Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects

The Applicant's Responses to the Examining Authority's First Written Questions

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The Planning Inspectorate

QQ1.20

Application by Equinor New Energy Limited for an Order Granting Development Consent for the Sheringham Shoal Offshore Wind Farm Extension Project and Dudgeon Offshore Wind Farm Extension Project

The Examining Authority's written questions and requests for information (WQ1)

Issued on Friday 27 January 2023

This document sets out the Examining Authority's (ExA) First Written Questions and requests for information (WQ1), in order to facilitate the conduct of the Examination. Responses are due by **Deadline 1, Monday 20 February 2023**.

Questions are set out using an issues-based framework derived from the Initial Assessment of Principal Issues in the Rule 6 letter, Annex C [PD-006]. The questions relate to issues as they have arisen from representations and to address the assessment of the application against relevant policies. All the post Hearing Actions from Issue Specific Hearing 1 and 2 [EV-003] [EV-005] have been included in WQ1 and these have been highlighted as such.

Column 1 sets out the unique reference number to each question which starts with 'Q1' (indicating that it is from WQ1), followed by an issue number, a sub-heading number and a question number. When you are answering a question, please start your answer by quoting the unique reference number.

Column 2 of the table indicates which Interested Parties (IPs) and other persons each question is directed to. Please provide a substantive response to the questions directed at you, or indicate why the question is not relevant to you. You may also respond to questions that are not directed at you, should the question be relevant to your interests.

If you are responding to a small number of questions, answers in a letter will suffice. If you are answering a larger number of questions, it will assist the ExA if you use a table based on this one to set out your responses. An editable version of this table in Microsoft Word is available on request from the case team: please contact sadep@planninginspectorate.gov.uk and include 'Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Project' in the subject line of your email.

Responses are due by Deadline 1, Monday 20 February 2023.

List of abbreviations

AADT	Annual Average Daily Traffic
AEoI	Adverse Effect in Integrity
AEZ	Archaeological Exclusion Zone
ALARP	As Low As Reasonably Possible
ALC	Agricultural Land Classification
AONB	Area of Outstanding Natural Beauty
AP	Affected Persons
ASI	Accompanied Site Inspection
AQMA	Air Quality Management Area
BEIS	Department for Business, Energy & Industrial Strategy
BMV	Best and Most Versatile
BNG	Biodiversity Net Gain
BoR	Book of Reference
BDC	Broadland District Council
BYR	Blue, Yellow and Red
CA	Compulsory Acquisition
CA Regulations	The Infrastructure Planning (Compulsory Acquisition) Regulations 2010

CA Guidance	Planning Act 2008: guidance related to procedures for the compulsory acquisition of land
CCA	Climate Change Allowance
CCR2C	Noise Receptor CCR2
CfD	Contract for Difference
CIA	Cumulative Impact Assessment
CIL	Community Infrastructure Levy
CION	Connections and Infrastructure Options Note
CoCP	Code of Construction Practice
CPRE	The Countryside Charity
CNMP	Construction Noise Management Plan
dB	Decibel
dDML	Draft Deemed Marine License
dDCO	Draft Development Consent Order
DEFRA	Department for Environment, Food & Rural Affairs
DEP	Dudgeon Offshore Wind Farm Extension Project
DEL	Dudgeon Extension Limited
DEP-N	Dudgeon Offshore Wind Farm Extension Project North
DEP-S	Dudgeon Offshore Wind Farm Extension Project South
DMRB	Design Manual for Roads and Bridges

DOW	Dudgeon Offshore Wind Farm
DWPA	Drinking Water Protected Area
EA	Environment Agency
EAG	East Anglia Green
eDNA	Environment Deoxyribonucleic acid
EEAST	East of England Ambulance Service NHS Trust
EIA	Environmental Impact Assessment
EM	Explanatory Memorandum
EMF	Electric Magnetic Field
EMP	Environment Management Plan
EPUK	Environmental Protection UK
ES	Environmental Statement
ExA	Examining Authority
FTE	Full Time Equivalent
FRA	Flood Risk Assessment
FLOWW	Fishing Liaison with Offshore Wind and Wet Renewables Group
GCN	Great Crested Newts
GLVIA3	Guidelines for Landscape and Visual Impact Assessment 3
GVA	Gross Value Added

GWTMZ	Greater Wash Transponder Mandatory Zone
HDD	Horizontal Directional Drilling
HE	Historic England
HGV	Heavy Goods Vehicle
HP3	Hornsea Project 3
IAQM	Institute of Air Quality Management
IFCA	Inshore Fisheries and Conservation Authorities
IP	Interested Parties
ISH	Issue Specific Hearing
ISH	Issue Specific Hearing
km	Kilometre
LA	Local Authority
LHA	Local Highway Authority
LIR	Local Impact Report
LLFA	Lead Local Flood Authority
LoNI	Letters of No Impediment
LV	Light Vehicle
LVIA	Landscape and Visual Impact Assessment
m	Metre

MCA	Maritime Coastguard Agency
MCZ	Marine Conservation Zone
MEEB	Measures of Equivalent Environmental Benefit
MHWS	Mean High Water Springs
MMMP	Marine Mammal Mitigation Protocol
MMO	Marine Management Organisation
MoD	Ministry of Defence
NB	Norfolk Boreas
NCAONB	Norfolk Coast Area of Outstanding Natural Beauty
NCC	Norfolk County Council
NE	Natural England
NFU	National Farmers Union
NH	National Highways
NNDC	North Norfolk District Council
NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxides
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NPS EN	National Policy Statement Energy Suite

NR	Network Rail
NRMM	Non-Road Mobile Machinery
NRIDB	Norfolk Rivers Internal Drainage Board
NSER	No Significant Effects Report
NSIP	Nationally Significant Infrastructure Project
NT	National Trust
NV	Norfolk Vanguard
OFH	Open Floor Hearing
OCoCP	Outline Code of Construction Practice
OCTMP	Outline Construction Traffic Management Plan
OFH	Open Floor Hearing
OLMP	Outline Landscape Management Plan
OS	Ordnance Survey
OSP	Offshore Platform
OSEP	Outline Skills and Employment Plan
OTN	Offshore Transmission Network
OWF	Offshore Windfarm
PA2008	The Planning Act 2008
PEMP	Project Environment Management Plan

PPV	Peak Particle Velocity
PRoW	Public Rights of Way
PVA	Population Viability Analysis
R	Requirement
RAF	Royal Air Force
RIAA	Report to Inform Appropriate Assessment
RR	Relevant Representation
RRH	Remote Radar Head
RSPB	Royal Society for the Protection of Birds
RVAA	Residential Visual Amenity Assessment
RYB	Red, Yellow and Blue
s	Section of Parliamentary Legislation
SAC	Special Area of Conservation
SEP	Sheringham Shoal Offshore Wind Farm Extension Project
SEL	Scira Extension Limited
SLVIA	Seascape and Landscape Visual Impact Assessment
SOCG	Statement of Common Ground
SoS	Secretary of State
SOW	Sheringham Offshore Windfarm

SNCB	Statutory Nature Conservation Bodies
SNDC	South Norfolk District Council
SPA	Special Protection Area
SPZ	Source Protection Zone
SSSI	Site of Special Scientific Interest
SWMP	Site Waste Management Plan
TA	Transport Assessment
TCPA1990	Town and Country Planning Act 1990 (as amended)
TP	Temporary Possession
TPO	Tree Preservation Order
TTSA	Traffic and Transport Study Area
USI	Unaccompanied Site Inspection
UXO	Unexploded Ordnance
WFD	Water Framework Directive
WMS	Written Ministerial Statement
WWI	World War One
WWII	World War Two
ZTV	Zones of Theoretical Visibility

Examination Library

References in these questions set out in square brackets (eg [APP-010]) are to documents catalogued in the Examination Library. The Examination Library will be updated regularly as the Examination progresses.

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Q1.1 General and Cross-topic Questions			Applicant's Responses
Q1.1.1 Planning Policy			
Q1.1.1.1	Local Authorities	**Planning Policy** Set out whether, in your view: a) There are any areas of where the Proposed Development conflicts with the aims and objectives of the designated NPSs, specifically NPS EN1 and NPS EN3; b) The representation of the Local Plans and policies [APP-088] is accurate or, if not, provide updated information; c) Any other policy documents are considered important and relevant to the Examination. d) Applicant, provide a complete summary in tabular form to demonstrate how it is considered the Proposed Development accords with all relevant paragraphs of the designated energy NPSs.	**a), b) c)** N/A **d)** The Examining Authority's attention is drawn to Section 6 of the submitted Planning Statement [APP-285]. This section of the Planning Statement sets out, in tabular form, a summary demonstrating how the proposed development is considered to accord with the relevant policies set out in the designated National Policy Statements (NPSs) for energy Nationally Significant Energy Projects, and other policy, including the consultation draft NPSs (September 2021). The Examining Authority is requested to advise the Applicant if it considers that any policies are not yet adequately addressed.
Q1.1.1.1	Marine Management Organisation	**Marine Plans** Provide a document setting out relevant East Inshore and East Offshore policies and marine plans that apply to the Proposed Development.	The Applicant has prepared a Marine Plan Policy Review [document reference 13.6] to address this question, which is being submitted at Deadline 1.
Q1.1.2 Planning Permissions			
Q1.1.2.1	Applicant Local Authorities	**Planning Permissions** Please update the Examination as to whether any new permissions have been granted, or new projects pending decision, that require consideration within the cumulative impact assessment.	The Applicant confirms that in line with the RenewableUK Cumulative Impact Assessment (CIA) Guidelines for offshore wind farms (RenewableUK 2013), the approach to CIA attempts to incorporate an appropriate level of pragmatism. This is demonstrated in the confidence levels applied to the understanding of other projects (either their design or their likely impacts), particularly those that are known but currently lack detailed design documentation, such as those projects at the scoping stage only. Only projects which are well described and sufficiently

			advanced, with adequate detail available with which to undertake a meaningful and robust assessment, have been included in the CIA. The Applicant selected other projects and plans for inclusion in the CIA in line with Version 3 of Planning Inspectorate Advice Note Nine: Rochdale Envelope (PINS, 2018) and version 2 of Planning Inspectorate Advice Note Seventeen: Cumulative Effects Assessment (PINS, 2019a). Projects were screened and agreed via consultation with stakeholders and are considered robust at the time of submission of the DCO application.
Q1.1.2.2	Applicant Local Authorities	**Planning Applications** Have any proposed works, to date, been subject to planning applications under s78 of the TCPA1990 (as amended) and, if so, where are they and what is their status?	The Applicant assumes that by 'any proposed works' the Examining Authority is referring to any works forming part of the proposed Authorised Development as described in the DCO application and defined in the draft DCO (Revision C) [document reference 3.1]. The Applicant can confirm that none of the proposed works have been subject to early planning applications under the TCPA1990 (as amended).
Q1.1.3 Legislative Framework			
Q1.1.3.1	Applicant	**Energy Security Bill Policy Statements and Draft Regulations** Provide copy of amendments to the Energy Security Bill Policy Statements and Draft Regulations (13 January 2023) and highlight sections of relevance.	Copies of the Energy Security Bill (as amended in committee, 16 January 2023) and the Energy Security Bill Policy Statement Offshore Wind Environmental Improvement Package Measures are submitted in Appendix B.1. Sections 240 – 245 of the draft Bill (in Part 12, Chapter 1) are considered relevant. In respect of the Policy Statement, the Applicant considers that the sections on Strategic Compensatory Measures and the Marine Recovery Fund (pages 11 – 15) are the most relevant to this examination. **See Appendix B.1**
Q1.1.4 Miscellaneous			
Q1.1.4.1	Applicant Interest Parties	**Review of Energy NPSs**	The analysis shown in section 6 of the Planning Statement [AS-031] confirms that the proposed development is in accordance with the policies set out in the consultation draft NPSs published by the Department for Business Energy and

		In light of the ongoing review of the energy NPSs, would any aspect of the Proposed Development be in conflict with, or require revision to align with, the revised energy NPSs? The ExA notes that the Applicant's assessment [APP-285, Section 6] but invites any further comments from the Applicant.	Industrial Strategy in September 2021. This is because the draft NPSs largely bring NPS policy up to date with known new policy initiatives with which the applicant is already complying, as a matter of good practice. An example would be Biodiversity Net Gain which the project has chosen to deliver even though this is only encouraged and is not a policy requirement in the consultation draft NPS. Many of the updated policies in the draft NPSs relate to widening the application of the NPSs to more technologies, removal of policy relating to onshore wind, and new coal for example to attempt to align the NPSs with current government policy on different energy technologies. Some changes however are potentially more relevant to offshore wind farm development and some of the key changes are therefore considered in summary form below: • Future generation mix: whilst the new draft NPS EN-1 dispenses with minimum need figures for types of power generation which currently apply in NPS EN-1, the corresponding section of the draft NPS concludes "Our analysis suggests that even with major improvements in overall energy efficiency, and increased flexibility in the energy system, demand for electricity is likely to increase significantly over the coming years and could more than double by 2050" (paragraph 3.3.3) and continues (paragraph 3.3.5) stating "we may need a fourfold increase in low carbon generation. This means that the majority of new generating capacity needs to be low carbon". Given this scale of need, the continuation of policy that need for energy generation has been demonstrated by the NPS (draft policy 3.2.5) and the removal of any requirement that weight attributable to need should be proportionate and its replacement with the draft policy that the weight given to need should be "substantial" (3.3.45), there is no diminution of and if anything, there is a greater level of need established by the new draft NPS than in the current NPS EN-1;

			• Coordinated connections: Draft NPS EN-1 policy on electricity networks infrastructure recognises that while individual radial connections developed project-by-project "may continue to be the most appropriate approach … it is expected that for regions with multiple windfarms a more coordinated approach will be adopted wherever possible", the SEP and DEP application has brought together and coordinated two separately located windfarm extensions into one coordinated application utilising shared cable corridors and connections and is one of the first such applications to do so; • Habitats Regulations Derogation: Draft new policy (4.2.10 of Draft NPS EN-1) provides for compliance with the Habitats Regulations introducing policy on the provision of information to enable Appropriate Assessment, including for the first time, where necessary, derogation, including mitigation, assessment of alternatives and/or compensatory measures, the SEP and DEP application already provides this level of derogation information; • Design: Draft new policy on design (4.6.2 of Draft NPS EN-1) adds the requirement for design principles to be "established from the outset", the SEP and DEP application establishes design principles and shows how they derive from the Applicant's aims and objectives for the Projects; • Flood Risk: Draft policy (5.8.7 of Draft EN-1) sets out more detail on the requirements including adherence to the drainage hierarchy, consistent with the National Planning Policy Framework - NPPF - and Planning Practice Guidance – PPG), the design and development of SEP and DEP already followed the requirements of the NPPF and PPG on assessing and managing flood risk; • Onshore Cable Route: Draft NPS EN-5 maintains the presumption that pylon supported overhead lines are the starting point for proposed electricity transmission infrastructure, but now includes a presumption that in protected landscapes cables will be laid underground, SEP and DEP onshore cable route is subterranean even in non-protected landscapes; and • Substation Design: Draft NPS EN-5 also now includes the Horlock Rules for the siting and design of substations (2.11.11), SEP and DEP have applied these rules as set out in the application documents.

Q1.1.4.2	Local Authorities	**Availability of Resources for NSIP casework** Are you confident that you have, or shortly will have, sufficient resources to deal with the NSIP-related workload that will be associated with the Proposed Development during the examination and recommendations phases and that would be associated with the Proposed Development if the SoS made an order granting development consent?	**N/A**

Q1.2 Alternatives and need			**Applicant's Response**
Q1.2.1 Selection of Landfall Site			
Q1.2.1.1	Applicant	**Landfall Location Selection Process** Whilst the ES [APP-089] sets out the reasons why Weybourne was chosen for the proposed landfall location for the cabling, explain why the options were limited to Weybourne, Bacton and Happisburg?	There are multiple aspects which have informed the landfall site selection process, including: • Onshore cable route from the landfalls including the length of the cable, and features which the cable route would pass through. • Technical feasibility of the landfall location itself – of note the technical risks associated with a landfall in Weybourne are well understood given the experience of the Sheringham and Dudgeon offshore wind farms. • Technical feasibility of the offshore cable routes – similarly existing knowledge of the cable route to Weybourne carries less risk than elsewhere. This includes knowledge of cables/pipelines in the area; information on geophysical data (the geophysical data from the Weybourne route show significant chalk outcroppings closer to shore, but these can be avoided by using HDD as a landfall installation methodology); and environmental sensitivities of the offshore cable routes, and particularly the cable route through the Cromer Shoal Chalk Beds Marine Conservation Zone. • Environmental sensitivities – for example, the Cromer Shoal Chalk Beds MCZ straddles the coastline from just west of Weybourne to Happisburgh. The area west of the MCZ is designated as a Special Area of Conservation (SAC) under EU Habitats regulations.
Q1.2.2 Selection of Substation Site			
Q1.2.2.1	Applicant National Grid	**Grid Connection** The Applicant has reported on the optioneering process that underpinned the selection process for the wind farm locations, the landfall location and the onsite substation location, commenting that the latter emerged following consultation with National Grid [APP-089] [APP-175]. The ExA seeks	**a)** The Site selection of the offshore cable corridor, landfall, onshore cable corridor and onshore substation were developed co**ncurrently as outlined on Plate 3-1 [APP-175, Plate 3-1] to reach key project**

		clarification, in light of policy and legislative requirements set out in NPS EN-1 Section 4.4 and the EIA Regulations 2017, on the following matters: National Grid a) Signpost in the Application material or submit information to highlight what alternative grid connections, other than Norwich Main, were offered to the Applicant? b) What criteria did you consider in making the connection offer to the Applicant? Applicant and National Grid c) Further explanation is needed to support the nuanced steps in the site selection process [APP-175, Plate 3-1]. For instance, did the identification of the offshore cable corridor, landfall, onshore cable corridor and onshore substation take place concurrently as shown [APP-175, Plate 3-1]? d) Applicant, submit marked on a map all the sites (field 1 to field 5 [APP-175, Table 3-5] and any others) considered for the onshore substation, a comparative assessment of suitability, including the criteria and weighting used for the assessment, with a statement of why each other site was dismissed, and the proposed site selected. In that regard, identify what options 1 to 6 refer to [APP-175, Table 3-1]. e) Provide a full flow chart with the sequence of steps taken, and the criteria and weighting that underpinned key decisions. In particular, outline how the MCZ, biodiversity and designated natural and built assets were considered. f) What weight or extent of consideration is given to nature, biodiversity and sites designated for nature conservation when preparing the CION and offer options? g) Given its distance in-land, what factors made Norwich substation the best option for the grid connection?	**milestones such as EIA Scoping, Statutory consultation / PEIR and final application submission of the Environmental Statement.** The design process is by nature iterative**. The site selection criteria vary depending upon the infrastructure proposed and the geography of the area and thus the options available. This resulted in a number of iterations to find the best solution at the level of maturity required for each design stage. Consequently, while the selection process was triggered simultaneously at each stage, some aspects reached the required level of maturity earlier than others within each milestone.** The response to Q.**1.10.2.1(a) provides further information on when key decisions were made during the different stages of the project development and additional detail is set out in the following application documents:** • Full details of the Onshore Substation site selection process are set out within the Onshore Substation Site Selection Report [APP-175]. • Full details of the main compound site selection process are set out within the Onshore Main Construction Compound Site Selection Report [APP-177]. • Full details of the site selection process including cable corridor selection are set out within the Chapter 3 of the ES – Site Selection and Assessment of Alternatives [APP-089]. **b)** The Applicant would like to clar**ify that Table 3-1 of ES Appendix 3.1 Onshore Substation Site Selection Report [APP-175] is an indicative table to demonstrate, as part of the explanation of the methodology followed, some of the early key constraints associated with the site selection and design considerations. As such, Options 1 to 6 in that table do not relate to the potential substation zones – they are purely an example to aid understanding of how a BRAG assessment is undertaken and presented. Sections 3.1.7 to 3.1.17 of ES Appendix 3.1 Onshore**

		h) Submit the CION and any relevant supporting material. If the CION is an extensive document, provide a summary as well.	**Substation Site Selection Report [APP-175] provide the assessment of suitability of the five fields taken forward for further consideration (Fields 1, 2, 3, 4 and 5). These are marked up on Figure 3.1.4 in Annex 3.1.1 of the same document (N.B Annex 3.1.1 has been titled Annex 3.3.1 in error).** **c)** A flow **chart of the site selection process is provided at Plate 3.1 of ES Chapter 3 Site Selection & Assessment of Alternatives [APP-089]. The sequence of steps taken, and the criteria and weighting that underpinned key decisions are provided, where relevant, in that chapter and its supporting appendices namely Appendix 3.1 Onshore Substation Site Selection Report [APP-175], Appendix 3.2 Cable Landfall Concept Study [APP-176] and Appendix 3.3 Onshore Construction Compound Site Selection Report [APP-177]. With respect to the particular features and constraints mentioned:** • The MCZ: ES Chapter 3 describes at several points how the MCZ was considered in the site selection process with regard to the offshore cable corridor and landfall. Particularly paragraph 31 which explains the consideration given to The Wash and North Norfolk Coast SAC and that the corridor through the western portion of the MCZ was considered preferable as it would provide a more direct and shorter route to the potential landfall options (reducing the overall impacts from cable installation) as well as having the distinct advantage of being close and parallel to the existing DOW export cable corridor, for which Equinor has first-hand experience of undertaking successful cable burial works.

			Biodiversity and designated natural and built assets: considered throughout including, for example: the MCZ and SAC in the offshore environment as discussed above; and avoidance of any interaction with onshore National Nature Reserves (NNR) along the Norfolk coast (e.g. Mundesley Cliffs SSSI and Paston Great Barn NNR) (paragraph 50). In general terms, avoidance of e.g. residential titles, designated sites, mature and historic woodland etc. were all key considerations in the site selection process as described at several points throughout the chapter (e.g. paragraphs 65, 94 and 105). **d), e) and f)** The Applicant considers that parts d), e) and f) should be directed towards National Grid to provide detailed responses. National Grid will have evaluated and determined the most appropriate connection point through the Connection and Infrastructure Options Note (CION) Process. The Applicant cannot comment on the distance in-land of Norwich Main substation. The CION Process is the mechanism used by National Grid to evaluate potential transmission options to identify the connection point in line with their obligation to develop and maintain an efficient, coordinated and economical system of the electricity transmission network. The grid connection point selected for SEP and DEP was determined by National Grid following the completion of the CION process. The CION process stipulates that it is the decision of National Grid rather than the Applicant to decide where the grid connection point will be. For more information regarding the grid connection point see Sections 3.6 and 3.10 of ES Chapter 3 Site Selection and Assessment of Alternatives [APP-089]. The Applicant notes that in the recent Energy Minister's (Minister Stuart) Letter to East Anglian Communities it has been made clear that Government *"will not, and cannot, force changes to these [Grid Connection agreements between developers and National Grid]*

			contracts". It is clear from the letter that this relates to SEP and DEP amongst other projects.
Q1.2.2.2	National Grid Applicant	**Substation Location** In relation to the proposed substation for the Proposed Development: National Grid i) Are there any concerns from a structural, engineering or technical perspective with regards to the specific location for the proposed substation [AS-005]? j) Are the works you require to upgrade and extend Norwich Main, or to connect and integrate with the Proposed Development adequately, covered within Schedule 1 of the dDCO and the associated Works Plans [APP-011, AS-009]? Applicant a) How will the works for the proposed substation for the Proposed Development interact with, or be separate from, the works for the Hornsea 3 substation taking place in the vicinity and is there any sequential preference in this regard? For instance do the Hornsea Project 3 works to the Norwich Main have to be completed first to create the necessary network into which the Proposed Development would connect?	**Applicant:** **a)** The works for the proposed onshore substation are separate to and independent of the works within the Hornsea Three Offshore Wind Farm Order (2020) (Hornsea 3), and the Application therefore does not rely on or require the Hornsea 3 project to connect to Norwich Main in advance of the Proposed Development. The Order limits for the Proposed Development do overlap with those for Hornsea 3. As such, the Applicant has included draft protective provisions for Orsted Hornsea Project Three within Part 10 of Schedule 14, which are currently subject to negotiation and further discussions with Orsted Hornsea Project Three to ensure co-ordination between the relevant projects.
Q1.2.2.3	Applicant National Grid	**Walpole Substation** At OFH1 [EV-009] [EV-010], a number of speakers highlighted that there was spare capacity at the Walpole Substation following the mothballing of Sutton Bridge gas fired power station and the declination of an application for Docking Shoal wind farm to connect. Comment on all aspects of this scenario. If this is the case how did this feature in the assessment of alternatives for the substation selection for the Proposed Development?	As set out in the Applicant's response to Q1.2.2.1 above, the CION Process is the mechanism used by National Grid to evaluate potential transmission options to identify the connection point in line with their obligation to develop and maintain an efficient, coordinated and economical system of the electricity transmission network. The Applicant is not in a position to comment on spare capacity at the Walpole Substation either historically, or now.

Q1.2.3 Viability of the grid connection and progress with other licences			
Q1.2.3.1	Applicant National Grid	**Offshore Transmission Network** k) Explain what an OTN would consist of and what the current policy and industry support for such an approach is. l) Has an OTN has been considered for the Proposed Development? Is an OTN, as described by IPs during representations at OFH1 [EV-009] [EV-010] feasible? m) In light of policy support (if any) discuss how, in your opinion, this can be considered in this Examination.	**a)** Section 3 of the Scenarios Statement [APP-314] sets out background to the Offshore Transmission Network Review (OTNR). The term Offshore Transmission Network (OTN) is used broadly to refer to interconnectors and offshore networks for wind farms which require connection to the onshore network. In July 2022 National Grid (NG) ESO published its 'Pathway to 2030: Holistic Network Design' (the HND report) which provided the first details of NG ESO's recommended single, integrated network design for future offshore transmission assets (see [redacted]). Under the OTNR process three workstreams have been created to address offshore wind projects at different stages of development: • Early Opportunities • Pathway to 2030 • Enduring Regime The Holistic Network Design (HND) is being developed as part of the Pathway to 2030 workstream. The HND report (NG ESO, 2022) provides details of what the proposed HND would consist of and includes a combination of radial and coordinated connections including nine radial connections for future offshore wind farms in scope for the study. As set out in paragraphs 39 – 41 of the Scenarios Statement [APP-314] the OTNR was initiated by BEIS and has since gained further policy support through the revised draft energy National Policy Statements (NPSs) which were consulted on in September 2021. The Applicant notes that there continues to be significant Government and policy support for greater coordinating of transmission systems in offshore wind, and this has been an important factor in maturing the integrated

			transmission system concept for SEP and DEP and taking the strategy that the Applicant has adopted towards the DCO application. The OTNR Expert Advisory Group is chaired by a member of the Offshore Wind Industry Council (a senior Government and industry forum established in May 2013 to drive the development of the offshore wind sector in the UK) and includes members from industry including technical experts, offshore wind developers, and transmission asset owners. The Applicant highlights that there is broad industry support for the OTNR and HND initiatives. **b)** Section 1.1 of the HND report (NG ESO, 2022) makes clear that *"Offshore wind projects in scope for the Pathway to 2030 workstream are at a fairly early stage of development and primarily those that secured seabed leases through The Crown Estate's Offshore Wind Leasing Round 4 and Crown Estate Scotland's ScotWind Leasing Round. It also includes assumed projects in the Celtic Sea and a small number of additional projects due to connect at a similar time and/or location as others in scope".* Given the well advanced stage of SEP and DEP the projects fall within the scope of the Early Opportunities workstream and not the Pathway to 2030. Section 4.3 (page 29) of the HND report (NG ESO, 2022) states: *"The* ***South East and South Coast Region does not contain any offshore wind directly covered by the HND due to the well-developed nature of the majority of the projects in this area****. The Department for Business, Energy and Industrial Strategy (BEIS) has now announced four initial pathfinder projects. These are well-advanced projects that are leading the way in utilising the regulatory and policy changes being developed through the OTNR to increase transmission network coordination and deliver the OTNR's objectives. Two of these projects are in this region:*

			• ***Equinor's proposal for an integrated transmission system for the Sheringham Shoal and Dudgeon Extensions in Norfolk***. • *Orsted's proposal for Boudica, to co-locate a 200MW battery as part of the grid connection in Norwich, Norfolk of Hornsea 3 offshore wind farm."* The Applicant considers that an OTN, as described by IPs during representations at OFH1 [EV-009] [EV-010], is not a feasible suggestion and reiterates the extensive steps taken towards coordinating the two projects as set out in the Scenarios Statement [APP-314]. **c)** Given that the extensive pre-application engagement undertaken with Ofgem, BEIS and NG, and that the significant involvement that the Applicant has had in the OTNR process has led to SEP and DEP falling into the scope of the Early Opportunities workstream (and having since been designated as a Pathfinder project), and in the context of the advanced stages at which SEP and DEP are compared with those early projects which are being considered under the scope of the Pathway to 2030 workstream, the Applicant considers that there is no basis for exploring 'an OTN' (or how SEP and DEP might fit into the HND), and therefore that this is not a matter for consideration within the Examination. The Applicant reiterates that it has already taken significant steps towards a coordinated approach between two separately owned offshore wind farms as described in the Scenarios Statement [APP-314]. This position has recently been reinforced through the Energy Minister's (Minister Stuart) Letter to East Anglian Communities which clearly states that Government "*will not, and cannot, force changes to these [Grid Connection agreements between developers and National Grid] contracts".* It is clear from the letter that this relates to SEP and DEP amongst other projects.
Q1.2.3.2	Applicant	**Contracts for Difference**	**a)**

		The Scenarios Statement raises timetables and funding programmes with regards to the delivery of the project and the degree of integration between SEP and DEP [APP-314, Paragraphs 7, 8, 46 and 63]. Clarity is requested on the following: n) The ExA notes that the current regulatory regime does not allow for shared or dependent bids and does not have a mechanism to ensure both projects may be awarded a CfD in the same allocation round [APP-027, Paragraph 66]. Does the Applicant consider the current regulatory regime to be a significant impediment to the delivery of the Proposed Development? o) Is it considered unlikely that the two CfD bids can be submitted and approved within that 7-year timeframe? p) If CfD bids being made in separate rounds is perceived to be a barrier to delivery of the preferred option (concurrent construction with integrated infrastructure), how likely is Scenario 1d (concurrent construction with completely separate infrastructure)? q) What factors relating to the CfD regime must be in place for scenario 1d to be the most likely scenario to happen? r) The ExA notes the Applicant's key engagement activities throughout the pre-application process relating to the Coordinated Approach to SEP and DEP [APP-314, Table 6-1]. What are the Applicant's next steps and timescales in relation to the securing CfD for both projects?	The Applicant considers the current regulatory regime to be an impediment to being able to guarantee the delivery of SEP and DEP concurrently; but not to be a significant impediment to the delivery of the Proposed Development given that the DCO application allows for sequential development. **b)** Whilst the projects could submit CfD bids into the same allocation round, should one not be successful then that Project would either need to be progressed via a different route to market, or would need to re-bid for a CfD in a future allocation round. Allocation rounds are currently run annually. A number of considerations will then inform the onward development and construction programme for each project including the milestone delivery dates that the project will be contractually obliged to meet under its CfD, and any market conditions that may influence, for example, procurement timescales. **c)** Section 5.2 and 5.3 of the Scenarios Statement [APP-314] set out the regulatory challenges with respect to delivering the preferred option including both barriers in the CfD regulatory regime, and barriers arising from the absence of a confirmed suitable Anticipatory Investment model. Should the projects both achieve separate CfDs in the same allocation round, but no suitable Anticipatory Investment model be in place then the projects may need to be developed at the same time but with separate grid connections as described in paragraphs 99 – 103 of the Scenarios Statement [APP-314]. The Applicant re-iterates that in this scenario it is anticipated that a number of works may still be undertaken in a shared manner, with very close collaboration required between the two projects. **d)** SEP and DEP will most likely need to be awarded CfD's in the same allocation round (either through linked/contingent bids, or not) for Scenario 1d to be taken forward. As set out in response to c) above,

			absence of a suitable Anticipatory Investment model will also be a factor which will influence the likelihood of Scenario 1d to occur. Since the time of DCO application the Applicant has continued to engage proactively with BEIS, Ofgem and National Grid. The Applicant also continues to be engaged on ongoing discussions regarding changes to the regulatory frameworks via its involvement in the OTNR process (see response to Q1.2.3.1 for further details on the OTNR process). Consent award is a pre-requisite for bidding into a CfD allocation round and therefore the Applicant will look to enter bids post-consent.
Q1.2.3.3	Applicant	**Co-operation Agreement** The Scenarios Statement references an agreement between SEL and DEL [APP-314, Paragraph 103]. Will this agreement be presented to the Examination, and should it be a document appearing in the dDCO, given its likely relationship to implementation on the various outline management plans?	The agreement between SEP and DEP referred to in the scenarios statement [APP-314] is a commercial and confidential agreement between the two project companies. It is not a consenting document. It would be inappropriate to present it to the Examination or include any reference to it in the dDCO.
Q1.2.4 The Need for this type of Energy Infrastructure, and specifically for the Proposed Development			
Q1.2.4.1	Applicant Interested Parties	**Need for Offshore Wind farm** a) The assessment of need for the Proposed Development has been set within the context of the ongoing need for electricity generation in the U.K. [APP-285, Section 4]. However, there are other types of infrastructure that are supported by NPS EN-1 that can meet the need for electricity generation. Justify the need for the specific type of infrastructure (offshore windfarm) for electricity generation as opposed to or alongside other types of infrastructure. And explain, how the Proposed Development specifically satisfies the need for offshore windfarms for electricity generation. Explain in the context of NPS EN-1, including Paragraph 3.2.3: *"The weight which is attributed to considerations of need in any given case should be proportionate to the anticipated extent of a project's actual contribution to satisfying the need for a particular type of infrastructure";* and Paragraph 3.3.4:	Please see Appendix B.3

		“There are benefits of having a diverse mix of all types of power generation. It means we are not dependent on any one type of generation or one source of fuel or power and so helps to ensure security of supply.”	

