

**TONY BARNETT ON BEHALF OF CORPUSTY & SAXTHORPE PARISH COUNCIL
8 FEBRUARY 2023**

**REGARDING THE APPLICATION BY EQUINOR NEW ENERGY LIMITED FOR AN
ORDER GRANTING DEVELOPMENT CONSENT FOR THE SHERINGHAM SHOAL
OFFSHORE WIND FARM EXTENSION PROJECT AND DUDGEON OFFSHORE
WIND FARM EXTENSION PROJECT**

1. This intervention falls under the notice of 13 December 2022 Planning Act 2008 (PA2008) –Section (s) 88 and 89 and The Infrastructure Planning (Examination Procedure) Rules 2010 –Rules 4, 6, 9, 10 and 13 and deals with matters of concern to Corpusty and Saxthorpe Parish Council. However, it also has broader relevance to the data, principles, methodology and methods upon which the Application rests. It is therefore applicable across the very large region of England affected by this proposed development.
2. By way of introduction, the ExA is invited to note that Corpusty & Saxthorpe Parish Council wholeheartedly welcomes the development of sustainable power generation through wind-power¹. Also by way of introduction, we invite the ExA to consider seriously what should already be apparent: the manner in which the vast quantities of project documentation, composed of many volumes, appendices, sub-appendices and indeed “libraries” could be intended, and are experienced by local communities such as parish councils, as cynical attempts to overwhelm the capabilities of such voluntary community organisation to engage with the overwhelming power of large corporate entities and government and quasi-government agencies as well as, indeed, the Crown Estates.
3. Our emphasis here is on how we should understand the effects of the proposed on-shore wind farm transmission technology on the health and well-being of the affected populations across a large swathe of the east of England, in the process using some local examples which apply to Corpusty and Saxthorpe and the adjacent areas of Norfolk, but not restricted to these.
4. In discussing this understanding, we point to the inadequate compensatory arrangements consequent upon poorly designed research on the health and well-being effects of the proposed project.
5. Our comments relate mainly to the following documents but are not restricted to these documents alone:

¹This document has been prepared by Tony Barnett on behalf of and in consultation with Corpusty & Saxthorpe Parish council. He writes in three capacities: (a) as a Parish Councillor; (b) as a resident of Corpusty; (c) in his professional capacity as, variously, a former Professorial Research Fellow at the London School of Economics (LSE) and at the London School of Hygiene and Tropical Medicine (LSHTM), as a current Visiting Professor at the LSE and as a Professor at the Royal Veterinary College. In all these capacities he has researched the social and economic impacts of large-scale disease events on the health and welfare of populations, usually associated with zoonotic diseases and notes that the methods for understanding such events have commonalities with the methods for assessing the impact of a project such as that proposed by Equinor.

- a. Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects Environmental Statement Volume 1 Chapter 27 - Socio-Economics and Tourism August 2022 Document Reference: 6.1.27
 - b. Annex C: Initial Assessment of Planning Issues S. 21. Socio-economic effects, Inter-related effects on human health and community well-being.
 - c. Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects Environmental Statement Volume 1 Chapter 28 – Health, August 2022, Document Reference 61.28
6. Annex C is very welcome because of its express mention of “Socioeconomic effects, Inter-related effects on human health and community well-being”. This statement stands in contrast to the exclusion of these matters from proper consideration in the examination of other submissions regarding wind power developments affecting this region, namely those originated by Vattenfall and Ørsted.
7. However, we note - with some disappointment - that despite this aspiration, on examination the ways in which these issues have been approached have marked methodological shortcomings. The extent of these shortcomings is such as to lead to the conclusion that the supposedly *extensive* “evidence” is inadequate to any proper consideration of the “socio-economic effects, inter-related effects on human health and community well-being”. These shortcomings should be of concern to the ExA in their considerations. Our reasons for coming to this conclusion are explained in the next paragraphs.
8. We respectfully advise the ExA to note that while the multi-volume documentation accompanying the proposed scheme is replete with *allusions* to evidence, very little of this “evidence” is indicative of serious consideration of the project’s effects on the health and well-being of the affected populations. This is so in the following three respects:
- a. the way the problem has been framed;
 - b. the types of data deployed;
 - c. absence of appropriate expertise in making the analyses.
9. We shall deal with each of these aspects in turn.

The way the problem has been framed: at its simplest, consideration of any project from an economic/project planning perspective should concern itself with the key economic issue, of what economists describe by using the concept of “externalities”.

