East Anglia ONE North and East Anglia TWO Offshore Windfarms

Applicants' Responses to Rule 17 Questions of 18 June 2021

Applicants: East Anglia ONE North Limited and East Anglia TWO Limited
Document Reference: ExA.AS-36.D12.V1
SPR Reference: EA1N_EA2-DWF-ENV-REP-IBR-001136

Date: 28th June 2021
Revision: Version 01
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Applicable to East Anglia ONE North and East Anglia TWO

Revision Summary				
Rev	**Date**	**Prepared by**	**Checked by**	**Approved by**
01	28/06/2021	Paolo Pizzolla	Lesley Jamieson / Ian MacKay	Rich Morris

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

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Glossary of Acronyms

CCS	Construction Consolidation Site
DCO	Development Consent order
DML	Deemed Marine Licence
ES	Environmental Statement
HRA	Habitats Regulations Assessment
LCT	Landscape Character Type
NMC	Non Material Change
OFTO	Offshore Transmission Owner
OLEMS	Outline Landscape and Ecological Management Strategy
OODMP	Outline Operational Drainage Management Plan
OTE	Outer Thames Estuary
PD	Procedural Decision
RSPB	Royal Society for the Protection of Birds
RTD	Red-Throated Diver
SAC	Special Area of Conservation
SIP	Site Improvement Plan
SIP	Site Integrity Plan
SNS	Southern North Sea
SPA	Special Protection Area
TCE	The Crown Estate
TWT	The Wildlife Trust
UK	United Kingdom
WTG	Wind Turbine Generator

Glossary of Terminology

Applicants	East Anglia TWO Limited / East Anglia ONE North Limited
Cable sealing end compound	A compound which allows the safe transition of cables between the overhead lines and underground cables which connect to the National Grid substation.
Cable sealing end (with circuit breaker) compound	A compound (which includes a circuit breaker) which allows the safe transition of cables between the overhead lines and underground cables which connect to the National Grid substation.
Construction consolidation sites	Compounds associated with the onshore works which may include elements such as hard standings, lay down and storage areas for construction materials and equipment, areas for vehicular parking, welfare facilities, wheel washing facilities, workshop facilities and temporary fencing or other means of enclosure.
Construction operation and maintenance platform	A fixed offshore structure required for construction, operation, and maintenance personnel and activities.
Development area	The area comprising the onshore development area and the offshore development area (described as the 'order limits' within the Development Consent Order).
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 / ONE North windfarm site	The offshore area within which wind turbines and offshore platforms will be located.
European site	Sites designated for nature conservation under the Habitats Directive and Birds Directive, as defined in regulation 8 of the Conservation of Habitats and Species Regulations 2017 and regulation 18 of the Conservation of Offshore Marine Habitats and Species Regulations 2017. These include candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and Special Protection Areas.
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.
Inter-array cables	Offshore cables which link the wind turbines to each other and the offshore electrical platforms, these cables will include fibre optic cables.

Jointing bay	Underground structures constructed at intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts.
Landfall	The area (from Mean Low Water Springs) where the offshore export cables would make contact with land, and connect to the onshore cables.
Link boxes	Underground chambers within the onshore cable route housing electrical earthing links.
Meteorological mast	An offshore structure which contains metrological instruments used for wind data acquisition.
Mitigation areas	Areas captured within the onshore development area specifically for mitigating expected or anticipated impacts.
Marking buoys	Buoys to delineate spatial features / restrictions within the offshore development area.
Monitoring buoys	Buoys to monitor *in situ* condition within the windfarm, for example wave and metocean conditions.
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.
Natura 2000 site	A site forming part of the network of sites made up of Special Areas of Conservation and Special Protection Areas designated respectively under the Habitats Directive and Birds Directive.
Offshore cable corridor	This is the area which will contain the offshore export cables between offshore electrical platforms and landfall.
Offshore development area	The East Anglia TWO / East Anglia ONE North windfarm site and offshore cable corridor (up to Mean High Water Springs).
Offshore electrical infrastructure	The transmission assets required to export generated electricity to shore. This includes inter-array cables from the wind turbines to the offshore electrical platforms, offshore electrical platforms, platform link cables and export cables from the offshore electrical platforms to the landfall.