Q1.3 Benthic ecology, Intertidal, Subtidal and Coastal effects			Applicant's Responses
Q1.3.1 Effects on Marine Life and Benthic Habitats including through Cable Installation Methods			
Q1.3.1.1	Local Authorities Environment Agency Natural England Royal Society for the Protection of Birds Marine Management Organisation	**Intertidal and Subtidal areas** Are you content with the Applicant's assessment of the adverse effects of the use of long HDD to bring the export cables ashore at landfall [APP-094]? Explain with reasons.	**N/A**
Q1.3.1.2	Natural England	**Benthic Ecology Recovery Time** Comment on the Applicant's assertion that a full recovery of benthic habitats and communities for SEP and DEP is anticipated within two years of construction [APP-094, Paragraph 164].	**N/A**
Q1.3.1.3	Applicant	**Testing Laboratory** The MMO state [RR-053, Paragraph 4.2.2]: "*The applicant confirmed that they have used Fugro, who are not currently validated by the MMO for sediment analysis. The MMO still have outstanding concerns with this which are discussed further in this*	The Applicant clarifies that the MMO request for the Applicant to use an MMO accredited lab for contaminants analysis and for a higher number of samples to be collected, is only relevant to the MMO's marine licensing process for disposal of material to sea. This is not required when determining risks to water quality from other marine activities as part of the EIA.

		representation." In response to this explain the reasoning for your choice of laboratory used.	Fugro were procured through The Applicant's standard procurement processes. Fugro undertook the full suite of benthic characterisation (including contaminants) surveys and the contaminants analysis. The contaminants analysis undertaken by Fugro and subsequent interpretation provided in ES Chapter 7 Marine Water and Sediment Quality [APP-093] together with the contaminants analysis undertaken for SOW and DOW indicates that levels of contaminants in the offshore sites are low and typical of the region. In order to obtain a licence for sediment disposal, a lab with MMO accreditation is required to undertake contaminants analysis. The Applicant recognises that Fugro are not an MMO accredited lab and therefore the Applicant proposes to undertake additional contaminants sampling and analysis (by an accredited lab) during the pre-construction stage for the purposes of licensing for dredge disposal material at sea. A sample plan request is being submitted to the MMO imminently to agree contaminant survey and analyte requirements which will be aligned with the OSPAR requirements. Regarding arsenic the Applicant understands this also to be a matter related to Fugro not being an accredited lab and would therefore be addressed through the resampling and analysis as described above.
Q1.3.1.4	Applicant	**Levels of Arsenic** The MMO state [RR-053, Paragraph 4.2.4]: *"The applicant compares selected Polycyclic Aromatic Hydrocarbons ("PAH") congener concentrations to 'OSPAR Background Assessment Concentration ("BAC")' and 'United States Environmental Protection Agency's ("US EPA's") Effects Range-Low ("ERL")', finding that these were not exceeded. As for the assessment of arsenic levels, the chemical analysis methods underpinning the sample contaminants data may not be suitable for them to be compared to these additional guidelines."* In your responses to the RR, respond to this specific point.	
Q1.3.1.5	Applicant	**Level of Sampling** The MMO state [RR-053, Paragraph 4.2.6]: *"The volume of sediment to be disturbed presented in the ES indeed indicates that the seven samples collected for contaminants analyses underrepresent the volumes of sediment to be disturbed according to OSPAR guidelines for volumes of dredged material, where 7-15 samples are requested for 100,000-500,000m3 of material."* In responding to this comment, explain why the samples collected are considered sufficient in the ES.	
Q1.3.1.6	Applicant	**Sampling for Particle Size Analysis**	As described in section 3.1.2 of the DEP Benthic Characterisation Report [APP-184], seabed fauna and particle size samples were acquired using a 0.1m^2 Hamon

		Can the Applicant provide the reasons why the particle size analysis samples were collected separately from the samples used for contaminants analyses, as raised as an issue by the MMO at 4.2.11 of their RR [RR-053].	grab. Chemistry samples were acquired with a 0.1m^2 Day grab, with the exception of samples acquired in the Cromer Shoal Chalk Beds MCZ, where a 0.04m^2 Shipek grab was used in order to reduce environmental disturbance.
Q1.3.1.7	Applicant	**Cable Protection in the MCZ** NE states regarding the MCZ states [RR-063, Appendix G, Paragraph 6,]: *"Of particular concern is the area of mixed sediment within the cable corridor, which has a more diverse community. Should cable protection be placed in this location then the conservation objectives to restore/maintain features will not be achieved".* In responding to this point, explain how the conservation objectives of the MCZ can be maintained or restored if cable protection is used in this area.	The Applicant will make reasonable endeavours to avoid the need for external cable protection within the whole of the MCZ including within the mixed sediment feature. Micro-siting of the export cables within the wider export cable corridor will be used to avoid areas where burial is more likely to be challenging on account of ground conditions and ensure the amount of external cable protection required is minimised. However, as shown on Figure 7.1 of the Stage 1 CSCB MCZ Assessment (MCZA) [APP-077], the area of mixed sediment bisects the entire cable corridor and therefore it would not be possible to microsite around this. The Stage 1 MCZA [APP-077] assesses the potential impact of long term habitat loss on the mixed sediment feature of the MCZ and concludes that that the conservation objective of maintaining the feature in a favourable condition or restoring it to favourable condition will not be hindered by the construction, operation and decommissioning phases of SEP and / or DEP. The CSCB MCZ is designated for seven broadscale marine habitat features (of which there are three in the offshore export cable corridor including Subtidal mixed sediments (A5.4)), two habitat features of conservation interest (FOCI) and one feature of geological interest, as shown in Table 7-1 of the Stage 1 MCZA [APP-077]). The FOCI are: peat and clay exposures; and subtidal chalk – these are the specific habitats that are known to be threatened, rare or declining in our seas, and present in this MCZ. FOCI species and habitats may be more sensitive to pressures and hence need targeted protection. By contrast, protecting examples of broadscale habitats, such as mixed sediments, across the MPA network aims to ensure that the full range of marine biodiversity in our seas is conserved. By definition, broadscale habitats are broadly (widely) distributed across both the MCZ (as shown in Figure 7.1 of the Stage 1 MCZA [APP-077]) and the wider region of the southern North Sea. Therefore there is very little basis for the suggestion that

			placing cable protection in one broadscale habitat over another in the same site will result in the Conservation Objectives not being achieved. As such, it is not necessary either to seek to avoid a particular broadscale habitat (nor could you do so with any degree of confidence – see below), or to suggest that avoiding works of a particular nature (in this case the use of external cable protection) is a necessary action to avoid hindering the Conservation Objectives. Further weight is given to this argument in considering what we know about the specific characteristics and distribution of this broadscale habitat feature within the cable corridor. As would be expected, there are differences in the distribution of habitats between the MCZ feature map (Natural England, 2020; Green and Dove, 2015) and the Applicant's own mapping, which is both more detailed and more recent. These differences are evident between Figures 7.1 and 7.2 of the Stage 1 MCZA [APP-077]. Specifically, with respect to subtidal mixed sediments (MCZA para 109), the Applicant's habitat mapping confirms that mixed sediment areas form a mosaic with subtidal coarse sediment areas for much of the offshore export cable corridor within the CSCB MCZ (these are the areas shown in green and orange on Figure 7.2). It is noted that it is difficult to delineate subtidal coarse and subtidal mixed sediment habitats in the offshore export cable corridor due to their similarity, with mixed sediment areas being close to the coarse sediment areas with a relatively low percentage of fines, but sufficient fine material to influence benthic communities. The key implication of this is that there can be no basis for any requirement to avoid areas of broadscale subtidal mixed sediment because they exist in a mosaic with other habitat types and it is not possible or appropriate to attempt to confirm their exact distribution, which is also likely to vary over time (Natural England, 2020). The final point relates to the suggestion that the mixed sediment areas have a more diverse community. This may be the case although as above cannot be said with any certainty with respect to any particular location due to the mosaic pattern of habitat distribution. Furthermore, as described in Section 8.2.2.2 of

			the Stage 1 MCZA [APP-077] (para 200) "*All sediment biotopes, including those recorded in the SEP and DEP offshore export cable corridor, and the biotopes Natural England's AoO [Advice on Operations] identifies as being represented within CSCB MCZ sediment habitat features, have high sensitivity to physical change to another sea bed type with no resistance and very low resilience.*". This confirms that, based on Natural England's own advice, there are no grounds for making a distinction between mixed sediment habitats and coarse sediment habitats because for the purpose of the assessment the sensitivity of benthic communities within them is the same. Condition 13 (i) of Schedules 10 and 11 and Condition 12 (j) of Schedules 12 and 13 of the Draft DCO (Revision C) [document reference 3.1] includes provision for a mitigation scheme for any benthic habitats of conservation, ecological and/or economic importance constituting Annex I reef habitats identified by pre-construction surveys and will be in accordance with the Offshore In Principle Monitoring Plan [APP-289]. This is the appropriate approach to mitigating impacts on benthic habitats of conservation, ecological and/or economic importance, which would include the FOCI habitats discussed above.
Q1.3.1.8	Applicant	**Cumulative Effect to MCZ** NE [RR-063 Appendix G, Paragraph 9 and 10] state that *"the O&M phase activities for DEP (and or) SEP combined with DOW, SOW, Hornsea Page 5 Project Three and on-going Oil and Gas impacts will result in lasting habitat change / physical disturbance which will further hinder the conservation objectives of the CSCB MCZ"* and that "*The risk of, and observed, reduction in designated habitat extent which has occurred and/or is predicted to arise from the above developments has meant that the MCZ is highly likely to be taken further away from its required conservation state in the future."* In that regard provide further explanation why the ES (APP-094, Paragraph 333] concludes that the	The conclusion within Chapter 9 Benthic Ecology [APP-094] is predicated on the evaluation of a medium sensitivity of the benthic habitats and biotopes within the export cable corridor (see Table 8-20 of [APP-094]) combined with a low magnitude of impact which is assessed given the small scale of the potential impact and the commitment that both projects have made to removal on decommissioning, thereby ensuring that although long lasting, the impact will not be permanent (i.e. the broadscale habitats concerned will not be removed and will therefore persist once the cable protection has been removed). The cumulative Stage 1 MCZA [APP-077] conclusions are summarised in Section 9 of that document. The assessments conclude that the conservation objective of maintaining the protected features of the CSCB MCZ in a favourable condition or restoring them to favourable condition will not be hindered by the construction, operation and decommissioning phases of SEP or DEP in isolation, SEP and DEP, or cumulatively with any other plan, project

		cumulative effects on the MCZ with other projects amounts to only minor adverse significance.	or activity. To explain further, key points of note to draw out from the assessments already provided include: • SOW and DOW do not contribute to lasting habitat change/loss (the O&M activities required only relate to temporary sea bed disturbance from export cable reburial, repair or replacement (i.e. there is no external cable protection to add to the cumulative long term habitat loss assessment from SOW and DOW)); • The Hornsea Project Three impact from lasting habitat change/loss is both very small (0.0009% of the total area of the MCZ or up to 0.016% of the subtidal sand feature) and only affects the subtidal sand broadscale habitat (the majority of the SEP and DEP export cable corridor is within subtidal coarse and mixed sediments); • Impacts from the existing pipelines at Bacton are considered to be part of the baseline. No information is available on any planned decommissioning works although if such works are undertaken, it is reasonable to assume that once the pressure has been removed from the site, habitats will recover; and • Consideration of the recent introduction of EIFCA fisheries management measures including byelaws and fisheries closures within the CSCB MCZ (see para 259 of the Stage 1 MCZA [APP-077]). These have been established in order to protect the features of the CSCB MCZ from the pressures of commercial fishing. The successful operation of these measures will lead to a reduction in pressure on the features of the CSCB MCZ. The reduction of such a pressure and the likely recovery that will follow, with that pressure having affected a much larger extent of the site and over a much longer timeframe than any OWF proposal, must be given its due consideration in the balance of the overall cumulative assessment.
Q1.3.1.9	Natural England Marine Management Organisation	**Micro-Siting** Are both the MMO and NE content that the use of micro-siting can avoid adverse impacts to Annex I / UK BAP priority habitat S. spinulosa reefs and the UK BAP priority habitat 'peat and clay exposures with piddocks.'	**N/A**

Q1.3.2 Impact on subtidal chalk features			
Q1.3.2.1	Applicant	**Effects of HDD Exit Pits** NE [RR-063 Appendix G, Paragraph 15] advises against the HDD exits pits being located in an area of subcropping chalk, with concern over cable protection use on chalk features within the MCZ. What alternatives were considered in this regard, and why were they dismissed?	During the pre-application consultation, including the early MEEB ETG discussions, the option for surface laid cables pinned to the seabed to avoid the need for external cable protection in the MCZ was considered. However, this was subsequently removed as an option due to fisheries related concerns raised by stakeholders (both snagging risk and the additional disturbance to fishing activity through the presence of surface marker buoys). It was also considered by the Applicant (paragraph 264 of ES Chapter 4 Project Description [APP-090]) that surface lay was not a viable option as it would not provide the necessary level of cable protection in the shallow nearshore environment. It would also be necessary to secure or 'pin' the cables to the sea bed in some manner to prevent their movement in the shallow water depths and the presence of unconsolidated surface sediments (sand) in this area would not support such an action. The primary objective of the long HDD is to avoid the sensitive outcropping chalk feature in the nearshore for which the MCZ has been designated. This objective is achieved. The location of the HDD exit is described at paragraph 257 of ES Chapter 4 Project Description [APP-090]: "*The HDD will exit in the subtidal, approximately 1,000m from the coastline (up to 1,150m from the onshore entry point).*"). As is evident from the habitat map in the Stage 1 MCZA [APP-077] (Figure 7.2), this will be in an area of subtidal sand and/or coarse sediment (both broadscale habitats). Natural England's advice against the HDD exits pits being located in an area of 'subcropping chalk' requires an appreciation of: • What is meant by the subcropping chalk, in what form does it exist in the export cable corridor and how does it correspond to the subtidal chalk FOCI for which the MCZ is designated (noting Natural England's advice in their Relevant Representation [RR-063] that 'chalk with sediment veneer' should be considered as subtidal chalk feature)**;** • How, if deemed necessary, it would be possible to avoid subcropping chalk**;**

			• If it were possible to locate the HDD exit to avoid the subcropping chalk what alternative feature would it be possible to move the works to in order to secure a better environmental outcome**; and** • The limitations with respect to how far it is technically feasible to drill. These are addressed in turn below. Subcropping chalk covers a large extent of the MCZ and was discussed with stakeholders in the ETG meetings, with those discussions resulting in the Applicant producing ES Appendix 6.3 Sedimentary Processes in the Cromer Shoal Chalk Beds MCZ [APP-182] and ES Appendix 6.4 Sheringham Shoal Nearshore Cable Route - BGS Shallow Geological Assessment [APP-183] which describe the sedimentary processes and geology along the export cable corridor in the MCZ. These were, in part, intended to address concerns around subcropping chalk and the potential for it to become exposed. It was subsequently agreed with Natural England and the MMO at Seabed ETG 2 following presentation of evidence contained in Appendix 6.3 [APP-182] that seabed sediments in the offshore export cable corridor within the CSCB MCZ are static, with the exception of Holocene sand / subtidal sand, which is mobile under some conditions. Therefore, the potential for subtidal chalk to be exposed in the future is restricted to the subtidal sand areas identified by the geophysical survey (as shown in Figure 7.2 of the Stage 1 MCZA [APP-077]). However, as set out in paras 116-117 of the Stage 1 MCZA [APP-077]: "*given the thickness of the Holocene sands (generally up to 3m where it occurs from 500m to 4.5km offshore, and up to 2m, locally to 6m, in the seaward 2km of the cable corridor inside the MCZ), it would only be possible for movement of the feather edges (where the sediment is thin and could all move), to generate new sea bed substrate, including the potential to expose previously buried chalk if present directly below the sand layer without a static gravelly sand/sandy gravel layer in between. There is a deep infilled channel cut through the chalk to -17m LAT filled with Weybourne Channel deposits (Appendix 6.3 of the ES [APP-182]* [visible on Figure 3.4*]) located across the*

			export cable corridor from approximately 750m to 1.5km offshore (Gardline, 2020a). It is likely that the offshore HDD exit location will be in this channel and therefore, given the depth of overlying sediment deposits there is no potential for exposure of chalk in this area. Survey data indicates that areas where there is potential for subtidal chalk to be exposed are of very limited extent within the offshore export cable corridor, and it is unknown if any such exposures would meet the criteria to be classified as the subtidal chalk habitat FOCI (e.g. criteria provided by Natural England for the Hornsea Project Three (RPS, 2020), or how persistent they would be. Therefore the MCZA is based on the known locations of subtidal chalk restricted to the outcropping subtidal rock feature in the inshore area of the CSCB MCZ only.". The Applicant considers that this provides a very clear and evidenced rationale for why it would not be appropriate to consider chalk with sediment veneer (subcropping chalk) as subtidal chalk feature – namely the subcropping chalk is too deep and/or unlikely to be exposed by the largely immobile sediments that lie on top of it. Of further note, the Applicant would draw attention to the description of the subcropping chalk feature provided throughout ES Appendix 6.3 [APP-182] which explains that the subcropping chalk is in an eroded form to a relatively flat and regular surface and that it is in no way similar to the complex erosional geo-structures of exposed chalk (such as ridges, pinnacles and arches) present in the nearshore. The implication of this is that in the unlikely event that subcropping chalk was in some way impacted by the works it is not reasonable to treat it as the same feature (the outcropping chalk) for which the MCZ has been designated. For these reasons the suggestion that subcropping chalk should be considered as subtidal chalk feature for the purpose of the assessment significantly overreaches the Conservation Objectives of the MCZ designation. Alongside this, there is a complete absence of any substantiated technical evidence to support such an action being necessary or appropriate. On the same basis, if it was deemed necessary to avoid subcropping chalk, it is difficult to see the case for how this would be possible based on the information

			that is available (which is extensive). The habitat mapping discussed above indicates that a shorter drill would reduce the distance between the HDD exit and the nearshore outcropping chalk feature, which would not be desirable, and would still be in the subtidal sand area. A longer drill would result in the HDD exit being in either sand or coarse sediment with the same or similar environmental outcome.
Q1.3.2.2	Natural England Marine Management Organisation	**Micro-siting and Chalk Features** Are both the MMO and NE content that the use of micro-siting can avoid adverse impacts to chalk features within the MCZ	**N/A**
Q1.3.3 Coastal erosion effects and coastal processes			
Q1.3.3.1	Applicant Natural England	**Coastal Impacts** It is noted that there would be use of HDD to link the offshore cables with landfall, but is it anticipated that there would be any impact to coastal features such as the cliffs or any other coastal processes?	As described in paragraph 252/255 of the ES Chapter 4 Project Description [APP-090]: The temporary landfall compound will be set back approximately 150m inland from the beach (beyond any areas at risk of natural coastal erosion) and would be up to 75m long by 75m wide. Each drill would start from the landfall compound, travel beneath the beach, and will exit in the subtidal zone at a suitable water depth. The drill will be of sufficient depth below the coastal shore platform to have no effect on coastal erosion. Furthermore, as noted in ES Chapter 7 Marine Geology, Oceanography and Physical Processes [APP-092] erosion would continue as a natural phenomenon driven by waves and subaerial processes, which would not be affected by SEP and DEP. Natural coastal erosion throughout the lifetime of the project has been considered within the project design by ensuring appropriate set back distances from the coast for the onshore HDD entry point (150m).
Q1.3.4 Effects on the Marine Conservation Zone			

Q1.3.4.1	Marine Management Organisation Natural England Norfolk Wildlife Trust East Inshore Fisheries and Conservation Authority Royal Society for the Protection of Birds	**Measures of Equivalent Environmental Benefit (MEEB)** The Applicant has proposed planting of oyster beds with the Marine Conservation Zone (MCZ) as a MEEB [APP-084]. In this respect: a) Of the options set out in Table 7-1 [APP-083], do you agree with the Applicant's assessment of the feasibility of providing other MEEB? b) If the answer to (a) is no, set out what options are available or preferred instead of oyster bed planting? c) Would the planting of a 1ha oyster bed in itself have ramifications for the composition and quality of the MCZ or would it be a superficial surface element unlikely to upset the balance of the conservation objectives? d) Would the oyster bed (not currently within the MCZ) attract different fish, prey and predator species to the area? e) Would the oyster bed, directly or indirectly, support the food resource for foraging birds? f) What is the likelihood of success of oyster beds establishing in the locality and what confidence can the ExA place upon this MEEB in recommending to the SoS BEIS about discharging their obligations under the MCA?	**N/A**
Q1.3.4.2	Applicant	**MEEB Interaction with Construction Effects** Is it correct that oyster bed/ reef restoration would be being undertaken at the same time as offshore construction works [APP-083, Table 8-2] and, if so, would sediment plumes from construction alongside	There is potential for an overlap in the timelines of offshore construction and oyster bed implementation. The initial oyster restoration site search area is approximately 9.6km from the SEP wind farm site at its closest point and approximately 4.2km from the offshore cable corridor at its closest point. As described within Chapter 6 Marine Geology, Oceanography and Physical Processes [APP-092], the worst-case activity with respect to an increase in suspended sediments relates to dredging for seabed preparation for wind

		the deposition of cultch have a cumulative effect on water quality and species?	turbine foundations and sand wave levelling, the latter of which would not be undertaken in the export cable corridors except for a small area in the export cable corridor as it exits the DEP North array area (see Figure 4.9 of the ES [APP-117]). Due to the predominance of medium and coarse grained sand across the SEP and DEP offshore sites, the sediment disturbed by the drag head of the dredger at the sea bed would remain close to the bed and settle back to the bed rapidly. Most of the sediment released at the water surface from the dredger vessel would fall rapidly (minutes or tens of minutes) to the sea bed as a highly turbid dynamic plume immediately upon its discharge (within a few tens of metres along the axis of tidal flow). Some of the finer sand fraction from this release and the very small proportion of mud that is present are likely to stay in suspension for longer and form a passive plume which would become advected by tidal currents. Due to the sediment sizes present, this is likely to exist as a measurable but modest concentration plume (tens of mg/l) for around half a tidal cycle (up to six hours). Sediment would eventually settle to the sea bed in proximity to its release (within a few hundred metres up to around a kilometre along the axis of tidal flow) within a short period of time (hours to days). Whilst lower suspended sediment concentrations would extend further from the dredged area, along the axis of predominant tidal flows, the magnitudes would be indistinguishable from background levels. Regarding construction within the offshore cable corridor, no sandwave levelling is required within the vicinity of the oyster restoration site search area (areas required are shown on Figure 4.9 of the ES [APP-117]). It is anticipated using conceptual evidence-based assessment and the results from modelling at the SOW and DOW export cable corridors that the changes in suspended sediment concentration due to export cable installation would be less than those that have been assessed in relation to the disturbance of near surface sediments during foundation installation activities (as described above). Any increase in suspended sediment during the phased installation of cultch for oyster bed planting would be negligible.

			Therefore, no cumulative effect from offshore construction activities and the deposition of cultch for oyster bed planting is predicted.
Q1.3.4.3	Natural England Environment Agency Marine Management Organisation Norfolk Wildlife Trust East Inshore Fisheries and Conservation Authority Royal Society for the Protection of Birds	**MEEB and Sandeels** Sandeels are considered an important part of the food resource for bird species, including kittiwakes and sandwich terns [APP-069]. a) Could sandeel habitat be artificially formed and sustained in the MCZ? b) If so, would that area be afforded protection from the fishing industry due to the designation?	**N/A**
Q1.3.4.4	Applicant Marine Management Organisation	**Condition Assessment for the Marine Conservation Zone** In the absence of any official condition assessment, what assumptions can be made with regards to the condition and quality of the MCZ [APP-084] and the desirability for its conservation?	The Applicant does not consider it appropriate to make assumptions with regard to the condition and quality of the MCZ and defers to Natural England as the competent authority for providing condition assessments for MCZs. It does however note that the recent introduction of fisheries byelaw areas will have a positive effect on the MCZ by reducing pressure from fishing. The reduction of such a pressure and the likely recovery that will follow, with that pressure having affected a much larger extent of the site and over a much longer timeframe than any OWF proposal, must be given due consideration. It is noted that at the time of writing (February 2023) the condition assessment has not been updated, although Natural England has advised in its relevant representation [RR-063] that it expects this to be available in the New Year

			(2023). Natural England has since advised the Applicant that the condition assessment is expected to go online this quarter and Conservation Advice published by end of March. However we highlight that a change in the condition assessment is not anticipated to result in a change to the Applicant's assessment conclusions that the conservation objective of maintaining or restoring the MCZ features to a favourable condition would not be hindered. This is because the assessment has already considered a recover objective in reaching its conclusions (as set out at paragraph 15 of the Stage 1 CSCB MCZA [APP-077]) and the fundamental points that underpin that assessment remain unchanged. Notwithstanding this, once it is available the Applicant will review the evidence that the updated condition assessment relies on. We do however note that the anticipated timing for its release during Examination will be a challenge, more so the later it is received.
Q1.3.4.5	Marine Management Organisation	**Marine Conservation Zone position statement** Confirm, in a simple tabular format, whether you are content with the Applicant's assessment of effects, mitigation, MEEB and conclusions regarding the Marine Conservation Zone, or if more work is required. Suggested table headings: Species / Agree methodology (Y/N) / Agree assessment of effects (Y/N) / mitigation suitable (Y/N) / MEEB suitable (Y/N) agree conclusions (Y/N) The table produced will also be requested for the final deadline in the Examination to provide a summary of where outstanding issues, if any, remain. This may form part of the statement of common ground.	**N/A**

Q1.4 Civil and Military Aviation			**Response**
Q1.4.1 Effects on Radar and Defence Interests			
Q1.4.1.1	Applicant Defence Infrastructure Organisation	**Aviation and Radar** a) Provide here or in the SoCG, an up-to-date position with regards to negotiations with MoD and whether any concern or issues remain to the Proposed Development [APP-101]? b) Has the applicant submitted a mitigation proposal to the DIO/MOD, but if not when will this likely happen? What is the likely timeframe in working towards this mitigation?	**a)** Engagement with the MOD is continuing towards reaching agreement on a suitable mitigation solution. **b)** No mitigation principle has been submitted as yet although it is recognised mitigation of effect will be required. It is expected that the mitigation proposal will be submitted to the MOD for consideration and agreement by Deadline 3.
Q1.4.1.2	Applicant	**RRH Neatishead** Along with RRH Trimington, is the Applicant looking to assess and provide mitigation to the radar system based as RRH Neatishead [APP-101]? Explain with reasons.	The Applicant understands that the intention of the MOD is to relocate the radar from RRH Trimingham to RRH Neatishead at some point in the future. Both would not need mitigation at the same time. The Applicant has amended requirement 27 (Ministry of Defence surveillance operations) of the draft Development Consent Order (Revision C) [document reference 3.1] to secure that appropriate mitigation would be undertaken at RRH Neatishead, if it was required.
Q1.4.1.3	Applicant Defence Infrastructure Organisation	**RAF Weybourne** a) How can the Proposed Development within the statutory safeguarding zone of RAF Weybourne avoid any unacceptably adverse impacts to technical assets? b) Describe what, if any, parameters or restrictions could be incorporated and secured by the dDCO to ensure the safeguarding of the assets at RAF Weybourne.	**a)** The Applicant provided further information to the MOD relating to the landfall, duct fabrication and onshore elements of the Projects. The MOD has now assessed this and confirmed to the Applicant that it intends to withdraw its objection so far as it relates to RAF Weybourne. **b)** None required as per response to (a) above.
Q1.4.1.4	National Air Traffic Service	**Greater Wash Transponder Mandatory Zone (GWTMZ)**	**N/A**

		The GWTMZ is referenced in your relevant representation [RR-062]. Explain what this is and the implications it has for the Examination of the Proposed Development.	
Q1.4.2 Proposed Mitigation			
Q1.4.2.1	Applicant	**Aviation Mitigation** Provide an update on consultation with Norwich Airport and helicopter operators [APP-101, Paragraph 145] and whether agreements have been reached on the necessary mitigation.	Meetings with Norwich Airport were held in February, April and July 2022. Norwich Airport have agreed that mitigation of radar may be available through radar manipulation by the radar manufacturer. Effect to the Minimum Safe Altitude can be completed by amendment, which Norwich Airport would, in principle, not object to. A draft SoCG has been provided to the airport for agreement.
Q1.4.2.2	National Air Traffic Service	**Impact on Radar** Do you consider that suitable mitigation has been agreed with the Applicant and secured appropriately within the dDCO? Explain with reasons?	**N/A**
Q1.4.2.3	National Air Traffic Service Norwich Airport Perenco Independent Oil and Gas	**Impact to Helicopter Access** **a)** Regarding helicopter access to and from oil and gas offshore platforms (particularly Waveney, Blythe and Elgood), explain with reasoning to support your position, whether suitable mitigation has been planned/agreed with the Applicant and secured appropriately within the dDCO? **b)** Please explain with reasons what further mitigation would be required. **c)** Applicant and Perenco, provide reasoning for what you consider to be the safe take off requirements and exclusion areas.	**a)** 1nm buffer free of turbines or other permanent infrastructure around Waveney has been secured in the works plans to ensure approaches and take off under Visual Meteorology Conditions (VMC) can be conducted safely [Appendix 16.2 - APP-205] and is currently being consulted upon with Perenco (first presented in the Helicopter Access Study [Appendix 16.2 - APP-205] sent in April 2022). Current discussions are being held with Perenco and IoG regarding positioning of turbines within the DEP North array area and DEP South array area to minimise any reduction in searoom (for example, to accommodate anchor spreads). Additionally, there is ongoing consultation with relevant O&G stakeholders (including Maritime and Coastguard Agency (MCA) and Trinity House (TH)) ensuring maintenance of appropriate access. Liaison and agreement of appropriate protocols during periods of construction; as well as final layouts and marking will be agreed with

			MCA and TH. This is secured in conditions to the deemed marine licences within the draft DCO (Revision C) [document reference 3.1] at conditions 10 and 13, Schedule 10 and Schedule 11 and conditions 9 and 12, Schedule 12 and Schedule 13. **b)** No further mitigation is considered to be required for the reasons set out in part a). **c)** An obstacle free environment of 1nm is sufficient, as evidenced by flight information available on the daily CHC flight schedule website for the Hornsea Windfarms ([redacted]). These flights operate safely using the same helicopter type and are conducted under the same Commercial Air Transport Regulations as flights to the Waveney and Blythe Platforms, indicating that safe Day Visual Meteorological Conditions (VFR) operations are possible with a smaller obstacle free radius (914m inside HO2 and 1200m for Blythe).