Simply put this concept concerns the ways in which action in one place or in relation to a specific project or activity generates effects/impacts which constitute “costs” in another place outside of the project. This approach is central to properly conceived cost-benefit analysis where such externalities are thought of as generating “costs”. The effects on the health and well-being of the population affected by the Equinor project is an example of a fairly straightforward conceptualisation designed to take proper account of externalities associated with the on-shore transmission and other associated works generated by the project.

At its simplest, the chain of reasoning linking the origin of such externalities *within* the project involves steps such as (a) identifying the externalised costs (b) specification of such effects/costs” (c) considering the time period over which such costs are to be considered to have an effect and (d) estimating the quanta of such costs with a view to balancing these costs by calculating methods of compensation using a range of market and non-market proxies as appropriate.

To clarify the latter point, a crude market proxy technique might ask people how much they would pay to have the noise of drilling/traffic/or other similar project disturbances removed from their village and then compensating them by that amount. This is a crude and somewhat dated approach. A more sophisticated approach would use *hedonic costing*, examining the loss of enjoyment which people experience because of project activities. This latter can be seen as a partial measure of “well-being” which could be combined with considerations of positive and negative effects on people’s health during and after the construction phase of the project.

Such approaches as those we have describe are curiously absent from the approach adopted by Equinor which is heavily dependent upon a schematic conceptualisation which they describe as “the ‘wider determinants of health’ model” (Doc. No. C282-RH-Z-GA-00045 6.1.28, Rev no.1, para 61, Plate 28.1) first developed by Dahlgren and Whitehead in their 1991 *Lancet* paper (Whitehead & Dahlgren, 1991). This approach, which the authors have recently reviewed (Dahlgren & Whitehead, 2021), was never intended to be used for such purposes, indeed the authors say in their recent paper: “The model conceptualises the main determinants of health for the whole population, which may differ from the most significant determinants of the social inequalities in health observed in that same population.” (Dahlgren & Whitehead, 2021, p. 21). In other words, use of this model as it is deployed in the proposal documents is an example of what is known to logicians as the ecological fallacy².

The significance of this comment is that while the diagram presented in Plate 28.1 above presents a *general* account of determinants of health, it does not deal with specific situations, and the externalities generated by a project such as that being proposed here, requires significant detailed analysis of the cost of such externalities as they are imposed on local communities if they are to be understood with a view to proper appreciation of their quanta and thus of correct criteria for compensatory action.

It is curious to note that nowhere in their discussion of their methodological framing of the problem of health and well-being, do the Equinor documents refer to either the readily available project planning guidance available in HM Government’s *Green Book*, in particular the recently updated 2022 edition (Fujiwara & Campbell, 2011; Treasury, 2022) which give useful advice as to how to deal with project related externalities or to the extensive literature and methods discussed in relation to project planning associated with either **Quality of life and capabilities theory** (Naz, 2020; Nussbaum & Sen, 1993) or with **Public Goods theory** (Besley & Ghatak, 1999; Cornes & Sandler, 1996; Inge Kaul, Conceicao, Le Goulven, & Mendoza, 2003). Nor,

²An ecological fallacy is a logical error occurring when the characteristics of a group are attributed to an individual. In other words, ecological fallacies assume what is true for a population is true for the individual members of that population.

in relation to hedonic costing specifically do they refer to the extensive literature on happiness economics (Diener & Oishi, 2000; B. Frey, 2008; B Frey & Stutzer, 2002; Layard, 2005; Oswald, 1997). The latter omission is important because when people speak and write about their worries concerning construction-associated disruption to their daily lives, or to worries associated with their feelings of powerlessness in the face of these interferences and – as a germane example – the effects on their well-being of being asked to wade through vast libraries of project documents, or when Ms Alison Shaw from Oulton Street described in her verbal presentation to the ExA at the public session in Norwich on the afternoon of 17 January 2023, the stress she has experienced in trying, as a parish councillor, to engage with these process, she is describing hedonic costs imposed by the project experienced by one person. Such costs should be taken into consideration in costing project generated externalities.

All these methodological omissions are apparent in the many pages of what (as it turns out) are very poorly formulated discussions of, for example, “Impact Assessment Methodology” (see 28.4.3) to be found in Doc. No. C282-RH-Z-GA-00045 6.1.28, Rev. no.1.

Because of these conceptual and theoretical shortcomings, the resulting data assembly methods presented in Table 28-6 should be considered as limited, biased and inadequate to the task of understanding the health and well-being effects of the project.

In the light of these remarks the ExA might want to consider and bring into the focus of its considerations the distinct possibility that Equinor’s entire submission in relation to health and well-being skews the way in which this project is being appraised. Indeed it is presented to the ExA and to HM Government in a way that fails to take proper account of the understanding and estimation of the project-associated costs being imposed upon local communities over a long period.

