



SHEPHERD+ WEDDERBURN

OUR REF S6152.23/CBW/CWI

YOUR REF

10 March 2025

National Infrastructure Planning  
Temple Quay House  
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Bristol  
BS1 6PN

Dear Sir, Madam

**Five Estuaries Offshore Windfarm Project (the “Project”)**

**Application Ref: EN010115**

**East Anglia TWO Limited’s Deadline 8 Submission – Response to Applicant’s Deadline 7 Submissions (REP7-087)**

We refer to the above Examination and confirm we are instructed by East Anglia TWO Limited. This submission is in relation to wake effects and is in response to the Applicant’s Deadline 7 submission (REP7-087).

## **1. Policy**

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- 1.1 The Applicant makes considerable play of the fact that East Anglia TWO has yet to be constructed. It is clear from Policy EN-3, paragraph 2.8.197, that the Government attach weight to projects where a licence has been issued by Government. That means that the assessment should be undertaken on projects that have such consents in place. The Applicant also seems to make play that if offshore wind was to be included as an offshore infrastructure, there would be more specific references to it in the context of the policy section headed up, “Other Offshore Infrastructure and Activities”. This interpretation is not supported by the way in which the text in the policy is set out. It is general in nature and does not discuss specific aspects of specific technologies.

## **2. Wake Loss Assessment**

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- 2.1 The Applicant makes submissions around the edge of the wake loss assessment. Again, they make points regarding the fact that East Anglia has yet to be constructed. East Anglia TWO Limited have put forward the detail of the layout which will be constructed and it is of note that the project benefits from a CfD. In addition, even in the event that East Anglia TWO had been constructed, the wake loss assessment would be carried out by forecasting the future wind resource and using the power curves of the turbines installed. It is a process that models a future event. The current modelling has been based on the modelling of the actual wind resource measured at the East Anglia TWO site.
- 2.2 The suggestion by the Applicant is that the assessment fails to assess the potential adverse wake effects of other projects located to the north east of the proposed East Anglia TWO project. This will not reduce the extent of energy yield loss that arose from the operation of Five Estuaries. All that such

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an analysis might do is to a minor extent reduce the overall annual energy production of East Anglia TWO. This in turn would effectively increase the percentage wake loss caused by Five Estuaries.

- 2.3 It is notable that most of the points that are made by the Applicant are generic in nature and they have refused to engage in the detail of the issue. If they thought that East Anglia TWO would impact in any material way on Five Estuaries, they would produce the figures. It is inevitable that the Applicant would have undertaken such an assessment in its own evaluation of the likely economic outturn of its own project. Simply put, the Applicant has chosen not to engage with this issue.
- 2.4 The Applicant refers to the lack of inclusion of all potential wind farms “up wind” from the proposed East Anglia TWO project. The potential inclusion of other assets in the wider region for the wake modelling of East Anglia TWO has been considered during the development phase of the project. This deliberate lack of inclusion of the referred projects in operation (namely London Array, Thanet, Kentish Flats, Gunfleet Sands) is due to the known distance to the East Anglia TWO project and their relevance. Additionally, the information on turbine size, layout and installed capacity is known and this gives a higher degree of certainty of the potential wake effects generated by those projects. In conclusion, the wake effects generated by the presence of the Five Estuaries wind farm affecting the East Anglia TWO wind farm are expected to be of a much larger order of magnitude and not affected in a relevant way by the presence of the other identified wind farms.

### **3. Uncertainty**

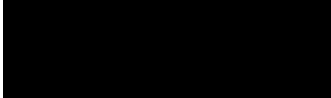
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- 3.1 The Applicant attempts to argue that, because there is some uncertainty regarding modelling the issue should be ignored. The Applicant will have undertaken substantial modelling on their own scheme and to suggest that there is a lack of confidence about modelling results is simply not tenable. East Anglia TWO Limited have sought to provide a reasonable estimate of the likely wake loss. The assessment has not sought in any way to seek to maximise the effect, but has in fact sought to use a middle of the road layout. That is why, in the context of this particular issue, weight should be placed on the evidence that is put before you. No other substantive evidence has been put before you. The Five Estuaries Wind Farm will have material wake effects on East Anglia TWO.
- 3.2 It would have been helpful if the Applicant had actually engaged in relation to the issue of mitigation, but again they have chosen not to do so in any meaningful way. As East Anglia TWO have pointed out, there is nothing to stop Five Estuaries potentially producing a layout which maximises turbines on their north-eastern boundary, away from their existing assets, and this would further increase and exacerbate wake effects.
- 3.3 Against the above background, we would invite the ExA to record the actual evidence that has been submitted to the Examination. It would also be appropriate to record the fact that the Applicant has refused to engage meaningfully on the issue.
- 3.4 Furthermore, in the event that there is a failure to properly deal with this issue, it is likely that it will create considerable uncertainty within the industry. That uncertainty will manifest itself as risk. It is appropriate for the Secretary of State to ensure that that risk is effectively and properly managed. In the circumstances, an appropriate requirement is necessary.
- 3.5 The consideration of uncertainty as normal distribution is standard practice in energy yield assessment for offshore wind farms. Uncertainty is inherent to any modelling process and does not invalidate the fact that the additional wake loss modelled by the consultant (DNV) is expected to be of significant magnitude. The modelling approach undertaken by DNV used the best available data to DNV and East Anglia TWO Limited, including wind measurement in the area. The assumptions are mainly related to Five Estuaries project specific details such as wind farm layout, turbine type and properties and hub height. The wake modelling has been conducted using the Wind Farmer Analyst software which is widely used in the industry to estimate internal and external wake effects between wind farms and the results validated. The wake modelling approach undertaken by DNV to assess the impact of Five Estuaries development on East Anglia TWO is appropriate and is consistent with some of most recent

works and approaches conducted in the industry, as for example the one conducted by DNV and RWE in Ref [1] below, validating with operational data several models (including Eddy Viscosity model with Large Wind Farm correction and other CFD approaches).

[1] C. Montavon (1), C. Rodaway (2), K. Gunn (2), G. Smith (1), D. Dunsmore (1), M. Del Hoyo (1), K. Sinclair (1). 1:DNV, 2:RWE. *Cluster Wakes and their Effect on a Wind Farm Annual Energy Production. Are current models capturing the magnitude of the effects observed in operational data? Whitepape of work Presented at WindEurope Technology Workshop, June 2024*

Yours faithfully

A solid black rectangular box used to redact a signature.

For and on behalf of Shepherd and Wedderburn LLP