Offshore electrical platform	A fixed structure located within the windfarm area, containing electrical equipment to aggregate the power from the wind turbines and convert it into a more suitable form for export to shore.
Offshore export cables	The cables which would bring electricity from the offshore electrical platforms to the landfall. These cables will include fibre optic cables.
Offshore infrastructure	All of the offshore infrastructure including wind turbines, platforms, and cables.
Offshore platform	A collective term for the construction, operation and maintenance platform and the offshore electrical platforms.
Onshore cable corridor	The corridor within which the onshore cable route will be located.
Onshore cable route	This is the construction swathe within the onshore cable corridor which would contain onshore cables as well as temporary ground required for construction which includes cable trenches, haul road and spoil storage areas.
Onshore cables	The cables which would bring electricity from landfall to the onshore substation. The onshore cable is comprised of up to six power cables (which may be laid directly within a trench, or laid in cable ducts or protective covers), up to two fibre optic cables and up to two distributed temperature sensing cables.
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 infrastructure	The combined name for all of the onshore infrastructure associated with the proposed East Anglia TWO / East Anglia ONE North project from landfall to the connection to the national electricity grid.
Onshore preparation works	Activities to be undertaken prior to formal commencement of onshore construction such as pre–planting of landscaping works, archaeological investigations, environmental and engineering surveys, diversion and laying of services, and highway alterations.
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.
Platform link cable	Electrical cable which links one or more offshore platforms. These cables will include fibre optic cables.
Safety zones	A marine area declared for the purposes of safety around a renewable energy installation or works / construction area under the Energy Act 2004.
Scour protection	Protective materials to avoid sediment being eroded away from the base of the foundations as a result of the flow of water.
Transition bay	Underground structures at the landfall that house the joints between the offshore export cables and the onshore cables.
Transmission DML	The deemed marine licence in respect of the transmission assets set out within Schedule 14 of the draft DCO.

1 Introduction

1. This document has been prepared by East Anglia TWO Limited and East Anglia ONE North Limited (the Applicants) in response to questions issued by the Examining Authority (ExA) on 18th June 2021 under Rule 17 of the Infrastructure Planning (Examination Procedure) Rules 2010 (R17QF).

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 ExA'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. A yellow icon indicates the question is applicable to the East Anglia ONE North project, a blue icon indicates it is applicable to the East Anglia TWO project, and both a yellow and blue icon indicates the question is applicable to both projects.

2 Applicants' Responses to Rule 17 Questions of 18 June 2021

R17QF Question Ref.	Question addressed to			ExA. Question	Applicants' Response
Biodiversity, Ecology and Natural Environment (including Habitats Regulations Assessment (HRA))					
R17Qf.1	The Applicants, Natural England, Marine Management Organisation and The Wildlife Trusts			**Southern North Sea (SNS) Special Area of Conservation (SAC): Impact-effect pathways** The Applicant's assessment [APP-043 and APP-046] in relation to the harbour porpoise feature of the SNS SAC excluded Adverse Effect on Integrity for impact-effect pathways relating to disturbance from vessels, collision risk, changes to prey resource, changes to water quality and barrier effects. For the avoidance of doubt, is it agreed with Natural England, the Marine Management Organisation and The Wildlife Trusts that the only potential impact-effect pathway relates to disturbance from underwater noise?	For avoidance of doubt, all of the effect pathways relating to disturbance from vessels, collision risk, changes to prey resource, changes to water quality and barrier effects are assessed in full in the ***Habitat Regulations Assessment - Information to Support Appropriate Assessment Report*** (APP-043). The conclusions of these assessments ruled out adverse effect on integrity of the SNS SAC. The conclusions of the HRA are agreed with Natural England (see rows NE410 and NE411 of the ***Statement of Common Ground with Natural England (offshore) - Version 02*** (REP8-109)). With regard to TWT's position, the Applicants note that the only issues raised in their relevant representation (RR-091) and subsequent representations refer to underwater noise and the inclusion of commercial fisheries in the in-combination assessment with were not agreed in the final

R17QF Question Ref.	Question addressed to			ExA. Question	Applicants' Response
					Statement of Common Ground with The Wildlife Trust – Version 2 [REP8-123] (see rows TWT-013).
R17QF.2	The Applicants, Natural England			**Non-Material Changes and In-Combination Assessments [REP11-121]** In [REP11-121], Natural England sets out its generic advice regarding the extent to which in-combination assessments (in this case relating to bird collision risk) can rely on Non-Material Changes made to other Development Consent Orders. To the Applicants: a) Please provide a fully reasoned response to the points set out in [REP11-121]. b) As well as the legal considerations that are raised, please set out any technical and commercial considerations (such as project financing) that would affect the likelihood of future change requests being made to increase project parameters after a project has been built and commissioned. To Natural England. On page 3 of [REP11-121] you state that 'even if the NMC is granted, we question whether it would be appropriate to rely on as-built parameters for HRA purposes in-combination assessments. This is because the developer could, in theory at least, keep on	a) The Applicant has responded to Natural England's deadline 11 submission ***Natural England's Representation to East Anglia ONE (EA1) Non-Material Change to DCO Application*** [REP11-121] in the ***Applicants' response to Natural England's deadline 11 submission*** submitted at Deadline 12 [document reference ExA.AS-10.D12.V1]. For the reasons set out below, the Applicants consider that a NMC is a legally robust mechanism in which to release headroom. A NMC must be approved by the Secretary of State and results in a statutory instrument being granted to amend the original Order and so following a NMC, the consented parameters become those set out in the amended DCO. To continue to refer to original consented parameters which no longer form part of the DCO that is in force is flawed and irrational. Before making a decision on any NMC application the Secretary of State will need to consider the potential cumulative and in combination effects arising from the change at that time. There are therefore appropriate procedures and safeguards in place in the event that any subsequent NMC application is made.

