

**APPLICATION BY NORFOLK VANGUARD LIMITED FOR AN ORDER GRANTING DEVELOPMENT
CONSENT FOR THE NORFOLK VANGUARD OFFSHORE WIND FARM PROJECT**

OPEN FLOOR HEARING

Wednesday 24 April 2019

Time: 19:00

Dereham Sixth Form College, Crown Road, Dereham, NR20 4AG

REGARDING VERBAL STATEMENT ON BEHALF OF PROFESSOR TONY BARNETT

I am Professor Tony Barnett of the London School of Hygiene and Tropical Medicine and my earlier evidence to the Ørsted enquiry was submitted by Cawston Parish Council as part of their bundle entitled *Cawston Parish Council's Deadline 6 post hearing submissions and confirmation of oral case*.

Within that bundle they supplied my report as "*Public Health, Pollution and the Real Costs to Society*."

I now wish to add the following additional information which expands upon and deepens some of my observations about whether or not Public Health England (PHE) had indeed commented on the issues I raised in my report. Below I do two things:

- (a) Reproduce the original text of Preamble 1 in my report;
- (b) In bold characters, explain why the PHE supposed evidence alluded to in their statement by Ørsted does not engage the public health issues I have raised nor could it do so given that
 - a. additional traffic estimates were not available at the time of the PHE letter for either the B1149 or B1145.
 - b. The broader public health issues I raise in my report had neither been raised nor addressed.

"PREAMBLE 1

I do not object to use of wind powered energy generation.

I wish to draw to the Examiners' attention several issues to do with the public health effects of the construction process as it impacts upon people and communities living along the routes of the B1149 and the B1145. I also wish to draw to the Examiners' attention some well-known technical issues associated with project costing methods. These should be taken very seriously by them in any assessment of the viability and true costs of the project.

I approach the Examiners in the spirit of exploring and ensuring proper consideration of public health risks and costs to wellbeing generated by this national infrastructure project as currently conceived.

The Examiners will have noted at the meeting Open Floor Hearing about Ørsted on 25 March, and at meetings in local communities affected by Vattenfall, individuals, families and communities are experiencing great anxiety and distress because of the way that project execution has been envisaged. This upset is not a passing experience, nor is it special pleading; it reflects present and potentially long-term cost to people and communities and should be considered as such by the Examiners.

All projects, national or local, have costs. I begin by outlining some technical economic issues concerning calculations and consideration of cost as a general background to the work of an enquiry such as this. These fall into three broad groups:

- a. Costs which are clearly money costs: an example is the cost of land acquisition for a project on an open and fair market.
- b. Costs which are not directly financial but may be more or less satisfactorily translated into money costs; an example might be a farmer's loss of the use of her or his land while the project uses it for a project related purpose over a number of agricultural seasons.
- c. Costs which are not at all easily translatable to money terms; this is particularly germane to the present examination and examples might include health effects, reduction in life expectancy, epigenetic effects, late developing illness associated with medium- or long -term exposure to particulate matter generated by project related additional traffic. Such effects may be very long term in their consequences. These types of costs are all too easily ignored although they are often very serious given their long-term effects on human health and welfare. In addition, such medium to long term effects on morbidity and/or mortality including reduced length and/or quality of life, are all too easily dismissed by intending developers because (as with tobacco related morbidity or mortality) the causal chain is long and there are likely to be confounding factors.

Because these costs are difficult to quantify, when they are considered they are often represented either by inadequate proxy indicators or ignored entirely. The costing process often ignore the externalisation of project costs onto populations outside the project's immediate spatial area and outside its immediate time duration. It is for this reason that the Examiners are invited to bear in mind the following question together with further technical issues and requests for information contained in question 3."

ADDITIONAL TEXT AS FOLLOWS

The Examiners should be aware that applicants for these schemes have been found to take very tightly circumscribed responses from Public Health England stating that they do not have concerns about certain very detailed and specific technical issues such as Electro Magnetic Fields and represent them as Public Health England's opinion about much wider public health concerns such as those raised in this document. For an example of this, the Examiners are referred to the Hornsea Project Three May 2018 document Environmental Statement: Annex 3.3 – Electro-Magnetic Fields (EMF) Compliance Statement PINS Document Reference: A6.4.3.3 sAPFP Regulation 5(2)(a) p. 5 which refers explicitly to EMF issues alone and to the letter from Dr Haymond Lam of Public Health England dated 13 September 2017, a copy of which is attached to this document.

