East Anglia ONE North and East Anglia TWO Offshore Windfarms

Applicants' Responses to Rule 17 Questions of 29 April 2021

Applicants: East Anglia ONE North Limited and East Anglia TWO Limited
Document Reference: ExA.R17QC.D10.V1
SPR Reference: EA1N_EA2-DWF-ENV-REP-IBR-001058

Date: 6th May 2021
Revision: Version 01
Author: Royal HaskoningDHV

Applicable to East Anglia ONE North and East Anglia TWO

Revision Summary				
Rev	**Date**	**Prepared by**	**Checked by**	**Approved by**
01	06/05/2021	Paolo Pizzolla	Lesley Jamieson / Ian Mackay	Rich Morris

Description of Revisions			
Rev	**Page**	**Section**	**Description**
01	n/a	n/a	Final for Deadline 10

Glossary of Acronyms

DCO	Development Consent Order
DML	Deemed Marine Licence
EPR	Examination Procedure Rules
ESC	East Suffolk Council
ExA	Examination Authority
HDD	Horizontal Directional Drilling
MMO	Marine Management Organisation
OLEMS	Outline Landscape and Ecological Management Strategy
OODMP	Outline Operational Drainage Management Plan
PD	Procedural Decision
SCC	Suffolk County Council
SEAS	Suffolk Energy Action Solutions
SuDS	Sustainable Urban Drainage System

Glossary of Terminology

Applicants	East Anglia TWO Limited / East Anglia ONE North Limited
The Councils	East Suffolk Council and Suffolk County Council
East Anglia ONE North project	The proposed project consisting of up to 67 wind turbines, up to four offshore electrical platforms, up to one construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
East Anglia TWO project	The proposed project consisting of up to 75 wind turbines, up to four offshore electrical platforms, up to one construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
East Anglia TWO windfarm site	The offshore area within which wind turbines and offshore platforms will be located.
Generation Deemed Marine Licence (DML)	The deemed marine licence in respect of the generation assets set out within Schedule 13 of the draft DCO.
Horizontal directional drilling (HDD)	A method of cable installation where the cable is drilled beneath a feature without the need for trenching.
HDD temporary working area	Temporary compounds which will contain laydown, storage and work areas for HDD drilling works.
Landfall	The area (from Mean Low Water Springs) where the offshore export cables would make contact with land, and connect to the onshore cables.
National electricity grid	The high voltage electricity transmission network in England and Wales owned and maintained by National Grid Electricity Transmission
National Grid infrastructure	A National Grid substation, cable sealing end compounds, cable sealing end (with circuit breaker) compound, underground cabling and National Grid overhead line realignment works to facilitate connection to the national electricity grid, all of which will be consented as part of the proposed East Anglia TWO / East Anglia ONE North project Development Consent Order but will be National Grid owned assets.
National Grid overhead line realignment works	Works required to upgrade the existing electricity pylons and overhead lines (including cable sealing end compounds and cable sealing end (with circuit breaker) compound) to transport electricity from the National Grid substation to the national electricity grid.
National Grid overhead line realignment works area	The proposed area for National Grid overhead line realignment works.
National Grid substation	The substation (including all of the electrical equipment within it) necessary to connect the electricity generated by the proposed East Anglia TWO / East Anglia ONE North project to the national electricity grid which will be owned by National Grid but is being consented as part of the proposed East Anglia TWO / East Anglia ONE North project Development Consent Order.
National Grid substation location	The proposed location of the National Grid substation.

Offshore development area	The East Anglia TWO / East Anglia ONE North windfarm site and offshore cable corridor (up to Mean High Water Springs).
Onshore development area	The area in which the landfall, onshore cable corridor, onshore substation, landscaping and ecological mitigation areas, temporary construction facilities (such as access roads and construction consolidation sites), and the National Grid Infrastructure will be located.
Onshore substation	The East Anglia TWO / East Anglia ONE North substation and all of the electrical equipment within the onshore substation and connecting to the National Grid infrastructure.
Onshore substation location	The proposed location of the onshore substation for the proposed East Anglia TWO / East Anglia ONE North project.
Transmission DML	The deemed marine licence in respect of the transmission assets set out within Schedule 14 of the draft DCO.

1 Introduction

1. Following the issue of questions under Rule 17 of the Infrastructure Planning (Examination Procedure) Rules 2010 (EPR) (R17Qs) by the Examining Authority (ExA) on 29th April 2021 to East Anglia ONE North Limited and East Anglia TWO Limited ('the Applicants'), the Applicants have responded to each question in ***Table 1*** below.