R17QF Question Ref.	Question addressed to			ExA. Question	Applicants' Response
				amending the project via NMC applications up to the limit of the Rochdale Envelope'. c) Given that an NMC, if granted, amends the original made DCO, do you disagree that the project parameters included in that amended DCO should form the basis of figures used in cumulative and/or in-combination assessments of proposed projects? d) Whilst there is no time limit on the submission of NMCs after the grant of a DCO, do you accept that the environmental information supporting the original DCO will, at some point, become out of date, meaning that any theoretical future NMC request would need to be supported by further environmental assessment? e) If so, do you acknowledge that any such further environmental assessment would need to take into account the cumulative and/or in-combination position at that time, which may include projects that have been consented in the intervening period? f) Do you consider that any future request to amend a DCO to increase project parameters could in fact constitute a material change, which carries with it a series of consultation and potentially examination measures, as set out in legislation and Guidance?	It is also worth noting that an Environmental Statement considers more than just physical parameters, for example, it considers construction effects arising as a result of particular construction programmes. To say that the amended consent for EA1 (which reflects the as-built position) could be amended to allow additional and/or larger turbines to be installed in the future as this would still be in accordance with the original ES is flawed. The reason for this is because the impacts of a separate offshore construction period occurring a number of years after completion of the first construction period were not assessed in the original ES. The Secretary of State would need to consider the potential effects arising from such a change at the time any such application was made. The ***Offshore Ornithology Precaution Note*** [AS-041] (sections 2.3.2 and 2.3.3) discusses the 'as-built' question in detail covering the practicalities of discharging consent and, using the example of East Anglia ONE, explains why the scenario of building out headroom envisaged by Natural England is simply not feasible. To continue to refer to originally consented parameters when they have been formally amended (and could not be amended again without a further Secretary of State approval) would exacerbate the issues already referred to by the Applicants in the ***Offshore Ornithology Precaution Note*** [AS-041] and would result in unrealistic and unjustifiably

R17QF Question Ref.	Question addressed to	ExA. Question	Applicants' Response
		g) If so, does the evident procedural necessity that any future requests (be they material or non-material) to increase project parameters would be subject to proper scrutiny based on an up to date cumulative and/or in-combination assessment in any way amend the submissions that you have set out on this point to date?	over-precautionary cumulative and in combination assessments. b) With regard to technical and commercial considerations, the assertion by Natural England that a developer could extend a constructed and commissioned windfarm via NMC applications to the limit of the Rochdale Envelope of the original consent is simply not realistic from a technical or commercial perspective. As a result of the UK Government push for cost parity of offshore wind with other forms of energy generation in recent years and the Contracts for Difference (CfD) scheme, modern windfarms are designed to be highly competitive and optimised for their specific generation output and site-specific conditions within the consented Order Limits. Two key aspects of this optimisation that would limit the practical extension of a windfarm through a NMC process relate to the site conditions and the technology deployed at the existing windfarm. These are discussed in turn below. Offshore windfarms are designed to optimise the site conditions within the Order Limits in terms of maximising energy yield whilst minimising the economic and technical impact of ground conditions on installation. Any remaining area within the Order Limits is likely to be sub-optimal in comparison to the area occupied by the existing windfarm and carry a comparative financial penalty. Assuming the

R17QF Question Ref.	Question addressed to	ExA. Question	Applicants' Response
			remaining area within the Order Limits is suitable, there is a significant question over the economic viability associated with the bespoke installation of a much smaller number of wind turbine generators (WTG) to 'fill the gap' between the generating capacity of the constructed project and limit of the Rochdale Envelope of the original consent. This would result from the 'extension' not being able to capitalise on the economies of scale which are likely to have made the originally constructed windfarm economically viable. The offshore and onshore transmission assets (the onshore and offshore substations and export cables) are optimised for the targeted generating capacity and load of the windfarm. Spare capacity for the installation of additional WTG is not factored into the design as it would increase the capital expenditure of the project and make it less competitive in securing a CfD through an increase in the levelised cost of energy (LCoE). Additionally, under the offshore transmission divestment regime an offshore windfarm is required to divest its transmission assets to an offshore transmission owner (OFTO) which would likely present a further significant barrier to extending a constructed windfarm. Any extension is therefore likely to require new transmission infrastructure (that in itself, would require regulatory approval) which for a small number of additional WTG is highly unlikely to be economically viable.