Q1.5 Construction Effects Offshore			
Q1.5.1 Development Scenarios and Rochdale Envelope			
Q1.5.1.1	Applicant	**Dudgeon Offshore Windfarm (DOW)** The Applicant has referenced environmental headroom that arises because the original permission for the existing DOW array was not built out to its fullest extent under the terms of a section 36 consent [APP-090, Paragraph 31]. This consent is suggested to be surrendered by virtue of Article 45 of the dDCO [APP-025, Paragraph 148]. Notwithstanding the information in the EM [APP-025, Appendix A], the ExA wish information, with reference to the section 36 consent, on the following: a) Provide the original Electricity Act consent for the existing DOW. b) What was the planned capacity (and number of turbines) for the DOW? c) How many turbines have been built, and how many have not been? d) Is there an Offshore Platform (OSP) existing in the DOW? e) If the answer to d) is yes, is there any unused capacity at this OSP given that the DOW has not been built-out to its full extent? f) If the answer to e) is yes, for what reasons is the Proposed Development of the DEP not connecting to/ able to exploit the capacity at this OSP? g) If only SEP were constructed in isolation, would the outstanding capacity (turbines) at the DOW still be surrendered through this DCO and, if so, where is this explained?	Article 45 in the draft DCO (Revision C) [document reference 3.1] has been included by the Applicant in order to provide a legal mechanism to secure the headroom from the Dudgeon Offshore Wind Farm (DOW). The Applicant highlights though that whilst the gap ('headroom') between the as built wind farm and the consented parameters exists, there is no intention for the additional headroom to be built out at DOW. This is confirmed in the letter dated 9th August from Dudgeon Offshore Windfarm Limited which was submitted with the DCO application (Appendix 1 of the Explanatory Memorandum [APP-025]). The Applicant also highlights that headroom existing between consented parameters for an offshore wind farm and the as built parameters is not unique to DOW. To the Applicant's knowledge no UK offshore wind farm has sought to use the additional capacity / headroom within its consent after an asset has been constructed and commissioned, and considers that were this a viable opportunity it would likely have already been done elsewhere for other projects. The Applicant considers that delivering additional capacity under the section 36 consent for DOW is unviable for a number of reasons but has nonetheless sought to provide responses to the questions below. **a)** The Applicant has provided a copy of the consent awarded, pursuant to section 36 of the Electricity Act 1989, for the construction and operation of DOW (ref. 12.04.09.04/113C) at Appendix B.4 of The Applicant's Responses to the Examining Authority's First Written Questions [document reference 12.4]. **b)** The consent for DOW stipulated that the capacity should *"…not exceed 560MW at any time…"* (see paragraph 3 of the section 36 consent (ref. 12.04.09.04/227C)). Paragraph 2 of the section 36 consent (ref. 12.04.09.04/227C) states that DOW could comprise "*wind turbine generators of the size and type chosen by the Company (subject to compliance with any requirements as to their size imposed*

		h) Would there be any environmental benefit in developing out the section 36 consent and subsequently reducing the number of turbines to be built elsewhere through this dDCO? i) In the hypothetical event that the Proposed Development is consented, what would prohibit the section 36 consent for the DOW being developed out prior to the commencement of the Proposed Development? j) In relation to g) above, could the section 36 consent area 'substitute' for DEP South, for example? See related question in Habitats Regulation Assessment.	*by or under these conditions)*". There is no given number of turbines expressly on the face of the consent, however Condition 7 provides for restrictions on other related parameters e.g. wind turbine height, rotor diameter etc. The Applicant notes however that the basis of the consent application for DOW was for an offshore wind farm *"comprising up to 168 wind turbines"* and that the parameters cited in Annex A and B of the section 36 consent (ref. 12.04.09.04/227C), which have underpinned important environmental assessments of the application, use 168 turbines at an assumed rating of 3MW as a maximum case. **c)** The Applicant confirms that 67 wind turbines were installed and are operational at DOW. The installed turbines are 6MW Siemens Gamesa turbines. The installed capacity at DOW is 402MW. As stated above the section 36 consent provides for a range of turbine sizes and overall windfarm capacity. There is a remaining c. 160MW capacity which theoretically could be realised by a range of number of turbines depending on their size and rating. **d)** The Applicant can confirm that yes there is an Offshore Substation Platform (OSP) as part of the transmission asset for DOW. **e)** The OSP and the export cable for DOW have been designed and built for the generating capacity of the existing wind farm only. Even if a marginal amount of additional capacity could be realised through modifications to the existing OSP, the capacity of the existing export cable would be limiting to realising any additional capacity. **f)** N/A **g)** No, Article 45 is explicitly triggered by the commencement of the relevant DEP works or offshore integrated works (as defined in the draft DCO (Revision C)

			[document reference 3.1]) and therefore in Scenario 1(a) (construction of SEP in isolation, where DEP does not proceed) the headroom from DOW would not be 'released'. **h)** Any difference or environmental benefit in developing out the section 36 consent and subsequently reducing the number of turbines to be built at DEP has not been assessed or quantified as it is not a viable alternative to delivering the Proposed Development. The proposal is unviable for a number of technical and commercial reasons, including: 1. As set out in e) above there is no additional capacity within the transmission infrastructure for DOW for any additional turbines to connect to it. 2. The Grid Connection to the National Electricity Transmission System (NETS) is for 400MW only. 3. It would require reopening the DOW consent, the final design parameters for which were submitted to and approved in writing by the Secretary of State prior to the commencement of construction pursuant to Condition 5. 4. OFTO ownership – the transmission asset for DOW was transferred to an OFTO and therefore any modifications to it would be commercial challenging as it is no longer owned by the Applicant and its partners. **i)** The Applicant has set out in h) above a number of reasons why developing out the remainder of DOW is unviable. Furthermore the Applicant highlights the letter dated 9th August from Dudgeon Offshore Windfarm Limited (Appendix 1 of the Explanatory Memorandum [APP-025]). **j)**

			As set out in response to h) above there are a number of reasons why constructing additional turbines under the existing section 36 consent for DOW is, in practice, unviable and therefore it is the Applicant's position that this could not 'substitute' for DEP South or any other part of the Proposed Development.
Q1.5.1.2	Applicant	**Dudgeon Extension Project Array Options** The ES states the worst-case would be full build-out at both DEP-N and DEP-S [APP-090, Table 4.3]. However, no details have been given as to what full build-out comprises nor how the split in the number of turbines between DEP-N and DEP-S has influenced decisions on the worst-case parameters. Explain/ signpost the following: a) If both the DEP-N and DEP-S sites would be developed, what would the split between turbines be, and how could this be secured in the dDCO (for example, 80% built if DEP-N and 20% in DEP-S or 50% DEP-N and 50% DEP-S)? b) What split/ share of turbines between DEP-N and DEP-S has been used when calculating or determining the worst-case scenarios when considering both being developed and not just DEP-N in isolation? c) If both DEP-N and DEP-S sites are to be developed, why does the OSP need to be in the Northern site as opposed to the Southern site thus further away from the coast and requiring greater cabling to landfall? d) The works plans indicate large zones within which an OSP could be built. Can the location be more specific, based on an optimum location for OSPs within their arrays? e) What factors, including commercial considerations, would influence developing in the North only?	Regarding the options for the build out of DEP it is important first to note that the mitigation hierarchy has been followed by the Applicant in designing the Order limits. ES Chapter 3 - Site Selection & Assessment of Alternatives [APP-089], paragraph 23 describes the key factors applied in the selection of the DEP North boundaries (in addition to the Crown Estate's criteria that had already been applied). This includes (5th bullet point) "*A shallow area (part of Cromer Knoll sandbank) to the north west of the existing DOW was excluded from the DEP North boundary for technical reasons due to the shallow water depth and bathymetry, which were considered unsuitable for foundation and cable installation. In addition, Natural England advised (during a meeting held 29th January 2018) that this shallow area was believed to be important for feeding birds and that it would therefore be of benefit to exclude the area from development. Following the bathymetry analysis, engineering review and the advice from Natural England, this area was removed from the southern boundary of DEP North.*". As such the Applicant has already given very clear consideration to the potential importance of areas for feeding birds which has resulted in it, in consultation with Natural England, avoiding this shallow area in order to minimise impacts. It has done this at an appropriately early stage of the pre-application process (in contrast to Natural England's latest advice on this matter which has arisen only recently as part of their Relevant Representation [RR-063]). Furthermore: • Applying **the design-based approach to density estimation, the assessment assumes DEP North and DEP South have an even density of seabirds distributed across them. On this basis, there can be no grounds for reducing the number of turbines in any part of DEP, because the predicted impacts are the same irrespective of whether DEP North and DEP South is developed or only DEP North.**

		f) For DEP, could all 30 turbines be built within DEP-N (in isolation) or within DEP-S (in isolation). If all 30 cannot be built at DEP-S (in isolation), what is the maximum turbine capacity that DEP-S could accommodate? g) The Scenarios Statement [APP-314, Paragraph 114] states: "This will be determined based on a number of technical and commercial factors such as wind yield, wake losses and ground conditions." Explain whether the technical factors are solely those listed in this sentence (or if more, state them) and why these factors are not yet known/ presented in the Examination or included in the Environmental Statement. h) At what point would the Examination (or local authorities if post-consent) be informed whether North is being developed on its own or together with the south, and how would this be legislated for in the dDCO?	• When assessed **for Sandwich tern using model-based density estimates (at Natural England's request), the DEP North only scenario increases the collisions impact only very slightly – project-alone increases in background mortality are predicted to be 0.37% for all of DEP and 0.55% for DEP North only (for further details refer to The Applicant's Responses to Relevant Representations [document reference 12.3], comment ID 19 submitted at Deadline 1.** • Furthermore, whilst for the majority of months mean density and predicted col**lision is higher for DEP North than for all of DEP, there is substantial overlap in confidence intervals in all cases and these differences do not approach statistical significance. As such there can be no grounds for reducing the number of turbines in any part of DEP, because any reduction in impact is marginal and the benefits uncertain, and such an action is outweighed by the issues of technical feasibility and economic viability as set out in Section 4.6 (Step 4: Feasibility of Alternative Solutions) Habitats Regulations Derogation – Provision of Evidence [APP-063]. As noted in the Defra (2021) best practice guidance for developing compensatory measures in relation to Marine Protected Areas "*Alternative solutions…should be limited to those which would deliver the same overall outcome for the activity whilst creating a substantially lower risk of impact to the MPA*." Neither of those conditions would be met by reducing the number of turbines in any part of DEP.**

			• With respect to the Seascape and Visual Impac**t Assessment (SVIA) (ES Chapter 25 [APP-111]), where the assessed effects on views are higher (including Peddars Way, which is significant) this is chiefly a result of DEP South, which is closer to the coastline. Any action to limit the number of turbines in DEP-North would increase the same in DEP-South. Such a change would be a challenge with respect to visual appearance and would not be welcomed by Natural England as evidenced in their advice to date (and who advised at the pre-application stage (including in their comments on the Preliminary Environmental Information Report) that it was DEP-South that should be excluded). Matters of visual appearance come with a much greater degree of certainty than that which can be associated with the seabird density and collision estimates (as discussed above) and this must be given appropriate consideration in the overall planning balance.** Also refer to responses to parts a) to h) of this question and Q1.14.1.4. In light of the information presented above, the Applicant does not consider the line of questioning set out in parts a) to h) to be appropriate. Despite this, the Applicant has sought to provide a response where possible, drawing upon information already provided within the DCO application. **a)** As outlined in Section 4.1.1.2 of the ES Chapter 4 – Project Description [APP-090], the option to use the DEP North and DEP South array areas, or just DEP North array area is a key design decision for DEP that will be determined post-consent during final detailed design of the Project. It is necessary to retain this flexibility within the DCO application to enable the Applicant to take appropriate account of the key technical and commercial factors outlined in response to parts e) and g) of this question, the extent and implications of which won't be fully known until later stages of the onward project programme. In light of this and the information presented above, it is not considered appropriate to specify a percentage split of turbines between the DEP North and DEP South array areas for the purpose of assessment within the consent application or for such a detail to be secured in the dDCO.

			b) As outlined in Table 4.3 of ES Chapter 4 – Project Description [APP-090], each offshore topic considers the option of the DEP North and DEP South array areas both being used; and the DEP North array only being used. The worst-case scenario differs between topic assessments. Whilst for Offshore Ornithology (ES Chapter 11 [APP-097]) the worst-case scenario is the build out of DEP North only, for Shipping and Navigation (ES Chapter 13 [AP-100]) and the SLVIA (ES Chapter 25 [APP-111]), the worst-case scenario assesses indicative turbine layouts for SEP and DEP. For all other topic assessments, the largest total array area of both DEP North and DEP South represents the worst-case scenario. As outlined in response to part a) of this question, it is not considered appropriate to specify a percentage split of turbines between the DEP North and DEP South array areas for the purpose of assessment within the consent application. **c)** Locating the Offshore Substation Platform (OSP) in DEP North optimises the amount of infield and interlink cable required. Locating the OSP in DEP South would require more interlink cabling between DEP North and DEP South and would lead to higher electrical losses, the implications of which would not be offset by a shorter export cable. **d)** The Works Plans (Offshore) [PDA-003] allows for OSPs to be placed anywhere within the SEP and DEP North array areas. The Applicant is not in a position to determine a more specific location of the OSPs until confirmation of development scenario and final layout. **e)** There are a number of technical and commercial factors that would influence development of the DEP North array area only. These include: • Development scenario (i.e. is DEP being built in isolation or integrated with SEP); • Wind farm efficiency due to increased internal wake;

			• Seabed condition, for example, there is a risk that sand waves and water depth at DEP North might reduce the feasible area for turbine installation; and • Final layout / design and costs associated with export cables, infield cables, OSPs etc. which will inform which design option is more favourable to ensure DEP is as economically competitive as possible. As outlined in response to part a) above, whether to utilise both DEP North and DEP South array areas, or just DEP North is a key design decision that will be made post consent. It is necessary to retain flexibility in the build out of DEP within the DCO application to allow the Applicant to take account of technical and commercial factors that have implications on how and to what extent DEP North and DEP South could be utilised to meet the required generating capacity. This flexibility is also necessary to ensure that the development of DEP remains economically viable under the different development scenarios (see Scenarios Statement [APP-314]) and within future commercial markets. f) The maximum number of turbines in either DEP North or DEP South will be influenced by available area for construction, once any potential technical limitations (e.g. ground conditions) are known, which will need to be considered in conjunction with the minimum inter-turbine spacing and layout commitments described in ES Chapter 4 – Project Description [APP-090]. It is currently considered possible to build all turbines within the DEP North array area, provided that any technical challenges of the area are limited. It is not considered possible to build all turbines DEP South owing to the smaller size of the array area and the already known technical constraints to design around (including an existing pipeline which bisects the area). The maximum installed capacity in DEP South will depend on technical specifications of the turbines (which continue to evolve) and any potential limitations to the buildable area as described in response to part e) of this question. **g)** The technical and commercial factors outlined in paragraph 114 of the Scenarios Statement [APP-314] represent the principal overarching factors that are

			considered to influence the decision whether to use DEP North and DEP South array areas or DEP North only. The Applicant does not consider it helpful to provide a detailed list of all possible technical factors that might influence this decision since many interact with one another as well as other considerations and so cannot be easily considered in turn. The implications of many technical factors to the design decision for DEP won't be fully known until post-consent once further details with regards to geotechnical ground conditions and the associated interfaces with turbine selection and number of turbines – which in turn is influenced by future product development (i.e., rotor and generator sizes available on the market) – can be fully assessed. It is therefore necessary to secure as wide a design envelope as possible in order to ensure that DEP can be built out in the most efficient and economically viable manner. **h)** A decision on whether the final design will utilise DEP North and DEP South, or DEP North only will be made at the detailed design stage. Part 1 of Schedule 2 (Requirements) and Schedule 11 (Marine Licence 2) of the dDCO (Revision C) [document reference 3.1] include the necessary requirements and conditions to inform (and where necessary consult with) the relevant authorities and stakeholders on the final design prior to commencement. Including: Marine Licence 2: Dudgeon Extension Project Offshore Generation Part 2 Condition 13 (1) The licensed activities or any phase of those activities must not commence until the following (insofar as relevant to that activity or phase of activity) have been submitted to and approved in writing by the MMO, in consultation with Trinity House, the MCA and UKHO as appropriate—which includes (a) a plan prepared in accordance with the layout commitments setting out proposed details of the authorised project, including [amongst other items] the (ii) the grid co-ordinates of the centre point of the proposed location for each wind turbine generator, platform, substation and meteorological mast; and (v) any exclusion zones or micro-siting requirements identified pursuant to 13(1)(e)(v) or relating to any benthic habitats of conservation, ecological and/or economic importance constituting Annex I reef habitats identified as part of surveys undertaken in accordance with condition 18.

Q1.5.1.3	Applicant	**Lifespan** The OWF is said to have an operational life span of 40 years, after which it would be decommissioned and removed [APP-090, Table 4.5]. Have you considered repowering/ replacement of turbines at this site, thus prolonging the lifetime of the Proposed Development, or would an alternate dDCO be required?	Re-powering/replacement of turbines would require a new consent. The ES has assessed an operational lifespan of up to 40 years followed by decommissioning so this would be outside the scope of the current assessments and application. It is also very likely that technology and surrounding circumstances will be different at that time and any decision to repower or replace the turbines would need to consider all the relevant factors at the appropriate time.
Q1.5.1.4	Applicant	**Cable Corridors** The ES States that onshore working corridors would be reduced from 60m to 20m in proximity to sensitive features such as hedges. Offshore however, the limits widen from 500m to 1km within the MCZ [APP-088, Paragraph 44]. Provide an explanation of the difference in approach to the proposed working corridors, onshore and offshore, and provide cross-section drawings showing the usage and layout of these proposed construction corridors and justify the extent of land required in each instance.	The greater width of offshore export cable corridor through the MCZ and on approach to landfall is designed to provide greater flexibility in the detailed routeing/micro-siting of the export cable/s at the pre-construction stage. During the detailed design stage, the offshore export cable route will be determined and will be approved by the MMO in consultation with relevant stakeholders at that time as secured through the requirement for a plan to be submitted detailing the layout of all cables. This approach to the offshore works is routine for projects of this nature and will enable sensitive features (e.g. benthic habitats or features of archaeological significance) to be avoided. It has been discussed and agreed with stakeholders through the pre-application process. The width of the onshore cable corridor (60m wide and up to 100m wide at trenchless crossings) accommodates all the project development scenarios under consideration, and includes contingency for micro-siting during construction should additional constraints be identified at a later stage in the development of SEP and DEP. Cross-section drawings showing the usage and layout of these proposed construction corridors are provided in ES Chapter 4 Project Description [APP-090, Plate 4-18 and 4.19]. The onshore cable corridor width of 45m (single Project) or 60m (two Projects) would also include a haul road to deliver equipment to the installation site from construction compounds, storage areas for topsoil and subsoil, and drainage. The working easement is expected to be narrower (approximately 27m for a single Project, 38m for two Projects concurrent, and approximately 45m for two Projects sequential) than the width of the Order Limits. This will allow room for micro-siting

			during detailed design, and for onward connection to the existing surface water drainage network for the proposed construction drainage. As described at paragraph 283 of ES Chapter 4 Project Description [APP-090] the working width of the onshore cable corridor would be further reduced to approximately 20m to minimise the impacts of crossing sensitive features such as hedgerows and watercourses. This approach to the onshore works is also routine for projects of this nature and enables impacts on sensitive features associated with the project footprint to be minimised as far as possible. It has been discussed and agreed with stakeholders through the pre-application process. The difference in approach offshore and onshore arises from the fact that onshore the question of cable width has an impact on the use of the land by the relevant landowners, and there is a legal obligation to minimise the land take as part of satisfying the compulsory acquisition tests. By comparison, offshore there is a single landowner, The Crown Estate, which is not actively using the seabed in question for any particular purpose. Accordingly, it is possible to adopt a different strategy, which has been agreed with The Crown Estate as part of the agreement for lease arrangements. In addition, the compulsory acquisition tests are not relevant as CA powers are not being sought (and are not, in fact, available as it is Crown land).
Q1.5.1.5	Applicant	**Foundation Design Choice** The ExA notes that the foundation type for the proposed wind turbines is as yet undecided and could be one of: Piled monopile; Suction bucket monopile; Piled jacket; Suction bucket jacket; and Gravity base structure [APP-090, Section 4.4]. While the ExA notes that the ES provides the parameters of the different foundation types [APP-090, Section 4.4.3], it seeks additional information on the following: a) Set out in tabular format, the worst-case effects, the benefits of and any other considerations that	The SEP and DEP Environmental Impact Assessment (EIA) is based on a project design envelope (or 'Rochdale Envelope') approach. Planning Inspectorate Advice Note Nine (the Planning Inspectorate, v3 2018) recognises that, at the time of submitting an application, offshore wind developers may not know the precise nature and arrangement of infrastructure which make up the proposed development. This is due to a number of factors such as the evolution of technology, the need for flexibility in key commercial project decisions and the need for further detailed surveys (especially geotechnical surveys), which are required before a final design and layout can be determined. This flexibility is important as it prevents consent being granted for specific infrastructure which cannot be used, or is not optimal, by the time of construction, which may be several years after the DCO application was made or consent has been granted.

		would determine the suitability of each foundation type. b) When will final choices regarding foundation design be made and is this likely to be during the Examination? c) On the basis of the overview provided in a) above, what assumptions can be made now as to the number / type of each foundation design to be used? Explain with reasons. d) Based on the earlier answers, would there be benefits to using a range of using different foundation designs (i.e. concurrent construction)? Explain with reasons. e) Following on from ISH1 [EV-013] [EV-017], provide technical note regarding foundation types, including commentary to justify why you cannot determine the proposed foundation type(s) during Examination, compared to other developers of proposed OWFs who have been able to provide greater certainty in terms of foundation choice during Examination.	The need for this flexibility is also recognised in the National Policy Statement (NPS) for Renewable Energy Infrastructure (EN-3), which identifies foundation type as one of the design details which may be necessarily broad at the time of application. Paragraph 2.6.43 of NPS EN-3 acknowledges that "…some flexibility may be required in the consent.", and that "Where this is sought and the precise details are not known, then the applicant should assess the effects the project could have (as set out in EN-1 paragraph 4.2.8) to ensure that the project as it may be constructed has been properly assessed (the Rochdale Envelope). In this way the maximum adverse case scenario will be assessed and the IPC should allow for this uncertainty in its consideration of the application and consent." Where necessary, a range of parameters for each aspect of the Proposed Development have been defined and the worst-case scenario associated with each parameter and receptor has been used in each impact assessment. This helps to ensure that the EIA process has considered the maximum effects of SEP and/or DEP, whilst also allowing for further optimisation and refinement at the time of construction. The project design envelope therefore provides the maximum extent of the consent sought and the detailed design of the Proposed Development can then be developed, refined and procured within this consented envelope prior to construction. **a)** The worst-case effects linked to foundation design choice differ depending on the receptor. For example, for marine mammals the worst case is associated with the effects of underwater noise caused by the installation of monopile foundations (Table 10-1 of ES Chapter 10 Marine Mammal Ecology [APP-096]), while the worst case for benthic ecology relates to the maximum area of seabed disturbance associated with the use of gravity base structure (GBS) foundations (Table 8-2 of ES Chapter 8 Benthic Ecology [APP-094]). The Applicant has therefore assessed the worst-case scenario for each receptor (in line with the Rochdale Envelope approach) selecting the relevant foundation type. Other considerations which will determine the suitability of foundation type post-consent at the detailed design stage will be technically and commercially driven e.g. ground conditions confirmed

			through geotechnical surveys, and economically favourable foundation type based on the supply chain at the time of procurement. As a result, the Applicant considers that the information provided in its application appropriately identifies and assesses the likely significant effects of the Proposed Development accounting for the possible development scenarios and design options that would be permitted by the draft DCO. **b) / c)** As stated at ID 2.3 of the Written Summary of the Applicant's Oral Submissions at Issue Specific Hearing 1 [document reference 12.1], submitted at Deadline 1, the Applicant confirmed during ISH1 that it would not be in a position to conclude on the foundation design choice until the detailed design stage post-consent, and therefore not within the timescales of the Examination process. This is due in large part, as outlined above in this response, to the foundation design choice being dependent on the final turbine size selected and the results of the detailed geotechnical surveys. Retaining flexibility in design allows the adoption of emerging technology, for example increasing turbine sizes, providing the parameters remain within those assessed within the ES. It is therefore not possible to make any assumptions at this stage as to the number / type of each foundation design to be used. **d)** As set out above the Applicant is not in a position to narrow down the type of foundation to be used at SEP and DEP at this stage, nor does it deem it necessary given that the EIA has been undertaken on the basis of a robust worst-case scenario. A range of foundation types is most likely to be used where technical challenges relating to ground conditions arise. There are economic efficiencies in using the same foundation type across the offshore wind farm arrays as this would have the most straightforward procurement, design and fabrication processes. **e)**

			The Examining Authority makes reference to “other developers who have been able to provide greater certainty in terms of foundation choice during Examination” and the Applicant takes this as a reference to Hornsea Project Four. The Applicant notes that whilst precedent from previous offshore wind farm projects, or other types of NSIPs / DCOs, can be constructive and helpful, it is only appropriate to apply precedence where there are meaningful similarities between the proposed development (SEP and DEP) and the schemes from which any example is being drawn. Whilst the nature of the infrastructure proposed is not entirely novel compared with many already consented offshore wind farm DCOs, the Applicant highlights that the specific geography of the sites both onshore and offshore differ, in some cases significantly, from that of other previous schemes. The Applicant therefore emphasises that the driver for / requirement to secure a commitment or mitigation in the case of another project does not mean that it is appropriate to apply the same to SEP and DEP, and such suggestions should be derived from the acceptability of predicted impacts unique to the proposed development. It is the Applicant’s understanding that for Hornsea Project Four there were specific considerations relating to physical processes, due to the location of the project and the local environment, that suggested a limit on the number of GBS foundations that could be used was justified (the limit being set at 80 out of a total of 180 wind turbine generator foundations). In contrast, these constraints do not exist at the location of the Proposed Development for SEP and DEP. The Applicant also observes that Hornsea Project Four was not otherwise restricted in terms of foundation design choice in its draft DCO; the flexibility to use different foundation types, including piled monopile; suction bucket monopile; piled jacket; suction bucket jacket; and GBS foundation, remained available. In terms of precedents from other offshore wind farm (OWF) developments, the Applicant highlights that Norfolk Vanguard, Norfolk Boreas, East Anglia One North, and East Anglia Two (and many others) all retained within their draft DCOs the possibility to select from at least five different foundation design options. The

			Applicant's approach to retaining flexibility with regards to foundation choice post consent is therefore fully consistent with accepted practice and precedent. The Applicant further notes that the Examining Authority raised the subject of foundation design choice during ISH1 in relation to underwater noise impacts on marine mammals. As detailed in ES Chapter 10 Marine Mammal Ecology [APP-096], noise impacts on marine mammals associated with the Proposed Development are not assessed to be significant and mitigation for potential noise effects is contained within the Draft Marine Mammal Mitigation Protocol [APP-288] as well as the In-Principle Site Integrity Plan [APP-290], which sets out the approach to delivering measures to ensure the avoidance of significant disturbance of harbour porpoise during piling works in relation to the Southern North Sea SAC Conservation Objectives. Based on the justification provided in this response, the assessment conclusions from the ES, and the precedents highlighted from other OWFs, the Applicant does not consider it to be necessary or reasonable to reduce flexibility in the range of foundation choices within the design envelope at this stage.

Q1.6 Construction Effects Onshore			**Applicant's Responses**
Q1.6.1 Development Scenarios			
Q1.6.1.1	Applicant	**Selecting the Development Scenario (Including Offshore)** Further to the discussions at ISH2 [EV-019] [EV-023]: a) Provide a flow chart showing steps leading into the Applicant's decision on which scenario to proceed with and subsequent steps for consultation/ phasing (from now through to project completion). b) Describe what ability the Applicant has to change direction and select another development scenario after serving notification of the chosen scenario to IPs under Article 9(1). c) If the Applicant can change its mind on Development Scenario, explain how late in the process can it do so. d) If SEP or DEP is to proceed in isolation, should there be a provision in the dDCO that consequentially prevents the remaining project from coming forward at a later date (say 3 or 4 years down the line)? See related question in the Draft Development Consent Order Section.	**a)** There are no requirements to consult any parties with respect to the proposed development scenarios for SEP and DEP. Once the chosen development scenario is known, which will be dependent on: • Outcomes of regulatory changes in the CfD and OFTO regimes**;** • Outcome of CfD allocation round(s)**;** • Commercial decision making by the project partners**; and** • Success in reaching Final Investment Decision (FID) for both projects**.** SEL and DEL will notify the relevant planning authority pursuant to Requirement 9(1) and 9(2) and the MMO pursuant to DML Condition 4 of Schedules 10 and 11 and Condition 3 of Schedules 12 and 13 of the dDCO (Revision C) [document reference 3.1]. Once the development scenario has been determined the final construction schedule and phasing plan can be matured such that the undertaker of each project can submit the phasing plan to the relevant planning authority pursuant to Requirement 9(4) and 9(5) of the dDCO (Revision C) [document reference 3.1]. **b)** The Applicant assumes part b) refers to Requirement 9(1) of the dDCO [AS-009] rather than Article 9(1). SEL and DEL are required to serve formal notice under Requirement 9(1) and 9(2) of the dDCO (Revision C) [document reference 3.1] prior to commencement of the authorised works. Paragraph 84 of the Scenarios Statement [APP-314] states that notification will necessarily be provided prior to the discharge of further consent Requirements and Conditions. Whilst Requirement 31 of the dDCO (Revision C) [document reference 3.1] provides for amendments to approved details to be made and re-approved by the 'approving authority', the Applicant considers it highly unlikely that either of the Projects would be minded to change direction at such a late stage in the development process. The development scenario under which each / both projects are built is fundamental to the overall costs, procurement strategy and construction

			schedule for each. The projects will need to achieve Final Investment Decision (FID) on the basis of the proposed development scenario (e.g. as integrated projects or not). On that basis, the Applicant does not consider that a project would 'change direction', however in Scenario 1(c) (sequential build, separate transmission systems) the first project may not be able to confirm key decisions for the second (see response to 1.6.1.1(d) below). **c)** As stated above, once formal notification on the chosen development scenario has been made to the relevant planning authority and the MMO it is unlikely a given project will 'change its mind'. In any event, SEL and DEL would not be in a position to notify the relevant planning authority (or the MMO) of its scenario decision until after FID had been reached and would do so immediately prior to the discharge of other DCO Requirements and DML Conditions. This is in relative terms fairly 'late' in the overall development process and a number of key commercial project milestones will need to have been met ahead of this. **d**) There is already provision for a time limit in Requirement 1 of the dDCO for commencement of each project. Requirement 9(1) and 9(2) and DML Condition 4 of Schedules 10 and 11 and Condition 3 of Schedules 12 and 13 of the dDCO (Revision C) [document reference 3.1] require notification of whether the undertaker intends to commence under Scenario 1, 2, 3 or 4. There are a number of sub-options within Scenario 1 including SEP or DEP proceeding in isolation. If the first project commences and believes the other will not be proceeding then it will notify the relevant planning authority accordingly, however should events change for the second project then it is possible that clarification may be required to confirm that both are proceeding under Scenario 1(c) rather than Scenario 1(a) or 1(b). The Applicant highlights that there are significant technical and commercial drivers for the projects to collaborate on areas of shared works during construction in the event that both projects proceed and therefore it is in the projects' interest to have as much certainty regarding the plans for the other project as possible. A provision preventing the remaining project coming forward would unnecessarily penalise the undertaker of the later project for having included the two projects in one DCO.