2. This document, is applicable to both the East Anglia ONE North and East Anglia TWO Development Consent Order (DCO) applications, and therefore is endorsed with the yellow and blue icon used to identify materially identical documentation in accordance with the Examining Authority's procedural decisions on document management of 23rd December 2019 (PD-004). Whilst this document has been submitted to both Examinations, if it is read for one project submission there is no need to read it for the other project submission.

3. Where an individual question relates to one project only it is clearly marked in column 3 of the table below. A yellow icon with a 1 indicates the question is applicable to the East Anglia ONE North project, a blue icon with a 2 indicates it is applicable to the East Anglia TWO project, and both a yellow and a blue icon with a 1 and 2 indicate the question is applicable to both Projects.

R17QC	Question addressed to			Question	Applicants' Response
Offshore Ornithology					
R17QC.1	The Applicants	1	2	**Cumulative and In-Combination Collision Risk** On 15 April 2021, the Secretary of State for BEIS decided to make a non-material change to the East Anglia THREE Offshore Wind Farm Order 2017 as applied for by East Anglia THREE Limited on 21 July 2020. The change reduces the maximum number of turbines and amends some of the offshore design parameters for turbines. Do the Applicants intend to further update their Offshore Ornithology Cumulative and In- Combination Collision Risk Updates [REP8-035] to reflect the revised position following the making of the East Anglia THREE Offshore Wind Farm (Amendment) Order 2021? • If not, please explain your reasoning. • If so, please indicate at which deadline the updated document (and any consequential updates to other examination submissions relating to cumulative/in-combination ornithological collision risk impacts) will be submitted, allowing time for other parties to comment on any material.	The Applicants are intending to update the ***Offshore Ornithology Cumulative and In-Combination Collision Update*** (REP8-035) to take account of the non-material change to East Anglia THREE at Deadline 11. ***Ornithology Cumulative and In-Combination Collision Update*** REP8-035 will also be updated to address some minor errors noted by Natural England in their Deadline 9 submission (REP9-066) and to reflect any changes to numbers for Hornsea Project THREE and Hornsea Project FOUR should revised numbers be available in time to be incorporated. The updated REP8-035 which is anticipated to be submitted at Deadline 11 will therefore comprise the final Offshore Ornithology Cumulative and In-Combination Collision Risk numbers for each Project.
Terrestrial Ecology					
R17QC.2	The Applicants	1	2	**Ecology Survey Results** [REP6-035] Natural England's D7 response [REP7-073] indicated that surveys had not followed best practice in relation to	The Applicants have stated in various submissions to the Examinations that the February 2021 survey of the woodland at the Hundred River crossing had the primary aim of verifying the results of the survey

R17QC	Question addressed to			Question	Applicants' Response
				timings and ground conditions, as many vegetation species are only evident in spring or summer and that the ability to identify these can be key to an adequate understanding of habitat type and its quality. • Will any further surveys be undertaken during spring and submitted into the Examinations? • If so, please indicate at which deadline additional survey results will be available. • If not, then please explain your reasoning, responding to comments from NE and other IPs on this matter.	already undertaken in April 2018 (April being within the optimal habitat surveying window). The February 2021 survey was only undertaken in response to information submitted by Suffolk Energy Action Solutions (SEAS) that was obtained from a site visit undertaken in January 2021 (REP5-108). The Applicants have additionally noted that across the ecological profession it is accepted that Phase 1 habitat surveys can be conducted all year round and would also note that in its cover letter at Deadline 9 (REP9-063) Natural England states that it *"is reviewing best available evidence and will provide further advice in relation to the potential 'wet' woodland and hairy dragonfly habitat at Deadline 10"*. However, in the interest of closing this matter to the satisfaction of the ExA, a third survey of the Hundred River crossing location will be undertaken during the month of May. A full survey report will be provided at Deadline 11.
Marine and Coastal Ecology					
R17QC.3	The Applicants	1	2	**Surveys to inform HDD design and delivery at landfall** At ISHs4, the Applicants stated that further ground investigations into geological conditions would take place in April/May 2021 or when weather conditions permitted, to further inform the horizontal directional drilling (HDD)/ trenchless techniques design at the landfall location.	The site investigation works are typically undertaken post consent although the Applicants have brought forward these investigation works in order to accelerate the delivery of much needed renewable energy, subject to consent being awarded. The Applicants can confirm that onshore site investigation works and near shore site investigation works have commenced. These site investigation works will continue into June 2021 (subject to weather) and

