

Closing Submissions

J. William Short

As I begin these Closing Submissions, I first read through my Opening Statement. After over 50 days of evidence and cross examination, I find that very little has changed. My opening statement could well form the end of my Closing.

I do not intend to rehash the many pages of evidence or hours of cross-examination – they stand by themselves. I will not repeat arguments made far better than mine by CREDIT, TDC, NCC, NNPA, NIA, MoD, NATS and other objectors, they also have responsibilities far greater than mine; suffice it to say that I generally support and agree with them all.

The Objectors all have extensive **responsibilities** – **responsibilities** that are Local, Regional and National. They represent & have **responsibilities** for Public Safety, Public Amenity, Economy (both local & regional), Environmental matters and the Social wellbeing of the people who live in the North East and those who visit the area and use and experience it's many attributes. Weight must be given to those responsibilities and that must be weighed against the sole responsibility of the Proponents – to their shareholders.

I fully support Government Policy in both the need for greater Energy Security and reduction of greenhouse gas emission and also see a clear requirement for public support for those objectives; they cannot be attained by adversarial decision and imposition. Great care must be taken to ensure those important objectives are not manipulated and corrupted simply to give benefit to a few.

The North East has met its 2010 & 2020 Energy targets. Northumberland is within a 24MW of its 2010 power target – and many more suitable alternative applications are in the pipeline. It has already met its 2020 energy related target.

As demonstrated in my evidence, supported by the BERR planning database and to date not contested or corrected by the applicants, developers have now brought forward schemes for wind generation in rural Northumberland that can only be described as wildly irresponsible and totally unacceptable. Compared with the current total installed capacity of onshore wind in the whole of England, a total of 372MW, in Northumberland alone, 130MW has been approved and there is a further 956MW proposed, applied for or under consultation. In the single county of Northumberland, THREE times the total operational figure for the whole of England.

It is not surprising that local opinion & responsible authorities have stopped much of this at planning stage. Such proposals are far beyond those laid out in PPS22. As seen in the extensive local survey, public opinion is now massively against these proposals.

It is many years since I last lectured in Acoustics; I must thank Mr Hayes for reinvigorating my interest in this branch of physics. In many areas and on many issues I am in agreement with Mr Hayes. Specifically, we agreed upon the data & graphs in JWS/O/20 (during XX D40/41) We agree that significant levels of wind shear (and in particular diurnal wind shear) exist on the proposed sites. We agree that these levels are at least equal to, and on many occasions exceed, the levels measured in the research by van den Berg in Germany/Holland.

We disagree on the conservatism of the modelling.

The ETSU calculations on both Ray & Steadings sites show that that limits are extremely close to, or even exceed, the maximum noise levels allowed under ETSU. A clear example of this can be seen in Mr Hayes evidence SWFL 5.5. Even with a very unusual wind shear as low as 0.1 (exponent) shown on p2 App.3F, the ETSU lower limit is exceeded between windspeeds of 4.5 & 7m/s at the village of Gt Bavington.

At more typical wind shear levels of 0.35, again at Gt. Bavington, the ETSU lower absolute criterion is exceeded between 2.6m/s and 7.4m/s. The exceedance is greater than 5dB – not a small amount. It even exceeds the Upper Absolute Noise Criterion between windspeeds of 4.7 and 7.4m/s.

JWS/O/33 p40 shows the 0.4 windshear levels: ETSU levels exceeded at windspeeds over 2m/s, for periods of 1 hour or more, on almost half of the days measured.

All of the above values do NOT include any addition for “adverse” meteorological conditions (according to Mr Hayes in SWFL5.4 para3.7-3.8), also agreed by Mr Simpson in XX on Day 41. The conditions modelled provided a maximum noise overestimate of only 0.2dB, an average underestimate of 0.28 – 1dB and a maximum noise underestimate of 0.5 to 1.4dB. This is optimism and certainly not conservatism.