These shortcomings invalidate and impose serious limitations on appraisal of the entire proposal as it has been presented in Equinor’s voluminous documentation. This point is examined in more detail in the next section.

The types of data deployed; without exception, the “data” that Equinor present as “evidence” in relation to health and well-being effects are *secondary* data, often at the wrong scale for the task in hand and also frequently dated. However, even more serious than this is that their choice of “data” is biased because it is selective in its approach, exhibiting confirmatory bias toward what they intend to achieve rather than adopting an approach which tries to understand and assess the effects of the project on well-being, in other words following a logical identification of “costs” and their quantification as we have described above. One example of many will illustrate this point.

In Doc. No. C282-RH-Z-GA-00045 6.1.28, Rev. no.1, Table 28-6 NPS Assessment Requirements, while Row 2, Column 3 claims that “well-being is considered throughout this chapter”, well-being is not defined and consequently appropriate parameters for its measurement are not presented. In many cases the approach which Equinor has adopted is to refer only to very broad policy documents as described in Table 28-7. Once again, these criteria are so broad as to be inappropriate to understanding the well-being effects on the diverse local communities across the very large area affected by the project. An interesting choice of language speaks volumes

of the implicit/unconscious biases which frame the way that data are used and presented, viz Doc. No. C282-RH-Z-GA-00045 6.1.28, Rev. no.1 paras. 82 and 83, pages 51 and 52 (there are many other examples):

“82. The assessment provides reasoned conclusions for the professional judgement as to whether in EIA terms an effect is significant, or not. Where appropriate, variation expressed in each evidence source has been reported. This approach is considered proportionate and in line with best practice for the consideration of human health in EIA.

83. For the purposes of the EIA, major and moderate effects are considered to be significant. In addition, whilst minor effects are not significant in their own right, it is important to distinguish these from other non-significant effects as they may contribute to significant cumulative effects.”

These two paragraphs are phrased in a way (the phrases “is considered”, “are not considered” stand as examples) which suggests that these are widely held and uncontested and conclusive pieces of information/judgement. We say that they are not and that this kind of presentation of “evidence” skates over important omissions, namely the absence of detailed evidence drawn from carefully designed consultations about well-being derived from interactions with individuals, households, and communities rather than from reference to highly generalised policy documents or from consultations with local government officials and local government policy documents as is evident in para 91 where the following is stated:

“Secondly, the inter-project cumulative effects are considered. As with other chapters, projects are screened for assessment based *on a list agreed with local authorities*. Then projects are considered for cumulative effect at different locations and for different vulnerable populations listed above.” (italics added for emphasis).

A little objective consideration shows that the entire approach in this documentation which claims to deal in “evidence” is really making claims about what is known about very large populations in ways which are derived from high level policy documents *or* are concerned with very local *design* issues, for example choice of precise drilling routes. They fail singularly to drill down into specifics.

The ExA might want to consider whether these inadequate approaches, whether by intention, omission, or simple unconscious bias, result in failure to properly consider questions of health and well-being. We believe this to be the case and the next section shows in one important detail why this might be so.

Expertise in making the analyses: here we draw to the attention of the ExA the document *Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects: Environmental Statement. Volume 1, Chapter 27 - Socio-Economics and Tourism*, dated August 2022, Document reference 6.1.27 APFP Regulation 5 (2) (a).

The results of, and indeed, the total sum of their consultation results are largely summarised as “Socio-economics and Tourism” in Table 27.1 on page 11 of this volume. Here we raise the important question of the professional competence deployed in this critical study. The ExA should note that this volume was approved on 22 August 2022 by [REDACTED]. [REDACTED] is an Earth Scientist

important aspects necessary for understanding project impact and externalities as discussed above. This judgement is not unique to this report, it has also been remarked by Professor John Glasson⁵, a consultant to another offshore windfarm project, Vattenfall (John Glasson, Bridget Durning, Tokunbo Olorundami, & Welch, 2020). In a very recent paper, published in 2022, concerning assessment of impact of offshore wind farms (OFWs), Professor Glasson comments as follows:

The coverage of social impacts in ESs for OWFs is disappointing, with many having little coverage at all. Some briefly mention social impacts, especially potential construction workforce impacts on housing and local services. A few go further with content on demography, housing and local services, and on local quality of life. However, even in such cases there is normally little depth with respect to specific issues; for example impacts of projects on cost of housing, community wellbeing (noise, increased vehicular movements, diversions etc), and community cohesion (Chadwick and Glasson, 2017). Yet there may be local community concern about potential housing price devaluation associated with visible projects (Alem et al., 2020). Overall, there appears to be a general assumption by developers and their consultants, across small and large, and older and recent projects, that social impacts are not important. As such, EIA scoping exercises generally underplay them. The recent scoping exercise for the major Hornsea 4 project provides a clear example of limited coverage of social impacts (Orsted, 2018b). Assessment methodology for social impacts is largely descriptive and qualitative, building on baseline studies of local demographics and economic conditions, with a predominant use of professional judgement and comparative studies. In several studies, there is little evidence of the role of public participation to assess social impacts; yet this is important for socio-economic issues and a requirement under the English national infrastructure regime (DECC 2011). This can marginalise community input, and may in part explain the limited social content.(Glasson, Durning, Welch, & Olorundami, 2022).⁶

In the light of such expert opinion, the ExA should not form the opinion that this document prepared by Corpusty & Saxthorpe Parish Council and the judgements made within it regarding the inadequacies of Equinor's assessment of health and well-being aspects of their proposed project are partial. They are not. Professor Glasson's comments show that they are based on a proper understanding of the problem of arriving at quantification of project associated externalities.

11. At the Public Examination in Norwich on 17 January 2023, the chair of the ExA, Ms Menaka Sahai, having heard our preliminary verbal presentation, invited submission of this more comprehensive report and requested in particular that we

⁵ Professor Glasson has academic qualifications in economics from the LSE and in regional planning from Lancaster University. He is a chartered town planner (MRTPI), and member of the International Association for Impact Assessment (IAIA). In addition, he is a Consultant and Professor Emeritus of Planning and Impact Assessment in Oxford Brookes University's Faculty of Technology, Design and Environment, and a Visiting Fellow at the Centre for Innovation Management and Research at Birkbeck College, University of London. He has been a Visiting Professor in Environmental Planning at Curtin University, Perth, Western Australia (2000-2014), and has been Visiting Professor at UTM (Malaysia) and UCLan (Lancashire).

⁶ See for example the presentation by Professor Glasson at:

_____ and note that this deals only with something described as "social impact". It does not deal with health and well-being issues.

submit detailed questions which the ExA might address to Equinor in completing its deliberations. These questions appear below.

- a. How has Equinor's exploration of the direct and indirect health and well-being costs considered as externalities to the project used a methodological framework and appropriate methods to capture both financial and hedonic costs to the local communities across the region affected by the project?
- b. How does Equinor respond to the detailed critique of their approaches outlined in the preceding?
- c. What population fractions, differentiated by standard socio-economic indicators, have the project related community consultations engaged?
- d. With regard to disruption of traffic movements associated with project traffic movements along the B1149 and B1145 roads:
 - i. What is the assessment of the increased 100 metre particulate emission plumes along both sides of the B1149 and B1145 during the project's life and over the following 30 years taking account of:
 1. the particular susceptibility of the ageing population characteristic of the area;
 2. the child population in the area;
 3. the effects of this additional traffic on ambulance response times in North Norfolk during the construction period once again taking into consideration the ageing population in this area and its special needs in relation to emergency responses as between the coast and the Norfolk and Norwich Hospital;
- e. The impact of additional traffic generated by the extensive housing developments planned over the next several years at Corpusty and Saxthorpe on project-related and other traffic movements including that generated from the many additional homes recently constructed in Holt, some for people who commute to Norwich daily and whose movements have already increased the burden of traffic on a narrow country road? The following screen shot shows the key choke points which will be affected and the ExA might want to request of Equinor updates as to the most recent assessment of the effects, over the life of the project, of their work programme on the choke points indicated in Figure 1.