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			A further practical issue relates to the assumption regarding the 'construction period' underpinning the original consent and the pre-commencement documentation (e.g. the 'construction programme' and the 'design plan') required to be discharged as a condition of consent, which is discussed in detail by the Applicants in the ***Offshore Ornithology Precaution Note*** [AS-041]. It is the Applicants' opinion that extending a windfarm a number of years after it has been constructed through a NMC against the originally consented Rochdale Envelope would almost certainly fail on the grounds that the impact assessment supporting the original consent would have been undertaken on the basis of a single construction programme, rather than two (or more) separate construction programmes separated by time. Finally, the spatial extent of seabed lease agreements with The Crown Estate (TCE) are generally revised post-construction through a 'deed of surrender' with the new spatial limits based on the constructed windfarm. This is to reduce the financial impact of leasing unused seabed. An extension to a constructed windfarm would therefore require rights to the seabed to be secured from TCE which would likely further reduce the economic viability of an extension should the issues raised above be surmountable. Simply put, the Applicants are not aware of any windfarm project being extended post construction in the manner that is of concern to Natural England. The one example the

R17QF Question Ref.	Question addressed to			ExA. Question	Applicants' Response
					Applicants are aware of is the addition of six WTG to the constructed 54 WTG Lynn and Inner Dowsing windfarm (Round 1), which required regulatory approval, and therefore any new or materially different impacts were assessed at that time, as discussed in the ***Offshore Ornithology Precaution Note*** [AS-041].
R17QF.3	The Applicants			**Red throated diver displacement: London Array monitoring report [REP11-122]** Please respond to the evidence submitted by Natural England at [REP11-122] (NE response to Year 3 Ornithological Monitoring Report for London Array) in support of its position on RTD displacement distances for EA1N and EA2.	The Applicants have not been able to review the final version of the London Array monitoring report as this is not currently in the public domain. However, on the basis of Natural England's comments in REP11-122 it appears that the main changes requested by Natural England were to the text and conclusions, rather than the analysis. So, it has been assumed here that the results are largely the same as the previous version which the Applicant has been able to review (Appendix 2 of REP2-004). However, on the basis that Natural England has not provided a response to the points made by the Applicants (see ***Applicants' Comments on Natural England's Deadline 8 Submissions*** REP9-016) with regards to the pre-existing red-throated diver distribution which can be seen in the O'Brien et al. (2012) analysis conducted before London Array was constructed. If the same approach has been taken by Natural England in this case then it raises questions as to the robustness of these conclusions. The crucial point being that it would appear entirely feasible that a similar magnitude of

R17QF Question Ref.	Question addressed to			ExA. Question	Applicants' Response
					effect could be estimated from the earlier (before windfarm) data even though there London Array was not present. Given the pre-existing distribution is almost identical to that seen in 2018, the Applicants consider Natural England's statement '*that conditions for the red-throated diver qualifying feature within parts of the OTE SPA are likely to have significantly deteriorated'* is unsupported by the evidence. The Applicants have made this point repeatedly in their submissions and to date Natural England has provided no response to this nor indicated why this is not an important observation that needs to be taken into account. For clarity, the Applicants do not dispute that windfarms have a redistribution effect on red-throated divers, but nothing the Applicants' have seen in other studies, or found in their own modelling has supported the size or scale of effect which Natural England consider to be appropriate. Note that the Applicants have not responded to Annex 1 of REP11-122 as this provides detailed comments on a report that was produced for a different project and developer.
R17QF.4	The Applicants, Natural England, Royal Society for the			**Offshore Ornithology Without Prejudice Compensation Measures [REP11-070]** In page 57 of [REP11-070], the Applicants have referenced perceived benefits due to reducing conflict between recovering gull breeding numbers and protecting	a) Natural England has made reference to two possible aspects for which the presence of gulls may be detrimental to the conservation of breeding avocets. In the draft advice on

