

Response to North Wessex Downs AONB's 'Study of Landscape Sensitivities Constraints to Wind Turbine Development'

Background

1. Introduction

The Council of Partners of the North Wessex Downs Area of Outstanding Natural Beauty (NWD AONB) commissioned a study by Land Use Consultants. The report of the Study was published in October 2005 and responses were sought from stakeholders. Below is the response of TV Energy to this report.

TV Energy is the independent, not-for-profit renewable energy agency for the Thames Valley and Surrey. Its mission is to promote and facilitate practical and sustainable energy projects and to provide education on sustainable energy solutions for the people, businesses and organisations of the area.

2. Welcome AONB interest in renewables

TV Energy recognises and appreciates the importance of the AONB to the visual, recreational and ecological heritage and future of the sub-region. Covering a large part of the Thames Valley's land area, the AONB is, by its nature, more sensitive to development of all kinds, and consequently there is a need to find ways to protect the North Wessex Downs from unnecessary encroachment by urban development and undue visual intrusion.

However, the area is also a place where consumers of heating and electricity live and work, including its 125,000 residents. It contains a natural and sustainable resource available to contribute to these energy requirements locally, with benign impacts on the landscape compared to conventional energy. We welcome, in principle, any efforts by the AONB to formulate a clear and balanced policy aimed at positively accommodating renewable energy sources in the area in harmony.

3. TVE Policy

TVE is aware of the need for responsible and appropriate application of sustainable energy in the Thames Valley area, both in terms of the needs of local people and the local ecology. There is an urgent need to build capacity to meet regional targets, which in turn contribute to the national drive to reduce greenhouse gas emissions and increase the security of the UK's energy supply. We concur with, and actively promote, the South East's regional policy of encouraging four single large wind turbines and three wind clusters (up to five turbines each) per county area, plus one large wind farm (currently one is planned in Kent), by 2026.

Wind power is one of a range of significant renewable energy options, all of which should be promoted where applicable, to suit the individual needs and capabilities of the diverse locations across the region. For this reason TVE is opposed to either unfairly ruling out any one particular source within the portfolio of renewable energy technologies, or concentrating on any one to the detriment of others. The adoption of either of these approaches would result in missed opportunities to increase the diversity of supply and reduce the traditional reliance on a few unsustainable energy sources, and would severely limit the sub-region's potential to develop renewables in a technically, aesthetically and environmentally rational manner.

We are supportive of proposals in a range of locations, provided that the statutory process and good practice are followed, i.e. where proper consultation of experts, interest groups and communities takes place, the individual sensitivities of the site are considered, and their proper safeguards provided for. TVE does not in general believe that developments should be limited to any one specified type or types of existing land use; instead, a given proposed site should be looked at on its individual merits. For example, while 'brownfield' commercial and industrial sites

can be ideal locations for wind generator development, in practice there are not as many suitable sites available for exploitation in our sub-region as might be hoped. We therefore support any rural, semi-rural, suburban and urban proposals which are demonstrated to fulfil the criteria above.

TVE is keen to see that those in the planning system are in possession of the full background to individual planning proposals, both in terms of the general factual case and case-specific factors, as well as policies in place at the local, regional and national levels. We would like to see the relevant members of the planning authorities and other bodies supporting and facilitating all proposals which are found to be in line with policy and principles of sustainability and local acceptability.

We highlight and discuss below some main points of concern with the report.

Areas of concern

4. Regional Policy

Regional Planning Guidance for the South East on Energy efficiency and renewable energy was published in 2004 including the following advice (GOSE, Nov 2004):

However, wind and other renewable energy development should not be precluded in AONBs and the new national parks as there will be locations where small scale construction, e.g. a wind development of between one and four turbines not generating more than 5MW, can be accommodated where conflict with statutory landscape protection purposes set out in PPS 7 can be avoided or minimised through careful siting and design.

TVE believes that this section quite clearly covers all turbines Height Classes 1-2, and nearly all in Height Class 3, to use the classifications pinpointed by the study. We recognise that the particularly open nature of some of the most characteristic NWD landscape has led to the report's recommendations of high constraints to turbine development. Nevertheless, as far as we are aware this explicit regional policy guidance has not been acknowledged by the study.

