

Conjoined Public Inquiry into Wind Turbines Session 4 Cumulative

Written statement/Proof of Evidence

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Resident for 28 years

I have lived, walked and ridden in this landscape for 28 years, I have my late father's remains here, and have memorials to my father and my father-in-law overlooking the mid-Wales landscape.

1. Landscape and Visual

1.1 General

The rolling landscape of Mid-Wales is predominantly horizontal, and it is the proposal to insert large vertical structures into this landscape which appears inappropriate to many who depend on the landscape for inspiration, elevation and recreation. In the presentation of evidence on the subject of windfarms in the landscape, there are some topics where the evidence produced to support applications appears to me to be specious and sophistic. These include arguments relating to the optimum height of turbines, the significance of rotational speed, the industrial nature of the landscape when windfarms are introduced, and the notion that windfarms somehow punctuate the landscape.

1.2 Height of turbines

All wind turbines under consideration at this inquiry are in the range 100m to 140m high, an almost threefold increase over the present Llandinam turbines. There are at least ten factors which need to be considered when evaluating the effects of an increase in height.

Height factor h	Power of h to which factor has an effect
Vertical elevation	+1
Area of ZTV	+2
Number of viewpoints in close zone (5km)	+2
Swept area of individual blade	+2
Height of centre of swept area (hub)	+1
Aggregate swept area	+2
Rotational speed	-1
Number of turbines needed for fixed power output	-2
Capacity for stacking	-2

Developers have concentrated on the last three factors listed, those which may be regarded as visual improvements, and neglected the rest. They attempt to justify almost trebling the height of the turbines by a lower number of turbines required for a given output, slower rotational speeds and reduced capacity for stacking. If these three criteria were pursued in isolation, it would justify ever

larger and larger turbines. The application proposed for Llandinam could be replaced by two turbines (N & S) each 500m high and 45MW capacity (slower rotational speeds, fewer turbines, less capacity for stacking) or even 1 turbine 750m high, 90MW capacity (even slower rotational speeds, etc). If the outcome seems preposterous, then the model is wrong.

1.3 Rotational speeds

One of the arguments used to justify the increased height of turbines is the reduction in rotational speed. The replacement turbines proposed for the Llandinam windfarm have a rotational speed of 15 rpm. With a three-bladed rotor, this equates to 45 transits of a blade across the tower. In musical tempo terms, this could be represented as a *largo*, such as Handel's *Largo* from *Xerxes*, "Ombra mai fu". A smaller turbine of 45m, the same height as those in the existing Llandinam windfarm, and achieving the same blade tip speed would have a rotational speed of around 40 rpm. This equates to 120 blade transits per minute, equivalent in musical terms to a *moderato*, such as a sprightly rendition of the national anthem (Welsh or English). Not a *prestissimo agitato*, not even a *vivace* or *allegro*. In neither case could the blade rotation be described as a blur.

1.4 Landscape description as industrial

A landscape occupied by scores of wind turbines was described by objectors as industrial and industrialised. A developer objected to the terms industrial, on the grounds that there would be no workers visible, and hence no industry. This seems based on a definition of industry that predates the Industrial Revolution.

The Industrial Revolution of the 18th and 19th century is so called because industry was transferred from the individual labourer or craftsman working domestically to large mechanised factories and depersonalised labour. A landscape is occupied by large multiple industrially produced structures which are visually unavoidable. They are intended to produce electricity on an industrial rather than a domestic scale. Therefore it is appropriate to describe the landscape as industrial or industrialised.

L S Lowry depicted the factories of Salford and Manchester with their chimney stacks and associated infrastructure. The broad shape of the underlying natural landscape is evident. Typically there are no workers visible in the scenes, only a few people engaged in recreational activity. At Tate Britain's recent exhibition of Lowry's work the paintings are described in the catalogue as "Industrial Landscapes", and at least one of the paintings is entitled "Industrial Landscape".