R17QF Question Ref.	Question addressed to			ExA. Question	Applicants' Response
	Protection of Birds			avocets and other ground nesting birds from gull predation. To the Applicants: a) Please expand on how any particular benefits for avocets and other ground nesting birds at Havergate Island would occur should fencing be erected at Orford Ness. b) Is there a danger that an increased gull population at Orford Ness could actually have the effect of increasing gull predation of ground nesting birds at Havergate Island? c) As a more general matter with regard to all of the compensation measures proposed within [REP11-070], please set out how any wider knock-on effects, either beneficial or negative, on other species that might arise from the implementation of the proposed without prejudice compensation measures (for example, rat eradication, predator proof fencing, by-catch measures and artificial nesting sites) have been or would be assessed. This should cover both SPA-qualifying and other species. d) What would be the decision-making mechanism regarding the overall acceptability (or not) of any such	conservation[1] there is a statement that '*Since monitoring began in 1996 fledging rates have been poor. On Havergate Island, 86 pairs fledged only 16 young in 1996. On Orford Ness, 17 pairs attempted to breed in 2012 but no young survived for more than a few days. This was largely due to predation by foxes and gulls Crawshaw, 2012*.' In the site improvement plan (SIP)[2], one of the actions identified is: *'6C. Investigate the movement of breeding Avocet away from the SPA, particularly due to displacement by large gulls on Havergate*'. While the particular reference to gull predation in the conservation advice is to birds breeding at Orford Ness rather than on Havergate Island, it would still appear to be appropriate to attempt to encourage separation of the species by encouraging lesser black-backed gulls to breed elsewhere and thereby afford the avocets on Havergate reduced predation risk from gulls. The SIP provides further support for this, with an action in relation to avocet being displaced from Havergate by the presence of large gulls (which will include lesser black-backed gulls). It would appear appropriate therefore that providing opportunities for the two species to breed in separate

[1]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/413376/Alde_Ore_Estuary_SPA_supplementary_advice.PDF
[2] http://publications.naturalengland.org.uk/publication/4884745984933888

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		knock-on effects that have been identified, and how would these effects be monitored and, if required, mitigated? e) For example, would it be appropriate to amend article 3 of parts 1-6 of Schedule 18 of the dDCO to include a requirement to include within the relevant Implementation and Monitoring Plan an assessment of any potential wider ecological effects (positive and negative) of the proposed compensation measures? If not, why not? To Natural England and RSPB: f) Do Natural England or RSPB have any observations to make on these points, or practical experience of relevance?	locations would reduce the degree of potential conflict in their management. b) The risk that an increased gull population would increase predation risk on ground nesting birds in the region cannot be ruled out, however see (c) for further discussion. c) The compensation measures proposed by the Applicants have been drawn from wider reviews of compensation options for seabirds (e.g. Furness et al. 2013[3]) which have given consideration to the wider ecological effects (both positive and negative) which could result. Therefore, the pool of options from which the Applicants have drawn has already been refined to avoid the risk of negative knock-on effects. Inherent in this process was an awareness that management for one species which was at the expense of another (native or endemic) species would be wholly inappropriate. Thus, with the exception of rat eradication, all the measures proposed involve either modest habitat changes or enhancements (e.g. artificial nest structures, predator exclusion fencing) or reduced anthropogenic pressure (e.g. reduced shipping activity, reduced bycatch). Therefore, in the case of the former (e.g. artificial nest structures) is simply taking advantage of the natural tendency for kittiwakes to use artificial cliff substitutes for breeding and will not result in

[3] Furness, R.W., MacArthur, D., Trinder, M. and MacArthur, K. 2013. Evidence review to support the identification of potential conservation measures for selected species of seabirds. Report to Defra

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			displacement of other species. While reducing anthropogenic pressures is in effect decreasing competition for resources with resulting benefits for a range of taxa. Rat eradication represents the most active compensation being proposed; however it is important to stress that it is almost certain that rats have been introduced to the islands in question accidently by human actions (e.g. on vessels). Therefore, while this is a more intensive management intervention, in principle it is similar to the concept of reducing anthropogenic pressures since it was human activity that created the situation in the first place. Indeed rat eradications have often been found to have positive effects on habitats and species far beyond those originally intended. In a review of 181 island eradication projects (Jones et al. 2016[4]), in only four cases were there medium to long term negative consequences for non-target species and these typically were reductions in predatory species whose numbers had increased artificially due to the introduced species that had been eradicated. Thus, while no formal assessment of the knock-on effects of the proposed compensation measures has been included in the ***Offshore Ornithology Without Prejudice Compensation Measures*** (REP11-070), these measures