5. National Policy

From Planning Policy Statement 22 on Renewable Energy (ODPM, Aug 2004):

11. In sites with nationally recognised designations (Sites of Special Scientific Interest, National Nature Reserves, National Parks, Areas of Outstanding Natural Beauty, Heritage Coasts, Scheduled Monuments, Conservation Areas, Listed Buildings, Registered Historic Battlefields and Registered Parks and Gardens) planning permission for renewable energy projects should only be granted where it can be demonstrated that the objectives of designation of the area will not be compromised by the development, and any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by the environmental, social and economic benefits.

From the PPS22's Guidance document (ODPM, Aug 2004):

Landscape character areas may be described in relation to their suitability as a location for particular types and scales of renewable energy development. When considering which technologies to include in this assessment, it is important that authorities should take into account any existing regional renewable energy generation targets, and any assessment of the technologies that are expected to make a significant contribution. In particular they should ensure that they have regard to the Key Principles set out in PPS22 (paragraph 1).

'Landscape sensitivity to a particular kind of change' is a separate consideration [from 'overall landscape sensitivity']. Different types of change will affect different elements of landscape character differently. It should not be assumed that because a landscape character area is deemed sensitive to one type of change that it could not accommodate other types of change. For example, a particular landscape character area may be more sensitive to change resulting from one renewable technology than another. In assessing a region's potential for renewable energy generation, strategic planners should consider the widest possible range of alternative technologies.

TVE believes that the two highly important issues of the Thames Valley and Surrey sub-region's regional renewables targets, and the range of renewable technologies projected to accomplish these targets, in the AONB area should be at the heart of the AONB study. They have not been

taken into account by this study. We recognise that it was not the intention to produce a stand-alone reference source on wind energy in the AONB area. We do urge the AONB Council of Partners to strengthen the effect of sections 1.10 to 1.14 and not to authorise the use of any version of this wind turbine/ landscape sensitivity report without having it incorporated into a full AONB renewable energy capacity assessment-based strategy.

6. Faccombe turbine - precedent

There has been a 300kW wind turbine in the NWD AONB at Faccombe Estate in North Hampshire since 1991. The machine has a 36 metre tower and a 22m rotor diameter (blade tip height 47m), hence would be allocated to Height Class 2, and is located in Landscape Type 2: 'Downland with Woodland', and would hence be "moderately to highly constrained" by the report's recommendations. As far as we are aware from the report, this turbine's existence and its visual impacts (or otherwise) on the AONB have not been taken into account by the authors of the study. TVE finds this surprising since the installation is an excellent example of how landowners can (and, arguably, should) exploit the AONB's wind development possibilities through the use of existing woodland and landscape features. In our view, this omission undermines the credibility of this study.

7. Baydon Meadow turbine - screening

The Baydon Meadow proposal was a single turbine scheme within the AONB, with a 50m hub height and 62m rotor diameter (blade tip height 81m), and hence belongs to the lower end of Height Class 3. The tower could indeed readily be adapted through a reduction of 1m to cause the scheme to fall into Height Class 2. The site lies near the M4 Membury Services and the adjacent telecommunications mast, on the border between Landscape Type 1 'Open Downland', which the report deems 'highly constrained' for wind / Type 2 'Downland with Woodland', which, in turn, the report deems 'moderately to highly constrained'.

This proposal was rejected at West Berkshire's full planning committee in November 2003. Part of the reasoning for this refusal was the absence of an informed NWD AONB capacity study on renewable energy installations and in anticipation of this being provided by the report now under discussion. Within the Appeal Decision (Planning Inspectorate, November 2004) which dismissed the proposer's subsequent appeal against rejection, the regional Planning Inspector issued advice on ways that the proposer could theoretically have ensured compliance with the visual impact demands of the surrounding AONB. The Inspector commented:

[Planning policies]

However, this particular part of the AONB is not an area of bald upland at the crest of the Downs themselves, or a location where the mast and turbine would stand directly on the skyline, or where there is no significant upstanding vegetation, or where human interference is entirely absent...this particular part of the landscape is one that is capable of absorbing some relatively large structures without undue interference...

I share the judgement implicitly made in the Berkshire Renewable Energy Strategy and the AONB Management Plan that it would be neither necessary nor desirable to protect the area from wind development altogether.

...