Q1.6.1.2	Applicant	**Construction of SEP and DEP in Isolation** a) The Applicant set out at ISH2 [EV-019] [EV-023] that R1 of the dDCO [AS-009] allows a potential overlap in construction crews, working at either end or at different points along the cable corridor in the concurrent scenario. Set out how this element of the concurrent scenario is assessed in the ES. b) If it has not, does the dDCO wording need to be edited in terms of sequencing of works? See related question in the Draft Development Consent Order Section.	**a) and b)** The detail of possible phasing of construction works is set out within ES Chapter 4 Project Description [APP-090]. This sets out that there could be up to a 4 year gap between construction start dates for SEP and DEP when constructed sequentially and this is illustrated on Plate 4-25. Conceivably, within the sequential scenario, construction on the second project could start within the 4 year gap and this could result in one project being at the end of construction and the other starting again at landfall with a shorter overall construction programme. The assessment within each chapter of the ES was prepared on the basis of a worst-case scenario for each topic. This considered the following construction phase envelopes: 1. Build SEP and DEP sequentially with a gap of up to four years between the start of construction of each Project – reflecting the maximum duration of effects; and 2. Build SEP and DEP concurrently reflecting the maximum peak effects. (see Section 9.2 of the Scenarios Statement, APP-314). Whatever phasing of construction is ultimately progressed will fall within this assessed envelope. If cable crews are working at either end or different points of the cable corridor, then the scale of the impacts will be no greater than the maximum peak effects and within the maximum duration of effects, both of which have been assessed. The Applicant therefore considers that a potential overlap in construction crews, working at either end or at different points along the cable corridor is assessed within the ES and no amendment is required to the dDCO wording. For completeness, the Applicant notes that working at different parts of the corridor would allow SEL and DEL to optimise the schedule of construction activities to, for example, mitigate cumulative impact with other projects by minimising, as much as reasonably possible, working in overlapping areas of the cable corridor. This would result in a reduced level of impact compared to that assessed as the worst case scenario.
Q1.6.1.3	Applicant	**Construction Effects from Haul Roads** Following ISH2 [EV-019] [EV-023] respond to the following:	**a)** The Environmental Statement assesses the worst-case scenario, for SEP and DEP built sequentially with a long gap between the construction of both projects, the worst-case scenario is that the haul road would need to be removed and reinstalled for the second project at a different location (within the DCO order limits). As shown in plate number 4-19 in APP-090 Chapter 4 Project Description, if the haul road used for the first project is removed the haul road for

		a) If it is known that both projects are going ahead (sequentially), why would there be a need to remove haul roads and temporary compounds? b) Would the digging, handling, laying, re-digging and re-handling of the soil resource in a (potentially) short space of time not have an adverse effect on its structure and quality? c) Discuss the effects and benefits that would arise if the haul roads and temporary compounds were left in situ until the whole onshore construction (sequential) was completed, in contrast to being removed between the construction of SEP and DEP?	the second project will not be at the same location, this is to reduce negative impact on topsoil. If it is known that both projects are going ahead sequentially the decision of removing the haul road and temporary compounds would depend on the gap between construction of both projects, discussions with landowners and local authorities, to assess level of impact. If the gap between construction of both projects is short and both local authorities and landowners agree, the haul road and temporary compounds will not be removed before construction of the second project. **b)** As per response to Q1.6.1.3, part a. **c)** The effects of leaving the haul road and temporary compounds in situ, would depend on the gap between construction of both projects; • When topsoil is stockpiled the soil within the core becomes anaerobic and certain temporary chemical and biological changes take place. These charges are usually reversed when the topsoil is reinstated, however the time it takes for these changes to occur very much depends on the physical condition of the soil – the longer you leave it the more it degenerates into subsoil. • As outlined in the Environmental Statement Chapter 18 [APP-104] paragraph 101, the installation of temporary culverts across ordinary watercourses could potentially directly disturb the bed and banks of the watercourse and result in the direct loss of natural geomorphological features. They could also result in reduced flow and sediment conveyance, create upstream impoundment, and affect the patterns of erosion and sedimentation. These impacts would be reversible once the temporary culverts have been removed and the bed and banks reinstated. The main benefit of leaving the haul road in situ for the entire duration of a sequentially built SEP and DEP would be related to the transport of material to build the haul road. This would reduce traffic movement, soil handling, construction dust and associated traffic emissions.

Q1.6.1.4	Applicant	**Construction Delay** Is there any merit in delaying the construction period for SEP/DEP to avoid or reduce the extent of cumulative effects arising from concurrent construction with other projects?	The Environmental Statement considered an absolute worst-case whereby SEP and DEP peak traffic overlaps with the peak period for Hornsea Project 3 and Norfolk Vanguard. Hornsea Project 3 has already started enabling works and Norfolk Vanguard estimated starting time is also 2023. Consequently, both projects will be significantly advanced at the estimated time of SEP and/or DEP construction and their traffic peaks will have likely already passed. Cumulative impacts will likely be either avoided or reduced at the time of SEP and DEP construction. Whilst SEP and DEP have not yet received consent, the project timeline has been created based on the UK Government's offshore wind target of 40 GW by 2030. The Applicant considers that delaying the start of construction of SEP and DEP will not be aligned with the UK government's target.
Q1.6.1.5	Applicant	**Construction Port** The ES states that it is expected that the operations and maintenance port to service the Proposed Development would be at Great Yarmouth, but that decisions have not yet been made on this matter [APP-090, Paragraph 4.4.9]. a) What other options and alternatives are available other than Great Yarmouth? b) Of these alternatives (including Great Yarmouth), have any been assessed as to the route vessels take and whether that route, in itself, is a worst-case scenario upon various environmental features (marine mammals and offshore ornithology)? c) Will a decision be made on the construction port during the Examination? d) Would Great Yarmouth continue to be the Operations and Maintenance Base, even if not the construction port?	**a)** The operations and maintenance port for all projects in the Greater Wash is Great Yarmouth, and as such the Applicant is not considering any other ports for O&M (offices, warehouse, routine logistics quayside). There are some additional areas (in addition to the current O&M base for SOW and DOW) proposed for further development by the consortia of Norfolk County Council, Great Yarmouth Borough Council and Peel Ports that could be of interest if need be but these are in the port of Great Yarmouth ('O&M Campus' development at the mouth of the river). **b)** The construction-phase assessment in respect of ornithology, as set out in the ES [APP-097] and RIAA [APP-059], is focussed on disturbance to sensitive species (such as red-throated diver) along the cable-route (e.g. Section 9.3.3.4.5.1 of the RIAA [APP-059]). This is considered to be the most relevant construction effect, given the route passes through the Greater Wash SPA. The assessment has not assumed a specific Construction Port; it is considered unlikely that the Construction Port selection would significantly affect the outcomes of the assessment, and as such Great Yarmouth is considered a realistic worst-case scenario in respect of ornithological receptors. O&M effects

		e) Would other infrastructure need to be permitted or developed to make the construction port (Great Yarmouth or otherwise) 'ready' for the Proposed Development?	on ornithological receptors have also been similarly addressed, e.g. in Section 9.3.3.4.5.3 of the RIAA [APP-059]. Again, it is not considered that Port selection would affect the conclusions to the assessment. Embedded mitigation measures in respect of red-throated diver are also proposed to avoid or minimise potential impacts from vessel traffic (Table 11-4 in Section 11.3.3 of the ES [APP-097]). In respect of marine mammals, Section 8.4 of the ES chapter [APP-096] describes the potential effects for each of the four relevant designated sites for both construction and O&M vessel movements. The assessments conclude in all cases that the underwater noise effects from operation and maintenance activities, including from vessels, are considered to be the same or less than those assessed for underwater noise from construction vessels and therefore there would be no significant effects. The conclusions are the same regardless of which port is used. The RIAA is consistent with this. Annex 1 of the Draft MMMP [APP-288] outlines Vessel Good Practice and Code of Conduct to Avoid Marine Mammal Collisions. However, the Applicant has now included this as a section of the Outline Project Environmental Management Plan (Revision B (OPEMP) [document reference 9.10], which has been updated at Deadline 1. **c)** The Applicant will begin the tendering processes for the manufacture and supply of turbines, foundations and offshore substation and associated transportation & installation vessels later in 2023. The Applicant anticipates that suppliers will require to make investment and manufacturing facilities modifications and/or new sites to meet turbine and foundations requirements. Therefore, whilst the Applicant may have concluded capacity slots and vessel reservations with suppliers, it will not have concluded on where the foundation and wind turbine generator fabrication will be located. **d)** Yes, Great Yarmouth will continue to be the Operations and Maintenance Base. **e)** For SEP and DEP the main assumption for the O&M base considers a reconfiguration of the current facilities used for SOW and DOW for the bigger cluster. However, the development by the consortia of Norfolk County Council,

			Great Yarmouth Borough Council and Peel Ports could also be considered as mentioned above.
Q1.6.2 Approach to Construction, Compounds, Programme, Timing and Methods			
Q1.6.2.1	Applicant Environmental Agency	**Landfall** a) Potential Sources of Contamination of the Land Quality Desk Study and Preliminary Risk Assessment Report [APP-206, Figure 17.1.5] shows a former sewage works on the line of the cable corridor at landfall. Provide evidence as to where the risks of interaction with the sewage works at landfall are included in the ES and could this affect the use of HDD? b) EA, do you have any concerns with regard to the interaction with the former sewage works?	**a)** Risks associated with potential sources of contamination within the study area as a whole, are discussed in ES Chapter 17 Ground Conditions and Contamination [APP-103, Section 17.6.1]. The assessment isn't broken up into the different areas within the ES as the same risks, and therefore mitigation measures, would be applicable at any location that is associated with potential sources throughout the whole study area. The measures to manage and mitigate any contamination that may be present will be set out within the Code of Construction Practice As set -out within section 4.1 of the Outline Code of Construction Practice which will be submitted for approval by the relevant Local Planning Authority as required by Requirement 19 of the draft DCO (Revision C) [document reference 3.1]. As set out within Section 4 of the Outline Code of Construction Practice (Revision B) [document reference 9.17], for each phase of the onshore works, a scheme to deal with the contamination of any land within the Order limits will form part of the CoCP. **b)** The Applicant does not have concerns, as the construction works can avoid the former sewage works.
Q1.6.2.2	Applicant	**Onshore Cable Corridor Width** The ES states that to minimise the impacts of crossing sensitive features such as hedgerows and watercourses, the working width would be reduced to approximately 20m [APP-090]. a) Is this reflected in the order limits?	**a)** The Order Limits show the envelope within which the working easement will be located after detail design and micro-siting. The exact location of the crossing of these features will be known after detailed design. As stated in the Outline Landscape Management Plan (Revision B) [document reference 9.18, para. 13], a commitment has also been made to further reduce the working easement at hedgerow crossings to minimise the temporary loss of

		b) Does this include the scenario where SEP and DEP are constructed concurrently? c) If it is possible to reduce the cable corridor to 20 metres in sensitive locations, was this not considered across the whole corridor with top-spoil and sub-soil storage areas at intervals along the corridor?	hedgerows and trees. The working easement at hedgerow crossings would typically be as follows: • 12m for either SEP or DEP in isolation; or • 20m for SEP and DEP (concurrently or sequentially). **b)** The minimum working width of the construction corridor is 38m of the 60m Order Limits to allow for the micro-siting of the circuits, this allows flexibility to move around obstacles such as trees, archaeology, general ecological feature, contaminated ground, and low-lying areas prone to flooding. It also gives the flexibility to traverse through breaks in hedge lines and move away from existing trees. **c)** There are several reasons why using storage areas for topsoil and subsoil will result in higher impacts: • Increased potential for soils to become compacted and for soil structure to deteriorate during construction works; and • Increase traffic movement, with subsequent impacts on noise and air quality.
Q1.6.2.3	Applicant	**Onshore Cable Corridor Width for Trenchless Crossings** The Order Limits include a 100-metre corridor width where trenchless crossings are proposed to be used [APP-011]. Provide further justification for the need for a 100-metre corridor width and what is it about this technique that requires additional space from a trenched cable corridor where the proposed width would be 60m? Explain with reasons, including providing a plate diagram setting out the layout and requirements for land associated with a HDD compound.	As set out by the Applicant at ISH2 [EV-019] [EV-023], the general routing principle aims to develop the Order Limit width of approx. 60m for all open cut ducted sections and 100m width at all trenchless crossings. A suitable transition between open-cut and trenchless crossings will be required to allow for an effective transition between the two duct installation methods. Each trenchless crossing will require individual design, based on length of the crossing, depth, and ground conditions. There are different configurations and the Applicant has accounted for what is called a flat formation where each of the cables from each of the circuits are separated. Since each circuit is composed of three cables that gives a total of 6 drills in one trenchless crossing. Phase separation per circuit can be up to 10m with the facility for 1No spare duct per circuit thus giving a measurement from end duct to end duct = 70m. 15m either of outside ducts will allow for equipment setup and storage. Please see Appendix A.5 [document reference 14.4.1].

Q1.6.2.4	Applicant	**Approach to Construction Compounds** a) The ES states that you would need one main construction compound and eight secondary compounds. In addition to the summary provided in the ES [APP-090, Section 4.6.1.6], describe how the number and the locations of the primary and secondary construction compounds were chosen. b) Describe what efforts have been made to minimise their number. c) How have the sizes of each construction compound been estimated?	**a)** In general, the most efficient delivery strategy for linear cross-country, underground cable projects is to establish construction compounds and laydown areas at semi-regular intervals strategically located along the cable route. This allows the construction managers, logistic operatives and site foreman to effectively organise deliveries and ensure a consistent supply of consumables to work areas. Based on the proposed work activities and construction program, a secondary construction compound located in close proximity to an access bellmouth every 5-10km along the cable route will provide an effective delivery and compound strategy. In addition to this, three CBS batching plants suitably spaced with one batching plant accommodated at the main compound, and one in the north and south of the scheme will be the optimum CBS supply strategy during construction. **b)** The main compound is located close to an A-road with good access to the strategic road network and in close proximity to the construction easement and long HDD. The location is also situated centrally along the cable route (i.e. midway between the landfall at Weybourne and Substation at Norwich). In addition to the main compound a number of secondary compounds strategically positioned along the route are required as this reduces the necessary storage capacity of the main compound and reduces the delivery times when relocating plant, material and labour from the main compound to the work site particularly for works around the substation and landfall which will be 30+ linear kilometres away from the main compound. Having deliveries to strategic secondary compounds allows delivery drivers to become accustomed to the route, ensuring they are compliant with the CATMAP and do not get “lost” and drive into nearby small towns and villages. **c)** At each Secondary Construction Compound the following will be required: • Stoned hardstanding (or equivalent); • Topsoil bunds;

			• Fencing; • Welfare facilities (small canteen, toilets, drying room, security cabin); • Parking; • Telehandler or Tracked Excavator with Lifting Forks to facilitate the loading/unloading of materials & equipment; and • Storage area for ducting, cable tiles, fencing, plant, waste skips etc. The required footprint of a standard secondary compound is approximately 2,500m2 which is adequate to accommodate the requirements detailed above. Secondary Compounds with CBS Batching: An onsite batching plant will give contractors control by ensuring a consistent and reliable supply of CBS and the strategy for this project includes three CBS batching plants located, North (A148-Bodham), central (Main Compound) and South (Hethersett Rd). Secondary compounds proposed to house CBS batching plants will have a footprint of 7,500m2 with 5,000m2 nominated for the batching of CBS and 2,500m2 nominated to meet the general secondary compound requirements. A CBS batching plant requires adequate space for the storage of aggregates and cement. Aggregates are typically stored in outside bays, with the cement stored in hoppers. All compound footprints will remain consistent as the compounds are sized to cope with peak construction activity demand.
Q1.6.2.5	Applicant	**Worst-Case and Trenchless Crossings** The ES states trenchless crossing techniques “such as HDD” would be used [APP-090, Paragraph 5]. a) Is the list of trenchless crossing locations exhaustive? Provide a full list of crossing locations and identify the type of crossing proposed at each location. b) How do the different crossing methods compare in terms of effects and what makes HDD the preferred option in some cases?	**a)** The Crossing Schedule (Revision B) [AS-023] provides the complete list of crossings. It also specifies type of crossing at each location. The Applicant wishes to highlight that compared to other windfarm projects, SEP and DEP have opted for a significantly higher number of trenchless crossings. Trenchless crossings, are technically, logistically and commercially more demanding than open cut. The high number of trenchless crossings demonstrates the Applicants willingness to minimise impacts. **b)** At critical crossing locations (i.e. major water courses, A-roads, B-roads, railways, woodland, utility crossings, etc.) the opencut method of installing ducting would not be technically suitable or may result in high impact to the

		c) Identify at each crossing location if a crossing technique can be secured and committed to with wording in the dDCO [AS-009] or, if flexibility is sought between crossing technique options. Explain with reasons.	feature that would be crossed. Therefore, SEP and DEP have included in the design, mitigation by opting to trenchless solutions. Horizontal Directional Drilling (HDD) is the most common method used on cross-country cable projects and it allows us to install our apparatus without any interaction with the obstacle within the cable corridor. This is one of the options considered to perform a trenchless crossing but is not the only option as a constructable solution, other examples are: Impact Moling, Micro-tunnelling, Pilot-Tube Micro-tunnelling and pipe Ramming. The proposed methodology will be based on many factors such as site-specific information, ground investigation, accuracy of crossing, maximum installation length, duct diameter. **c)** Flexibility is required to take account of site-specific requirements, possible innovation in techniques and contractor specific proposals.
Q1.6.2.6	Applicant	**Construction compound for HDD and other forms of Trenchless Crossings** a) Would other forms of trenchless crossing need a larger, similar or smaller sized compound compared to HDD? b) Can locations be specified and secured, prior to the close of the Examination, within the dDCO for each type of crossing?	**a)** All compounds would be similar in size. **b)** Siting compound locations will be determined following detailed design as it is then that crossing techniques and entry and exits points will be determined. This is after close of the Examination and a decision on the application.
Q1.6.2.7	Applicant	**Construction Compound Assumptions** The ES sets out that the secondary compounds would be 2,500m^2 but that two of these secondary compounds may be up to 7,500m^2 to accommodate batching of cement bound sand (CBS) [APP-090]. a) Which two secondary compounds will be 7,500m2 in size or have all secondary compounds been assumed to be 7,500m2?	**a)** The **Onshore works plans** [AS-005] show the location of all secondary compounds. The list of secondary compounds is given below. The table includes addresses, footprint and proposed usage.

<table>
<tr>
<td></td>
<td></td>
<td>b) If the latter of those two, how will it be decided which two will be 7,500m2 in size?

c) How has this potential need been secured in the dDCO?</td>
<td>
<table>
<tr><th>Location</th><th>Footprint</th><th>Proposed Usage</th></tr>
<tr><td>A148, Bodham</td><td>7,500m2</td><td>CBS Batching plant & construction laydown area</td></tr>
<tr><td>Church Street, Little Barningham</td><td>2,500m2</td><td>Secondary compound & laydown area</td></tr>
<tr><td>B1354 Blickling Road, Oulton</td><td>2,500m2</td><td>Secondary compound & laydown area</td></tr>
<tr><td>B1149, Heydon</td><td>2,500m2</td><td>Secondary compound & laydown area</td></tr>
<tr><td>Reepham Road, Brandiston</td><td>2,500m2</td><td>Secondary compound & laydown area</td></tr>
<tr><td>Fakenham Road, Attlebridge</td><td>30,000m2</td><td>Main Compound (CBS compound within)</td></tr>
<tr><td>Church Lane, Easton</td><td>2,500m2</td><td>Secondary compound & laydown area</td></tr>
<tr><td>B1172, Ketts Oak</td><td>2,500m2</td><td>Secondary compound & laydown area</td></tr>
<tr><td>Hethersett Road</td><td>7,500m2</td><td>CBS Batching plant & construction laydown area</td></tr>
</table>
b)
Responded to at Q1.6.2.7, part a; and Q1.6.2.4, part a.
c)
The Applicant has already determined the locations that would be suitable for the two compounds of up to 7,500m2, as set out above. The location of the temporary construction compounds is shown on the Onshore works plans [AS-0005], which effectively secure the size that they could be constructed. The Applicant does not consider it necessary for the draft DCO [document reference 3.1] to include specific drafting in relation to this.
</td>
</tr>
<tr>
<td>Q1.6.2.8</td>
<td>Applicant</td>
<td>Construction Methods

The ES sets out that the onshore cable duct will be installed in sections of up to 1km at a time, with a typical construction presence of up to four weeks along each 1km section [APP-090]. Why is this approach the most efficient and does it seek to minimise adverse effects from the construction works?</td>
<td>The proposal is to split the project into three sections with two duct installation teams working within each section at staggered locations, this approach omits any congestion on the haul road and maximises productivity.

The approach also seeks to minimise adverse environmental effects as a result of the construction works by limiting the amount of land being worked on at any one time. Topsoil would be stripped from the section of the onshore cable corridor to be worked on and stored within the working width. The cable trench(es) would then be excavated, typically utilising tracked excavators. The excavated subsoil would be stored separately from the topsoil, and both will be managed to minimise soil erosion.

The cable duct installation works are a continuous activity with each work front progressing a section at a time. In any given location once the cable ducts have been installed the trench will be backfilled and the work front will continue moving onto the next section. In conjunction with the cable duct installation, the haul road will be constructed starting with an initial topsoil strip. It will also be installed in stages as each work front progresses. It would be formed of</td>
</tr>
</table>

			protective matting, temporary metalled road or permeable gravel aggregate dependant on the ground conditions, vehicle requirements and any necessary protection for underground services. Cables would be pulled though the pre-laid ducts at a later stage in the construction programme avoiding the need to reopen any excavations. Typically, this would be achieved by accessing the onshore cable corridor directly from the existing accesses (i.e. the existing road network where it crosses the cable corridor or from other accesses such as existing farm tracks) where possible. The ES assesses a number of construction scenarios and each topic considers the worst-case scenario in respect of the onshore cable duct installation. Mitigation has been identified to avoid, reduce or eliminate likely adverse effects. This approach to the installation of the cable ducting seeks to minimise the likely significant adverse effects in conjunction with industry standard mitigation methods in relation to aspects such as soil management, surface water, groundwater and agricultural drainage management, air quality and noise and vibration control measures and landscape and biodiversity management.
Q1.6.2.9	Applicant	**Construction Methods** The ES states that the primary cable installation method would be open cut trenching, with cable ducts installed within the trenches and backfilled with soil. Cables would then be pulled though the pre-laid ducts at a later stage in the construction programme [APP-090]. Explain why it is preferred to pull the cables through the pre-laid ducts rather than installing the cable at the same time as the ducts are installed.	Cable installation process is much quicker than duct installation. Duct installation will take place during the dry seasons of the year thus allowing cable and jointing works to continue through the wetter months.
Q1.6.2.10	Applicant	**Link Boxes** The project description [APP-090] sets out that link boxes will be placed close to field boundaries wherever possible to allow easy access during	The final positioning of the link boxes cannot be confirmed until detailed cable design has been completed. The Applicant therefore considers that it would not be appropriate to secure this within the dDCO.

		operation/maintenance. Should this be secured in the dDCO?	
Q1.6.2.11	Applicant	**Weybourne Wood Options** The ES [APP-089, Paragraph 87] states two stretches of HDD would be used to cross underneath Weybourne Woods. The ExA requires more information on the following: a) Why was the design option of 2x400m trenchless crossings chosen when it has been stated elsewhere that long HDD could be in excess of 1,000m, thus passing the entire 800m stretch of wood in a single action? b) There would be a joint bay where the two runs of HDD interconnect within the wood. How would this joint bay, and access thereto, be managed or provided for in the dDCO should maintenance need to be undertaken from it? c) During ASI1, a number of trees in proximity to the HDD compound within Weybourne Woods were noted to have orange dotted markings upon them. It is understood that these trees were marked by the Forestry Commission. What is the meaning of these markings and are the trees marked as a consequence, or in relation to, the Proposed Development?	**a)** The longer the drill, the greater the risk of borehole failure and ground conditions at this location are very challenging, as experienced during the original SOW HDD west of the current location. Ground Investigation Boreholes have been undertaken along the drill alignment that confirm the two drill option is constructable. **b)** There will be no joint bays at this location, the north and south drill ducts will be coupled together to allow the completion of cable installation from the north and south of the woodland thus removing any further access requirements during operation. **c)** Trees throughout the woodland have been marked by the Forestry Commission for logging as part of their commercial farming operations.
Q1.6.2.12	Applicant	**Construction Programme and Contractors** The Project Environmental Management Plan [APP-297] refers to multiple contractors being utilised across the project. In this respect: a) How will various contractors be co-ordinated and by whom? b) Will there be contractors working on different parts of the project at the same time (for	**a)** As set out in Construction, Design and Management Regulations 2015 (CDM) it is the duty of the Applicant to appoint a Principal Contractor (PC) to coordinate the construction phase of the project. There will be three separate PCs – one for the offshore element, one for the onshore civils element and one for the electrical installation and commissioning at the substation.

		example, contractors at Weybourne concurrently with contractors at Cawston) and, if so, what are the implications for cumulative impacts assessments?	The Applicant will manage any interface between the different elements in a proactive manner. **b)** As per Q1.6.2.8 the project will be split into three sites and the contractor will produce a Construction Traffic Management Plan for submission to Norfolk County Council for approval. With regard to whether Contractors working on different parts of the project at the same time has been taken into consideration during the cumulative impact assessment, by the nature of the construction approach, impacts to sensitive receptors will likely be confined to the work areas for whichever scenario goes forward. However, due to the nature, spatial scale and temporal overlap of the construction works, there is potential for the onshore elements of the project to have direct and / or indirect cumulative effects on sensitive receptors in instances where work areas overlap with the same aquifer, SPZ, river catchments, designated / non-designated site / assets. The likelihood of this occurring will depend on other factors, such as the nature and/ or capacity of the receiving environment that would make a cumulative effect more or less likely and requires consideration of a source-pathway receptor approach to inform the assessment. Mitigation measures limit the potential for cumulative effects to occur. Embedded mitigation includes avoiding Ancient Woodland sites, employing trenchless construction techniques for sensitive watercourse crossings and reduced cable corridor working widths at hedgerow crossings. Additional mitigation in the form of industry standard mitigation methods in relation to aspects such as soil management, surface water, groundwater and agricultural drainage management, air quality and noise and vibration control measures and landscape and biodiversity management are set out in the Outline Code of Construction Practice [APP-302] and will minimise any likely adverse effects.
Q1.6.3 Baseline survey and effects of Unexploded Ordinance			

Q1.6.3.1	Applicant	**Impacts of Detonation** NE [RR-063, Appendix G, Paragraph 19] states that further information is required in relation to the depth of any crater and the impacts this may have on any sub-cropping chalk, peat and clay, with the detonation of UXO. Can such details be provided for Examination?	The Applicant proposes that, since UXO clearance will be a separate marine licence post-consent that any further assessment is reserved until more accurate information on the number, location and type of UXO to be detonated is known which will allow an accurate assessment to be undertaken.
Q1.6.4 Effects of construction works on human health			
Q1.6.4.1	Applicant	**Potential for Insect Infestation and Emissions of Odour, Steam and Smoke** NPS EN-1 at Paragraph 5.6.4 sets out that the Applicant should assess the potential for insect infestation and emissions of odour, steam and smoke to have a detrimental impact on amenity. Where have such effects been assessed?	Although unlikely, there is the potential for material excavated during construction to be odorous. In the event of this occurring, it is expected that odours would quickly disperse and therefore the impact would be short-lived and would be unlikely to constitute a statutory nuisance. The Project activities are highly unlikely to result in an insect infestation. Any signs of the beginnings of an infestation will be identified through routine maintenance checks during the construction and operational phases of the Project.
Q1.6.4.2	Applicant	**Adverse Effects of Noise and Air Quality on Human Health** The ES concludes that the significance finding for population health in the assessment [APP-114] for both of these matters under all construction scenarios, is that any change due to SEP and DEP would be a low magnitude of change on a receptor of medium to high sensitivity. This represents an impact of minor adverse significance. Based on 'Table 28-13: Indicative EIA health significance matrix' should this be a minor to moderate significance? If so, does this therefore represent a significant effect in EIA terms?	ES Chapter 28 Health [APP-114, para. 181 and 198] acknowledges that sensitivity is medium to high for noise and air quality, respectively. The professional judgment for both noise and air quality, take account of the Project activities, and find that the magnitude of change is low. Table 28-13 shows this places each finding on the border for EIA health significance between moderate/minor and minor. Where the matrix offers more than one significance option, professional judgement is used to decide which option is most appropriate [APP-114, para. 81]. This has been found to be minor adverse, and thus not significant, for noise and air quality due to the transitory nature of the effects (the longest duration for noise is medium at Landfall where there are no sensitive receptors within 500 metres); by the finding that any predicted air quality emissions would be below statutory thresholds for health protection; and by the mitigation put in place for noise [APP-109] and air quality [APP-108].