[4] Jones et al. (2016) Invasive mammal eradication on islands results in substantial conservation gains, PNAS, 113, 4033–4038 www.pnas.org/cgi/doi/10.1073/pnas.1521179113

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			either follow established examples for which there is strong evidence for overwhelming positive benefits (e.g. island rat eradication), or involve reductions in anthropogenic activity for which no assessment is considered necessary (e.g. reduced risk of bycatch or shipping disturbance) or can be considered neutral in their risk of causing side effects (e.g. artificial nest structures). d) As discussed, the Applicants consider that the risk of negative knock-on effects is negligible and not a concern. However, the Applicants have updated the ***Offshore Ornithology Without Prejudice Compensation Measures*** document submitted at Deadline 12 (ExA.AS-4.D12.V4) to make provision for consideration during the detailed design of the compensation measures of any potential wider effects, either beneficial or negative, on other habitats and species that might arise from the implementation of the proposed compensation measure. Following this process, if stakeholder concerns remained, monitoring and mitigation options would be discussed and implemented as required. This could be implemented at any stage in the life of the compensation measure. It is worth noting that the each of the proposed compensation measures make provision for adaptive management (with the exception of the red-throated diver measures for which this is not relevant).

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			e) As noted above, the Applicants have updated the ***Offshore Ornithology Without Prejudice Compensation Measures*** document submitted at Deadline 12 (ExA.AS-4.D12.V4) to make provision for consideration during the detailed design of the compensation measures of any potential wider effects, either beneficial or negative, on other habitats and species that might arise from the implementation of the proposed compensation measure. This is set out in the compensation plans for kittiwake, gannet, razorbill, guillemot and lesser black-backed gull (Appendix 1 through 5). The Applicants consider that it is not necessary to amend paragraph 3 of parts 1-6 of Schedule 18 of the dDCO as paragraph 3 secures that the relevant implementation and monitoring plan must be based on the strategy for compensation set out in the compensation plan for that species in the ***Offshore Ornithology Without Prejudice Compensation Measures*** document.
Onshore Substation Siting and Design			
R17QF.5	SCC	**Land Plans and Appendix 2 of the Outline Operational Drainage Management Plan (OODMP)** Appendix 2 of the updated OODMP [AS-125] shows the order limits in relation to the SuDs basin alternative outfall on Church Lane. Are you content that the order limits	It has been brought to the Applicants' attention that ***Appendix 2*** of the updated ***Outline Operational Drainage Management Plan*** (OODMP) (AS-125) shows an earlier iteration of the Order limits than that shown on Sheet 7 of the ***Land Plans – Version 06*** (REP11-003). However, this does not affect the area around the concept design for the sustainable drainage system (SuDS) outfall. For clarity, an

R17QF Question Ref.	Question addressed to			ExA. Question	Applicants' Response
				shown in Appendix 2 correspond with those shown on Sheet 7 of the Land Plans?	updated ***OODMP*** has been submitted at Deadline 12 (document reference ExA.AS-37.D12.V6) with an amended ***Appendix 2***. To confirm, the concept design for the SuDS outfall is wholly contained within the Order limits.
R17QF.6	SCC, Environment Agency			**Maintenance of the Friston Watercourse** Paragraph 140 of the OODMP [AS-125] states that additional inspection or maintenance works required on the Friston watercourse due to the projects will be addressed by way of an agreement with the Environment Agency prior to commencement of Work Nos 30 and 41. To SCC: • Does this satisfy your concerns in relation to this matter and is there sufficient detail within the OODMP? To the Environment Agency: • Can you please confirm that you are content to enter into such an agreement?	The SoCG with the Environment Agency has been updated at Deadline 12 (document reference ExA.SoCG-3.D12.V4) to confirm that the framework to ensure that any additional inspection or maintenance works are appropriately undertaken will be agreed between the Applicants and the Environment Agency prior to commencement of Work Nos. 30 and 41.
R17QF.7	The Applicants, SCC, ESC, Historic			**Landscape and Visual Impact**	a) The Applicants consider 'bunding' in this instance to refer to the 'batter slopes' shown on the plans and cross sections within ***Appendix 5*** of the ***OODMP***