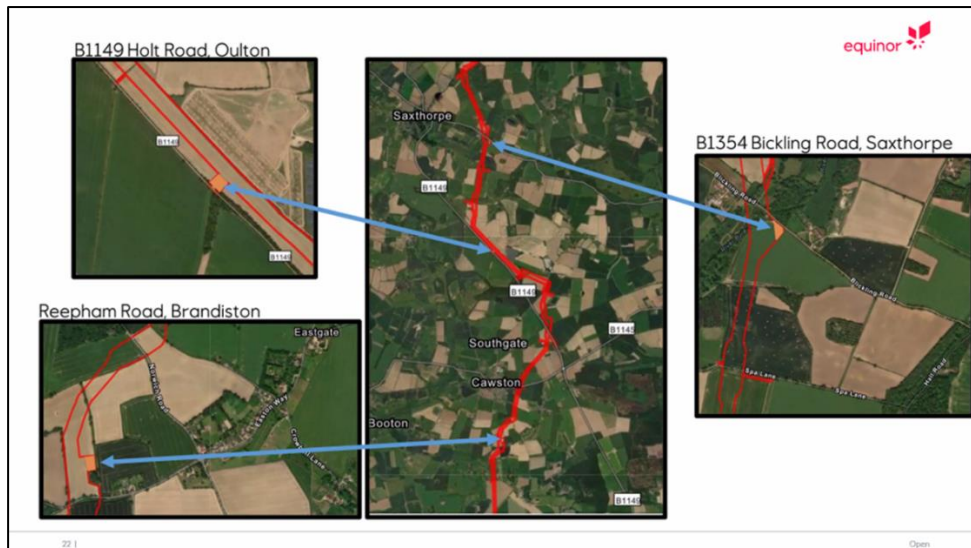


Figure 1: Choke points

- f. The impact of project related traffic on transport to and from the proposed broiler farm at Edgefield (NNDC planning application PF/22/1753) and the proposed layer farm at Lime Kiln Farm, Oulton (NNDC planning application PF/21/0317)?
- g. How many social scientists and/or public health scientists were employed by Equinor, and for how long, and what was the total budget line allocated to their work in the preparation of this report on health and well-being aspects of the proposal?
- h. Who were the social / public health scientists who were employed on this proposal, and may we have sight of their (if necessary, anonymised) curricula vitae?
- i. What total budget was allocated to exploring the impact of the proposed project in preparation of each of the volumes of evidence prepared by Equinor?
- j. More specifically, what size budget was allocated to understanding the health and welfare impacts of the project and what was the size of the budget allocated to understanding the impact of the project on non-human animals and birds?
- k. In Table 28-6: NPS Assessment Requirements, Row 2 column 3, the following statement appears “Employment is considered within this chapter, as well as Chapter 27 Socio-Economics and Tourism. Well-being is considered throughout this chapter.” It would be very helpful if Equinor could provide a clear definition of what they mean by well-being, how they

have derived this definition from the literature, and what conceptual and in particular operational definitions have they deployed in understanding the impacts of their proposed work on well-being.

- I. In the same table, row 2, column 1, Equinor point to NPS requirements that they are to consider *“the potential effects, including benefits, of a proposal for a project, the Infrastructure Planning Commission (IPC) will find it helpful if the applicant sets out information on the likely significant social and economic effects of the development, and shows how any likely significant negative effects would be avoided or mitigated. This information could include matters such as employment, equality, community cohesion and well-being.”* In these connections, is Equinor able to provide clear definitions of what they mean by equality, community cohesion and well-being and help us to understand the conceptual and operational definitions they have deployed to understand and measure these concepts in relation to the impact of their proposed work?
- m. Equinor have allocated a budget to compensate communities in the region impacted by their project. It would be very helpful if Equinor could tell us the total size of this budget together with the purpose of line items within it and to elucidate the size of their total budgets and their *modus operandi for calculating* each of the following items:
 - i. total compensation to all landowners affected by the project.
 - ii. mitigation of adverse impacts on non-human populations such as birds and animals.
 - iii. mitigation of adverse traffic impacts on affected through routes, particularly but not exclusively the B1149 and the B1145?
- n. Why has Equinor adopted a market-based compensation framework for landowners affected by the project but in stark contrast has adopted what might be described as a “largesse” framework (sometimes referred to as a “community benefit fund”), whereby communities are invited to compete with each other for local communities’ compensatory funding?

It seems that Equinor has no knowledge of the theory of public goods (Barnett & Sorenson, 2011; Besley & Ghatak, 1999; Bruno S. Frey, Simon Luechinger, & Alois Stutzer, 2004; Cornes & Sandler, 1996; Inge Kaul et al., 2003; I. Kaul & Faust, 2001).

Such knowledge would have re-framed the problem of compensation in a more balanced and less biased and more equitable way. The result would be that rather than the “largesse” approach they have adopted for compensating communities, Equinor would have realised that a more just and correctly costed approach would have resulted in an offer recognising

the true quantum of compensatory payments to impacted communities over time. For example, such an arrangement might have resulted in all present and future households in the affected region benefitting from reduced price electricity for the life of the project. This approach could come near to applying costing compensation correctly.

The ExA is encouraged to enquire of Equinor why they have neglected to consider adopting this technique by completing a proper cost-benefit analysis, thus arriving at a satisfactory and informed recognition of the impact of the proposed project on the health and well-being of the population of this region over the life of the project. This would enable them (and all interested parties) to make estimates of the proper quantum required for compensation, applying a *social license to operate* approach as recommended by Professor Glasson and his team⁷?

12. We hope that these comments and questions will be of assistance to the ExA in its deliberations.

⁷ [REDACTED]

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