

**Air Quality Representation: Deadline 8**  
**Offshore Windfarms**  
**East Anglia ONE North: PINS Ref: EN010077**  
**East Anglia TWO: PINS Ref: EN020078**

**Client: SEAS**

**Reference: 4242-3r2**

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## **Report Issue**

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## Table of Contents

<b>1.0</b>	<b>INTRODUCTION</b>	<b>1</b>
<b>2.0</b>	<b>AREAS OF CONCERN</b>	<b>2</b>
2.1	Issue 1 - Air Quality Impacts Associated with Vessel Emissions	2
2.2	Issue 2 - Ammonia Emissions from Road Traffic and Non-Road Mobile Machinery	2
2.3	Issue 3 - Generator Exhaust Positioning	3
2.4	Issue 4 - Sensitivity Analysis of Exhaust Emission Reduction	4
2.5	Issue 5 - Cumulative Road Traffic	5
<b>3.0</b>	<b>SUMMARY</b>	<b>6</b>

## **1.0 INTRODUCTION**

1.1.1 Redmore Environmental Ltd was commissioned by SEAS to comment on air quality impacts associated with the proposed East Anglia ONE North and East Anglia TWO Offshore Windfarms. The findings were summarised in report 4242-2r1, dated 29<sup>th</sup> January 2021. This indicated the following five areas of concern of relevance to both applications:

- Issue 1 - Air quality impacts associated with vessel emissions have not been considered;
- Issue 2 - Air quality impacts associated with ammonia (NH<sub>3</sub>) emissions from road traffic and non-road mobile machinery (NRMM) have not been considered;
- Issue 3 - Optimistic assumptions have been adopted in regards generator exhaust positioning within the assessment of NRMM and haul road emissions;
- Issue 4 - The results of the sensitivity analysis of exhaust emission reduction and how these affect predicted pollutant concentrations have not been given any weight when determining the significance of air quality effects; and,
- Issue 5 - As covered separately by SEAS, a number of cumulative developments have not been considered within the Air Quality Assessment.

1.1.2 The initial representation was considered by the applicant and a response produced by Royal HaskoningDHV<sup>1</sup>. This was reviewed and a further representation produced, as outlined in the following report.

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<sup>1</sup> Applicants' Comments on Suffolk Energy Action Solutions' (SEAS) Deadline 5 Submissions, Royal HaskoningDHV, 2021.

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## **2.0 AREAS OF CONCERN**

### **2.1 Issue 1 - Air Quality Impacts Associated with Vessel Emissions**

2.1.1 Air quality impacts associated with vessel emissions have not been assessed. It is stated in the Royal HaskoningDHV response<sup>2</sup> that:

"The scoping reports produced for the Projects considered that the impacts of vessel emissions operating offshore would be unlikely to significantly impact air quality at onshore human and ecological receptors and were therefore scoped out."

2.1.2 It is accepted that offshore vessel emissions are unlikely to affect onshore receptors. However, movements in and around the ports have the potential to increase pollutant levels in the vicinity of mooring locations and transport routes. These have not been considered in any part of the application. As such, we would maintain our position that it is not possible to determine whether the effects are likely to be significant in accordance with the requirements of the Town and Country Planning (Environmental Impact Assessment) Regulations (2017) until an assessment has been undertaken.

### **2.2 Issue 2 - Ammonia Emissions from Road Traffic and Non-Road Mobile Machinery**

2.2.1 Air quality impacts associated with NH<sub>3</sub> emissions from road traffic and NRMM have not been quantified. Increased levels can lead to direct impacts on foliage, as well as changes in ground flora. This also affects the amount of nitrogen and acid deposition with similar adverse effects. The Sandlings Special Protection Area (SPA) has been designated for the protection of European nightjar and Wood lark. Information available from the UK Air Pollution Information System (APIS) website<sup>3</sup>, which is a joint venture between the Joint Nature Conservation Committee, the Environment Agency, the Northern Ireland Environment Agency, Scottish Natural Heritage, Sniffer, Natural England, Natural Resources Wales, the Scottish Environmental Protection Agency and the UK Centre for Ecology and Hydrology, indicates that there is the potential for negative impacts on both

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<sup>2</sup> Applicants' Comments on Suffolk Energy Action Solutions' (SEAS) Deadline 5 Submissions, Royal HaskoningDHV, 2021.

<sup>3</sup> <http://www.apis.ac.uk/>.

species due to impacts on the species' broad habitat as a result of increased NH<sub>3</sub> concentrations and nitrogen deposition<sup>4</sup>. Without detailed consideration of these issues the conclusions of the EIA and Appropriate Assessment under the Habitats Regulations may therefore be flawed.

2.2.2 Royal HaskoningDHV indicate that the UK Government has not provided relevant NH<sub>3</sub> emission factors. However, they have been derived by Air Quality Consultants Ltd and subsequently used in the planning system, such as during the recent examination of the Epping Forest District Council Local Plan and associated impacts on the Epping Forest Special Area of Conservation (SAC)<sup>5</sup>. This data source is therefore considered appropriate for an assessment of this nature and justification of modelling of these emissions has not been provided.

2.2.3 Royal HaskoningDHV also state that the Euro VI emission standard for NH<sub>3</sub> will 'significantly reduce or eliminate ammonia emissions from the majority of vehicles used by the Projects'. If the applicant is confident that this level of emission will not cause exceedences of the relevant critical level for NH<sub>3</sub> at the Leiston-Aldeburgh Site of Special Scientific Interest (SSSI) and Sandlings SPA then this should be proven through dispersion modelling. This would also show the extent of any impact and identify whether any habitat deemed of high quality would be affected. Without this data it is not possible to fully understand the additional pollutant loading within the designations. This may affect both the conclusions of the EIA and Appropriate Assessment. As such, without this information, it is not possible to determine whether the effects are likely to be significant.