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	England, SASES, and any other Interested Parties.			The Outline Landscape and Ecological Management Strategy (OLEMS) version 6 dated 11 June 2021 [AS-127] contains an updated design for the proposed SuDS basins. The revised designs remove previous areas of wet woodland within the basins and appears to reorientate the basin for the proposed southern substations. In addition, text within the OLEMS has been amended to state that SuDS basins "may" be encompassed by bunds (as opposed to "will") To the Applicants: a) How likely is it that bunding will be required for the SuDS basins? b) Para 138 of the OLEMS states that bunding for landscaping purposes is subject to detailed design and the availability of suitable material on site during construction. If suitable material is on site during construction, provide examples of what bunds may be constructed and to what purpose. To SCC, ESC, Historic England and other Interested Parties:	(document reference ExA.AS-37.D12.V6). It is likely that such reprofiling of the land will be necessary for each SuDS basin. However, the gradients and extents of the slopes will depend upon the results of infiltration testing and how these feed into the final basin designs. For example, the basins may be micro-sited, reorientated, resized and/or reshaped in order to maximise infiltration and to reflect the final design of the substations and landscaping. Land contours around the final basin designs / locations will influence bunding requirements. b) Where available, rather than create 'bunds', the Applicants are more likely to use excess site materials for reprofiling of areas of the land to create gradual slopes to accommodate landscape mitigation planting and further reduce the visual effects of the National Grid infrastructure and onshore substations. The heights, gradients and extents of such reprofiling cannot be determined until the detailed design stage of the Projects (i.e. once ground investigations are complete and the availability of suitable material is known).

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				c) Provide any further submissions you may to wish to make on the landscape and visual impact of the latest iteration of the proposed SuDS basins. d) Does the removal of the previously proposed wet woodland have an adverse effect on the ecological aims of the proposed developments? e) Does the removal of the previously proposed wet woodland have an adverse effect on the role of the OLEMS proposals as landscape or historic environment mitigation?	
R17QF.8	The Applicants			**Landscape and Visual Impact: Additional SuDS capacity for Friston** Previous iterations of the OLEMS contained an illustrative location for a proposed additional surface water management SuDS basin to reduce flood risk for Friston. The latest version of the OLEMS [AS-127] removes this illustrative location, with paragraph 144 stating that: *"Further consideration will be given to the location of any additional SuDS basins during detailed design. Factors to be considered will include whether to locate the additional SuDS basins to the north of the substations (which would control the surface water flows entering the existing drainage channel to the west of the substations), or to the*	Further to detailed hydrological modelling to establish the feasibility of an additional SuDS basin, there are a number of options available for the location of the SuDS basin, depending on the results of the hydraulic model, the size of the SuDS basin proposed, and its integration within the strategic landscape framework. Irrespective of its location, the SuDS basin would be normally dry and will be grass covered, therefore discretely integrated within the landscape. Should an additional SuDS basin be provided, the final location would be confirmed within the final Operational Drainage Management Plan and Landscape Management Plan.

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				south of the substations (which would control surface water flows entering the outfall pipe connecting to the Friston watercourse)…" • Provide further information on a potential location for this basin to the south of the substations in landscape and visual impact terms, including details on any potential knock-on effects on proposed landscaping areas currently shown within the OLMP General Arrangement.	Given that the additional SuDS basin is supplemental to the strategic landscaping, it will not compromise the strategic landscaping and there is considered to be no potential knock-on effects on the proposed landscaping areas currently shown within the OLMP General Arrangement.
R17QF.9	The Applicants			**Landscape and Visual Impact: Operational Infiltration** The OODMP [AS-125] states that the latest testing at the proposed SuDS basin locations has ruled out an infiltration only solution for both the onshore substations and National Grid infrastructure SuDS basins, and that the Applicant has adopted a hybrid infiltration and attenuation system for the onshore substations and an attenuation only solution for the National Grid infrastructure respectively. The OODMP also notes that the final infiltration rates for the SuDS basins and the Q_{BAR} runoff rate for the design discharge rate to the Friston Watercourse will be confirmed during detailed design, allowing the optimal SuDS basins configuration, size, capacity and location to be confirmed.	Whilst it is not possible to state categorically whether further infiltration testing (to be carried out at the detailed design stage) will change the overall design conclusions of the ***OODMP*** (document reference ExA.AS-37.D12.V6), the Applicants consider that on the balance of probability, it is unlikely to change the SuDS basins design concept. However, the Applicants' commitment to undertake further infiltration testing will provide the opportunity for the final design concept to be verified, and the final design to be refined to maximise infiltration opportunities where practicable.