R17QC	Question addressed to			Question	Applicants' Response
				• Will the outcomes from this work be submitted into the Examinations? • If so, please indicate at which deadline the survey results will be available. • If not, then please explain your reasoning. In these circumstances might any changes to the dDCOs or relevant certified documents be required in order to respond to the survey outcomes once known?	thereafter the data will be collated and verified. The final reports will not be available until September 2021 at the earliest and is therefore not within the timeframes of the Examinations. The final reports will not therefore be submitted to the Examinations. The investigations will not provide any further environmental information. These site investigation works are not being undertaken to establish the viability of a Horizontal Directional Drilling (HDD) at the landfall, rather the site investigation works will provide the detailed ground engineering properties required to inform the detailed design of the HDD. As such, the results of the site investigation works will not require any changes to the draft DCOs or any relevant certified documents. Please also refer to ***Sections 2*** and ***3*** of the ***Outline Landfall Construction Method Statement*** (REP8-054).
R17QC.4	The Applicants	1	2	**Contaminant sampling, dredge and disposal activity offshore** [REP9-060] In [REP8-156], the MMO set out its view that the contaminant sampling conducted by the Applicants at this stage is insufficient. In [REP9-060] the MMO clarified that it would normally advise that the regulation of all dredge and disposal activity should be removed from the dDCOs and a separate sediment sampling plan and marine licence should then be sought by the Applicants for each project. However, the MMO proceeded to observe in relation to its D8 position (set out prior to the extension	As noted in ***Applicants' Comments on Marine Management Organisation's Deadline 6 Submissions*** (REP7-055), this issue arose as a result of the Marine Management Organisation's (MMO's) advice on sediment contaminants sampling changing during the Examinations from what was provided pre-application. Notwithstanding that, the Applicants are continuing to engage with the MMO on this matter and have submitted a sampling plan for sediment contaminants sampling into the MMO Marine Case Management System. However, it is not anticipated that this matter can be concluded within

R17QC	Question addressed to			Question	Applicants' Response
				decision) that 'due to the late stage of the application process [it had] made a pragmatic decision to agree to the inclusion of the dredge and disposal activity within the DCO consent.' In its D9 submission, the MMO identified that it was content with the current drafting of dDCOs / Deemed Marine Licences (DMLs) in Schedules 13, Condition 31(1) and (2) / Schedules 14, Condition 27(1) and (2), as this drafting 'accurately reinforces that dredge and disposal activities cannot take place until results of sediment sampling information and proposed dredge and disposal activities have been approved by the MMO.' However, the MMO also identified that discussions on these matters with the Applicants are continuing with a request having been made on their part for sampling to be provided, prior to the close of the Examinations. Enabling this to occur could in turn enable the MMO to revert to its in-principle position that these DML conditions may not be required in the final dDCOs. • Will outcomes from these discussions with the MMO and additional sampling work be submitted into the Examinations and is it anticipated that consequential changes to DML drafting will be proposed? • If so, please indicate at which deadline this work will be available. • If not, then please explain your reasoning.	the timeframe of the Examinations due to the timescales required for engagement on and approval of the sampling plan, collection of samples, analysis, reporting and sufficient time for engagement on the report with the MMO and their advisors. Therefore, the Applicants do not anticipate any further changes to the conditions in the DMLs. The Applicants consider that the inclusion of the dredge and disposal activity within the DMLs is entirely appropriate and suitably controlled through Schedule 13, Condition 31 and Schedule 14, Condition 27 which the MMO have confirmed they are comfortable with in their Deadline 9 submission (REP9-060).
Onshore Substation Siting and Design					

