. More appropriate developments for FC to be involved in are wood fuel generating systems, sited within or near to suitable Forestry Commission woodlands. The sustainable management of woodlands can be promoted by using low value timber and forestry residues.

⁶ Welsh Assembly Government (July 2004) *Draft TAN 8: Renewable Energy*.

⁷ National Trust (1999) *A Call for the Wild*.

⁸ <http://www.viewsofscotland.org/Library/Report%20Wind%20turbines%20and%20rural%20tourism.pdf>

⁹ See <http://www.wales.gov.uk/subiplanning/content/research/powysenergy/summary-e.htm>

Landscape

37. The landscape is the most valuable asset of Wales. While the land itself supports agriculture and forestry, it is tourism that makes the leading contribution to the economy of Wales. The proliferation of wind turbines is defacing some of our most prominent and attractive views. Much of the appeal of the Welsh landscape lies in its wildness: a sense of remoteness and an absence of urban and industrial features. This is what attracts tourists to the country, and this is now being squandered across parts of upland Wales.
38. The industrial development of remote rural areas overturns decades of planning legislation and customary practice. The single issue of wind generation should not take precedence over current planning practice. There is also a shortage of housing in Wales, but nobody would advocate allowing the building of residential developments across undeveloped rural areas. Planning laws and practice may need reviewing, but this should involve extensive research and consultation nationally, and not occur through a hurried response to a temporary problem.
39. Society demands electricity to contribute to our quality of life. The landscape is also an important element contributing to our quality of life. The value we have attached to the landscape for centuries is reflected in: planning legislation; designated landscapes; favoured tourist destinations; the National Trust acquiring certain properties; cherished designed landscapes; *etc.*
40. Remote or wild places have an intrinsic value and the capacity to enrich people's lives with inspiration, discovery and adventure. It is in remoter places, away from the dominating presence or evidence of human activity, that visitors and locals find spiritual and physical refreshment.
41. The National Trust presents some persuasive arguments in support of wild land.¹⁰
42. There is clear evidence from Scotland that the presence of wind farms deters tourists, with consequent substantial loss of revenue and employment prospects to the local economy.¹¹
43. The closure of the countryside during the FMD outbreak demonstrated very clearly the economic importance of tourism in the countryside of Wales.