[Issue 1: Character and appearance]

The fact that onsite screening would be of negligible effect is not, in my consideration, a good reason to exclude suitable proposals for mitigating the visual impact of such a tall, rotating structure altogether.

...

[Issue 3: The impact on the living conditions of local residents]

As with landscape impact, these are matters that I consider could be readily resolved, notwithstanding the height of the proposed turbine, by carefully sited and selected tree planting close to the garden boundaries concerned.

...

[Other matters and overall conclusions]

In terms of PPS7, I do not regard this particular proposal as falling within the category of major development that should only be permitted in nationally designated areas in exceptional circumstances.

TVE believes that these points are salient and should be taken into account when developing the AONB's overall wind energy and renewables development strategy, and calls into question the judgements expressed in the AONB report. For example, the introduction of limited and aesthetically appropriate plant screening could transform a site in 'Open Downland' area with its

high constraints into, in effect, a tiny annex of the 'Downland with Woodland' landscape type with its greater tolerance for wind development, without negatively affecting the surrounding landscape character.

8. Changing landscape

The Government's Sustainable Development Commission report 'Wind Power in the UK' (SDC, May 2005) discusses the issues of landscape change and the visual effects of turbines:

Landscapes are not static; they have always been changing and will continue to do so, adapted by human needs and economic activity, and affected by future climate change. They are in a constant state of dynamic equilibrium which cannot be frozen at any one point in time.

...

Wind projects are just one of the many forms of development that may bring about landscape change in the UK. However it is worth bearing in mind that wind turbines are not permanent structures and once removed the landscape can usually return to its previous condition – although roads may remain for a considerable period of time after a site has been decommissioned. This is provided that wind developments do not lead to land-take by other developments, which should be guarded against in protected or previously undeveloped areas.

The 'New Landscapes: Enclosure in Berkshire' resource (www.berkshireenclosure.org.uk, Berkshire Records Office, 2006), documents some of the major changes of recent centuries:

Between 1700 and 1900 the landscape of Berkshire was transformed. The open fields (particularly predominant in the north), common lands and manorial wastes were swept away, to be replaced by small fields surrounded by hedgerows. During these two centuries over half of the county was thus affected.

The process which brought about this change is known as enclosure. Legally enclosure means the abolition of rights of common enjoyed by tenants of a manor over some or all of the open lands in a parish, and the redistribution of the land into individual ownership. Practically, it meant the end of strip farming, of common pasture, and of rights over the waste. Physically the change was dramatic. Huge social, economic and technological changes also followed enclosure, the effects of which historians continue to debate.

...

Apart from a few isolated parishes elsewhere, activity in the period before 1800 concentrated in the downland parishes of Lambourn and East Garston, and in the Vale of White Horse.

...

The second decade of the nineteenth century saw a few more enclosures in the north, but now the areas affected were mostly in the Kennet Valley, the Downs and, in particular, east Berkshire...

TVE believes that as well as the current appearance of the AONB, regard should be given both to the past nature of the area's landscape character, and more importantly to its future.

Wind turbines currently have an expected lifetime of about 20-25 years, with the option to replace with a newer and more efficient generation, or to return the site to its original condition – for example, if interim technological and economic developments in renewable energy encourage concentration on other sustainable energy technologies at that future time. Well-planned wind turbines also have a very low instantaneous impact on the land and ecology, and little or no such impact in their legacy. In this sense wind generators are relatively temporary structures that represent part of the key to permanently preserving many of its vital aspects over the long term – namely the area's interlinked local climate, flora, fauna, hydrology agriculture and ultimately its geomorphology and visual appearance.

The document 'The Climate is Changing. Time to Get Ready' (Environment Agency, March 2005) summarises the projected 'key impacts of climate change', including the following deemed already to be 'inevitable':

- low summer rainfall may stress protected sites
- biodiversity losses due to higher water temperatures, poor water quality and eutrophication
- intense rainfall and periods of drought would lead to soil damage and erosion

The limited visual effects on landscape due to well-sited and well-designed wind turbines are in TVE's opinion dwarfed in comparison both to past and continuing direct human intervention in the countryside, and in comparison to potential and ever more likely indirect changes (due to anthropogenically accelerated climate change) in the near future. In this wider context, we respectfully put the question of which landscape it is that the area's trustees are duty-bound to preserve.