The above values take no account of reflections from vertical walls, a feature rather likely in the proximity of a house. It was agreed that this could provide an increase of 3dB within 2m of a single wall and up to 9dB where a corner existed. It was also agreed that greater levels existed “at the façade” but Mr Hayes did not agree with the 6dB level stated by WHO (p157)

Even if accepting only the 3dB level up to 2m (which I do not) plus the 0.5dB atmospheric adjustment, this would provide a maximum ETSU exceedance of almost 10dB at Great Bavington village for a substantial number of days (JWS/O/33 p39 does not include the atmospheric adjustment)

Such high noise levels cannot be acceptable – no amount of unsubstantiated “conservatism” in modelling can counter these levels.

The Steadings site was rejected by Wind Prospect – the reasons are clear in their constraints Figure 7 – residential buffer to reduce noise impact. Any attempt to install turbines in this area will produce noise impact that will damage the future of any further on-shore development.

Mr Simpson for Amec, initially gave evidence (Amec 4.7 paras 1.1.12 – 1.1.18) that there was NO diurnal wind shear and that wind shear had no effect upon his calculations. I find these assertions deeply disturbing.

Mr Simpson later accepted under cross examination that his own data measurements showed considerable windshear, that diurnal windshear was evident at Ray, that the wind shear levels were equal to or exceeded the van den Berg analysis. When asked if the 18dB errors discussed by van den Berg would apply, Mr Simpson agreed that there would be significant errors but that “my estimate is for an exponent of 0.25, you’d be getting a difference of 5dB, 0.35 is 9dB and at 0.47, a 10db error”

During cross examination I took him to table 6 of the ION report (Amec 5-4) and discussed the effects of the wind shear levels that he had accepted. He accepted that

ETSU levels could be exceeded by 2.2dB at Cornhills and by 6.3dB at Larkhall even in Mode 1 operation.

He then stated that “this is data that would have to be taken into account by the developer in seeing if the 35dB lower level can be met. Windshear will need to be taken into account with a greater level of control of turbines or even turning off some”

He then accepted that these were free field levels and did not take into account any reflections that would occur within 2m of a wall.

He also accepted the relative humidity and temperature corrections could be a further 0.5-1.4dB to be added.

I would submit that all of these matters should properly have taken into account be the developer in their Environmental Impact Assessment prior to application. There is no plan or proposal that in any way demonstrates that wind shear can be taken into account and turbines controlled or turned off; yet this is necessary to comply with ETSU limits.

I would further submit that WHO limits must also be taken into account when considering the Key Principles of PPS22. As stated in the Guide to PPS22, ETSU provides a *methodology* for assessment of noise for wind farms – it provides recommendations and guidance on good practice but it can not be given greater weight on health matters than the WHO document which specifically deals with that aspect.

The methodology within ETSU has been used, but was flawed in such a way as to skew results in favour of the developers. Three errors provided that skew. Firstly the background noise measurement locations did not conform with the ETSU requirements. Despite clear guidance, measurement locations were not a minimum 2m from a wall or vertical surface that would provide reflections (and a possible increase in noise levels of up to 3dB)

Secondly, measurements included birdsong during the “night-time” hours. This was clearly visible in the ETSU graphs, was accepted and indeed referred to in the developers evidence. The sudden noise increase at dawn is clear and is in excess of 5dB. The inclusion of this noise (which is totally unrepresentative for much of the year) is a further skew in favour of the developer.

Lastly the noise wind speed measurement location for Steadings. This was located in an area of exceptionally high roughness. As noted in ETSU a high roughness results in a low wind shear (due to turbulence produced over the rough ground) The nearby Gt Bavington crag would completely prevent any laminar flow – it would prevent any accurate & representative wind speed record during periods of high wind shear experienced at the sound measurement sites. The wind speeds used throughout the ETSU methodology would thus be lower and more variable than at the sound monitoring locations thus further skewing the calculation in favour of the developer. Mr Hayes stated that the monitoring company conceded that greater deviations would result from that location and that although averages would be “about right”, an anemometer would be required to sample more fully and to get accurate figures. It should be noted that SWFL refused to supply the more accurate anemometer figures for the site: they quoted commercial sensitivity of data at a location surrounded by multiple monitoring masts thus figures are widely known to multiple companies but were denied to this Inquiry.