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Mr Stuart Livesey
Project Development Manager
Hornsea Project Three Offshore Wind Farm
DONG Energy, 5 Howick Place,
London
SW1P 1WG

13 September 2017

Dear Stuart,

Your Ref:
HOM03_42_02082017
Our Ref: 37878

**Nationally Significant Infrastructure Project
Hornsea Project Three Offshore Windfarm
Section 42 Consultation**

Thank you for your consultation regarding the above development. Public Health England (PHE) welcomes the opportunity to comment on your proposals and Preliminary Environmental Information Report (PEIR) at this stage of the project.

PHE notes that we have replied to earlier consultations as listed below and this response should be read in conjunction with that earlier correspondence.

Request for Scoping Opinion responded on 25th November 2016

We have considered the submitted documentation and can confirm that we are satisfied with the approach taken in preparing the PEIR and the conclusions drawn.

We have assessed the submitted documentation and wish to make the following comments:

We note that whilst the submitted reports do not identify any significant risk to public health, traffic movements associated with the overall development and the onshore construction activities may generate some localised issues, particularly noise, which will need careful management during the development phase.

PHE has reviewed the Preliminary Environmental Information Report: Annex 3.3 - Electro-Magnetic Fields (EMF) Compliance Statement and consider the assessment it contains to be satisfactory. There are a couple of factual points in the text of the Annex that should be checked and revised, although that does not reflect on the sufficiency of the assessment. These are:

1) Para 1.2.2.14. Check the latest IARC lists of classifications. Coffee has moved from Class 2B to Class 3.

2) Para 1.3.1.2. Revise first sentence. HPA RPD recommended adopting the ICNIRP guidelines in its 2004 advice. The government responded to that advice by adopting the guidelines in the terms of the 1999 EU Recommendation.

We understand that the promoter will wish to avoid unnecessary duplication and that many issues including air quality, emissions to water, waste, contaminated land etc. will be covered elsewhere in the ES, but we believe that the summation of relevant issues into a specific section of the report provides a focus which ensures that public health is given adequate consideration and due weight in the planning process. The section should summarise key information, risk assessments, outline any proposed mitigation, and identify any residual impacts or uncertainties. Compliance with the requirements of National Policy Statements and relevant guidance and standards should also be highlighted.

Should you have any questions or concerns please do not hesitate to contact us.

Yours sincerely



Environmental Public Health Scientist
nspiconsultations@phe.gov.uk

Please mark any correspondence for the attention of National Infrastructure Planning Administration.

FURTHER ADDITIONAL EVIDENCE SUBMITTED 1 MAY 2019

1. Re: correspondence from Public Health England (PHE)

I have now received a response from Public Health England regarding the correspondence from Dr Haymond Lam dated 13 September 2017. This is the section 42 scoping response to which reference is made below and shown above at page 3 of my comments today.

This response dated 1 May 2019 states as follows:

'Dear Prof Barnett

Thank you for your letter, in light of the timescales for a response, it is useful to note that our section 42 scoping consultation response highlighted that it should be read in conjunction with previous correspondence such as our response to the scoping opinion on the 25th November 2016, where the need to consider issues such as air quality were highlighted.

Our section 42 response also highlighted "that whilst the submitted reports do not identify any significant risk to public health, traffic movements associated with the overall development and the onshore construction activities may generate some localised issues, particularly noise, which will need careful management during the development phase. In particular we note the need for a comprehensive Construction and Environmental Management Plan."

Our understanding from the submitted documentation was that these aspects would be addressed through detailed consultation with the district and county councils.

I hope this helps and happy to discuss this further.

Kind regards

Carol Richards

NSIP Admin Team'

As far as I can judge:

- a. neither the PHE's scoping consultation opinion dated the 25th November 2016, nor**
- b. the section 42 scoping response dated 13 September 2017**

considers or comments in any serious manner upon the wide range of public health and welfare issues which I described in my original evidence submitted to the Examiners at the Open Floor Hearing at Dereham on Wednesday 24 April 2019. The Examiners will note that there I cite *inter alia* PHE's own research as partial support to my argument together with other sources.