Q1.6.4.3	Applicant	**Changing Working Patterns** Does the assessment of noise on human health consider changing working patterns with increased numbers of people working from home? If so, how?	As detailed in ES Chapter 28 Health [APP-114, para. 128], the assessment of noise on human health takes account of people who spend extended periods at home and who therefore may experience greater exposure duration (to SEP and/or DEP-related noise) than those who are absent during normal working hours. This encompasses changing working patterns and any potential increase in the numbers of people working from home. The assessment [APP-114, para. 128] shows variation along the onshore cable corridor in the numbers of households with no adults in employment, one person in the household with a long-term problem or disability, people aged over 65 and retired people. These are taken as proxy for the time people spend at home during the day. The population profile, in APP-280, uses data from the 2011 census. The conclusion, in paragraph 128 of AP-114, stands that near landfall and along the onshore cable corridor, a slightly higher proportion of people in general spend extended periods at home and that near the onshore substation people generally spend less (or approximately the same amount of) time at home than at the local, regional or national level. In showing the scoring for sensitivity, the assessment [APP-114, paragraph 176,] includes people who work from home amongst population groups that may be particularly sensitive to changes in noise. The assessment [APP-114, Paragraph 181] states that there would be an impact of minor adverse significance for the general population and vulnerable groups. These vulnerable groups include people who are currently in work e.g. shift workers. There is no explicit mention of ‘people working from home’ in this paragraph but their inclusion in paragraph 176 shows they form part of this judgement. In addition, the intra-project cumulative effects for vulnerable groups takes account of the fact that they will be at home during the day and are more likely to experience effects in combination [APP-114, Table 28-22].
Q1.6.4.4	Applicant	**Physical Activity Effects** The ES [APP-114, Paragraph 255] identifies additional mitigation measures to help minimise the risk of any behavioural change as a result of	ES Chapter 28 Health [APP-114, para. 255] identifies additional mitigation measures to help minimise the risk of any behavioural change as a result of unexpected or unknown duration changes to access arrangements (such as Public Rights of Way). These include:

		unexpected or unknown duration changes to access arrangements (such as Public Rights of Way). Where are these secured in the dDCO?	• Providing diversions signs and advertising notices locally in advance of time that will explain the new route and duration of the diversion; • Providing diversions that are suitable in terms of providing equivalent levels of access; and • Providing reopening signs and notices that advertise the reopening. These provide additional detail on the mitigation measures that are outlined in APP-105 (paras 176-181) and secured in the OCoCP [APP-105, Section 10], which is in turn secured via Requirement 19 (Code of Construction Practice) of the draft DCO (Revision C) [document reference 3.1].
Q1.6.4.5	Applicant	**Journey Times and/or Reduced Access Effects** The ES [APP-114, Paragraph 268] notes that only small changes in journey times would be expected, largely relating to short delays at certain junctions. The delay from alternative routes range from no delay in travel time (for the majority of routes) to a delay of up to six minutes, what specific evidence supports these assumptions?	This information is taken from APP-110 [Table 24-49: Road Closures Magnitude of Effect Assessment – SEP or DEP in Isolation].
Q1.6.4.5	Applicant	**Air Quality Effects** NCC [RR-064] is of the view that adverse effects of air quality should include adverse effects on pregnant women as there is evidence that poor air quality adversely impacts birth weight, and that lung cancer and type 2 diabetes are also key health outcomes related to air quality. How would the inclusion of such matters affect the outcomes of the assessment?	Paragraph 185 of APP-114 lists the population groups that may be especially vulnerable to changes in air quality. Norfolk County Council [RR-064] notes that pregnant women should be included in this list as there is evidence that poor air quality adversely impacts birth weight. Paragraph 186 of APP-114 lists key health outcomes relevant to air quality. Norfolk County Council notes that lung cancer and type 2 diabetes are also key health outcomes related to air quality. These are both fair comments. The inclusion of vulnerable population groups and a clarification of the health outcomes does not change the findings of APP-114 with regards to air quality. In paragraph 198 the conclusion of the assessment for population health is given for air quality. It states that any change due to SEP and DEP be a low magnitude of effect on a receptor of medium to high sensitivity. This represents an impact of minor adverse significance, i.e., not significant for the general population or vulnerable groups. Paragraph 198 goes on to list the vulnerable

			groups and states that any effects would be below all recognised statutory thresholds for health protection, and would be short-term, temporary and would cease on completion of the works. This conclusion takes account of mitigation commitments by the Applicant. Details of the air quality changes are set out in the ES Chapter 23 Air Quality [APP-108]. The mitigation measures for Air Quality are set out in measures 22.1 to 22.9 of Environmental Statement - Schedule of Mitigation and Mitigation Routemap [APP-282]. Measure 22.2 [APP-282] includes a stakeholder communications plan and community engagement before work commences.
Q1.6.4.6	Applicant	**Reduced Physical Activity Effects** NCC [RR-064] has set out that health outcomes related to reduced physical activity should include type 2 diabetes, unhealthy BMI, stroke and musculoskeletal conditions. How would the inclusion of such matters affect the outcomes of the assessment?	Paragraph 231 of ES Chapter 28 – Health [APP-114] lists key health outcomes relevant to physical activity. Norfolk County Council [RR-064] notes that type 2 diabetes, unhealthy BMI, stroke and musculoskeletal conditions are also key health outcomes related to physical activity. This is a fair comment. This inclusion does not change the findings of APP-114 with regards to physical activity. APP-114 looks at health effects arising from changes to physical activity in relation to potential for physical activity to be temporarily affected by the temporary diversion of National Trails, Public Rights of Ways (PRoWs), cycle routes and long distance walking routes (herein referred to as 'routes') as well as some reduced access to the coast, as a result of the temporary disruption and/or restricted access (no greater than one week) to small portions of Weybourne Beach at landfall (paragraph 229). In paragraph 252 [APP-114] the conclusion of the assessment for population health is given for physical activity. It states that any change due to SEP and DEP will be a low magnitude of effect on a receptor of medium to high sensitivity. This represents an impact of minor adverse significance, i.e., not significant for the general population or vulnerable groups because the only direct impact on access of physical activity would be in relation to diversion of routes which will be temporary, localised and reversible. Paragraph 253 states that all effects would be short-term, temporary, fully reversible and would cease on completion of the works. This conclusion takes account of mitigation commitments by the Applicant. Details of the changes to Land Use, Agriculture and Recreation are set out in the

			Environmental Statement Chapter 19 [APP-105]. The mitigation measures for Land Use, Agriculture and Recreation are set out in measures 19.1 to 19.18 of Environmental Statement - Schedule of Mitigation and Mitigation Routemap [APP-282]. Measure 19.13 [APP-282] relates to potential disruption to onshore coastal assets; measure 19.4 [APP-282] secures mitigation related to air quality, noise, traffic and visual impacts through the Outline Code of Construction Practice (OCoCP) (Revision B) [document reference 9.17]; measures 19.15-19.17 [APP-282] relate to impact on Public Right of Way across the planned area.
Q1.6.4.7	Applicant	**Interactions** The ES [APP-114, Table 28-22] shows intra-project cumulative effects for site-specific population groups for all scenarios. Explain why the significance of effects for the vulnerable population is negligible or minor adverse when the significance of effects for the general pollution is minor adverse, who have a lower sensitivity than the vulnerable population.	The findings in ES Chapter 28 Health, Table 28-22 [APP-114] refer to a range. Thus, for the general population the intra-project cumulative effect is considered to be 'no greater than minor adverse'. The finding for vulnerable groups is that 'most of the individual effects are negligible or minor adverse and that there may therefore be a cumulative effect'.
Q1.6.4.8	Norfolk County Council	**Mental Health Mitigation** NCC [RR-064] set out that it would like the Applicant to include further mitigation measures to address any adverse effects on mental health, especially given the potential length of construction works. Is this justified given that NCC agrees that there are unlikely to be any significant, long term adverse health impacts from the proposal compared to baseline conditions. If it is, then how could further mitigation be secured?	The Applicant notes the request from Norfolk County Council [RR-064] to 'include further mitigation measures to address any adverse impacts on mental health', especially with regards to the potential length of construction works. The Applicant considers that further mitigation measures are not required. Norfolk County Council [RR-064] requests increased involvement of local communities in the way in which disruption of the natural environment and its impacts on mental health can be minimised, and in the way in which current levels of physical activity can be maintained and improved through provision of information around alternative undisturbed routes on land. The Applicant recognises that these are subtly different requests, but responds to them as one as the mitigation to reduce the disruption of the local environment is the same as mitigation to maintain current levels of physical activity. While direct links with mental health are rarely made in APP-282 there are provisions to ensure liaison that will contribute to reducing stress and anxiety associated with the construction programme: liaison with Norfolk County Council about proposed

			construction works on Public Rights of Way (measure 19.13); community liaison through the OCoCP (Revision B) [document reference 9.17, paragraph 29] and the PEMP (Revision B) [document reference 9.10, paragraph 71]; procedures for addressing community complaints through the OCoCP (Revision B) [document reference 9.17, paragraph 30] and PEMP (Revision B) [document reference, paragraph 75]. This is in addition to commitments to reduce disruption from air quality, noise, traffic and visual impacts [APP-282, measure 19.4]. These are provided in the Schedule of Mitigation and Mitigation Routemap [APP-282].
Q1.6.4.9	Applicant	**Well-Being** At OFH1 [EV-009] [EV-010], the representative for Corpusty and Saxthorpe PC raised formulae can be used to determine the cost of both health and well-being impacts. In relation to this can you set out what data and algorithms have gone into the modelling to date and how this can be quantified into a cost/ benefit analysis.	The Applicant notes the comments made by Professor Barnett, the representative for Corpusty and Saxthorpe PC, during OFH1 [transcript from 01:15 to 01:32, EV-009 and EV-010]. Paragraph 75 of ES Chapter 28 Health [APP-114] states that the EIA human health assessment is a qualitative analysis, following the IPH (2021) guidance approach, which draws on qualitative and quantitative inputs from other EIA topic chapters. This is considered the most appropriate methodology for assessing wider determinants of health proportionately, consistently and transparently. Table 28-9 in APP-114 provides the Data and Information Sources used to develop the baseline for the assessment. Paragraph 79 of APP-114 states that the approach to judging the significance of any given effect uses a range of data sources to ensure reasoned and robust professional judgements are reached. Key sources of data include scientific literature; baseline conditions; health priorities; consultation responses; regulatory standards; and policy context. Table 27.6 in ES Chapter 27 - Socio-Economics and Tourism APP-113 and Table 24-7 in ES Chapter 24 - Traffic and Transport [APP-110] provide the Data and Information Sources used to develop the baseline for the socio-economic and the traffic and transport assessments, respectively.
Q1.6.4.10	Applicant	**Electric and Magnetic Fields** It has been suggested in relevant representations that EMF levels should be secured and monitored.	That is not consider a risk by The Applicant. The Applicant commissioned an independent study by National Grid which assessed the strength of EMFs along the onshore cable corridor. The study can be found in ES Appendix 28.1 – Sheringham and Dudgeon Extension Projects EMF Assessment [APP-279].

		What is the risk that the EMF levels are greater that the Applicant's calculations?	These calculations were performed by an independent third party in accordance with relevant standards to provide impartial, accurate and reliable analysis, and which demonstrated that all the design options assessed produced magnetic fields significantly below the ICNIRP public exposure limits. This was the case, even in worst case conditions; using the design that produced the highest magnetic field and assuming the circuits were carrying the maximum load, which would also result in the highest magnetic fields possible. The maximum fields for such design were only 11% of the public exposure limit, directly above the cables. This reduced to 0.5% of the exposure limits at the DCO boundary.
Q1.6.4.11	Applicant	**Electric and Magnetic Fields - Cable Phase Arrangement** The EMF Assessment [APP-279] shows that the RYB BYR cable phase arrangement produces less of a magnetic field than a RYB RYB cable phase arrangement. Further, it would also seem that a trefoil cable design results in an EMF of less intensity than a flat cable design. Consequently, to minimise effects of magnetic fields as far as possible, should the Proposed Development adopt a RYB BYR cable phase arrangement with a trefoil cable design in all scenarios? Explain with reasons.	EMF levels depend on several parameters, not only cable configuration. A combination of cable configuration, burial depth and distance from the circuits will determine the anticipated EMF levels at a given location. EMF decreases very rapidly with distance. As said in the response to Q1.6.4.11, even in worst-case conditions the maximum fields were only 11% of the public exposure limit, directly above the cables. This reduced to 0.5% of the exposure limits at the DCO boundary. The final cable configuration will be determined at detailed design, which needs to take into account several other factors.
Q1.6.4.12	Applicant	**AC Corrosion on Pipelines** The EMF Assessment sets out that all third-party assets will be crossed by the proposed cable circuits at or near 90°, therefore AC corrosion is highly unlikely, and that if crossing angles reduce to below 60°, further investigations will be needed to assess the potential impacts [APP-279, Page 15]. Where is this secured in the dDCO?	The crossing of third party assets is managed and protected through the protective provisions in Schedule 14 of the dDCO (Revision C) [document reference 3.1] which require approvals from the relevant statutory undertakers whose assets are being crossed.
Q1.6.4.13	Norfolk Parishes Movement for an	**Details of Organisation**	**N/A**

	Offshore Transmission Network	Please set the membership of your organisation and the 95 parishes for which you represent. In addition, set out which of these parishes are affected by the Proposed Development.	
Q1.6.5 Effects from emissions on air quality			
Q1.6.5.1	Applicant	**Dust Emissions and Fine Particulate Matter Assessment Methodology** The ES [APP-132] states that *"Both Scenario 2 (concurrent construction) and Scenario 3 (sequential construction) have similar potential for generating construction dust and fine particulate matter impacts on receptors, as overall they both cover the maximum footprint of construction works, however the sequential build may result in the same area of land being affected twice, which would affect the duration of impacts. This is not explicitly accounted for within the IAQM assessment methodology"*. a) Has the duration of potential adverse effects been taken into account in the assessment? b) If so, how? c) If not, given the significant timescale difference of the sequential construction scenario compared to the isolation and concurrent scenarios, should it be an important factor in the assessment? Provide justification.	**a)** and **b)** As stated in Section 26.1.1 (paragraph 215) of ES Chapter 22 Air Quality [APP-108], the Institute of Air Quality Management's (IAQMs) 'Guidance on the assessment of dust from demolition and construction, Version 1.1' (IAQM, 2016) does not explicitly account for duration of potential adverse effects in the assessment methodology. It is important to note that under any of the proposed construction scenarios, dust-generating activities would not occur continuously for the entire construction period, and mitigation measures would be implemented which would reduce the likelihood of impacts occurring. **c)** At landfall, construction works would be less than one year in total under each Scenario (Scenario 2: five months for HDD plus four months for cable pull; Scenario 3: four months for HDD plus two months for cable pull per Project, with a gap between Projects of between two and four years). The onshore cable duct will be installed in sections of up to 1km at a time, with a typical presence of up to four weeks along each 1km section. The onshore substation site preparation and construction activity durations will be in total either 30 months (Scenario 2) or 28 months per Project (Scenario 3, with a gap between Projects of two and four years). SEP and DEP have undergone extensive site selection processes which incorporated environmental considerations in collaboration with engineering design requirements. These considerations have taken into account proximity to sensitive human and designated ecological receptors. In the construction dust and fine particulate matter assessment presented in Section 22.6.1.1 of ES Chapter 22 Air Quality [APP-108], potential dust impacts have been considered separately for each of the different Project components, i.e. at landfall, the

			onshore cable corridor and main construction compound, and the onshore substation, to ensure the worst case impacts have been considered. The construction dust and fine particulate matter assessment was undertaken using a worst-case scenario whereby the maximum amount of works (e.g. cable trenching, a construction compound, jointing bay and link box construction) are undertaken in proximity to the greatest number of human and ecological receptors. Recommended mitigation measures, as detailed in Section 7 Air Quality Management of the Outline COCP (Revision B) [document reference 9.17] as secured by Requirement 19 of the draft DCO (Revision C) [document reference 3.1], for these worst-case locations would then be applied to all onshore construction works, to provide a conservative assessment. As good site management and application of control measures can significantly reduce dust generation potential, it is concluded that with the implementation of mitigation measures detailed in Section 7 Air Quality Management of the Outline COCP (Revision B) [document reference 9.17], which will be secured in the final COCP, the residual impacts from any Scenario are considered to be not significant, regardless of the duration of the construction Scenario, as the mitigation measures recommended will be applied to all onshore construction works. As such, the duration of the works is not considered to be an important factor in the assessment.
Q1.6.5.2	Applicant	**Dust Emissions and Fine Particulate Matter Assessment Methodology** Are the number of receptors thresholds presented in the Construction Phase Dust and Fine Particulate Matter Assessment Methodology [APP-259, Table 22.1.3 and Table 22.1.4] appropriate? Provide justification.	As stated in ES Appendix 22.1 Construction Dust and Fine Particulate Matter Assessment Methodology, [APP-259], the construction dust and fine particulate matter assessment methodology used in ES Chapter 22 Air Quality [APP-108] followed the recommended guidance provided in the IAQMs 'Guidance on the assessment of dust from demolition and construction, Version 1.1' (IAQM, 2016) and the use of this guidance and methodology was agreed with stakeholders during consultation (see Table 22.1 of ES Chapter 22 Air Quality [APP-108]). Table 22.1.3 and Table 22.1.4 of ES Appendix 21.1 Construction Dust and Fine Particulate Matter Assessment Methodology [APP-259] are replicates of Table 2 and Table 3, respectively, in the IAQM (2016) guidance, therefore it is considered that the number of receptor thresholds are appropriate.

Q1.6.5.3	Applicant	**Non-Road Mobile Machinery Assessment Methodology** The assessment [APP-132] refers to 'Defra technical guidance (Defra, 2021a)' that states emissions from NRMM used on construction sites are unlikely to have a significant impact on local air quality where relevant control and management measures are employed. Provide the full reference of this guidance and a full copy if possible.	The Technical Guidance referenced in ES Chapter 22 Air Quality [APP-108] is the Department for the Environment Food and Rural Affairs (Defra) 'Local Air Quality Management Technical Guidance (TG16)', which was most recently released in April 2021. Since ES Chapter 22 Air Quality [APP-108] was written, an updated Technical Guidance (LAQM.TG22) was published by Defra and supersedes all previous versions. The conclusions of the updated guidance (TG22) remain the same as TG16 in that NRMM emissions used on construction sites are unlikely to have a significant impact on local air quality, where relevant controls and management measures are employed. The example measures referenced in TG22 have been adapted into Section 22.6.1.2.5 of ES Chapter 22 Air Quality [APP-108] and within Section 7 Air Quality Management of the Outline COCP (Revision B) [document reference 9.17] . The reference for the updated guidance is: Defra (2022) Local Air Quality Management Technical Guidance (TG22), August 2022.
Q1.6.5.4	Applicant Local Authorities	**Road Traffic Emissions Assessment Methodology** When considering construction road vehicle exhaust emissions, the assessment [APP-132] sets out that *"Peak construction flows were not used in the assessment, as peak construction would occur over a 1 or 2 month period (at worst) and using these to derive AADT across a full year would unrealistically inflate the impacts of construction generated traffic. The use of average construction flows was deemed to be robust and more appropriate representation of construction impacts from traffic over an annual period, and aligns with the requirement for use of AADT flows"*. a) LAs do you agree with this approach? b) Applicant, provide further justification for this approach.	**a)** N/A **b)** It was considered that to use one- or two-month (at worst) peak construction flows and apply them across the duration of a year to represent annual average daily traffic (AADT) would be unrepresentative, and an overestimation, of actual construction traffic for SEP and/or DEP. On average across the links considered in the human receptors road traffic emissions assessment, the average AADT data used in ES Chapter 22 Air Quality [APP-108] equates to approximately half that of peak AADT (derived from a one- or two-month period (at worst) applied across a full year) data. As traffic flows are continuous emissions sources (in comparison to more variable emissions sources such as industrial stacks), comparison of modelled concentrations to annual mean air quality objectives are most appropriate, rather than short-term Objectives. The use of peak traffic flows in the derivation of annual mean concentrations would therefore significantly overestimate annual mean pollutant concentrations, and therefore average flows are considered to be more appropriate.

			Section 22.5.3 of ES Chapter 22 Air Quality [APP-108] outlines that background pollutant concentrations in the study area are no greater than 50% of the relevant air quality Objectives, and Sections 22.6.1.3.1.1 and 22.6.1.3.2.1 of ES Chapter 22 Air Quality [APP-108] conclude that impacts generated by road traffic upon local air quality are not significant under any scenario, as negligible impacts are predicted at all human receptor locations and predicted pollutant concentrations were 'well below' (i.e. less than 75% of) relevant air quality Objectives. It is anticipated that even if peak AADT data were used in the assessment, predicted impacts at human receptors under all scenarios would remain not significant, and predicted pollutant concentrations would remain below the relevant air quality Objectives.
Q1.6.5.5	Applicant	**Road Traffic Emissions Assessment Methodology** The ES [APP-132] states: *"The sensitive receptor locations were selected based on their proximity to road links affected by SEP and/or DEP and exceeding the screening criteria detailed in Table 22.10, where the potential effect of project-generated traffic emissions on local air pollution would be most significant"*. Explain further how it was judged where potential effects would be most significant?	Representative sensitive human receptors were chosen to ensure that those receptors with the highest pollutant concentrations (i.e. closest to the road, junctions, etc.) were included in the construction road traffic emissions assessment presented in ES Chapter 22 Air Quality [APP-108]. At least one human receptor was included on each of the road links affected by SEP and/or DEP which exceeded the screening criteria detailed in Table 22.10 of ES Chapter 22 Air Quality [APP-108]. At a minimum, these were the closest human receptors to the affected road link, where potential effects would be most significant. Where applicable, receptors were included at either side of the affected road link to ensure the effect of meteorological conditions was considered. On links which extended for long distances, for example Link 2, numerous (i.e. seven) human receptors were included on either side of the road at approximate equal intervals, to ensure changes in the speed limit along roads were assessed, which would correspondingly affect the emissions and the resulting concentration at the receptor. In built up areas, such as Great Yarmouth and Lowestoft, numerous human receptors were chosen along affected road links. Again, at a minimum, these were the closest to the affected road links and additional receptors were chosen and included to represent areas where congestion and/or slower speeds would be experienced (i.e. queuing at

			junctions, traffic lights or roundabouts) to ensure potential effects were assessed where they would be of the greatest magnitude.
Q1.6.5.6	Applicant	**Air Quality Management Areas** The ES [APP-132, Paragraph 157] notes that the statutory designated Railway Road and Gaywood Clock AQMAs in King's Lynn, declared in 2003 and 2009 respectively for exceedances of the NO2 annual mean, are located as close as 400m from road links likely to be used by project. It is assumed that due to this distance there will be no significant effects. Provide further justification and evidence to support this assertion.	As detailed in Section 22.4.3.3.1 of ES Chapter 22 Air Quality [APP-108], construction phase road traffic emissions were assessed at receptors within 200m of affected road links, as per guidance in Highways England et al. 'LA 105 Air Quality' guidance (Highways England et al., 2019). The reduction in pollutant concentrations with distance back from the road is significant, and therefore it is considered that this distance provides sufficient dilution and dispersion of pollutant emissions from SEP and/or DEP-generated road traffic. As stated in paragraph 57 of ES Chapter 22 Air Quality [APP-108], SEP and/or DEP traffic would not pass through the AQMAs themselves, therefore the increases in pollutant concentrations within these AQMAs as a result of SEP and/or DEP would either be nil or de minimis. Sensitive receptors have been included in the assessment in much closer proximity to affected road links, e.g. R11 and R19 are approximately 0.8m from the roads edge. At these receptors, negligible impacts were predicted and SEP and/or DEP generated traffic was not predicted to cause a breach of any of the air quality Objectives; therefore, the contribution from SEP and/or DEP at a distance of 400m from affected roads would be insignificant.
Q1.6.5.7	Applicant	**Air Quality Cumulative Effects Assessment** The cumulative effects assessment [APP-132] notes that for both construction phase dust and particulate matter and NRMM that each project will employ mitigation measures to control and manage emissions. Can the Applicant confirm what mitigation measures are secured for each of the other projects in this regard?	In the outline Code of Construction Practice's (CoCPs) submitted as part of the Norfolk Boreas [APP-692]**)**, Norfolk Vanguard [APP-025] and Hornsea Project Three [APP-179] offshore wind farm applications to the Planning Inspectorate, measures were included for minimising emissions of construction dust and from on-site plant (i.e. NRMM) and these will be secured through the final COCP for each project. The Environmental Management Plan (EMP) [REP7-035] submitted as part of the A47 North Tuddenham to Easton application to the Planning Inspectorate states that *"the Principal Contractor will develop a Construction Noise and Dust Management Plan to manage likely significant environmental effects"*. Mitigation measures for minimising emissions from NRMM are also included in the EMP. The Norwich Western Link project is anticipated to submit a planning application to Norfolk County Council in Spring 2023; therefore no documents are currently

			available for review. It is anticipated that best practice mitigation measures would be recommended for the project, and it is expected that the Contractor appointed for this project, and the projects listed above, will implement these mitigation measures to minimise construction dust and emissions from NRMM.
Q1.6.5.8	Applicant	**Air Quality Cumulative Effects Assessment** Is the cumulative effects assessment for road traffic emissions sufficiently detailed and robust? Are there any road links considered cumulatively with the other projects that would exceed the IAQM and EPUK (2017) criteria, but did not for this Proposed Development alone? If so, which are these and should an assessment of the effect on human receptors be undertaken, similar to that undertaken in Section 22.6.1.3.1.1 of the ES [APP-132]?	The additional road links that would exceed the IAQM and EPUK (2017) criteria when considered cumulatively with other projects (i.e. SEP and/or DEP, Norfolk Vanguard, Norfolk Boreas and Hornsea Project Three), did not exceed the screening criteria for SEP and/or DEP alone, are shown on Figure 1 of Appendix A.1 in Appendix A - Supporting Figures for the Applicant's Responses to the Examining Authority's First Written Questions [document reference 12.4.1]. It is not considered that a similar assessment to that undertaken in Section 22.6.1.3.1.1 [APP-108] is required. The links that have been screened in for inclusion in Section 22.6.1.3.1.1 and 22.6.1.3.2.1 of ES Chapter 22 [APP-108] have already been assessed cumulatively, as the 'without SEP and/or DEP' scenario includes cumulative traffic, therefore the 'with SEP and/or DEP' predicted concentrations presented are inclusive of cumulative traffic. Each of the total predicted concentrations were 'well below' (i.e. less than 75% of) the NO_2, PM_{10} and $PM_{2.5}$ Objectives, with maximum predicted total concentrations of 28.7µg.m^{-3}, 19µg.m^{-3} and 11.9µg.m^{-3}, respectively, for the (worst case) SEP and DEP concurrent scenario. As such, cumulative effects on these links would not have a significant impact on air quality. For the additional links (shown in Appendix A.1, ref. Q1.6.5.8) that exceed the IAQM and EPUK (2017) criteria when considered cumulatively, all cumulative construction traffic would be temporary given the nature of offshore wind farm projects. As detailed in Section 22.7.3.3 of ES Chapter 22 Air Quality [APP-108], the cumulative construction traffic flows used in the assessment were daily peak AADT and HGV flows, and are therefore overly conservative in nature. Additional links exceeding the IAQM and EPUK (2017) criteria when considered cumulatively would not be significantly impacted by SEP and/or DEP; for the majority of these links, SEP and/or DEP traffic was well below the IAQM and

			EPUK (2017) screening criteria, therefore SEP and/or DEP would have a minimal contribution to potential cumulative impact on these links. The majority of additional links (screened in cumulatively) are located in rural Norfolk, where background pollutant concentrations are low. The total cumulative pollutant concentrations which would be experienced on the additional links are anticipated to be similar to those experienced on Links 2, 4 and 87 (i.e. receptors R4-R8, R10-R14, R17-R19) (i.e. total concentrations <20µg.m^{-3} for NO_2 and PM_{10} and <15µg.m^{-3} for $PM_{2.5}$). Given these low overall concentrations, it is not expected that the cumulative impact of traffic would give rise to a significant air quality effect. There are some additional links screened in on the fringes of Great Yarmouth and Norwich. It is anticipated that total predicted concentrations on additional links to the north of Great Yarmouth would be similar to those predicted at receptors R43 and R44 (i.e. <30µg.m^{-3} for NO_2, <20µg.m^{-3} for PM_{10} and <15µg.m^{-3} for $PM_{2.5}$). On these links to the north of Great Yarmouth, SEP and/or DEP has a minimal contribution to potential cumulative impacts, as the Project would not route any light vehicles and a limited numbers of HGVs (approximately half the IAQM and EPUK (2017) screening criteria) on these links. Two additional links exceed the criteria to the south of Norwich as a result of including cumulative traffic. SEP and DEP have deliberately avoided routing traffic through Norwich (and the associated Norwich City Council AQMA), and the minimal SEP and DEP construction traffic using the additional links screened in cumulatively will relate to Project traffic travelling from the outskirts of Norwich City to the Project and not into Norwich City (nor near or through the Norwich City Council AQMA). It is anticipated that total predicted concentrations will be similar to those for receptors R28 to R31 on Link 42 (i.e. <20µg.m^{-3} for NO_2 and PM_{10} and <15µg.m^{-3} for $PM_{2.5}$), and therefore the impact of cumulative traffic is not expected to give rise to any significant air quality effects. It is therefore our professional judgement that the cumulative effects assessment for road traffic emissions is sufficiently detailed and robust.
Q1.6.6 Adequacy of the Outline Code of Construction Practice			
Q1.6.6.1	Applicant	**Outline Code of Construction Practice**	**a)**

	Local Authorities National farmers Union	The OCoCP [APP-302, Table 1-1] sets out a number of EMPs that will form part of the final CoCP and will be prepared, submit and approved post-consent. a) A pre-construction drainage plan, a scheme to deal with the contamination of any land (including groundwater), a Materials Management Plan, Soil Management Plan, a Site Waste Management Plan, hydro-fraction surveys (for bentonite breakout) and a Construction Surface Water Drainage Plan are all referred to in the main text of the OCoCP but are not included in Table 1-1. Why is this? b) Confirm the status and origin of EMPs listed in Table 1-1. c) The OCoCP refers to Construction Method Statements. What will these include? d) Justify the level of detail and content provided to date within the suite of EMPs. e) Is it possible for the ExA to be sure that such EMPs will be successful in mitigating any impacts without seeing more detail? f) Local Authorities and NFU are there any management plans that you consider are crucial to review during the Examination? Explain with reasons.	The Applicant acknowledges that the following plans are not listed within the OCoCP (Revision B) [document reference 9.17, Table 1-1] but are listed within the body of the main text: • A scheme to deal with the contamination of any land (including groundwater)**;** • Materials Management Plan**;** • Soil Management Plan**;** • Site Waste Management Plan**;** • Hydro-fraction surveys (for bentonite breakout) (e.g. Bentonite Brake Out Plan)**; and** • Construction Surface Water Drainage Plan**.** These plans, together with those listed in Table 1-1 would be prepared, submitted and approved post consent. The Applicant confirms that pre-construction drainage plan and construction surface water drainage plan are the same. **b)** Table 1-1 provides a list of the plans which would form part of the final CoCP. The Applicant confirms that these more detailed plans would be prepared by the Principal Contractor and submitted and approved post consent. Outline details of the management measures to be included within those plans are set out within the relevant section of the Outline CoCP (Revision B) [document reference 9.17]. It is for the Principal Contractor to progress these plans further. **c)** The Applicant has committed to producing detailed Construction Method Statements for construction operations relevant to that phase of the works. Each Construction Method Statement will follow industry best practice guidance. The production of the Construction Method Statement would be the responsibility of the Principal Contractor, as such it is not possible to provide full details of the content of these; however, they would likely cover the following: • Details of the organisation in control of the activity and the individual responsible. • A description of the activity and how the work will be managed.