It should also be noted that Mr Simpson, under my cross examination, gave his own estimate of the errors due to wind shear as being 5dB to 10dB for typical (and frequent) wind shear exponents.

The above errors are all in one direction – they completely negate any possible conservatism in the rest of the model. I would submit that it is essential that only the lower ETSU limit is applied throughout any noise condition. Any higher levels would simply lead to unacceptable loss of amenity, health effects, an excess number of complaints and a resultant unacceptably high workload placed upon Local Authority Officers.

Even these flawed ETSU measurements clearly show that, under wind shear conditions that occur frequently during both night-time & amenity hours, the guidance limits of **both** WHO and ETSU itself are exceeded by both Ray & Steadings proposed developments at a number of properties and by Steadings within the village of Great Bavington. No adequate means of automatic control have been suggested – simply an acknowledgement that “it must be taken into account and turbines turned off”. There is no adequate condition that could protect residents. Further measurements, controls or limitations could only be applied after the event and has been demonstrated by the evidence and experience of Julian & Jane Davis, such assessment after construction is, in practice, impossible. The Development proposals have not stated how the environmental and social impacts due to this noise have been minimised through careful consideration of location, scale, design and other measures as is required by PPS22 key principle viii

During my cross-examination, Ms Kay Hawkins conceded that the DEFRA assessment repeated on p1 of JWS/O/2 was, in terms of an overview, “a very important piece of Government Policy”

These clear statements specifically about this area, specifically referring to both the natural environment and it’s “critical” effect upon tourism must be viewed in conjunction with the Key Principles of PPS22.

Statements such as “the continued maintenance of the region’s high quality environment will be central to tourism’s competitive advantage.”

The First Key Principle limits development to “ locations where the technology is viable and environmental, economic, and social impacts can be addressed satisfactorily.”

The social & economic effect of even the 10%-30% drop in tourism suggested by reputable surveys, would be totally unsatisfactory – it would be devastating to an already struggling local economy.

During cross-examination Ms Rylott conceded that more than two developments would exceed the carrying capacity of the area and if two were allowed, then Ray & Green Rigg would be preferred. I would submit that any more than a single development would have excessive cumulative effect. The developments are all very different in aspect – Ray a long line of turbines along the ridge, Steadings in clumps, spread over a wide area and Green Rigg a condensed cluster. These do not aggregate well in any combination.

I have always been prepared to rank the proposals – to compare and contrast their respective advantages and disadvantages.

Steadings has only one factor to commend it: it is placed largely within the area of low landscape sensitivity, the Upland Fringe Farming (UFF).

The disadvantages of the specific location within the UFF are, however, great. It is located in that area of UFF which has the greatest concentration of residences. It is largely close to the high sensitivity Rolling Lowland Farming landscape. It is clearly a large development not the medium development considered suitable in the RSS. It is designed with large turbines rather than the medium height considered the maximum in the GONE landscape assessment – indeed that assessment considered “small”, less than 80m, to be the maximum near to the RLF landscape character type. Due to the close proximity to residences and the village of Gt. Bavington, noise becomes a major factor in excessive social & environmental impact. It clearly does not conform to the Key Principals of PPS22. The dispersed cluster arrangement is clearly visible across a very wide area of Northumberland, along an extensive section of the Roman Wall World Heritage Site, across a large area of the National Park and near three main tourist routes. There appears to be no attempt to minimise impact.

Ray, in the 16 turbine evolution, is still clearly placed in an area of High Landscape Sensitivity defined in the GONE study. It is not in an area of Least Constraint as defined in the GONE GIS system having both landscape and multiple aviation constraints. It does not comply with PPS22, in that it is a long line of large turbines placed along a prominent ridge which is clearly visible across a very wide area of Northumberland, along an extensive section of the Roman Wall World Heritage Site, across a large area of the National Park and alongside three main tourist routes. There appears to be little attempt to minimise impact.