1.5 Landscape description as "punctuated" by turbines

A developer has described the individual structures in a windfarm as "punctuating" the landscape. The function of punctuation in the written and spoken word is to add sense, by separating the text into sentences, clauses and phrases, and by indicating quotations, questions and exclamations. The imposition of turbines at random in a landscape could not be said to add sense or to assist in the understanding of that landscape in any way. Rather it would act to confuse and disrupt the interpretation of the landscape.

2. Rights of Way

2.1 General

The Wynford Vaughan Thomas memorial lookout at Glaslyn, between Dylife and Aberhosan, was one of the chosen landscape viewpoints for SSA B. The impact on views from the lookout and its sculpted viewing table were discussed. What wasn't mentioned was that Wynford made a journey through Wales on horseback in 1967, after he retired from his broadcasting career. Details of his route are difficult to discover, but one of my neighbours in Mochdre met him by chance within a mile of my smallholding.

A few years ago, when I made my own 5-day cross-Wales journey on horseback to Cadair Idris and back, I met my wife and her mother for lunch on day 1 at Wynford's memorial. My gaze followed his gesticulating arm to the peaks of mid-Wales and my destination. I'm sure my shared experience with Wynford is not unique. Whenever I visit this lookout I meet other visitors from near and far. The website Wales Tourist Information describes it as the most beautiful view in the world, and it was obviously Wynford's favourite. But like me, Wynford didn't simply view the landscape from individual viewpoints. He travelled through the landscape, enjoying and savouring it as he went. These connections add further elements of significance and value to the inviting mountain views from his favourite place.

2.2 Impact of turbines on Rights of Way

The proximity of some of the proposed turbines to footpaths, bridleways and national trails will make the paths unusable for some horses, and intimidating and unacceptable to many walkers and riders. The British Horse Society recommends a clearance of 3 times the turbine height for bridleways and 4 times the height for national trails. The intention is to provide clearance that will permit the vast majority of horses and riders to pass the turbines safely. Some riders and their horses may be content to pass turbines at closer distances, but for those that cannot, the presence of turbines at closer proximity is effectively an obstruction. Some riders can pass, others cannot. If by comparison a locked gate were placed across a bridleway, that would be recognised as an obstruction, despite the fact that some riders could pass the gate by jumping it. Some riders can pass, others cannot, and it is recognised as an obstruction.

Evidence from Whitelees windfarm in Scotland shows horses and riders passing through the windfarm with few problems, although the distances are not determinable. However, this is a classic case of bias by selection. Participation is by volunteering to perform a challenging task. Some riders will feel confident based on previous experience, and will volunteer. Other riders will not feel confident based on previous experience, and will not volunteer. Hence the participators do not represent the non-participators or the general population of riders.

There are also other issues where the situation shown at Whitelees differs from that in Wales, particularly that of open access to horses through the Scotland Open Access Code, the fact that this was a familiarisation day rather than a ride through an operational windfarm.

3. Output in relation to Capacity

Emphasis is placed on the output capacity of the proposals. Targets are set in terms of capacity. I appreciate that it is not the role of this inquiry to examine government policies. But it is the particular nature of wind energy that it is both inefficient (expressed as output in relation to capacity) and sporadic. Average energy output will be approximately 20% of the rated capacity, and will be produced sporadically over time in a distribution totally unrelated to the fluctuating energy demand. The same applies to all infrastructure. To cope with the occasions (about 10% of the time on average) when the wind is optimal for generation, the capacity of the connecting network has to match the capacity of the proposed installations. For the rest of the time the capacity of the connecting network will be only partially used to a greater or lesser degree (about 70% of the time), or not used at all (about 20% of the time).

Costs and benefits

The evidence presented by developers exaggerates the benefits of the proposed schemes, and dismisses or diminishes many of the costs. I believe that the costs in terms of landscape, environment and loss of amenity are huge from these schemes. I believe the proposals for turbines and infrastructure on this scale greatly exceed the capacity of the landscape to absorb them. Developers should be constrained to the limits of the natural environment, and be developing wind farms on a smaller vertical and lateral scale within TAN 8 upper limits, and in conjunction with genuine renewable energy sources that can be managed with controllable outputs.

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