			• The location of the activity, its boundaries, means of access and how it is segregated from other activities. • Environmental management and constraints. • Plant and equipment required. • The procedure for changing the proposed method of work if necessary. • Precautions necessary to protect workers, and other people that could be affected, including personal protective equipment. • Emergency procedures, including the location of emergency equipment. • The handling and storage of materials and pollution prevention procedures. **d)** The Applicant considers that the level of detail described within the OCoCP (Revision B) [document reference 9.17] is appropriate given the stage of the application. Details of the management measures to be implemented within the subsidiary plans are included within the relevant section of the Outline CoCP and would form the basis of any subsequent EMPs developed by the Principal Contractor. The Code of Construction Practice (and EMPs detailed therein) is secured by Requirement 19 (Code of Construction Practice) of the draft DCO (Revision C) [document reference 3.1]. **e)** As detailed in (d) management measures to be implemented within the subsidiary plans are outlined within the relevant section of the Outline CoCP (Revision B) [document reference 9.17] and would form the basis of any subsequent EMPs developed by the Principal Contractor. These management / mitigation measures have been drawn from the respective ES chapters, informed both through best practice and guidance, and professional judgement. Therefore the Applicant considers that it is possible for the Examining Authority to be sure that such EMPs will be successful in mitigating any impacts. The Code of Construction Practice (and EMPs detailed therein) is secured by Requirement 19 (Code of Construction Practice) of the draft DCO (Revision C) [document reference 3.1], which requires that:

			• (1) No phase of the onshore works may commence until a code of construction practice (which must accord with the outline code of construction practice) for that phase has been submitted to and approved by the relevant planning authority following consultation with Norfolk County Council, the Environment Agency, relevant statutory nature conservation bodies and, if applicable, the MMO. • (3) All construction works for each phase must be undertaken in accordance with the relevant approved code of construction practice. **f)** N/A
Q1.6.7 Waste Management			
Q1.6.7.1	Applicant	**Waste Management** The OCoCP [APP-302] secures the production of a Site Waste Management Plan. a) It is, however, unclear what this will contain and how it will be ensured that the waste hierarchy will be implemented. Provide further information on this matter. b) Is a Site Waste Management Plan required for operational stage, especially at the onshore substation? Explain with reasons.	**a)** The Applicant would refer the Examining Authority to ES Appendix 17.2 Waste Assessment (Onshore Development) [APP-207]. This document presents information relating to the waste hierarchy (Section 17.2.3.4.3). The waste hierarchy requires the producer/holder of a waste to demonstrate that prevention, re-use, recycling, other recovery and disposal have been considered in the priority order stated, to determine the most suitable waste management option for all wastes prior to removal from site. ES Appendix 17.2 Waste Assessment (Onshore Development) [APP-207] provides estimates of waste types and estimated quantities during construction and operation and outlines general and specific waste management measures to be implemented. As detailed in ES Appendix 17.2 Waste Assessment (Onshore Development) [APP-207] a Site Waste Management Plan (SWMP) would be prepared before construction starts to record any decisions given to materials resource efficiency when designing and planning the works. Any assumptions on the nature of SEP and DEP; their design; the construction method or materials employed, to minimise the quantity of waste produced on site; or maximise the amount of waste reused, recycled, or recovered, would be captured within the SWMP. The SWMP would provide information on each waste type that is expected to be

			produced in SEP and DEP with the appropriate European Waste Catalogue (EWC) code and description for each waste type. It will provide an estimate of the quantity of each type of waste and the proposed waste management option for each waste produced (i.e. re-use, recycling, recovery, or disposal; on or off-site). **b)** The Applicant considers that suitable waste management plans and procedures should be developed to cover the operation phase of the onshore substation. As detailed in ES Appendix 17.2 Waste Assessment (Onshore Development) [APP-207] the servicing of equipment in the onshore substation is likely to give rise to small quantities of liquid hazardous waste (used oil, solvents, paints etc.), solid hazardous waste (oil-contaminated wipes, absorbent, and some specialist electrical equipment and batteries etc.) and non-hazardous waste (packaging, cables, metal waste, plastic waste, waste electrical and electronic equipment (WEEE). The onshore substation would be unmanned, however due to the requirement for general ad hoc maintenance, personnel/maintenance engineers would visit the site. Small amounts of general waste may be generated. Wastes produced during operation phase would be managed in accordance with the general principles of the waste duty of care and suitable waste management plans and procedures would be developed as part of Operation and Maintenance Manuals.

Q1.7 Commercial Fisheries and Fishing			**Applicant's Response**
Q1.7.1 Effects on Fishing Stocks			
Q1.7.1.1	East Inshore Fisheries and Conservation Authority	**Electromagnetic Field** The ES [APP-098, Paragraph 377] states that no experiments have highlighted significant concerns with EMF and the magnitude of impact of EMFs is generally considered to be low for most marine organisms. What is your stance on this issue?	**N/A**
Q1.7.1.2	East Inshore Fisheries and Conservation Authority	**Effect to Fish and Shellfish Stocks** Is there evidence that can be provided as to the effects to fish and shellfish stocks as a result of the Proposed Developments such as that proposed with SEP and DEP?	**N/A**
Q1.7.2 Effects on fishing enterprises as a result of navigational or special restrictions			
Q1.7.2.1	Applicant Trinity House Maritime and Coastguard Agency Natural England East Inshore Fisheries and Conservation Authority Interested Parties	**Restricted Fishing** The ES states: *"The Applicant considers the most effective way this could be achieved would be to restrict fishing on sandeel, and with respect to prey availability for Sandwich tern, sprat or juvenile herring in UK waters. However, this would need to be implemented either by Defra in the case of sandeel or the relevant Inshore Fisheries and Conservation Authority (IFCA) in the case of sprat and juvenile herring fisheries within UK inshore waters."* [APP-069, Paragraph 127]. All a) What is your assessment of the economic effects on fishing communities if such restrictions were imposed?	**a)** The proposal to restrict fishing of sandeel, sprat and herring is a compensatory measure to mitigate ornithological impacts. This compensatory measure has not been assessed within the commercial fisheries impact assessment. Note withstanding this, it is noted that the latest ICES advice for the sandeel stock in Area 1r (where SEP and DEP are located) states that when the maximum sustainable yield approach and precautionary considerations are applied, there should be zero catch of sandeel in 2022. The Applicant advocates that ICES advice is followed and seeks to work with fisheries administrators and governing authorities to support implementation on a restriction to sandeel fisheries. **b)**

		Applicant b) How would DEFRA or the IFCA implement such fishing restrictions? c) How would such restrictions be secured in the dDCO and could the dDCO be able to compel another organisation to enact such restrictions? d) Do the powers of a Development Consent Order allow for the imposition of byelaws or restrictions of the type suggested in the ES?	The Applicant has not given detailed consideration to the legal mechanism that Defra or the IFCA would use to implement fishing restrictions, as it is not a compensatory measure that is within the Applicant's control to deliver. A potential option to regulate fishing activity would be the use of powers that exist under the Sea Fish (Conservation) Act 1967 and the Marine and Coastal Access Act 2009. However, the Applicant cannot state whether these would be considered suitable by Defra to impose a measure of this nature. As noted in paragraph 87 of Appendix 3 - Kittiwake Compensation Document [APP-072], an extension to a proposed fisheries management area or a new proposal to provide protection through closure to fishing for sandeels would need to be facilitated by the UK Government in allocating appropriate powers to a relevant management body and, potentially, through the delivery of legislation to secure the necessary powers. **c)** The Applicant considers that it would not be possible through the dDCO to compel another organisation to act in this manner. **d)** The Applicant does not consider that bylaws or restrictions could be directly imposed through a Development Consent Order.
Q1.7.2.2	East Inshore Fisheries and Conservation Authority	**Closed Area Byelaw 2021** Disclose the full details of the byelaws including the area covered (map) and the restrictions imposed [APP-077, Paragraph 245]. Set out the nature of the impacts if the Proposed Development were to go ahead and the additional area within which restrictions may be imposed.	**N/A**
Q1.7.2.3	East Inshore Fisheries and	**Impact to the Potting Fleet** The ES [APP-098] sets out that there would be moderate adverse impacts (without mitigation) to the UK potting fleet	**N/A**

	Conservation Authority	during construction, operation and decommissioning phases of SEP and DEP. Are the 'justifiable disturbance payments' sufficient to mitigate for these impacts?	
Q1.7.2.4	Applicant	**Potting Fleet Mitigation** Provide an update on the negotiations currently progressing with the justifiable disturbance payments for the UK potting fleet.	Compensation has been paid to local impacted fishermen throughout the pre-construction period during survey activities that has required removal of fishing gear and vessels. The dialogue and development of agreements has been facilitated by the FLO and with a few exceptions in close cooperation with fisherman's associations. The survey vessels have still on a few occasions encountered fishing gear during survey operations. In general, going forward, the Applicant seeks to anticipate potential disruption and seek solutions to avoid or reduce temporary displacement during surveys and construction, with financial compensation being a last option to offset remaining significant impacts. Where financial compensation is required, evidence-based agreements will be established for those individual fishermen that have a demonstrable economic dependency upon the area proposed for closure. The methodology will be based on the FLOWW guidelines and will be agreed as part of the development of the Fisheries Liaison and Co-existence plan, in close cooperation with the FLO.
Q1.7.2.5	Applicant East Inshore Fisheries and Conservation Authority	**Restrictions to Fishing within Operational OWFs** Clarify the extent of any restrictions on fishing fleets within the wind farm areas once they are operational and whether the existence of the turbines would result in any significant impingement or practical difficulties on fishing activities in these areas?	The Applicant confirms that during the operational phase restrictions within the wind farm areas will be limited to the application for standard safety zones around manned or sensitive offshore platforms during operation and maintenance or in some cases around access points to turbines. Specifically, safety zones of up to 500m will be applied when major maintenance is in progress (e.g., use of jack-up vessel or similar). The commercial fisheries impact assessment for the operation phase assumes that fishing will not resume in areas where physical infrastructure is presents including of GBS foundations and associated scour protection with a maximum permanent footprint of 1.09km2 for SEP and DEP development. The assessment assumes that fishing will resume around and between infrastructure within SEP/DEP where possible, with the exception of an

			assumed 50m operating distance from infrastructure, areas of cable protection, and safety zones around infrastructure undergoing major maintenance or replacement. There will be no legal restrictions in place, other than in respect of safety zones for major maintenance. In practice, the Applicant anticipates that the individual decisions made by skippers with their own perception of risk will determine the likelihood of whether their fishing will resume within SEP/DEP. Inclement weather will be a significant contributor to this risk perception. In addition, certain gear types including pelagic trawl, twin rigged trawls and demersal seine / fly shooting will not be practically deployed within the operational wind farm sites. Standard practices within the existing Dudgeon and Sheringham Shoal sites confirm there are no fishing restrictions within the operational sites, other than safety zones around major maintenance works such as component exchanges. Regular liaison is maintained with the fishing industry via a FLO and notice of planned maintenance works is communicated via Notice to Mariners. Fishermen operate within the wind farm on the understanding that pots and fishing gear are not tied off on the assets.
Q1.7.2.6	Applicant	**Fish/Shellfish Processors** Clarify if adverse effects of the Proposed Development have been assessed and would be mitigated the impact not only for those working on the fishing fleets but also local businesses that may be significantly adversely impacted if fishing activity is reduced for a substantial amount of time, such as those in fish/ shellfish processing businesses?	Chapter 12 Commercial Fisheries [APP-098] considers potential impacts on commercial fisheries activity, which is understood as fishing activity legally undertaken where the catch is sold as taxable profit. Assessment of potential wider supply chain impacts is not within the scope of Chapter 12. In relation to potential adverse impacts on commercial fisheries activity, the Applicant confirms that additional mitigation is proposed for the UK potting fleet during the construction phase, where potentially significant short-term and localised impacts of the Proposed Development have been identified. This mitigation will be delivered through the Outline Fisheries Liaison and Co-existence Plan [APP-295] and is expected to include cooperation agreements and associated disruption payments, to be delivered in line with FLOWW guidance, and specific to the potential impacts on the UK potting fleet.

			On the basis that fishing can resume within and around SEP and DEP during the operational phase, medium to long term effects on the UK potting fleet are not assessed to be significant and additional mitigation is not proposed during the operational phase of the Proposed Development. The Applicant believes that the fishing industry and offshore wind farm developments can co-exist and, as such, sets out with the objective to co-exist with the fishing industry in and around SEP and DEP, with key principles and measures for co-existence defined within the Outline Fisheries Liaison and Co-existence Plan [APP-295].
Q1.7.2.7	Jonas Seafood	**Fish/Shellfish Processors** Following comments at the ISH1 [EV-014] [EV-018], can you provide more clarification on the potential impacts to your business, along with your view as to why your business would be uniquely affected? Are there other similar businesses to Jonas Seafood that would be similarly affected?	**N/A**

Q1.8 Compulsory Acquisition and Temporary Possession			**Applicant's Responses**
Q1.8.1 Updates on Negotiations			
Q1.8.1.1	Applicant	**CA Schedule** a) Complete the CA Schedule found in Annex A. The ExA has seen the summary of landowner negotiations [APP-028, Appendix 2], and requests the information be presented in the format set out in Annex A, and updated at the relevant Examination Deadlines. b) Confirm the CA schedule provides an update on all affected persons and plots included in the Book of reference.	**a)** The Applicant notes this request and will update the document and submit it at each forthcoming deadline. Please refer to the updated CA Schedule [document reference 12.5] being submitted at Deadline 1. **b)** This CA Schedule includes all Category 1 Owners or Reputed Owners within the updated Book of Reference (Revision B) [document reference 4.1] being submitted at Deadline 1 where acquisition of land and rights are sought and the Land Interest is able to provide proof of title. Tenants, Lessees and Occupiers identified as Category 1 interests in the Book of Reference are not included in the CA Schedule as protection of their interest is included within the Owner and Reputed Owner voluntary agreements. All Category 2 interests identified in the Book of Reference as having rights and/or apparatus within the Order Land are either protected within the Owner or Reputed Owner voluntary agreements where applicable or are addressed within the [update of statutory undertaker negotiations] referred to in the response to Q1.8.3.4 below. The Applicant is not seeking to acquire any rights within land owned by Category 3 interests identified in the Book of Reference as they are outside the Order Land. Category 3 interests therefore have been excluded from this CA Schedule. Where a Land Interest is identified within the Book of Reference as having an interest in respect of subsoil beneath a public highway, such plots are excluded from this CA Schedule as the Applicant will obtain the required rights through the New Roads and Street Works Act 1991.

Q1.8.1.2	Applicant	**Book of Reference** Re-submit the BoR: a) clearly identifying each Part of the BoR as specified in the CA Guidance and regulation 7 of the APFP Regulations 2009 in table headings and contents table; and b) with the top two rows of the table headings repeated on each page.	The Applicant notes this request and has submitted an updated Book of Reference (Revision B) [document reference 4.1] at Deadline 1. The Applicant has included the table headings on each page, in both the clean and tracked Book of Reference (Revision B) [document reference 4.1] as specified in the CA Guidance and Regulation 7 of the APFP Regulations 2009. Please note the inclusion of the table headings has not been included as a tracked change.
Q1.8.1.3	Applicant	**Responses to Relevant Representations** a) When responding to RRs relating to CA or TP matters, identify the relevant plot numbers as marked on Land Plans [AS-002] [AS-003] [AS-004]. b) When responding to RRs that suggest alternatives to specific aspects of the Proposed Development, provide further justification in line with CA guidance that for the relevant plots of land all reasonable alternatives to CA, including modifications to the Proposed Development, have been explored. c) When responding to Relevant Representations [RR-078] [RR-042] [RR-043] that have concerns relating to blight, provide Applicant's specific consideration in relation to those concerns for each of the scenarios that could be allowed under the dDCO.	**a)** The Applicant notes this request and has identified relevant plot numbers within responses. **b)** The CA guidance (paragraph 8) requires that "The applicant should be able to demonstrate to the satisfaction of the Secretary of State that all reasonable alternatives to compulsory acquisition (including modifications to the scheme) have been explored." As set out in the Statement of Reasons [APP-028] (paragraphs 110 – 115) the Applicant has sought to minimise the use of compulsory acquisition powers wherever possible – for example by including only temporary possession or rights where permanent acquisition is not thought to be justified and through the considerable effort that has been and is being put into negotiations for voluntary acquisitions with affected parties. Section 7.2 (paragraphs 124 – 127) of the Statement of Reasons summarises how the site selection process was undertaken with regards to the location and preliminary design for the onshore elements of SEP and DEP. Section 7.3 (paragraphs 128 – 130) includes a summary of how affected parties were consulted during the refinement of the design for SEP and DEP. Section 7.4 (paragraphs 131 – 133) confirms that a number of project design alternatives were considered in the site selection for SEP and DEP, which is detailed in ES Chapter 3 Site Selection and Assessment of Alternatives [APP-089]. This includes certain

			boundary changes which were made as a direct result of feedback from affected parties. The Applicant has therefore demonstrated how its approach to compulsory acquisition is aligned with the CA guidance in relation to alternatives. Where specific alternatives are suggested in relevant representations, the Applicant has provided a response to these. **c)** The Applicant has responded at Deadline 1 to any relevant representations that raise concerns in relation to blight, although notes that no blight claims have been received from affected parties to date.
Q1.8.2 Affected Persons' Site-specific Issues			
Q1.8.2.1	Chris Tansley Susie Tansley	**Suggested Mitigation** Outline here or in your Written Representation, the positive suggestions for the protection of wildlife and ways to mitigate the effects that the Proposed Development construction process would have on the properties built on your land [RR-022] [RR-112].	**N/A**
Q1.8.2.2	Christopher Hughes	**Restrictive Covenants** Outline here or in your Written Representation, the restrictive covenants relevant to your property and related effects of the Proposed Development [RR-023].	**N/A**
Q1.8.2.3	Outer Dowsing Offshore Wind	**Project Interactions** In any future submissions to this Examination, provide a plan of your project, highlighting potential spatial interactions with the Proposed Development.	**N/A**
Q1.8.2.4	Applicant	**Protected Characteristics**	**a)**

	North Norfolk District Council Yvonne Odrowaz-Pieniazek	a) Applicant, further to the ASI [EV-004], the ExA believes one or more residents of the Old Orchard House may have protected characteristics in line with s4 of the Equality Act 2010 [RR-124]. Explain what special consideration has been given. b) Applicant and NNDC, to confirm (without specifying any personal details) if protected characteristics of s4 of the Equality Act 2010 would trigger the Public Sector Equality Duty. c) Yvonne Odrowaz-Pieniazek, provide any further information or evidence that you may have to demonstrate that the exposure to EMF may be greater that the calculations provided by the Applicant.	The ES Chapter 28 Health [APP-114] includes an assessment of the impacts of the development on "vulnerable groups". These are defined in section 28.3.2.2 (paragraph 21) to include: • Children and young people; • Older people (particularly those suffering with dementia); • People living in deprivation (including those experiencing income and/or access/geographic vulnerability); and • People with existing poor health (physical and mental health). Vulnerable individuals have been assessed as part of the vulnerable group population. Paragraph 57 [APP-114] states that the assessment of human health in the EIA does not look at effects on individuals but on populations. **b)** The Applicant notes that the Public Sector Equality Duty (PSED) applies to certain public bodies in the exercise of their functions. The PSED would therefore apply to the Secretary of State in its determination of the application for development consent for SEP and DEP. The PSED would also apply to relevant local authorities in discharging any DCO requirements. The Applicant has provided sufficient information within ES Chapter 28 Health [APP-114], as outlined in the response to Q1.8.2.4(a) above, to enable these bodies to be satisfied that all potential impacts on those with protected characteristics have been considered and assessed by the Applicant.
Q1.8.2.5	Applicant Affected Persons represented by Savills and Bidwells	**Term** Several Affected Persons [too numerous to list] represented by Savills and Bidwells and the NFU seek clarification why the term would be in perpetuity as opposed to 99 years, which parties state has typically been the term in other made DCOs.	The Statement of Reasons [APP-028] sets out the compelling case in the public interests for securing compulsory acquisition powers over plots of land. The Statement of Reasons [APP-028] also describes and justifies the extent and impact of the powers sought in the draft DCO (Revision C) [document reference 3.1]. With regards to negotiation of voluntary agreements, the Applicant has had and continues to have productive discussions with affected parties. The basis of the rights being sought in perpetuity is to align with the Compulsory Acquisition rights

<table>
<tr><td></td><td></td><td>a) Explain what you mean with reference to Application documents in the Examination Library.
b) Provide comparative examples referenced in your RR.
c) Elaborate on how this affects you specifically.
d) Applicant may respond.</td><td>under the draft DCO (Revision C) [document reference 3.1]. The voluntary agreement ensures that the landowners are compensated for rights at the same level or above the assessment of losses should Compulsory Acquisition powers be exercised.

It remains the Applicant's preference to reach a voluntary agreement for the acquisition of land and rights if possible.</td></tr>
<tr><td colspan="2">Q1.8.3 Special Land</td><td></td><td></td></tr>
<tr><td>Q1.8.3.1</td><td>Applicant</td><td>Public Open Space

Further to your justification [APP-028, Section 12.4], provide any evidence of agreement that have been reached with the Affected Persons in relation to plots 01-001, 01-002, 01-003, 01-004, 01-005, 01-006, 01-007, 01-008, 01-009, 01-010, 01-011, 01-012, 01-013, 17-001 and 23-001. You may tabulate your response.</td><td>The Applicant refers to Open Space Agreements Updates [document reference 12.48] providing a summary of negotiations with the Affected Persons.</td></tr>
<tr><td>Q1.8.3.2</td><td>Applicant

National Trust</td><td>National Trust Land

The ExA notes that while negotiations are ongoing, NT has pending concerns in relation to the CA of its inalienable land at Weybourne wood.
a) Applicant and NT, outline in your SoCG the milestones and associated timescales (in relation to this Examination) of how these negotiations are likely to progress and conclude.
b) NT, do you see any major impediment to reaching a voluntary agreement with the applicant?</td><td>The Applicant and National Trust (NT) are in the process of preparing a Statement of Common Ground (SoCG), which, once finalised, will include key milestones for entering into a voluntary land agreement. The milestones have been agreed with National Trust and are set out below:

<table><tr><td>Draft Heads of Terms Agreed</td><td>Spring (March/April) 2023</td></tr><tr><td>Draft Option Agreement</td><td>June 2023</td></tr><tr><td>Signed Option Agreement</td><td>Summer 2023</td></tr></table></td></tr>
<tr><td>Q1.8.3.3</td><td>Applicant</td><td>Crown Land

a) Outline the steps taken so far with the Crown Estate Commissioners, the SoS for Defence, the Forestry Commission, the SoS for Environment, Food and Rural Affairs and the SoS for Transport</td><td>The Applicant has engaged with Crown bodies and provides updates as follows:

<u>The Crown Estate Commissioners</u>

The Applicant attended a meeting with The Crown Estate on 8th December 2022 to discuss the s.135 consent letter previously issued on 15th August 2022. This</td></tr>
</table>

		for their consent to the inclusion of the Crown land as required for the Proposed Development. b) Outline the milestones and associated timescales (in relation to this Examination) of how these discussions are likely to progress and conclude. c) Provide evidence where possible.	was subsequently reissued following the meeting for further review by the Crown Estate. The Crown Estate has confirmed they have a standard template of which the Applicant has requested a copy in order to progress matters. The Crown Estate has now instructed their solicitors to progress matters in relation to the s.135 consent. The Applicant continues to engage and is hopeful of agreement by close of examination. SoS for Defence The Applicant issued a s.135 consent letter for review on 15th August 2022. This was subsequently reissued on 1st March 2022, following which the SoS for Defence has confirmed receipt. The Applicant continues to engage and is hopeful of agreement by close of examination. The Forestry Commission and SoS for Environment, Food and Rural Affairs The Applicant has engaged regularly with the Forestry Commission and following meaningful discussions has obtained s.135 consent from SoS for Environment, Food and Rural Affairs dated 18th November 2022 (See Appendix B.5). The Applicant will continue to engage and provide updates in relation to the DCO application and the implementation of the consent in due course. SoS for Transport The Applicant issued a s.135 consent letter for review on 15th August 2022. The Applicant will continue to engage and is hopeful of agreement by close of examination.
Q1.8.3.4	Applicant	**Statutory Undertaker Land** The ExA has seen the Current Status of Statutory Undertaker Negotiations [APP-028, Appendix 3], and requests the table include additional information, including: • Statutory Undertaker name and Nature of the undertaking;	The Applicant notes this request and has submitted The Applicant's Statutory Undertakers Position Statement [document reference 12.46] at Deadline 1.

		• Land/rights affected (including all plot numbers from the BoR); • How are they a Statutory Undertaker (relevant legislation); • If s127 and/or if s138 engaged in each case; • Status of discussions including protective provisions and/or commercial agreement; • Estimate of the timescale for securing agreement; • Envisaged impediments to the securing of such agreements; and • Any other relevant information that is relevant for Examination.	

Q1.9 Cumulative Effects			Applicant's Response
Q1.9.1 Scope and Extent			
Q1.9.1.1	Applicant	**Approach to Cumulative Effects Assessment** In many subject areas within the ES, it is assumed that other projects will mitigate their own impacts through secured mitigation to reach a conclusion that there would be no significant cumulative impacts, without any further consideration of the interaction with the Proposed Development. Justify this approach to cumulative effects assessment, and corresponding mitigation with reference to Planning Inspectorate Advice Note 17.	The Applicant confirms that Version 2 of Planning Inspectorate Advice Note 17: Cumulative Effects Assessment (PINS, 2019a) has been taken into account in the Cumulative Impact Assessment (CIA). The standard industry approach is that the CIA is based on the residual effects, as identified in the assessments for other projects. The overarching NPS for Energy (EN-1) 2011 states that: "when considering cumulative effects assessment, the Environmental Statement (ES) should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other developments". Any project consented must have acceptable impacts, therefore effects are either negligible or acceptable (not significant) post-mitigation. The Applicant is not aware of any policy or guidance that suggests such an assessment should be based on the unmitigated effects of other projects. The Applicant makes the reasonable assumption that all considered projects will incorporate any legal minimum requirements (for example Contractors will deploy standard pollution prevention mitigation or will adhere to legal noise limits). To disregard mitigation when considering the effects of other projects would likely be to result in a significant overestimation of the potential cumulative impact to the extent that it would be unrealistic and would require the EIA practitioner to assume that the effect of the other project/s would be different from what is stated in the corresponding assessment, and to make their own interpretation of what this might be, which may not be valid. In line with PINS Advice Note 17, Section 3.4.10, the means of securing mitigation measures within both the SEP and DEP projects and the other plans and projects will be delivered

			through requirements in the Development Consent Order for each project.
Q1.9.1.2	Applicant	**Norfolk Boreas Wind Farm Project** In many of the ES topic areas this project is identified as being one that could cumulatively interact with the Proposed Development. However, it is not always clear in the ES how the project has been taken into account in the cumulative effects assessment for the various onshore topics. With the exception of Traffic and Transport (which is covered elsewhere), explain in detail how the Norfolk Boreas Wind Farm Project has been taken into account for all onshore topics.	The Applicant directs the Examining Authority to the following documents and sections for details in relation to consideration of Norfolk Boreas Wind Farm Project in the cumulative impact assessment: • ES Chapter 17 Ground Conditions and Contamination [APP-103, Table 17-14]; • ES Chapter 18 Water Resources and Flood Risk [APP-104, Table 18-33]; • ES Chapter 19 Land Use, Agriculture and Recreation [APP-105, Table 19-19]; • ES Chapter 20 Onshore Ecology and Ornithology [APP-106, Table 20-15]; • ES Chapter 21 Onshore Archaeology and Cultural Heritage [APP-107, Table 21-15]; • ES Chapter 22 Air Quality [APP-108, Table 22-55]; • ES Chapter 23 Noise and Vibration [APP-109, Table 23-28]; • ES Chapter 26 Landscape and Visual Impact Assessment [APP-112, Table 26-16]; • ES Chapter 27 Socio-economics and Tourism [APP-113, Table 27-18]; and • ES Chapter 28 Health [APP-114, Table 28-18]. Each table contains the rationale for screening Norfolk Boreas in or out of the cumulative impact assessment.
Q1.9.1.3	Applicant	Battery Storage For all named parties, in relation to [RR-071] and [RR-123]:	**a)**

	Yare Power Limited Novus Renewable Services Ltd Orsted Hornsea 4	a) Show on an annotated plan drawing the extent of overlap between the Order limits for the Proposed Development and any planning permissions granted for battery storage in the vicinity of Norwich Main substation. b) Set out an annotated plan drawing the routes or positions of any extant grid connections between those storage apparatus and Norwich Main. Applicant c) Explain what measures are in place, in the ES and the dDCO, to prevent interference with, or the sterilisation of land associated to, the battery storage facilities.	The Applicant provides a plan within Appendix B.6, which provides site location details for the following battery storage proposals (details of which were obtained from the respective planning applications) in the vicinity of the Norwich Main substation: • Orsted Iceni ESS (UK) Limited (Planning Reference: 2022/0867). Energy Balancing Infrastructure. Planning permission granted 23 January 2023. • FPC (Electrical Land) Ltd. (Planning Reference: 2021/2645). Battery Storage 130MW and associated infrastructure. Planning permission granted 8th September 2022. • Yare Power Ltd. (Planning Reference: 2021/1399). Development of battery storage facility with associated infrastructure. Planning permission granted 16 August 2021. • Pivot Power (Planning Reference: 2018/2017). 49.9MW. Planning permission granted 15 November 2018 but has since expired. The Applicant understands that Novus Renewable Services Ltd. is at an early stage of its proposed development and, at the time of submitting this response, a planning application has not been made. **b)** The planning applications referred to in part a) above do not include information regarding the position or route of any extant grid connections. The Applicant therefore defers to the respective developers to provide any information they wish to disclose relating to grid connections. The exception to this is the Orsted proposal, which, due to its co-location with the Hornsea Three Onshore Converter Station, will be able to route any grid connection within the Hornsea Three Order limits, as indicated on the plan included in Appendix B.6. **c)**

			The Onshore Substation Site Selection Report [APP-175] sets out the process which the Applicant adopted to select the onshore substation site. This, in turn, informed the routing of the cables within that specific area. As part of the selection process the Applicant carried out two phases of consultation to partly manage and mitigate impacts to the local area and to advise other developers of the SEP and DEP projects. From the plan shown within Appendix B.6, the Order Limits do not overlap with the planning permission boundary for any of the other proposed developments for battery storage with an extant planning permission. The Order limits do overlap with the Hornsea P3 Wind Farm Project, which was inevitable, given that it surrounds most of the sub-station. It is understood that the grid connection for the Orsted battery storage proposal may utilize the Hornsea Project Three corridor. As such, the Applicant has included draft protective provisions for Orsted Hornsea Project Three within Part 10 of Schedule 14, which are currently subject to negotiation and further discussions with Orsted Hornsea Project Three to ensure co-ordination between the relevant projects. Discussions with the other developers are also ongoing to ensure there will be appropriate co-ordination between the relevant projects. It should be noted that the Applicant's use of the land over which it has sought rights will be significantly influenced by the precise connection point(s) into the NGET substation once those are decided by NGET in due course. The same will be true of the final grid routes for the other developers. See also related response to Q1.11.7.1.
Q1.9.1.4	Applicant	**Cumulative Effects and Piling** The worst-case scenarios (for construction works such as piling) suggest the worst-case would be for simultaneous piling at SEP and DEP (1 pile at each). However, could there be a scenario of greater adverse effect where, if DEP-S to be built-out as well, that there could be three simultaneous piles at SEP, DEP-N and DEP-S?	To clarify, the worst-case scenario for underwater noise assessments for marine mammal receptors is based on simultaneous piling and for fish receptors is based on sequential piling (within the same 24 hour period). Three simultaneous piling operations have not been assessed within the relevant assessments (only two). Therefore, the Applicant would not be permitted to undertake three simultaneous piling operations.