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		• Confirm (or otherwise) that the further infiltration testing to be carried out will not change the overall design conclusions of the OODMP (version 5) – that is that the SuDS basins will be hybrid infiltration and attenuation for the onshore substations and attenuation only for the National Grid infrastructure.	
Construction			
R17QF.10	The Applicants, SCC, ESC, Historic England, SASES, and any other interested IPs.	**Landscape and Visual Impact: Construction Drainage Management** The Outline Code of Construction Practice [REP11-015] provides an example construction surface water drainage scheme at the Substations Location (Appendix 2, Figure 3). This is described in the text as a worst-case indicative general arrangement (para 176). • Provide any submissions you may wish to make on any impacts of this proposed construction surface water drainage scheme on matters of landscape, visual impact and the setting of heritage assets.	The Applicants consider that the Application included a full assessment of the effects of construction. The additional detail on temporary construction drainage would not alter the original conclusions. ***Chapter 24 - Archaeology and Cultural Heritage*** (APP-072) provided an assessment of construction impacts on setting *217. The heritage settings assessment (see **Appendix 24.3**, section 3.8 and **Appendix 24.7**) was informed by site visits to understand how the proposed East Anglia TWO project would potentially change the setting of each asset and whether these changes would impact on the significance of the asset. The assessment concluded that only changes in setting due to the operation of the proposed East Anglia TWO project would be of sufficient duration to merit more detailed assessment. Any changes in setting due to*

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			construction activities would be temporary and of sufficiently short duration that they would not give rise to material harm. Indirect (non-physical) impacts as a result of change in the setting of heritage asserts during the construction phase have therefore been excluded from further consideration (i.e. ***no impact****).* The conclusions of the assessment were agreed with both Historic England (see ***Statement of Common Ground Historic England (Offshore) - Version 04*** (REP8-128)) and the Councils (see ***Statement of Common Ground with East Suffolk Council and Suffolk County Council - Version 04*** (document reference ExA.SoCG-2.D12.V6)). ***Chapter 29 - Landscape and Visual Impact Assessment*** (APP-077) assessed construction impacts at the substation in section **29.6.1.3**. Significant effects were concluded for both landscape and visual receptors. *166. The construction of the onshore substation and National Grid infrastructure will result in a large-scale change to the local character of this area of the LCT, during construction of the onshore substation, CCS, temporary working areas and access roads, together with the increased activity of vehicles, machinery, cranes and the stockpiling of materials that will be needed during construction.* *168…..Despite the notable screening provided in the local landscape, the construction of the onshore substation and*

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					National Grid infrastructure are assessed as having significant visual effects on residents of localised areas on the edges of Friston (not from Friston as a whole), as represented by Viewpoints 1, 2, 4, and 9; people walking on the local public right of way network to the north of Friston (between Friston and Fristonmoor) as represented by Viewpoints 2 and 5; residents of scattered rural dwellings near Friston, as represented by Viewpoints 5 and 8; motorists travelling on the B1121 Saxmundham Road, to the north of Friston, as represented by Viewpoint 8; and motorists/cyclists travelling on Grove Road immediately passing the onshore substation and National Grid substation, between Friston and Grove Wood/Manor Farm, as represented by Viewpoint 14.
Draft Development Consent Orders (dDCOs)					
R17QF.11	The Applicants			**Substation Design Principles Statement Appendix A: Engagement Strategy [REP11-046]** Paragraph 20 of the engagement strategy states, '[o]nce complete the Architectural Framework will form the base from which the Detailed Design Document (required to satisfy DCO Requirement 12), for each substation will be developed.' Requirements 12 of the draft DCOs [AS-110] do not refer to a 'Detailed Design Document'; although it's existence	The Applicants apologise for any confusion that may have been caused with the capitalisation of "Detailed Design Document" in Appendix A of the Substations Design Principles Statement. The text was intended to relate to the details of the layout, scale and external appearance of the substations which must be submitted for approval in accordance with requirement 12 of the draft DCO. The Applicants have therefore updated the text within Appendix A of the Substations Design Principles Statement to clarify this,

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			might be inferred from the reference to 'details of the layout, scale and external appearance' in R12(1). a) It is arguable that changes to the drafting of Requirements 12 are necessary to provide adequate security for the approach set out in the Substation Design Principles Statement. Taking that to be the case, please: • propose drafting to secure reference to a 'Detailed Design Document' in Requirements 12. • provide a definition of 'Detailed Design Document' in Articles 2 Interpretation of the draft DCOs; and • make reference in the definition of 'Detailed Design Document' to 'built form' as well as to 'layout, scale and external appearance.' b) If it is the Applicants' position that the changes requested at (a) above are not necessary to be included in the dDCOs, please also explain why that is considered to be the case.	and this was submitted into the Examination on 21 June 2021 (AS-133). The Applicants do not consider that any amendments are necessary to requirement 12 to refer to a Detailed Design Document as the relevant details are already captured within requirement 12. Furthermore, paragraph (5) of requirement 12 specifically states that such details must accord with the Substations Design Principles Statement.