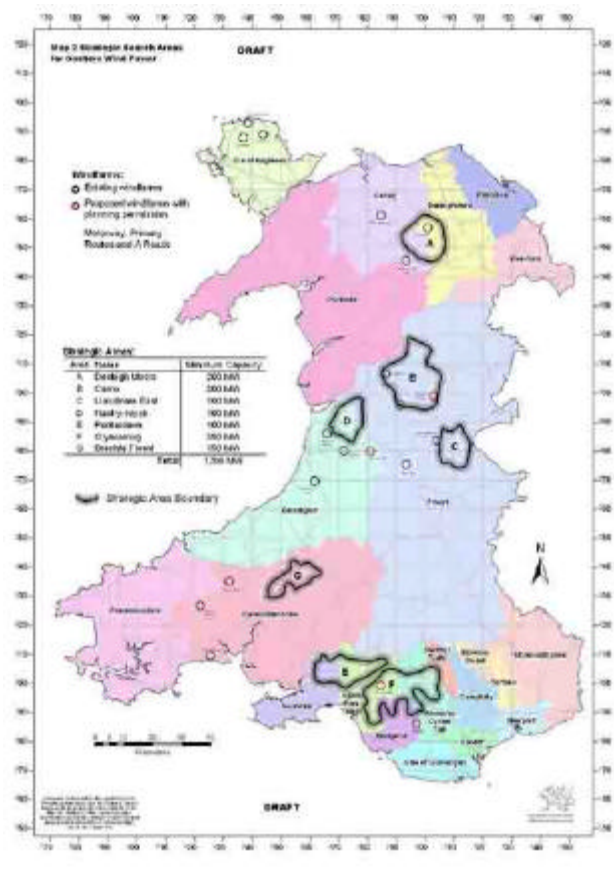
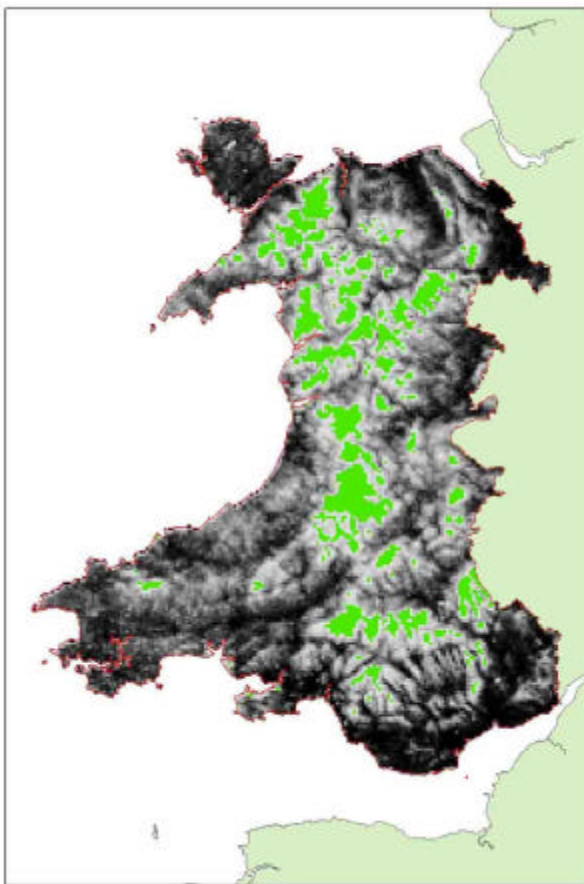
¹⁰ National Trust (1999) *A Call for the Wild*, available from Estates Department, 01285 651818.

Or http://www.nts.org.uk/web/FILES/wild_land_policy_2002.pdf

¹¹ <http://www.viewsofscotland.org/Library/Report%20Wind%20turbines%20and%20rural%20tourism.pdf>

Mapping exercise

44. We welcome the strategic approach of the Welsh Assembly Government in identifying Strategic Search Areas for Onshore Wind Power. The mapping exercise in TAN 8 has been well executed, but can be improved.
45. Wild areas should be included in the set of environmental constraints. Though there is no strict definition of 'wild' in the context of land, there are certain criteria that contribute to a sense of wildness: absence of buildings, distance from population, accessibility, naturalness, *etc.* Scientists at the Geography Department, University of Leeds have developed an online wilderness mapping tool which can be used to map wild areas in Britain by applying weightings to a set of factors¹².
46. "The remoteness/wildness map layer is conspicuous in its absence, and the error of judgment in the TAN is to consider all areas $\geq 500\text{m}$ from residential areas as suitable, ignoring the fact that remote and wild areas are also to be deemed unsuitable on landscape grounds."¹³
47. A simple map of the remoteness/wildness quality next to the Draft Map of Strategic Search Areas for Onshore Wind Power is shown below. It will be noted that the only significant area of wild land that overlaps a Strategic Search Area is in Area D, Nant y Moch.



¹² www.ccg.leeds.ac.uk/teaching/wilderness/

¹³ Pers. comm., Dr. Stephen Carver, Geography Department, University of Leeds.