Q1.9.1.5	Applicant	**East Anglia Green** Several written and oral submissions [too numerous to list], make reference to the EAG project, and state that there is functional interdependence between EAG and the Proposed Development, and should be considered together and cumulatively. It has been further suggested that the Proposed Development could not go ahead without EAG first in place. a) Set out what is known about the EAG project and its relationship with the Proposed Development. d) Explain, or signpost, where in the ES consideration has been given to EAG and any cumulative effects. e) What is your response to suggestion that there is a need for a single combined NSIP being formed between EAG and the Proposed Development? f) Comment on the assertion that without EAG in place, it is premature to consider that the Proposed Development would deliver any public benefit when its generated electricity may not be able to be connected into the grid as it currently stands? g) If there is not adequate capacity within the existing onshore electricity transmission and distribution system, without EAG in place, does this represent an impediment to the delivery of the Proposed Development?	**a)** The EAG project is described by National Grid on their website[1] as "a proposal to build a new high voltage network reinforcement between Norwich, Bramford and Tilbury [which will] play a vital role in delivering electricity efficiently, reliably, and safely and will support the UK's move to reduce carbon emissions." The indicative project timeline is also shown on the National Grid website, which (as at 15 February 2023) confirms that a non-statutory public consultation was undertaken from 21 April – 16 June 2022. It states that a further non-statutory public consultation is due to be held in late spring/early summer 2023, followed by statutory public consultation and expected submission of a DCO application in December 2024. Construction is anticipated to start in 2027, with the development being fully operational from 2031. A scoping report for EAG was submitted to the Planning Inspectorate in November 2022 and a Scoping Opinion was issued by the Planning Inspectorate in December 2022. At the time of preparation of the application for SEP and DEP there was therefore very little knowledge about the EAG project in the public domain, and indeed there is still limited information. In terms of the relationship between the EAG project and SEP and DEP, the two projects are being developed by separate promotors, on different timelines, and are not linked, other than the fact that both projects will connect into the existing Norwich Main substation. It is understood from the EAG Scoping Opinion that the EAG project is likely to seek to use the same access arrangements to Norwich Main substation as proposed by the Applicant for SEP and DEP. The Scoping Opinion for EAG requires the promotor of that project to undertake an assessment of any likely cumulative effects of that project together with

[1] [redacted]

			SEP and DEP as well as any necessary measures to mitigate potential cumulative impacts. The Applicant's conclusion, based on NGET's public statements, is that the need for the EAG project is not triggered by the connection of SEP and DEP to the Norwich Main substation, but rather by significant expected growth in both generation and demand in the area and the need for reinforcement. The Scoping Report for EAG does make reference to the dependency of specified offshore wind farms (Five Estuaries and North Falls) on its development, but these do not include SEP and DEP. The grid connection offer for SEP and DEP that was signed in 2019 is not conditional upon the delivery of the EAG project. **b)** At the time of the SEP and DEP DCO application, EAG was a Tier 3 development. As such, the Applicant considered there to be insufficient information to assess cumulative environmental effects with SEP and DEP for the majority of ES topics. There was low confidence in the available data in which to carry out a meaningful CIA. The exception to the above was within ES Chapter 26 Landscape Visual Impact Assessment [APP-112] where the EAG was considered in its CIA. From a landscape and visual perspective, sufficient information was available from National Grid's 'Project Background Document' (published in support of their first stage of public consultation in Spring 2022) from which to inform the CIA in a meaningful way, albeit it was acknowledged that only a 'moderate confidence' could be attributed to the details of EAG given the early stages of development at the time of the Applicant's DCO submission. Therefore, consideration of EAG and the Proposed Development was based on the following assumption: "For the purposes of this cumulative assessment, information presented in National Grid's 'Project Background Document', which was published in support of their first stage of public consultation in Spring 2022, has

			been used. Given the wide area of the preferred route option in which the East Anglia Green Energy Enablement (GREEN) Project could be installed, it is assumed that, in RWCS, it would be located as close to the SEP and/or DEP substation as possible." [APP-112, section 26.7.3, para. 480]. In relation to the other ES Topics, the Applicant suggests that EAG would be in a more suitable position to assess cumulative effects with SEP and DEP, which as a Tier 1 development, has a higher degree of certainty. Should SEP and DEP construction be completed prior to the commencement of EAG, effects arising from SEP and DEP should be considered as part of their baseline assessment. **c)** It is the Applicant's position that a single combined NSIP being formed between EAG and SEP and DEP is entirely inappropriate. As set out above in the response to Q1.9.1.5(a), the projects are being brought forward by separate promotors and on significantly different timelines. Even if the projects were linked, the Energy National Policy Statement EN-5 (2011) acknowledges at paragraph 2.3.2 that a consolidated approach to the consenting of generating stations and related electricity networks infrastructure *"may not always be possible or represent the most efficient approach to the delivery of new infrastructure. This could be, for example, because of the differing lengths of time needed to prepare the applications for submission to the [Planning Inspectorate], or because a network application relates to multiple generation projects or because the works involved are strategic reinforcements required for a number of reasons. It may also be relevant that the networks application and a related generating station application are likely to come from two different legal entities, or be subject to different commercial and regulatory frameworks."* There would have to be an extremely compelling reason for SEP and DEP to be combined with EAG, which simply is not present and

			certainly is not required for the Applicant to have made a valid DCO application for determination by the Secretary of State. **d)** The grid connection offer for SEP and DEP that was signed in 2019 is not conditional upon the delivery of the EAG project. **e)** See answer to Q1.9.1.5.(d) above.
Q1.9.1.6	Applicant	**Cable Corridor Routes** Provide a plan (or series of plans) showing the Proposed Development onshore cable corridor route alongside the onshore cable corridor routes of all other wind farm projects (NV, NB, HP3) that could result in cumulative effects.	ES Appendix 6.2.5 Chapter 5 Figures - EIA Methodology, [APP-118, Figure 5.3] illustrates the Proposed Development onshore cable corridor route alongside the onshore cable corridor routes of Norfolk Vanguard, Norfolk Boreas and Hornsea Project 3.

Q1.10 Design			**Applicant's Response**
Q1.10.1 Design Principles			
Q1.10.1.1	Applicant Local Authorities Statutory Bodies Interested Parties	**Suitability and Adequacy of the Applicant's Approach to Design** a) Has the Applicant satisfied the requirements set out in NPS EN-1 Section 4.5 in relation to sensitivity to place and contributing to the quality of the area in which the infrastructure would be located? b) Clarify, with reasons, whether you believe that design outcomes relating to proposed elements of infrastructure, structure and buildings proposed within the order limits, flood risk, landscape and ecology are sufficiently well developed within the application documents. c) Confirm, with reasons, whether you believe that noise mitigation measures and construction structures related to the construction compound should also be considered as part of the Applicant's approach to design. Applicant may respond.	**a)** The way in which policy requirements for Good Design as set out in NPS EN-1, and specifically Section 4.5, have informed the design process and the outcomes, is set out in full in the Design and Access Statement (Onshore) [APP-287]; the Offshore Design Statement [APP-312]; and the Project Vision [APP-313]. As part of the design process, an understanding of place in its widest sense, which includes landscape character, seascape, cultural heritage and biodiversity factors, as well as settlement and communities, has been gained through extensive baseline studies which underpin each topic chapter in the EIA process. This baseline information has informed the design and development process to date and provides the basis for development of the Project's approach to securing good design established in the design control documents referred to above. Section 4.5 of NPS recognises that achieving good design requires sensitivity to place as one of a range of multi-faceted aspects of design that need to be sought after. It states:: *"Applying "good design" to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible. It is acknowledged, however that the nature of much energy infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area".* The National Infrastructure Commission (NIC) has set out design principles for national infrastructure. This includes "Places" which the NIC defines as "Provide a sense of identity and improve our environment". Good Design principles were adopted throughout the project and were key in the , during the Crown Estate's invitation to bid for seabed licences when early decisions around siting and layout had to be taken. Examples of the design decisions made taking the above principles into account and that have all helped mitigate adverse effects include: the choice of location for landfall, the homing in

			on a single undergrounded cable option to serve both wind farm extension projects and the use of appropriate technologies such as the decision to underground the onshore cables to avoid operational landscape and visual effects and the use of trenchless crossing techniques in the construction phase. EN1 acknowledges there is a limit to the extent to which energy infrastructure can contribute to quality of the area. The project, through its iterative Environmental assessment and design refinement process, has sought to minimise adverse effects wherever possible, through incorporating embedded mitigation, and by providing reasonable mitigation to reduce residual effects where possible and appropriate, as required by NPS-EN1 Para 5.9.8. The onshore substation site has been carefully selected following a process in which avoiding landscape effects and key sensitive receptors featured as overarching site selection criteria (the site selection process is explained fully in Environmental Statement Volume 1 Chapter 3 - Site Selection & Assessment of Alternative [APP-089]), and the location and height of the platform within the site has been designed to avoid harm to the landscape. The project overall will deliver enhancements, for example through biodiversity net gain, and additional woodland planting in the vicinity of the onshore substation. The project therefore has been and will continue to be designed carefully to avoid harm to the landscape, as required by Para 5.9.17 on NPS-EN1, and to represents Good Design according to all the facets of this policy, through the process set out in and governed by the Site selection criteria and principles, the Design and Access Statement [APP-287], the Design principles within it and the Offshore Design Statement [APP-312]. **b)** Iterative multi-disciplinary workshops were undertaken throughout the process to identify optimum solutions which met the project objectives and responded appropriately to environmental and technical constraints whilst maintaining project viability. Consultation has been an important element of the design process and has taken place throughout, including sharing design development with stakeholders.

			The development of the design principles and the approach to design and outcomes has therefore been robust, has evolved throughout the development of the project including through consultation (such as in Expert Topic Groups) and provides a clear framework for detailed design to be completed post consent to ensure good design outcomes. As above, this approach was informed by the policy objectives of National Planning Policy, particularly NPS-EN1 and 3, and guidance by the National Infrastructure Commission (Climate, People, Places and Value- Design Principles for National Infrastructure). The level of detail reached is considered appropriate, and indeed similar to many other recently consented projects of this nature. The NSIP process is underpinned by a parameter based, Rochdale envelope approach, reflecting the needs of the industry where technology continues to advance and detailed design work is only appropriate where the certainty provided by a consent has been established, in order to provide the necessary flexibility in projects with this timescale. This is the case for the SEP and DEP project which has been designed carefully, within defined limits and on plans, with outcomes shaped by Design Principles, and consultation, and secured through requirements. Further, if the design was to be more developed or fixed now, this would be premature and prejudge what may be appropriate at the time of development, according to further surveys, micro siting and other factors as determined by the local authority through requirements. The DAS and the Offshore Design Statement provide a robust framework and process to guide detailed design decisions such that what is built is entirely appropriate. The Design Framework for the project is established by the Project Vision [APP 313], Design and Access Statement (Onshore) (DAS) [APP 287] and Offshore Design Statement (ODS) [APP 312]. Good Design is both an outcome as well as a process. These documents, along with the Project parameters; ES Chapter 4 – Project Description [APP 090] and Works Plans (onshore and offshore) [APP 011; APP 012; APP 014; AS 005; AS 006; PDA 003; PDA 004] describe the design process and project outcomes at a proportionate level appropriate to the stage of the application and project development. Specifically, regarding the onshore works, the cable corridor; the elements of substation under the control of the applicant including site selection; and landscape and ecology proposals are sufficiently well developed and provide the

			necessary project parameters within the application documents, and detailed in section 7.7 and 7.8 of the DAS and are secured through approvals of plans etc, and through requirements. The overarching Project Vision [APP 313] and Design Objectives, guide the Design Principles, which are set out in the DAS [APP 312]. These Design Principles have influenced the design outcomes as described in the DAS and the following documents: • Outline Landscape Management Plan (Revision B) [document reference 9.18] • Outline Ecological Management Plan (Revision B) [document reference 9.19] • Outline Biodiversity Net Gain Strategy [APP-306] Regarding the offshore array and infrastructure - the same Vision and Design Objectives apply, with a series of Layout Commitments, arising through navigation requirements and repeated in the Section 20.2 of the Navigation Risk Assessment [APP-198]. These commitments are secured within each of the Marine Licences within the draft DCO (Revision C) [document reference 3.1]. As documented in Section 6.3 of the ODS [APP 312], the design process will continue post consent and the final layout to be built will be dependent on a range of factors, with full consultation with the relevant local authorities, including: • Further survey work • Selection of the Wind Turbine Generators • Detailed engineering • Engagement with MCA and Trinity House. Engineering, navigation, safety, protected species/environments and economic factors will continue to be the main drivers influencing the design process. Section 6.3.4 of APP 312 provides additional guidance for Equinor to consider when developing the final layout relating to aesthetic that may have a bearing on seascape, landscape and visual receptors.

			c) Regarding the Construction Compound, the design process has considered siting through options studies, and the site selected is considered to be optimum. The approach to design has also considered the size of the compound, informed by operational requirements. The approach to design allows further details of the construction compound design and operation to be determined and agreed post consent, with contractor input, in line with the final Code of Construction Practice based upon the outline CoCP (Revision B) [document reference 9.17], secured by Requirement 19 of the draft DCO (Revision C) [document reference 9.17]**.** As stated within the CoCP a Construction Noise (and vibration) Management Plan will be prepared which will detail measures which will be adopted to reduce construction noise. The level of information provided and available is considered appropriate for projects of this nature at this stage in the development process. An example of a good practice that could be adopted includes, temporarily storing topsoil that is stripped from the entire compound and in temporary bunds, to agreed heights around the compound to provide a degree of visual and noise screening. Post consent design will determine if any other noise mitigation is required, based on the actual plant and processes to be involved. Regarding other construction structures within the compound, this is likely to comprise standard 'portacabin' office/mess accommodation and material racks. The precise detail would be determined at the post construction stage. The applicant's position is that it is not appropriate or necessary to provide design details for the construction compounds pre-consent, which by their nature are temporary.
Q1.10.1.2	Applicant	**Proposed Design Principles for the Onshore Substation (all scenarios)** The SoS needs to be satisfied that the Proposed Development is (having regard to regulatory and other constraints), as attractive, durable, adaptable and as sustainable as it can be. Taking the onshore substation, since it would be the element of the	The Onshore Substation parameters are confirmed in Environmental Statement Chapter 4 – Project Description [APP-090, para 336] including an operational compound (platform) size of up to 6ha for SEP and DEP concurrent and sequential scenarios, or up to 3.25ha for SEP or DEP in isolation. The 6ha platform would allow for either one 50m x 25m control/switchgear building in the concurrent and integrated scenario or two 30m x 14m wide buildings in a sequential scenario. Beside the electrical equipment needed for

		Proposed Development with the greatest visual impact on land in the operational phase; how has the Applicant provided the information necessary to satisfy the SoS of these criteria for each of the scenarios proposed?	connection of each wind farms (e.g. transformers) all other parameters are the same for all scenarios. The DAS [APP-287] sets out Design Principles and guidance (section 7), which apply to all scenarios. The DAS includes an illustrative masterplan (Figure 7.4) based upon a worst case which is the larger platform. The platform will be formed through cut and fill and whilst the worst case in EIA terms assumes export of surplus fill, it is the intention to sustainably reuse excess material to soften engineered gradients to create smoother landforms to assist blending the platform into the existing landscape. The creation of semi natural grasslands and habitats, as well as new native woodlands to supplement the existing woodland framework which defines the site will also assist in making the substation as attractive as it can be, recognising there are limits related to the functionality of the electrical equipment. Existing, and in time new woodland, will ensure the substation structures are screened as far as possible, helped by the local topography, in that the site is set down. The guidance in relation to building materials and colour, as well as fencing and other materials will also assist in making the substation as attractive as it can be, again recognising there are limits. Importantly the local planning authority will be signing off the proposals, using the DAS as the basis for their professional planning judgement and decisions. Given the functional nature of the substation, and juxta position of the existing Norwich Main, consistency of materials, and building types will help with visual integration, which will be a matter which the LPA will no doubt consider. Regarding durability, the projected lifespan is 40 years and economic and regulatory factors will ensure durability. Regarding the landscape mitigation, the applicant has committed to a 40year maintenance period which will ensure the success and longevity of the mitigation planting. Regarding adaptability, the design of the substation, as defined by the works plans includes a long-term access route, and that, along with internal circulation space within the platform allow for future changes and adaption.

			The reuse of materials, use of native species, the infiltration proposal for flood risk, and habitat creation all reflect the overarching sustainability principles which are embedded in the Design Framework at Vision Level, the Design Objectives and the Design Principles. These same objectives are embedded in the Applicant's supply chain processes.
Q1.10.1.3	Applicant	**Proposed Design Principles for the Onshore Substation (all scenarios)** Set out the elements of the onshore substation's scale, mass and fabric where the Applicant has the opportunity to exercise greater design choice and outline (with additional visual information) the design approach taken to ensure that these elements, when taken together with the whole of the substation proposal, or proposals, would provide both a sense of identity and an improvement to the surrounding environment.	There are elements of the substation on which the applicant has greater design choice, as ultimately controlled by the LPA through the DCO Requirements. Guidance is provided within the DAS, to include visual information regarding layout (Fig 7.4), precedent images (Fig 7.2 and 7.3), visualisation (Fig 7.5) and cross sections (Fig 7.6 and 7.7), at an appropriate level of detail for a project of this nature, to ensure the substation is fit for purpose, has a clear sense of identity and an aesthetic which contributes to the area as far as possible, given its function. Its siting, landform and peripheral landscape treatment beyond the platform is particularly important in this regard. Those elements for which there is design choice, and over which the local authorities ultimately have control, through requirements, are as follows: • Platform ground modelling/integration into existing landform ensures the best fit possible in terms of existing landscape character • Buildings/structures- simple, functional and in keeping with Norwich Main. Colour will be important. • Fencing- palisade of grid, to meet safety and regulatory requirements, but colour can be informed by colour studies as for buildings. • Hard surfacing within compound, to include parking – simple durable gravel, slab or asphalt. • Substation surrounds, including habitat creation and woodland planting. Native species and habitats to reflect and enhance local character. Species as for cable corridor, referred to in DAS to in Section 6 • Access track to substation- compacted local stone/gravel to blend in, soft verges

			The approval process will include consultation with the local authority to ensure solutions are appropriate to place and local character, and to minimise effects, as far as possible, guided and by the DAS The Applicant also respectfully draws the examiners attention to the answers to Q 1.10.1.1 and .2 above which partly provide an answer to this question.
Q1.10.2 Design Development Process			
Q1.10.2.1	Applicant Local Authorities Statutory Bodies Interested Parties	**Design Development Process** a) Provide further detail of the structured framework within which the Applicant has carried out its design process to date, giving detail of the key milestones which have been reached within that process and setting out which elements of the overall design have been fixed at this stage. b) Set out the main stages of the remainder of the design process required to fully develop the Applicant's design of the Proposed Development in the event that its application is granted Development Consent, giving an indication of expected deliverables and timescales wherever possible and indicate how this process will be secured within the draft DCO. c) Provide an outline description of the design professional disciplines that have contributed to the Applicant's design process to date. d) Set in further detail how the Applicant's design principles – established in its Design and Access Statement [APP-287] – are secured within the draft DCO	**a)** The approach for achieving good design was considered at the outset of the project. A framework for good design was developed with the purpose of shaping the design and development of the project. The framework for good design provides a line of sight between the Project Vision, the National Infrastructure Commission's (NIC) Design Principles, project principles and more detailed design responses and design principles for onshore and separately for offshore elements of the project. The framework is set out within the Project Vision [APP-313, page 6] and sets out the project vision and objectives which sit behind and shape the design approach, and ultimately the design principles for the project explained in full in the Design and Access Statement [APP-287] The design framework and specifically the Offshore Layout Commitments and Onshore Design Principles informed the process for site selection and lead to the adoption of Black/Red/Amber/Green (BRAG) assessment, described within Chapter 3 of the ES – Site Selection and Assessment of Alternatives [APP-089]. The BRAG assessment was used by the multi-disciplinary project team to inform key design decisions as the project matured. The design process is iterative and has developed over time. Even prior to project inception, to secure the site for development, the Applicant participated in 'Leasing Round' which required the submission of technical project information, including environmental information to give The Crown Estate confidence that the project could be progressed.

			Subsequently, at Project Inception, a project brief was prepared which set out the key objectives which carried through to the framework set out within the Project Vision. This helped inform the expertise required to develop the project and the appointment of a project team. Subsequent key project milestones during the pre-application phase and the dates when key design decisions using the framework set out above were made are summarised below: **Scoping Report (October 2019)** • The consenting strategy was defined and this included the strategy to develop SEP and DEP through a single planning process. Advantages in doing so included consistency across projects, approach to assessments, consultation and examination with the added benefit for increased transparency for a potential compulsory acquisition process and integrated grid option to reduce the overall environmental impact. • Indicative Project description was developed and confirmation that a design envelope approach used (the approach of which is recognised within the Overarching National Policy Statement (NPS) for Energy (EN-1, 2011) and NPS for Renewable Energy Infrastructure (NPS EN-3, 2011). • High-level construction programme developed. • Site selection progressed and Scoping Areas identified that encompassed both the offshore and onshore infrastructure identified including two landfall locations (Weybourne and Bacton), a substation search area and the need for temporary compounds. • The likely environmental impacts of the project were identified and confirmed within the Secretary of States' Scoping Opinion (dated November 2019). **Consultation** Consultation has played a key role in refining the design and defining the Order Limits. Full details of the pre-application consultation and how feedback received continually informed design is available within the Consultation Report [APP-029]. A summary of the milestones are below:

			<u>Phase One Consultation (July-August 2020)</u> • Sought views on the site selection process • Five potential locations for the Onshore Substation were consulted on. • Weybourne was selected as the preferred landfall location prior to Phase One consultation and the community were advised in May 2020. <u>Phase Two Consultation (April-June 2021)</u> • Included feedback on how the Phase One consultation was considered in the design development • Preliminary Environmental Information published which developed the findings from the Scoping Report and stakeholder consultation • Included two potential locations for the Onshore Substation • Included four options for the main compound options <u>Targeted Consultation</u> • Onshore targeted consultation (January-February 2022) was held January-February 2022 as a result of refinement of the main construction compound location • Offshore targeted consultation was held April-May 2022 as a result of a proposed extension to offshore order limits. <u>Stakeholder Consultation</u> • Throughout the project, technical and public facing stakeholder engagement was undertaken. This informed: o the approach, scope and methodology to environmental surveys and next steps (which included project development); o site selection process including the location of the Onshore Substation; o project design parameters such as use of trenchless crossings, HDD at Landfall;

			○ landscaping design proposals including restoration; and ○ avoidance of sensitive features. • Further details are set out within section 3.4 of the Planning Statement [AS-031]. • The establishment of Expert Topic Groups and the Evidence Plan Process has enabled discussions and agreement on EIA topics. • In addition, discussions with potentially affected landowners refined the Order Limits, particularly in respect of boundary proposals and helped enable access for survey purposes. Full details of all pre-application activity are set out within the Consultation Report [APP-029]. Full details of the Onshore Substation site selection process are set out within the Onshore Substation Site Selection Report [APP-175]. Full details of the main compound site selection process are set out within the Onshore Main Construction Compound Site Selection Report [APP-177]. Full details of the site selection process including cable corridor selection are set out within the Chapter 3 of the ES – Site Selection and Assessment of Alternatives [APP-089]. **Application Submission** At point of application submission, the Order Limits were further refined to take on board all feedback received during the pre-application phase. Each of the technical chapters of the Environmental Statement submitted in support of the project includes the feedback relevant to the technical topic and the project response. Design is an ongoing process and the draft DCO includes a range of parameters to allow flexibility in the final detailed design of the project which is only appropriate to carry out once the certainty of a consent can allow final and more detailed surveys and information to be gathered and contractor arrangements put in place. Good design outcomes depend on iterative design processes which are

			informed by every stage of the project's development, up until final implementation. The project design envelope at this stage therefore provides maximum extent for each parameter. The detailed design of SEP and DEP will be developed and refined within the consented project design envelop prior to construction with the final design lying between the minimum and maximum extent of the consent. The Requirements within Schedule 2, Part 1 of the draft DCO (Revision C) [document reference 9.17] secure the project parameters, including the extent of the Order Limits and detail additional design and survey (technical and environmental) that must be progressed and approved during the detailed design phase. **b)** Details of the construction programme are set out within Chapter 4 of the ES – Project Description [APP-090]. To achieve these timescales, the following phases of works will take place: **Survey Work** The design will continue to be informed through ongoing technical and environmental surveys including: • Onshore Archaeological surveys (secured by Requirement 18); • Ground Investigations; and • Environmental Surveys including landscaping and ecology (secured by Requirements 11, 12 and 13). The timescales and durations of the above activities will vary. Archaeological surveys, for example, are ongoing. Ecological surveys will be carefully timed to take account of seasonal constraints. In addition, the pre-construction ecology surveys are timed such that the most up to date information will be available prior to construction and so that final construction plans can take account of up-to-date information. **Detailed Design**

			Following, and assuming CfD award, the detailed design, taking on board the latest survey information, will progress. Site preparation works and construction will generally commence once a Final Investment Decision (FID) is secured albeit some site preparation activities may take place in advance of FID. **c)** The Applicants' project team comprises a range of specialist experts, working in a multi-disciplinary manner who have, together, contributed to the design evolution. The team includes: • Environmental practitioners covering both offshore and onshore disciplines such as Environmental Impact Assessment Practitioners, ornithologists, ecologists, arborists, historic environment practitioners, transport experts (including shipping and navigation), hydrologists, flood risk consultants, Land Quality Consultants, Socio-economic experts, Public Health Consultants, Noise experts, Air Quality experts, etc.; • Engineers and specialists covering civil, electrical and marine designs; • Surveyors and Land Agents; • Planning practitioners and consenting experts; • Landscape Architects; • Lawyers; and • Consultation Experts. **d)** The DAS [APP-287] includes design principles which have been embedded in the design of both projects and which are secured through various requirements. With regards to the onshore substation building(s), the design guidance is for: • Buildings to be simple form and cuboid; • Building materials to be steel frame/prefabricated insulated panels; and • Building colour to be informed by a colour study.

			These are all items subject to approval under Requirement 10(4) of the draft DCO (Revision C) [document reference 3.1] (which requires approval of details relating to layout, scale, external appearance and materials). Other relevant design guidance in the DAS is secured as follows: • Security Fencing is to be 3m high mesh or steel palisade. This is an item subject to approval under Requirement 14; • reuse of topsoil – is covered in the outline Landscape Management Plan (Revision B) [document reference 9.18] [APP-303] which is subject to final approval under Requirement 11; • Reinstatement of landfall and cable corridor – restoration of land used temporarily for construction is covered in Requirement 25. Details are also included in the outline Landscape Management Plan (Revision B) [document reference 9.18] which is subject to final approval under Requirement 11 and the outline Ecological Management Plan [APP-304] which is subject to final approval under Requirement 13; and • Landscape treatment and species – these items are covered in the outline Landscape Management Plan (Revision B) [document reference 9.18] which is subject to final approval under Requirement 11 and the outline Ecological Management Plan which is subject to final approval under Requirement 13. Whilst the Applicant considers that the design principles established in the Design and Access Statement are adequately secured, the Applicant has included an amendment to Requirement 10 of the draft DCO (Revision C) [document reference 3.1] to confirm that the details submitted under 10(4) must be in accordance with the Design and Access Statement. The Design and Access Statement is also now included as a certified document under Article 38 and as a defined term in Article 2.
Q1.10.2.2	Applicant Local Authorities	**Design Review** Comment, with reasons, if the Applicant should seek independent design review advice in line with the policy recommendation in NPS, Paragraph 4.5.5.	The Applicant confirms, as discussed at ISH2, that, to date, no local authority, or other stakeholder has requested independent design review. Should relevant stakeholders/local authorities consider that post consent design review could add value, the applicant would consider it. It is not felt this would be appropriate for the offshore infrastructure given the constraining nature of the design principles established by the Maritime and Coastguard Agency's Marine Guidance Notes,

	Statutory Bodies Interested Parties		as reflected in the Offshore Design Statement, and the consideration that has been given to offshore design in arriving at the design envelope and parameters of the project to date and the general agreement from relevant stakeholders to the approach to embedded and to secondary mitigation.

Q1.11 Draft Development Consent Order			**Applicant's Responses**
Q1.11.1 General			
The questions here relate to the dDCO Revision B [AS-009] and EM Revision B [AS-012]. All other documents referenced in the following questions have been identified with EL references.			
Q1.11.1.1	Applicant	**Template and Best Practice Guidance** a) Confirm that the submitted dDCO has been drafted using the Statutory Instrument template. b) Confirm that the submitted dDCO and EM follows best practice drafting guidance from the Planning Inspectorate set out in Advice Note 15, providing in tabular format, brief explanation of how each aspect of Advice Note 15 has been addressed.	**a)** The Applicant confirms that the submitted draft Development Consent Order (dDCO) has been drafted using the Statutory Instrument template and was subject to the formal validation process prior to submission. Confirmation of the validation process undertaken to date for the dDCO (Revision C) [document reference 3.1] can be found in appendix B.11 of Appendix B – Supporting Documents for the Applicant's Responses to the Examining Authority's First Written Questions [document reference 12.4.2]. **b)** The dDCO (Revision C) [document reference 3.1] and Explanatory Memorandum (Revision C) [document reference 3.2] have been drafted taking into account the drafting guidance in Advice Note 15. The Applicant notes that many of the points of advice within Advice Note 15 are picked up during the formal validation process referred to in (a) above. Other points are self-evident from the DCO and Explanatory Memorandum drafting. With that in mind, the Applicant would welcome guidance on precisely what the panel requires so that a response can be considered at a later deadline.
Q1.11.1.2	Applicant	**Precedence for Two Undertakers** Provide precedence where there are two undertakers for the purposes on an Order for development consent [AS-012, Section 1.2].	There are two undertakers for the purposes of the following development consent orders: • The Dogger Bank Creyke Beck Offshore Wind Farm Order 2015**;** • The Dogger Bank Teesside A and B Offshore Wind Farm Order 2015**; and** • The Hornsea Two Offshore Wind Farm Order 2016**.**

			These three Orders grant development consent for two NSIPs within the same Order. There are also two undertakers for the purposes of The National Grid (Hinkley Point C Connection Project) Order 2016. This is a single NSIP but consent and powers of compulsory acquisition were granted to two undertakers (National Grid Electricity Transmission Plc and Western Power Distribution (South West) plc) in respect of certain works. There are three undertakers for the purposes of The Hornsea One Offshore Wind Farm Order 2014.
Q1.11.1.3	Applicant Discharging Authorities	**Discharging Requirements and Conditions** Applicant, provide a list or table of specifically named authorities and undertakers that are relevant in the dDCO for each and every reference to the following. Please list separately, instances where any of the following, for example 'local authority', refers to different body or bodies. • highway authority • lead local flood authority • relevant planning authority • local planning authority • street authority • drainage authority • sewerage undertaker • local authority • acquiring authority • public authority • Crown authority	Please see Appendix B.8 in Appendix B – Supporting Documents for the Applicant's Responses to the Examining Authority's First Written Questions [document reference 12.4.2].