9. Survey of users' views

TVE Energy has undertaken a number of professional surveys on public attitudes towards renewables, including wind energy. The Reading Area Study (TVE/Reading BC/University of Reading, 2003) and the GreenPark Wind Turbine & Renewable Energy Survey (TVE/Wokingham DC/Reading BC, 2004) both showed overwhelming support for renewable energy and wind energy. These both dealt with urban populations, but due to geographical proximity it is highly likely that at least a proportion of these residents will be counted amongst the users of the NWD. AONBs were indeed set up for the entire nation and therefore should not reflect any one interest group.

We believe similar exercises should be carried out to ascertain the attitudes of users and residents of the NWD AONB to renewable energy development. Without these quantified data, it is hard for the Council of Partners to understand the expectations and aspirations for the AONB of the people who use it, and the extent to which sustainable development projects in the area are, in theory, supported or opposed by the public.

10. Other scales

The report does not address small and micro-turbines under 25m blade tip height. TVE would expect that a comprehensive policy on the opportunities for wind power and renewables in the AONB would consider the visual impact of all scales of renewable energy. It should therefore by default highlight and promote the development of small and micro-turbines as part of its sustainable development strategy, whether these be free-standing or building-mounted, since this scale of wind technology has a low visual impact regardless of siting.

11. Other technologies

For reasons given above, TVE is unhappy that wind energy alone has been singled out by the Council of Partners in this context for special treatment within the portfolio of renewable energy. We understand that, as quoted above, the conditions of PPS22, which in general advise a presumption within the planning process in favour of sensitively sited and designed renewable energy proposals including wind, have intentionally and justifiably stimulated a response from those responsible for designated landscape areas including the NWD. Wind power, specifically not being excluded from AONBs by national policy, should be amongst the energy sources considered in relation to landscape impact. However, we believe that all renewable energy developments have at least some visual impact on the AONB and that while wind turbines with blade tip height over 25 metres can have the greatest potential for visual impact, the opportunities for other renewables must also be considered by a comprehensive capacity study in order to inform overall policy.

As a particular example there remains a question mark over of the AONB Council of Partners' approach to the extent of the capacity afforded by the area to the cultivation of bioenergy crops (largely willow coppice, 3 to 5 metres high at harvest), and the development of small-scale renewable bioenergy plants and heating systems. The bioenergy infrastructure is a vital element of this sub-region's renewable energy strategy, and the policy and drivers behind it are identical to those behind wind energy, with the added potential benefits of greater biodiversity and rural employment. TVE believes the AONB management has an important part to play in formulating local policy towards these potential introductions, which in many ways represent a return to the landscape of the past rather in comparison to the intensive.

12. Factual inaccuracies

- a. TVE would like to draw attention to inconsistencies in the Height Class methodology. Height Class 1 is described throughout the report as comprising machines with a blade tip height of 25 – 40 metres, including in Appendix 2 which is the main reference for turbine classes and models; yet in the same section, four out of the six machines listed under Height Class 1 are listed as having (or potentially having) a blade tip height of 23 metres or less. This ambiguity leads to significant doubt over the classification system, and TVE requests clarification of the intended lower cut-off height for this class, along with a justification.
- b. Section 2.15 claims that wind turbines “generate electricity for up to 30% of the time”. On the contrary, even though the positive amount being generated varies, modern wind turbines actually produce electricity 70-85% of the time,¹ when considered over a typical year. The statement therefore does not reflect reality and TVE is concerned that the effect of this unjustified claim could be to reduce the technically uninformed reader’s support for the technology and sway opinion against accepting. The authors may have confused the quantity in question with the ‘capacity factor’ of typical wind turbines, which is often around 30% in the UK’s installed turbines (but can be much higher, as well as lower, depending on the model and the site). This quantity is based on the actual annual energy output compared to the theoretical ‘rated’ output.² We are forced to question the making of such an erroneous claim in writing, particularly in a document likely to have some influence over people’s attitudes to and decisions on renewables in the NWD and beyond.
- c. Sections 2.17 and 2.19 claim that “Pylons or cables, which may be either underground or overground may also be an integral part of a wind turbine development to allow the transmission of electricity to a nearby substation and to allow a grid connection” and that “connections to the main grid from the onsite substation are often run overground via pylons.” Further references to ‘pylons’ with the same implication are to be found throughout the report. Pylons – “a large vertical steel tower-like structure supporting high-tension electrical cables” (Collins Paperback Dictionary, 4th Edition, 1999) – are not used by wind developments for feeding electricity from the turbines to the sub-station, nor for the distribution of electricity from the substation to the general transmission network. Where necessary to go overground, wooden poles similar in size and appearance to those that typically carry telephone lines, are used for these purposes. Pylons are used as carriers for the existing high-voltage electricity transmission network, independent of wind developments. TVE is disappointed that technically uninformed readers may be misled through the inaccurate application of the term ‘pylon’.