Green Rigg is the only “medium” development as defined by both the RSS and the GONE Landscape Study. A little over half of the site is within the area of least landscape constraint (the UFF LCT). It is a single cluster that minimises the area of immediate impact and minimises the visual impact upon the wider area. It is immediately adjacent to a main tourist route but only one route. It is nearer to the National Park and most of the Roman Wall WHS, but the smaller turbine height reduces that comparative impact. The disadvantages include its close proximity to the Great Wanney Crag and to the lesser crags on the site (with one turbine being placed only 90m from a crag). The Landscape Assessment is very clear that turbines would diminish the heights of smaller crags and such locations should be avoided. Ms Hawkins conceded that point during XX.

The ranking of sites is thus very clear – Green Rigg is the best; Steadings is by far the worst.

It should not, however, be concluded that Green Rigg is in the best available site within the area. The GIS system makes it clear that a site of lower constraint lies to the West of Green Rigg and a second site of lower constraint lies to the North East of Knowesgate. One disadvantage of permission being granted for any one of these three proposals is that it is likely such permission would prevent future developments at one of these more suitable alternatives due to cumulative effect.

The aviation disaster risk is of major concern to local people. We do not wish to be another Lockerbie. There has already been a near collision, involving an airliner, resulting in an aircraft crashing and loss of life within our area. Warnings were given to that airliner allowing it to take avoiding action. The extensive RAF trials over much smaller wind turbines proved that considerable obscuration of RADAR coverage did exist for some kilometres around the wind farm. The proposed developments are placed across a narrow gap between restricted airspaces that is extensively used by

commercial heavy jet airliners, RAF aircraft on approach to a unique and highly necessary training facility and General Aviation aircraft.

Any reduction of RADAR coverage will limit Air Traffic Control. Any reduction will increase RISK of further loss of life. Such risks to RAF aircrew, passengers & crew of airliners and to people living below can not be acceptable.

The Kyle decision sets a precedent on aviation matters. The similarity between the Newcastle International Airport case and that near Prestwick is clear. In this case there is not just one aviation case. There are three quite distinct aviation reasons why permission should be refused. As in the Kyle decision, the likelihood of any acceptable mitigation of the three aviation issues within a reasonable timeframe is extremely low. As with Kyle this extended timeframe would place an unacceptable burden on local people due to planning blight.

CD328 notes a clear need for agreed specification of mitigation measures and the requirement that such a solution can be delivered in a reasonable timeframe. It is clear that in all three aviation cases, there can be no compliance with such guidance.

The extended timeframe is made even greater due to the Grid Connection situation. Attempts are being made to speed up grid connection with "Connect & Manage" but this would not apply to sites that do not have a realistic prospect of early generation. This would clearly be the case with these proposals due to the aviation mitigation requirements. As shown in evidence, there is little prospect of connection within 10 years. Indeed, the very large number of alternative sites available and being considered in the northern part of the United Kingdom would mean that it is very likely that the maximum possible national capacity for wind generation will be reached well before any of these three sites could begin generation. Any permission given would simply be a worthless imposition upon the local population.

The combined effects of aviation constraints and grid constraints remove any viability for these schemes.

I would, however, ask that in refusing permission, consideration should be given to the many other proposals that exist within the area. There may be the possibility of an acceptable grid connection to the local loop and a small configuration of wind farm that may be acceptable to the aviation interests. There is also the great danger that multiple new proposals would result in multiple new Public Inquiries. That would certainly place an unacceptable burden on both Local Government and the local population.

I would hope that a clear statement be made that the capacity for development is limited.

I would also ask that a clear statement be made that, in line with PPS22 para 25, aviation issues should be addressed to the satisfaction of not only the Local Authority but also the MoD, NATS and NIA, BEFORE any future planning applications are submitted in this area or in areas immediately adjacent to Knowesgate.

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