48. The importance of wild land and its relevance to wind farm developments is recognised by Scottish Natural Heritage: “Consideration of the wild land category should recognise the absence of a specific Government policy test for wild land, and that its distribution has not yet been formally mapped (although a general definition is provided in NPPG 14). However it appears self evident that any wind farm development in these areas will significantly impact on its qualities, and therefore should be resisted. In seeking to identify and safeguard these areas it should be recognised that we are not seeking to establish a new wild land designation.”¹⁴ The wild land definition has since been published.¹⁵
49. SSSIs and nature reserves should be included in the set of environmental constraints (not variable). The construction of wind farms, and associated infrastructure damages habitats. Also, sites protected for biodiversity have greater value if they are appreciated by the public. The experience of natural areas is ruined by the dominating presence of wind turbines.
50. Comment on the mapping methodology: “The problem with such a basic Boolean sieve mapping exercise is that the results are very much at the mercy of how you define what is an acceptable threshold for each of the input criteria (*e.g.* why define $\geq 500\text{m}$ from residential areas as the acceptable threshold? what makes 500m acceptable and 499m unacceptable?). Sieve mapping also doesn't take into account data input error or uncertainty (*e.g.* where is the residential area boundary?) and the different priorities different people may attach to different criteria (*e.g.* house owners would weight distance from residential areas as more important than wind speed). I would advocate a multi-criteria evaluation (MCE) approach because these methods allow the specification of different criterion weights, don't rely on rigid (and difficult to define) mapping thresholds, maintain full use of available data (*e.g.* distance from residential areas is best described as a surface not a binary map) and allow for optimisation and multiple view points in the site selection process. There are plenty of examples of MCE/GIS wind farm siting models in the scientific press. Basically, the sieve mapping approach is way too simplistic.”¹⁶

Nant y Moch area

51. Area D, Nant y Moch is the subject of a landscape and biodiversity initiative (the Pumlumon Project), the first large-scale nature conservation project in Wales, which aims to bring a 30,000ha area into conservation management.
52. The initiative proposes the steady integration and connection of existing protected areas, taking in the various habitats from the coast and estuary, valley woodlands and pastures, moorlands, upland woodlands, to the higher elevation sub-montane habitats. There are several SSSIs, including substantial moorland areas and the estuary and coastal zones, and several nature reserves (CCW, RSPB, Wildlife Trust). Restructuring of Forestry Commission woodlands (about 30% of the area) is an important part of the process, already under way in Hafren.
53. The initiative is a partnership (in formation) of government agencies, local authorities, NGOs and landowners.
54. The existing biodiversity interest, the remoteness and size of the area, and the absence of industry or buildings are factors which favour the area for this initiative.
55. These characteristics of remoteness, wildness and absence of evident human activity are fundamental to the value of the area for which it is to be promoted.
56. The Nant y Moch area has huge cultural, historical and spiritual significance for Wales. Pumlumon itself is considered as a sacred mountain, set in the heart of the country, with extensive views across Wales. If the view from Pumlumon is dramatically compromised by

¹⁴ SNH (2002) *Strategic locational guidance of onshore wind farms*: Section 12, page 3.

¹⁵ SNH (2002) *Wildness in Scotland's countryside: a policy statement*. ISBN: 1-85397-332-7.

Or <http://www.snh.gov.uk/strategy/pd02c.htm>

¹⁶ Pers. comm., Dr. Stephen Carver, Geography Department, University of Leeds. For a paper on Boolean sieve mapping versus the MCE model see CARVER, S. (1991) Integrating multicriteria evaluation with GIS. *International Journal of Geographical Information Systems* 5(3), 321-339.

wind farm developments, it will affect the quality of the experience of this place, amounting to a form of desecration. Moreover, Owain Glyndwr's decisive battle took place at Mynydd Hyddgen within this area. The historical and cultural significance of Owain Glyndwr's association with this area is profoundly related to the cultural identity of Wales. The cultural and spiritual importance of place are vital elements in the promotion of the Pumlumon area through the initiative.

57. The benefits of the initiative are: the intrinsic value of wildlife and a wild landscape; sustainable economic development of local communities through nature and cultural tourism; revenue from fishing and hunting; environmental 'services' provided by the landscape – carbon sequestration, flood mitigation, water quality, *etc.* This is a sustainable development programme in the true sense of the term, without conflict or compromise, with genuine long-term benefits locally, nationally and globally.
58. There are very obvious conflicts between promoting an area as a large-scale nature reserve and valued landscape, and having it as a target area for wind farms.
59. We therefore request that the Nant y Moch area be removed from the map of target areas for wind farms.

Stanley Owen
Wildland Group
20.09.04