13. Landscape capacity – no quantification

TVE is disappointed that a key expected element of this study was not addressed, namely an elucidation of the areas where turbine development is deemed suitable (theoretically - subject to the individual merit principle) and hence the estimated range of the numbers and scales of turbines deemed acceptable for the whole AONB.

The Planning Inspector for the Baydon Meadow case at least, was under the impression that the forthcoming publication would be a “landscape capacity study” for wind development, which at least implies a neutral or positive attitude to incorporating wind power into the AONB where appropriate. The report presented is called instead a “Study of Landscape Sensitivities Constraints to Wind Turbine Development”, whose negative implication is borne out by the presumption of ‘constraints’ methodology. This is duly reflected in the results of a report which

¹ Source: www.bwea.com/ref/faq.html (British Wind Energy Association, January 2006)

² Viz., a turbine with a rated capacity of 100 kilowatts. This represents the optimal power output for which that machine was designed. *Purely theoretically*, generating 24 hours a day for a year at capacity would produce:

$100\text{kW} \times 8760 \text{ hours/year} = 876,000 \text{ kilowatt-hours/year}$
of energy. However, let us assume that *in practice*, at the site in question the turbine actually generates, say, 260,000 kilowatt-hours energy per year. The resulting ‘capacity factor’ of this hypothetical project is hence the percentage:
 $(260,000\text{kWh} \div 876,000\text{kWh}) \times 100\% = 29.68\%$.

declares that the entirety of the landscape to be either 'moderately' or 'highly' constrained to wind power, rather than offering a recommendation of the area's likely 'carrying capacity' and the areas which offer good prospects for given scales of wind development.

14. Effects of recommendations

We are concerned that – in spite of the point being covered briefly in the report's summary – within the total presentation of the study there is hardly sufficient emphasis on recognising the excellent opportunities available to lessen the visual impact of a turbine and hence increasing the opportunities for developments in the many zones deemed 'highly constrained'. Varied land formations, vegetation and man-made features afford such opportunities throughout the NWD, regardless of the more general landscape character and it should be a key theme of the report to survey them and present examples.

If the examples at Facombe and Baydon Meadow and their outcomes could have been analysed as part of this study, we feel, without wishing to pre-judge the results, there would be a greater and more useful body of evidence for its conclusions, which may even upon reflection have been different.

In summary TVE has concerns that the impression given by the current version of the present study's report could be detrimental to the site-specific principle. TVE is concerned about its likely impact on achieving a balanced approach at the planning stage and hence on future planning decisions, if taken as it stands or on its own.

Conclusions

- TVE welcomes moves by the NWD AONB's management towards incorporating appropriate renewables into the area.
- TVE believes that the AONB Council of Partners must take into account local, regional and national policies, drivers and targets for wind energy and other renewables.
- In this context, we do not find the tone of this report to be sufficiently positive with regard to opportunities for wind energy in the NWD AONB, as opposed to the constraints.
- TVE particularly appreciates the advice in sections 1.10 – 1.13 'How the Report should be used' and 1.14 'Limitations of the Study'.
- We believe that due to the tone of the report, these *caveat* factors should be given even more weight than at present,
- We look forward to viewing the Users' Guide referenced in 1.13.
- TVE also believes that this study, focussing on just one type and scale of technology, in conjunction with the AONB Management Plan, does not represent an complete renewable energy capacity study and should not be used by decision-makers as they stand.
- We request that the Council of Partners commission a comprehensive follow-up study on renewables capacity in the AONB, in order fully to inform its renewable energy development strategy.
- TVE also respectfully requests that the factual corrections and clarifications that we have detailed be made and that our arguments above addressed.
- We look forward to the revised draft being presented for public consultation.