R17QC	Question addressed to			Question	Applicants' Response
R17QC.5	The Applicants	1	2	**Flood risk modelling** Please consider undertaking further percolation testing and additional topographical and hydraulic modelling at the proposed substations site at Friston, to enable a more precise assessment of construction and operational flood risk to be made, taking downstream/ Friston River conditions into account. In addition, please consider further investigative work to confirm that any potential culvert to the Friston watercourse is a viable option. • Can this work be submitted into the Examinations? • If so, please indicate at which deadline the survey results and additional impact assessments will be available. • If not, then please explain your reasoning. What steps should be taken in the absence of this data?	The Applicants can confirm that infiltration testing has been undertaken at the substation site as part of the ongoing onshore site investigation works, part of which was witnessed by Suffolk County Council (SCC) as the Lead Local Flood Authority. Given the nature of these tests, preliminary results are expected to be available by 7 May 2021, allowing further discussions with SCC (as Lead Local Flood Authority) and East Suffolk Council (ESC) (as relevant planning authority) on the extent of infiltration likely to be available at the substation site and conceptual designs for the surface water management system (including indicative footprint of the Sustainable Urban Drainage System (SuDS) basins). The Applicants expect to provide a verbal update on this matter to the Examinations at ISH 16, and a written submission (in the form of an updated Outline Operational Drainage Management Plan (OODMP) at Deadline 11. As stated in the ***Outline Operational Drainage Management Plan*** (REP8-064), The Applicants will prepare a detailed hydraulic model of the catchment which reflects the detailed design of the onshore substations, National Grid substation and associated infrastructure. This detailed design information is not available at this stage, therefore it is not feasible to prepare such a detailed hydraulic model at this stage. The results of the flood risk assessment submitted with the Applications (APP-496) also remain

R17QC	Question addressed to			Question	Applicants' Response
					unchanged, therefore there is no benefit in updating the flood risk assessment. The Applicants disagree that further percolation testing and additional topographical and hydraulic modelling is required at this stage. The Applicants are not increasing flood risk downstream given its commitment which has been consistently made, that the discharge to the Friston Watercourse will not increase from pre-development greenfield rates. How this is achieved (i.e. extent to which infiltration is practicable and (if required) the permitted discharge rate to the Friston watercourse) is a matter of discussion between the Applicants and the Lead Local Flood Authority through development of detailed design – the information presented to the Examinations clearly show that there is no increased food risk downstream. Further concept design work regarding the culvert at Church Road is ongoing, with an update to be provided at Deadline 11 within an updated ***Outline Operational Drainage Management Plan*** (REP8-064). The Applicants will ensure that the final design of the culvert at Church Road to the Friston watercourse is a viable option and there are a number of engineering techniques available to ensure this.
R17QC.6	The Applicants	1	2	**Substation Design Principles Statement (SDPS)** [REP8-082]	The onshore site investigation works are underway and will provide detailed ground engineering data to feed into the Projects' detailed design. In addition,

R17QC	Question addressed to			Question	Applicants' Response
				Further to the question on flood risk modelling above (R17QC.5), please confirm whether revisions to existing modelling or further modelling for flood risk purposes and/or soil and groundwater investigations could be carried out to support further revisions and refinements to the proposed final finished ground levels and maximum visual envelope for the proposed onshore substations and National Grid substation. If this work is contemplated or in progress, it should include consideration of the impact of possible drainage solutions on landscape treatments and planting locations, species and density. • Can this work be submitted into the Examinations? • If so, please indicate at which deadline the survey results and additional impact assessments will be available. • If not, then please explain your reasoning. Why is this work unnecessary?	this data will feed into the electrical and technical design process which forms part of the detailed design development. The detailed design process however will continue well into 2022. This information will ultimately be utilised to feed in to the finished ground levels of the onshore substations, National Grid substation, and the maximum heights above datum of buildings of external electrical equipment however this will be at a later date following further development of the detailed design process. This information will therefore not be submitted into the Examinations as it forms only one part of the wider design process. Details regarding the maximum heights of buildings and external equipment are set out within ***Table 6.1*** of the ***Substations Design Principles Statement*** submitted at Deadline 8 (REP8-082). The Outline Landscape and Ecological Management Strategy (OLEMS) (document reference 8.7) provides significant detail on the landscape proposals proposed for the projects, including species mix and extent of planting, the latter being considered with surface water drainage (SuDS) requirements within the outline landscape masterplan. The results of the Infiltration Tests referred to in R17QC.5 will be used to inform the likely infiltration rates within the site and will in turn allow for the refinement of the SuDS basin sizing, which may allow for refinement of the landscape proposals (insofar as such refinement does not reduce the screening function of the landscaping). It is stressed however, that the final

R17QC	Question addressed to			Question	Applicants' Response
					design of the SuDS system is influenced by a wide variety of factors which can only be established during the detailed design stage of the Projects, such as the final footprint of the onshore substations and National Grid substation; surface water catchment philosophy; surface water conveyancing philosophy; detailed hydraulic modelling results; landscape considerations (including consideration of relevant guidance such as the CIRIA SuDS manual and SCC Guidance)); biodiversity considerations; and access considerations. Surface water management can only be considered in an integrated manner with the detailed design of the substation site and will therefore not require any specific update of the OLEMS into the Examination to include this detail.