### **2.3 Issue 3 - Generator Exhaust Positioning**

2.3.1 Optimistic assumptions have been adopted in regards generator exhaust positioning within the assessment of NRMM and haul road emissions. Horizontal sources and point sources with rain caps have little or no initial vertical velocity. Royal HaskoningDHV state:

"The ADMS 5 modelling software does not allow the user to specify horizontal emissions from point sources."

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<sup>4</sup> <http://www.apis.ac.uk/src/select-a-feature?site=UK9020286&SiteType=SPA&submit=Next>.

<sup>5</sup> Epping Forest Special Area of Conservation Air Quality Assessment Modelling Methodology for 2020 Habitat Regulations Assessment Technical Note, AECOM, 2020.

2.3.2 This statement is factually correct. However, horizontal emissions can be represented within ADMS 5 using jet sources. Alternatively, the United States Environmental Protection Agency has proposed that the stack exit velocity should be reduced to 0.001m/s and an equivalent stack diameter calculated such that the buoyant plume is properly calculated. Experience of using this method has indicated significantly greater air quality impacts than if standard point sources are modelled. Given that the actual plant to be used on site is unknown at this stage of the project, worst-case assumptions should be adopted to ensure a robust assessment. As this was not the case, and coupled with the non-inclusion of NH<sub>3</sub> emissions, effects on the Leiston-Aldeburgh SSSI and Sandlings SPA may be significantly underestimated.

## **2.4 Issue 4 - Sensitivity Analysis of Exhaust Emission Reduction**

2.4.1 The results of the sensitivity analysis of exhaust emission reduction and how these affect predicted pollutant concentrations have not been given any weight. As stated in the original representation, it is understood that previous research has shown better correlation between vehicle emission performance and the DEFRA Emissions Factor Toolkit (EFT) in recent years. However, there is always uncertainty when predicting future conditions and a precautionary approach should be adopted when undertaking environmental assessment. This position is supported by Appeal Decisions APP/V2255/W/15/3067553 & APP/V2255/W/16/3148140 which indicate that although it is accepted that emissions will reduce in the future, the rate of improvement is difficult to predict and should therefore be viewed with caution. No comment has been provided by Royal HaskoningDHV to justify their approach in the context of these planning appeal decisions. Additionally, consideration to any lesser improvement in air quality conditions than currently predicted by DEFRA has not been provided. Clarification on how the effects of COVID-19 on vehicle purchasing habits and associated impact on fleet mix may affect predicted air quality impacts, as requested in the original representation, has also been omitted.

2.4.2 Although it appears that agreement with East Suffolk Council (ESC) has generally been reached in regards mitigation of impacts within the Stratford St Andrew Air Quality Management Area (AQMA), it is concerning that the above factors have not been considered fully and future year predictions have been accepted without question. This may have led to effects on human receptors and ecological designations being

underestimated and the current response to the previously provided comments are not considered satisfactory.

## **2.5 Issue 5 - Cumulative Road Traffic**

2.5.1 Traffic associated with the proposals, as well as Sizewell C and any other relevant committed developments not considered within the Air Quality Assessment, will travel through the AQMA located along the A12 in Stratford St Andrew. This has been declared by ESC due to exceedences of the statutory AQO for annual mean NO<sub>2</sub> concentrations. The Royal HaskoningDHV clarification note indicates that:

"A qualitative assessment was undertaken in the absence of finalised data from Sizewell C, as explained in the Sizewell Projects Cumulative Impact Assessment (Traffic and Transport) Clarification Note submitted at Deadline 2 (REP2-009)."

2.5.2 Within the Sizewell Projects Cumulative Impact Assessment (Traffic and Transport) Clarification Note it is made clear that Sizewell C data is now available. However, this has not been utilised to further quantify air quality impacts within the AQMA. Justification for not updating the modelling has not been provided. Without this data we would maintain our position outlined in the original representation that when considered in the context of the potentially overly optimistic representation of future emissions and the sensitivity of human receptors within the Stratford St Andrew AQMA, the current assessment may have led to a significant underestimation of cumulative air quality impacts within the vicinity of the access route.



### **3.0 SUMMARY**

3.1.1 Redmore Environmental Ltd was commissioned by SEAS to comment on the application for development consent for the East Anglia ONE North and East Anglia TWO Offshore Windfarms.

3.1.2 The following five areas of concern have been identified which are relevant to both applications:

- Issue 1 - Air quality impacts associated with vessel emissions have not been considered;
- Issue 2 - Air quality impacts associated with NH<sub>3</sub> emissions from road traffic and NRMM have not been considered;
- Issue 3 - Optimistic assumptions have been adopted in regards generator exhaust positioning within the assessment of NRMM and haul road emissions;
- Issue 4 - The results of the sensitivity analysis of exhaust emission reduction and how these affect predicted pollutant concentrations have not been given any weight; and,
- Issue 5 - A number of cumulative developments have not been considered within the Air Quality Assessment.

3.1.3 As outlined above, the review of the Air Quality Assessment indicated a number of areas which have not been considered in sufficient detail to allow a conclusion on potential effects to be reached. As such, without submission of additional detailed analysis, it is not clear how the Examination Authority can be confident that significant air quality impacts will not occur at human and ecological receptors based on the evidence provided to date. It is therefore considered that without this information and the incorporation of any required effective mitigation into the proposal, the application should be refused.