In addition to the above, while Ms Richards from PHE states that "these aspects would be addressed through detailed consultation with the district and county councils." I draw to the attention of the Examiners that "these issues" – those that I have raised in my original evidence – have not been examined through any detailed consultation with the district and local councils. Furthermore, I should add that what she describes (using the wording of Dr Lam's letter of 13 September 2017, as "some localised issues", are in fact extremely significant and long-term issues for the health and

welfare of a substantial population in the communities around the B1145 and B1149. I also note that the people of these communities are described throughout the Vattenfall documentation as “receptors”. I leave it to the Examiners to decide whether this linguistic oddity reveals anything about how the local people with their “localised issues” are seen by Vattenfall.

2. Re: Methods used to cost the Vanguard Project

In a previous submission from Cawston Parish Council dated 5 April certain private email correspondence between me and a parish council representative was inadvertently entered into the evidence base. I now wish to refer to what was an informal comment in a more formal manner.

My purpose in the informal language of my private email was to report that an observer had commented to me that, were this project a military project, special transport routes would be made across open land rather than trying to accommodate such a project within the evidently inadequate public road system leading considerable excess traffic through settled communities with substantial populations.

The formal economic point arising from the above to which I would like to draw the Examiners’ attention is that the overall costing of this project as it stands is formulated on the basis that its considerable *externalities* (costs generated within and by the project but displaced onto others and therefore not counted in the project accounting cost-benefit or cost-efficiency analyses if these exist) are in fact displaced onto the local road system and local communities (and their local taxes to pay for this unusual use) over a very long time. These costs can be ignored within the existing costing method because they become invisible as they appear (after displacement) in the local authority budgets in increased road repair costs and in the health and welfare costs absorbed by local people’s bodies over a long period.

Were these costs to be calculated – for example through the method of Disability Adjusted Life Years (DALYS) (see Appendix 1 for an explanatory note on this method which is used and recommended by the World Health Organisation) applied to the health and welfare of the local community, it is almost certain that the temporary use of open country for the transport requirements over the life of the project would be considerably less than the cost to the health and welfare of the local communities.

Indeed, it would much easier to calculate the money cost of such a strategy given that loss of a strip of land for n years of the life of the project could be calculated on a simple basis using land rental/purchase prices + production foregone + an element for disruption and reinstatement or some similar accounting method.

Such an approach would make the true costs of the project clear instead of making them invisible by imposing them and indeed disguising them in non-monetary costs imposed on the local communities.

This method and this strategy is to be encouraged so that an environmentally sustainable project to provide wind powered energy to the whole of the UK does not result in the local communities of this part of Norfolk paying quite disproportionately for that energy generation through immediate disturbance and long term increased morbidity, poor health both physical and mental, and very likely premature mortality.

Appendix 1

Metrics: Disability-Adjusted Life Year (DALY)

Quantifying the Burden of Disease from mortality and morbidity

Definition

One DALY can be thought of as one lost year of "healthy" life. The sum of these DALYs across the population, or the burden of disease, can be thought of as a measurement of the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease and disability.

DALYs for a disease or health condition are calculated as the sum of the Years of Life Lost (YLL) due to premature mortality in the population and the Years Lost due to Disability (YLD) for people living with the health condition or its consequences:

Calculation

$$\text{DALY} = \text{YLL} + \text{YLD}$$

The YLL basically correspond to the number of deaths multiplied by the standard life expectancy at the age at which death occurs. The basic formula for YLL (without yet including other social preferences discussed below), is the following for a given cause, age and sex:

$$\text{YLL} = N \times L$$

where:

N = number of deaths

L = standard life expectancy at age of death in years

Because YLL measure the incident stream of lost years of life due to deaths, an incidence perspective has also been taken for the calculation of YLD in the original Global Burden of Disease Study for year 1990 and in subsequent WHO updates for years 2000 to 2004.

To estimate YLD for a particular cause in a particular time period, the number of incident cases in that period is multiplied by the average duration of the disease and a weight factor that reflects the severity of the disease on a scale from 0 (perfect health) to 1 (dead). The basic formula for YLD is the following (again, without applying social preferences):

$$\text{YLD} = I \times DW \times L$$

where:

I = number of incident cases

DW = disability weight

L = average duration of the case until remission or death (years)

Prevalence YLD

The recent GBD 2010 study published by IHME in December 2012 used an updated life expectancy standard for the calculation of YLL and based the YLD calculation on prevalence rather than incidence:

$$YLD = P \times DW$$

where:

P = number of prevalent cases

DW = disability weight

Social value weights (age-weighting and discounting)

The original Global Burden of Disease Study and WHO updates for years 2000-2004 also applied several social value weights in the calculation of DALYs for diseases and injuries. Apart from the disability weights, these also included time discounting and age weights.