		• approving authority	
Q1.11.1.4	Applicant	**Offshore Transmission Owner** With reference to the Cable Statement [APP-283, Paragraph 44], please describe in greater detail the role that an Offshore Transmission Owner may play in the delivery of the Proposed Development and what provisions for that role are secured through the dDCO.	The DCO provides the powers (and related obligations) needed to construct, operate, maintain and decommission the generating assets and the transmission assets. It is unlawful for the generator to own and operate the transmission assets, save for a limited grace period after commissioning. This grace period allows for the OFTO tender process to be run by Ofgem after which the successful bidder becomes the OFTO and the transmission assets are transferred to it. After that time it has full responsibility for the operation, maintenance and decommissioning of the transmission assets. As part of the transfer process from the promoter to the OFTO the relevant consents for the transmission assets are transferred, which include the relevant parts of the DCO and the relevant deemed marine licence(s). This is provided for under Article 5 (transfer of benefit). The relevant private land agreements for the onshore transmission assets and the offshore lease, granted by The Crown Estate for the offshore transmission assets, are also transferred to the OFTO.
Q1.11.2 Definitions			
Q1.11.2.1	Applicant	**Authorised development and Authorised Project** Consider including in the EM an explanation for the distinction between authorised Development and authorised project.	Please see amendments to paragraph 40 of the Explanatory Memorandum (Revision C) [document reference 3.2].
Q1.11.2.2	Applicant Local Authorities Interested Parties	**Commence** a) How would the activities currently excluded in the definition of commence be controlled, monitored and mitigated, given the CoCP would not be approved and enforceable (in line with R19) when the works excluded from the definition of commence may need to take place? b) Local Authorities, do you have concerns about works being delivered without any controls, in particular activities such as diversion and laying of	**a)** A number of existing requirements include pre-commencement controls including Requirement 13(2) (Ecological Management Plan), Requirement 15(4) (Traffic and Transport) and Requirement 18 (Onshore Archaeology). The Applicant has been in discussions with the relevant local authorities regarding pre-commencement activities. It is understood from those discussions that it becomes overly burdensome and onerous for them where a DCO includes obligations to discharge numerous pre-commencement plans where these would not be necessary under the ordinary Town and Country Planning regime where

		services, the erection of any temporary means of enclosure, and the erection of welfare facilities? c) Local Authorities, are there other activities excluded from the definition of commence that you consider should be controlled through a management plan? Explain with reasons. d) Applicant and Local Authorities, is there a need for a definition for pre-commencement works and an accompanying management plan? e) Are there any concerns from any party about the scope, breadth and definition of commencement with the Order or its accompanying dDMLs? If so, explain what they are and the implications that you use the ExA to take account of.	such activities are either not classed as development under the Town and Country Planning Act 1990 and/or where such activities would benefit from permitted development rights under the Town and Country Planning (General permitted Development) (England) Order 2015 (the GPDO). For example, (i) Non-intrusive surveys are not classed as development and can be carried out without planning permission; (ii) Erection of welfare facilities would be permitted pursuant to Part 4, Class A of the GPDO which permits 'the provision on land of buildings, moveable structures, works plant or machinery required temporarily in connection with and for the duration of operations being or to be carried out on, in, under of over that land or on land adjoining that land.' This is subject to conditions within Part 4 that require removal of any temporary buildings, structures, works, plant or machinery after construction is complete and re-instatement of adjoining land. The Applicant notes that the dDCO (Revision C) [document reference 3.1] already reflects the GPDO in this regard as Requirement 25 requires land used temporarily for construction to be re-instated to its former condition; and (iii) the laying and diversion of services which is permitted under Parts 13, 15 and 16. The Applicant has however included amendments to the drafting of Requirement 19 to make clear that pre-commencement screening and fencing commitments contained within the outline Code of Construction Practice (Revision B) [document reference 9.17) are appropriately secured. This follows similar drafting in the CoCP requirements within the Norfolk Vanguard Offshore Wind Farm Order 2022 and the Norfolk Boreas Offshore Wind Farm Order 2021. **b)** and **c)** N/A. **d)**

			See response to a) above. A separate definition for pre-commencement works and an accompanying management plan is not considered necessary. With the amendments proposed, the pre-commencement activities are sufficiently controlled by the Requirements. **e)** N/A.
Q1.11.2.3	Applicant Interested Parties	**Maintain** Justify if the drafting *"to the extent assessed in the environmental statement"* is an adequate bar in the definition of maintain to limit maintenance activities authorised under the dDCO and the dDMLs to those that are assessed within the ES.	This approach is a well-precedented and accepted mechanism to define what is and isn't included in the parameters of consent. The purpose of the EIA and presentation of the assessments in the ES underpin and provide justification for the maximum parameters of the consent during construction, operation and decommissioning (in the event consent is granted) in line with the Rochdale envelope approach. If a maintenance activity is proposed during operation which has not been covered by the ES assessment, the wording makes clear that it cannot be treated as being within the scope of the consent. Activities outside those assessed could not be undertaken without a modification to the DCO or a further consent. This mechanism has been accepted in all previous offshore wind DCOs including most recently in the East Anglia One North Offshore Wind Farm Order 2022, the East Anglia Two Offshore Wind Farm Order 2022, the Norfolk Boreas Offshore Wind Farm Order 2021 and the Norfolk Vanguard Offshore Wind Farm Order 2022. See Appendix B.2
Q1.11.2.4	Applicant	**Horizontal Directional Drilling Compound** The definition of horizontal directional drilling compound includes construction site associated with other trenchless construction techniques. Is this definition too broad and should the construction site associated with other trenchless construction techniques have a bespoke definition?	The definition of horizontal directional drilling compound in the dDCO (Revision C) [document reference 3.1] is precedented in The Hornsea Three Offshore Wind Order 2020. The Applicant does not consider that a separate definition for trenchless technique construction compound is necessary as, apart from referring to trenchless technique construction compound instead of horizontal directional drilling compound, it would be identical to the definition for horizontal directional drilling compound. A separate definition is therefore considered unnecessary.

Q1.11.3 Schedules			
Q1.11.3.1	Applicant	**Article 3 – Development consent granted by Order** In relation to the wording and implications of Article 3 [AS-009], please advise on the following: a) With Equinor as the Applicant, what role would they have post-consent and why would they not be listed as an undertaker? b) If maintenance is required on a joint transmission scenario, who would the responsible undertaker be for the purposes of enforcement? c) In the case of sequential or concurrent working scenarios, is there a clear chain of command?	**a)** As set out at paragraphs 4 and 5 of the Explanatory Memorandum (Revision C) [document reference 3.2] and in paragraph 2 of the Scenarios Statement [APP-314], Equinor is not the owner of either SEP or DEP. Scira Extension Limited is the owner of SEP and Dudgeon Extension Limited is the owner of DEP and are therefore the appropriate undertakers for each project. SEL and DEL, as owners of the two projects, have authorized Equinor to take on the role of manager of the development of SEP and DEP and to submit the application on behalf of the owners. **b)** For the avoidance of doubt, the reference to 'joint transmission scenario' in the question is taken to refer to those elements of the transmission works that would be integrated in scenario 3 or scenario 4. In accordance with the definition of "undertaker" and the wording of Article 4 (Maintenance of the authorised project) both SEL and DEL have the benefit of the Order with regards to undertaking maintenance of any integrated transmission works. In the event of enforcement, as per part (c) of the definition of "undertaker" any necessary enforcement action would be taken against the project company that exercised its powers to maintain the integrated works under the DCO. **c)** In the event SEP and DEP are constructed concurrently or sequentially, SEL and DEL would enter into a Co-operation Agreement to deliver the projects (see response to Q1.2.3.3 in this document). In accordance with Construction, Design and Management Regulations 2015 (CDM), it is the duty of the Applicant to appoint a Principal Contractor to coordinate the construction phase of the projects. The Applicant will manage any interface between the different elements in a proactive manner. This has been successfully achieved for other projects listed in the response to Q.1.11.1.2 above.
Q1.11.3.2	Applicant	**Article 5 – Benefit of Order** a) MMO, elaborate on the risk that you have identified [RR-053] with regards to collaboration between	**a)** and **b)** N/A.

	Marine Management Organisation	two different asset holders working in the same area if transfer of benefits were to happen? b) MMO, provide proposed drafting for a collaboration condition, identifying a relevant precedence. c) Would the procedure set out in Article 5 be applicable in full if, for example, DEL decided to step down as an undertaker of its own project and transfer the rights to develop DEP to SEL? Following on from the discussion at ISH1 [EV-013] [EV-017]: a) Applicant, what mechanisms are in place to ensure that two different undertakers and two different asset holders (generation assets (Schedules 10 and 11) and two transmission assets) working in the same area would collaborate together, especially if transfer of benefit were to happen. b) Applicant, how can the collaboration be secured in the dDCO? Without prejudice, provide suitable drafting.	**c)** In the event that DEL decided to transfer the benefit of the Order to SEL (or vice versa) the Article 5 procedure would apply in full unless one of the exceptions excluding Secretary of State consent at 5(7) applied. **a)** As explained at ISH1 (see paragraph 35(i) of the Written Summary of the Applicant's Oral Submissions at Issue Specific Hearing 1 [document reference 12.1]), SEP and DEP have a common shareholder (Equinor) who is development lead for both projects. SEL and DEL made a decision in 2019 to work closely together and there are existing arrangements between the project companies which mean they have a vested interest in working together in a collaborative way. Whilst the transfer of benefit option exists within the dDCO (Revision C) [document reference 3.1], the Applicant emphasises that the most likely scenario going forward is that the two projects will continue to work in tandem within the agreements already set out between them. In the event, a transfer of the benefit were to take place, extensive commercial arrangements would be put in place to facilitate that. **b)** It remains the Applicant's position that collaboration is secured as outlined in the Applicant's response to (a) above. However, the Applicant is in discussions with the MMO with regards to including drafting for a potential collaboration/cooperation condition in the DMLs.
Q1.11.3.3	Natural England Environment Agency Affected Persons	**Article 6 – Disapplication and modification of legislative provisions** a) EA, are there any concerns regarding the scope of the provisions sought to be modified or disapplied? c) Do Affected Persons have any concerns regarding the disapplication of the provisions of the Neighbourhood Planning Act 2017 relating to the	**N/A**

		temporary possession of land as proposed in Article 6(1)(e)?	
Q1.11.3.4	Applicant	**Article 10 – Temporary stopping up of streets and Schedule 5 – Streets to be temporarily stopped up** This schedule sets out roads to be 'temporarily stopped up.' The stopping up of a road takes away the public's right to pass and repass (regardless of mode of transport). However, the EM [AS-012, Paragraph 63] implies that pedestrian access is to be maintained during temporary stop ups. To this extent, is 'stopping up' the right terminology here, or would a road closure (enforced by a Traffic Regulation Order) prohibiting vehicular traffic only be more appropriate?	The Highways Act 1980 section 116 contains the general power to stop up a highway. This applies to the stopping up of the highway itself and is not restricted to either vehicles or pedestrians although sub-section 4 does specify that a stopping up can be in respect of all traffic or be subject to the reservation of a footpath, bridleway or restricted byway. Article 10 of the dDCO (Revision C) [document reference 3.1] reflects the Highways Act 1980 by permitting the undertaker to stop up any street and both divert traffic and prevent persons from passing along the street subject to the requirement to allow reasonable access to or from premises abutting the street. Paragraph 63 of the Explanatory Memorandum (Revision C) [document reference 3.2] correctly identifies that '[t]his Article allows for the temporary alteration, diversion or restriction of streets for the purposes of authorised development, whilst ensuring that essential pedestrian access to and from premises along that street is maintained if necessary'. Use of the term stopping up in the dDCO (Revision C) [document reference 3.1] and the Explanatory Memorandum (Revision C) [document reference 3.2] is correct, given the statute states that this can be in respect of all traffic or with the reservation of pedestrian rights.
Q1.11.3.5	Applicant	**Article 12 – Access to works** The wording in the EM [AS-012, Paragraphs 68 to 69] conveys a broader meaning than the drafting in the dDCO. Reconsider the wording in the EM, including adding a reference to Schedule 6.	The Explanatory Memorandum (Revision C) [document reference 3.2] has been updated to clarify the position.
Q1.11.3.6	Applicant Affected Persons	**Article 16 – Authority to survey and investigate land** a) Applicant to consider if the notice in Article 16(2) should include an indication of the work required, given the nature of work to make trail holes and dig	**a)** The Applicant notes that the drafting included in Article 16 is well precedented and aligns with the drafting in other offshore wind farm Orders (including most recently the East Anglia One North Offshore Wind Farm Order 2022, the East Anglia Two

		trenches can be intrusive and require preparation for the Affected Person. b) Provide suitable amendments to the drafting to secure the provision. c) Affected persons, specify in what ways you would be impacted by these provisions.	Offshore Wind Farm Order 2022, the Norfolk Boreas Offshore Wind Farm Order 2021 and the Norfolk Vanguard Offshore Wind Farm Order 2022) as well as in the Orders for other NSIPs. The drafting is also in line with similar statutory powers under s53 of the Planning Act 2008 and under s172 of the Housing and Planning Act 2016. The Applicant is not aware of precedent in any other Order which requires the notice to include an indication of the work required. However, it is considered good practice for notices served on landowners to specify various details such as whether works would be intrusive/non-intrusive, location of any boreholes/trial pits and whether equipment would be taken onto or left on the land. As such, the Applicant has amended Article 16(2) of the dDCO (Revision C) [document reference 3.1]. **b)** Refer to response at a).
Q1.11.3.7	Applicant	**Article 18 – Compulsory acquisition of land** a) Should Articles 18(1) and 18(2) specify the specific scenarios when consent from the other undertaker would be needed? b) Confirm that the land required for only SEP or DEP is the entire extent of the Order limits. c) If so, then the wording “so much of the Order land as is required” suggests that the land required for only SEP or DEP might be different and lesser that the entire extent of the Order limits. Consider re-drafting and providing a clearer explanation in the EM [AS-012, Paragraphs 80 to 83].	**a)** The intention of the drafting is that consent must be obtained in all scenarios. **b)** Whilst powers of compulsory acquisition are sought over the entire Order limits for all scenarios including scenario 1(a) (SEP only) or 1(b) (DEP only), the extent of the land and rights actually acquired would vary depending on which scenario is taken forwards as explained in section 11.4 of the Statement of Reasons [APP-028]. In scenarios 1(a) or 1(b), the land subject to permanent acquisition would be less than the entire extent of the Order limits because, for example, in either of those scenarios only one onshore substation would be required and the extent of the land to be acquired at the substation site would therefore reflect that. **c)**

			See response to b) above. The Explanatory Memorandum (Revision C) [document reference 3.2] has been amended to cross-refer to the Statement of Reasons [APP-028].
Q1.11.3.8	Applicant	**Article 20 – Compulsory acquisition of rights** While the ExA notes the explanation in the EM [AS-012, Paragraphs 88], the scope of Article 20 (1) and 20(2) is too broad because it does not specify that the provision only applies to the plots listed in Schedule 7. a) What is the risk that the provision in this Article could mean that the undertakers would have an unrestricted right to impose undefined new rights over any of the Order land, not just the plots listed in Schedule 7, and including over land for TP only? b) Provide suitable alternative wording.	**a)** The drafting in Article 20 is well precedented and aligns with the drafting in other offshore wind farm Orders (including most recently EA1N / EA2 and Boreas / Vanguard) as well as in Orders for other types of NSIPs. As set out in paragraphs 87 and 92 of the Explanatory Memorandum (Revision C) [document reference 3.2], the flexibility to acquire rights or impose restrictive covenants across any of the Order land (not just the plots included in Schedule 7) is required because it enables the undertaker to reduce the amount of land which would otherwise be subject to outright acquisition under Article 18 where that may be possible in the future. **b)** No alternative wording is considered necessary.
Q1.11.3.9	Applicant Affected Persons	**Article 26 – Temporary use of land for carrying out the authorised project** a) Affected Persons, is the provision in Article 26(2) for 14 days' notice period adequate to prepare for Temporary Possession of your land? Applicant may respond. b) Applicant, what are the implications to your construction programme and viability of the Proposed Development if the notice period was increased? c) Applicant, justify the need for the provision in 26(8)(a). d) Applicant, provide justification and explanation if the interaction between the provisions in Article 26(8)(a), and Article 20(1) and 20(2) would allow the creation of permanent rights under over land which is intended for Temporary Possession only.	**a)** N/A. **b)** The drafting in Article 26 is well precedented and aligns with the drafting in other offshore wind farm Orders (including most recently EA1N / EA2 and Boreas / Vanguard) as well as in Orders for other types of NSIPs. The 14 day notice period included in 26(2) is a minimum notice period which it is standard to include in these types of Orders. **c)** The Article does provide an ability to acquire rights over land subject to temporary possession. That wording was used in the model provisions (Article 28) and has appeared in precedent granted DCOs (The Norfolk Boreas Offshore Wind Farm Order 2021 and The Norfolk Vanguard Offshore Wind Farm Order 2022 both as Article 26 and The Hornsea Three Offshore Wind Farm Order 2020, Article 26). This is a fallback provision to ensure deliverability of the authorised project,

		e) Affected Persons, whose land is listed in Schedule 9, are you aware and were you consulted on the basis that your land is sought for Temporary Possession but the Applicant would have the ability to create undefined new rights over your land? Applicant may respond. f) Applicant, what are the implications of removing the provision in 26(8)(a) from the dDCO? Respond on the basis of precedence from recent made DCOs.	including service diversions. Acquisition of rights is only anticipated in plots shown in blue on the Land Plans (Revision B) [AS-002], primarily for the main cable route and mitigation land, the locations of which have been identified. Flexibility to acquire other rights is necessary to ensure deliverability, should, for example, service diversions be required outside the main cable corridor. Although the Applicant has sought to identify all the services located within the Order Land it cannot be ruled out that there are others that are not mapped or incorrectly mapped or that some owners have not advised the Applicant of the location of their apparatus. This reserve power is therefore needed should a diversion be required in order to obtain the land rights to put that diversion in place and retain it on the new line. Any such acquisition would be compensatable in line with the Compensation Code. All affected land and rights holders have been consulted on the application as required by section 42 of the Planning Act 2008 and notified of the acceptance of the application under section 56 of the Planning Act 2008. Both processes noted that the application would include seeking powers of compulsory acquisition. As with every DCO, all of the Order Land would be subject to various powers if the DCO is granted and affected persons have been provided with an opportunity to make representations on the application. **d)** Please see above response at c). **e)** N/A. **f)** The implications of removing 26(8)(a) would be that the undertaker would be restricted to acquiring only new rights in subsoil or airspace in plots which are to be the subject of temporary possession should that need arise and would be prevented from acquiring new rights or imposing restrictive covenants in that land. See above response at (c) which sets out the precedent for the drafting.
Q1.11.3.10	Applicant	**Article 35 – Trees subject to tree preservation orders**	The DCO boundary, as a whole, currently overlaps with one Tree Preservation Order in South Norfolk (TPO 1967 No. 4) based on the data search completed in July 2021. The DCO boundary follows the line of the existing access road to

		What process would occur, and with whom, to inform the 'reasonable belief' of the Applicant that a TPO tree obstructs or interferes with the Proposed Development?	Norwich Main substation which is included within this TPO's woodland area. Processes that will be followed with regard to TPO trees at the substation will include: • Submission of an application to discharge Requirement 10 (Detailed design parameters onshore) of the dDCO (Revision C) [document reference 3.1] . Of note, paragraph 6 requires details of the layout and tree impacts of a permanent access road to the new substation. This will allow the local authority to comment on any tree impacts associated with the road (that may be near TPO 1967 No. 4) and provide consent through the onward consenting process. • Submission of a landscape management plan as per Requirement 11 (Provision of Landscaping) of the dDCO (Revision C) [document reference 3.1] which will detail all trees and hedgerows to be removed (including TPO'd trees) and those to be retained. More generally, detailed design work will take place once DCO consent has been granted. This will include a full tree survey of the route and input from an Arboriculturist into design. An Arboricultural Method Statement would also be produced at this stage as stated in the Arboricultural Report. The Method Statement will detail tree removals and likely tree pruning works including those to protected trees which the Arboriculturist reasonably believes are necessary. Specifications for all pruning will be given by the Arboriculturist and in accordance with British Standard 3998:2010 – Tree Work Recommendations. This is secured under Requirement 11 (Provision of Landscaping) of the dDCO (Revision C) [document reference 3.1]. Paragraph 2(e) requires '*details of existing trees and hedges to be removed and details of existing trees and hedges to be retained, with measures for their protection during the construction period where applicable'*. Should unexpected works to trees (including protected trees) become necessary during construction, the project Arboriculturist will be consulted. Collaboration between the contractors and the Arboriculturist will take place to explore alternatives to pruning a protected tree. Written sign off from the project Arboriculturist will be required (this will be stated in the future Arboricultural

			Method Statement) to undertake pruning to a protected tree, this will constitute the 'reasonable belief'. The Arboriculturist will provide the specification for this work in line with British Standard 3998:2010 – Tree Work Recommendations.
Q1.11.3.11	Applicant	**Article 38 - Certification of plans and documents, etc.** What does the Environmental Statement in 38(1)(b) consists of? Should the title be more descriptive?	The Environmental Statement includes all the chapters, figures and appendices comprised in volumes 1 to 3 of the Environmental Statement submitted to the Examination. The Applicant considers that it is clear what is meant by Environmental Statement in Article 38 and what it will therefore have to submit to the Secretary of State for certification.
Q1.11.3.12	Applicant Interest Parties	**Article 45 – Modification of DOW section 36 consent** a) Article 45, is a novel provision in this dDCO, and the ExA is seeking input from parties if they have concerns or support for the provision and drafting, and implications for future applications for development consent. Applicant may respond. b) Applicant, submit into Examination, further details of Riverside Energy Park Order 2020 that has been referred to as precedence, including a brief description of the relevant context.	**a)** No specific comments of concern or support have been received from other parties. **b)** The Riverside Energy Park Order 2020 grants development consent for an integrated Energy Park comprising complementary energy generating development (including energy from waste, anaerobic digestion, solar photovoltaic, battery storage and infrastructure to provide for local district heating) and an associated electrical connection. As set out in the Explanatory Memorandum submitted with the application for the proposed Riverside Energy Park (REP), REP will be situated next to the existing Riverside Resource Recovery Facility (RRRF). Drafting was included in Article 6 and Schedule 13 of the REP Order to address overlaps between the REP Order and an existing section 36 consent for the RRRF. Specifically, the RRRF section 36 consent is amended by the REP Order to remove reference to a storage area for ash container storage. The area has not been required for any such storage by the RRRF and instead will be used by REP rather than be sterilised. Whilst the amendment to the section 36 consent is not a direct precedent for the proposed amendment to the DOW section 36 consent in Article 45 of the dDCO (Revision C) [document reference 3.1], it is similar in that the RRRF section 36 consent has been amended so that is reflects the as built parameters of the RRRF in order to facilitate a different development.

Q1.11.4 Schedules			
Q1.11.4.1	Applicant	**Schedule 1 – Authorised Development** Consider specifying that the grid coordinates for the part of the authorised development, which is seaward of MHWS, is relevant for all scenarios.	The Applicant considers that this is already clear from the drafting because 'authorised development' includes all the works specified in Part 1 of Schedule 1 which encompasses all the development required in any given scenario.
Q1.11.4.2	Discharging Authorities	**Further Associated Development** Are you satisfied that all instances of further associated development in connection with Work Nos. 1B to 7B, Work Nos. 8B to 22B, Work Nos. 3C, 4C, 5C and 7C and Work Nos. 8C, 9C, 12C, 15C, 16C and 17C are controlled adequately by the provisions in the dDCO?	**N/A**
Q1.11.4.3	Discharging Authorities	**Ancillary Works** Are you satisfied that all instances of ancillary works are controlled adequately by the provisions in the dDCO?	**N/A**
Q1.11.4.4	Applicant	**Accuracy of coordinates** Provide a means by which you can cross-check the accuracy of the coordinates in Schedule 1.	As explained at ISH1, the co-ordinates provided in Schedule 1 (and in the DML Schedules) have been prepared by the Applicant using a leading Geographical information System (GIS) known as ArcGIS. The Applicant's legal advisers acknowledged that there were some errors made when the co-ordinates were initially transposed by it into the dDCO SI template for submission. The accuracy of the co-ordinates have now been double checked using a computer comparison programme (Workshare Compare) to compare the co-ordinates in the schedules against the co-ordinates provided by the Applicant. All the transposing errors have now been identified and corrected in the dDCO (Revision C) [document reference 3.1].
Q1.11.4.5	Discharging Authorities	**Accuracy of all Schedules**	**N/A**

		Check the Schedules in the dDCO for accuracy and provide the ExA with suggested corrections and amendments.	
Q1.11.5 Requirements			
Q1.11.5.1	Applicant National Farmers Union	**Requirement 1 – Time limits** a) Applicant, what changes would you need to make in light of your response to questions in Construction Effects Onshore? c) NFU, specify which landowners are affected by the seven years time limit for commencing the authorised development and in what way.	**a)** In accordance with the response to Q1.6.1.2, none are proposed.
Q1.11.5.2	Applicant	**Requirement 9 – Scenarios and Phases of authorised development** a) What changes would you need to make to R9(1), in light of your response to questions in Construction Effects Offshore? d) The ExA believes that for enforcement purpose Table 1-1 from the EM should be included in R9 so it is clear which works are applicable to each scenario. Applicant to comment, providing reasons. e) R9(2) and (3) state that the undertaker would seek approval for the written scheme setting out the phases of construction; and then states that the scheme may subsequently be amended from time to time. Would approval be needed for such amendments? Explain with reasons. f) Is there a contradiction between R9(4) and R9(2) and (3), where (2) and (3) state that the scheme may subsequently be amended from time to time, but (4) states that each scheme must be implemented as notified?	**a)** Please see amendments to Requirement 9 included in the dDCO (Revision C) [document reference 3.1] submitted at Deadline 1. **b)** The drafting in Requirement 9 includes reference to 'scenario 1', 'scenario 2', 'scenario 3' and 'scenario 4'. These are defined terms which already include references to the relevant work numbers set out in Table 1-1 of the Explanatory Memorandum (Revision C) [document reference 3.2]. Any replication of Table 1-1 in Requirement 9 would therefore be unnecessary duplication. **c) and d)** Please see amendments to Requirement 9 included in the dDCO (Revision C) [document reference 3.1] submitted at Deadline 1. **e)** Please see amendments to Requirement 9 included in the dDCO (Revision C) [document reference 3.1] submitted at Deadline 1. **f)**

		g) Consider consistency in language and using "written scheme" in all instances? h) Should "written scheme" be defined in Article 2?	The Applicant considers that the current drafting in Requirement 9 is sufficiently clear and reflects the terminology used in equivalent requirements in other offshore wind DCOs. A definition of 'written scheme' is not necessary as sub-paragraphs 9(4) and 9(5) explain what the written scheme is.
Q1.11.5.3	Applicant	**Requirement 10 – Detailed design parameters onshore** a) What are the criteria in the ES or secured in the dDCO that the relevant planning authority can rely on for testing or assessing the details in R10(4), in order to give approval? b) In that regard, Applicant to consider securing the design and vision documents [APP-287] [APP-312] [APP-313] through R10.	**a)** and **b)** see response to Q1.10.2.1(d) and proposed amendments to Requirement 10 of dDCO (Revision C) [document reference 3.1].
Q1.11.5.4		**Requirement 17 – Operational Drainage Plan** It has been suggested in RRs that R17 should include a mechanism to secure the management and maintenance of drainage systems. a) Does the Applicant agree? b) If so, provide a revised form of wording to include such matters in R17.	In response to RRs, the Applicant has amended Requirement 17 to include reference to management and maintenance of drainage systems. Please see the dDCO (Revision C) [document reference 3.1].
Q1.11.5.5	Applicant Ministry of Defence	**Requirement 27 - Ministry of Defence surveillance operations** a) Outline here or in your SoCG the milestones and associated timescales (in relation to this Examination) of how these discussions are likely to progress and conclude. b) Provide evidence where possible. c) Outline the implications for the ExA's recommendation to the SoS, of not reaching agreement before the close of Examination.	**a)** Discussion with the Ministry of Defence (MoD) has commenced and is progressing well, including the drafting of a SoCG. Timescales are difficult to define however SoCG agreement is expected by Deadline 4. The drafting of Requirement 27 is in line with similar requirements agreed for other recent offshore wind farm projects and the Applicant does not foresee any barrier to finalising agreement with the MoD prior to the end of the Examination in relation to the wording of the requirement. **b)**

			Evidence on progress is not presently available. Discussion with the MoD on the draft SoCG is currently in progress.. **c)** In light of the responses to (a) and (b) the Applicant considers that it is highly unlikely that agreement would not be reached. In any event, the requirements as drafted provide for appropriate mitigation of the radar impacts as shown by experience on other projects and, given the nature of the drafting means that SEP and DEP could not proceed without the Secretary of State's approval (in consultation with the MoD) post-consent, that provides a strict control mechanism against which the ExA could recommend consent and the Secretary of State could grant it.
Q1.11.5.6	Applicant NATS	**Requirement 28 - Cromer and Claxby Primary Surveillance Radar** a) Outline here or in your SoCG the milestones and associated timescales (in relation to this Examination) of how these discussions are likely to progress and conclude. b) Provide evidence where possible. c) Outline the implications for the ExA's recommendation to the SoS, of not reaching agreement before the close of Examination.	**a)** Discussion with the NATS commenced pre-application. A preferred mitigation solution has been identified by NATS. Timescales are difficult to define however SoCG agreement is expected by Deadline 3. The applicant has requested suitable dates for a meeting with NATS to progress the SoCG. **b)** The approach to mitigation of NATS radar systems has been agreed, discussions on the SoCG are continuing. **c)** In light of the responses to (a) and (b) the Applicant considers that it is highly unlikely that agreement would not be reached. In any event, the requirements as drafted provide for appropriate mitigation of the radar impacts as shown by experience on other projects and, given the nature of the drafting means that SEP and DEP could not proceed without the Secretary of State's approval (in consultation with the NATS) post-consent, that provides a strict control mechanism against which the Examining Authority could recommend consent and the Secretary of State could grant it.

Q1.11.6 Draft Deemed Marine Licences			
Q1.11.6.1	Applicant Marine Management Organisation	**Timeframes for determinations** a) MMO, concern has been raised regarding a four-month lead-in period for review and decisions from the MMO on detailed submissions. Set out what periods for consultation would be reasonably achievable, and in line with other made OWF DCOs. b) Applicant, what are the implications to construction programme and viability of providing additional time, as requested by MMO for the discharge of approvals.	The Applicant is in discussion with the MMO about timings of document submission. We understand that the MMO is likely to refer to their relevant representation where they stated 6- months is required for all submissions. The implications vary by document, but the Applicants main concern is that earlier submissions (6 months as opposed to 4) would require updates or amendments as constructions details are refined in the lead up to construction beginning. Submitting these documents earlier then issuing updates would create extra workload for the MMO, it's key consultees and the Applicant.
Q1.11.6.2	Applicant Marine Management Organisation	**Outline Offshore Operation and Maintenance Plan** The ExA are concerned regarding the 'amber' items highlighted within the Relevant Representation [RR-053], particularly that additional licences may be required "if proposed works exceed those assessed within the ES or described within the DCO." What is the likelihood / probability of the works falling outside of the scope of the DCO or causing greater effects than assessed as the worst-case scenario in the ES?	The Outline Offshore Operations and Maintenance Plan (OOMP) (Revision B) [document reference 9.9] has been updated at Deadline 1. The description of amber items has been updated as follows: • *Amber indicates that an additional marine licence may be required **in the extremely unlikely event that** proposed works exceed those assessed within the ES**, Stage 1 CSCB MCZ Assessment [APP-077]** or described within the DCO**; or a certain time period (five or ten years) after completion of construction has elapsed*** As indicated, it is considered to be extremely unlikely that the worst-case scenarios assessed for O&M phase activities would exceed those assessed in the ES since these have been derived from precautionary assumptions based on experience from SOW and DOW. However, if that were to be the case, or a period of five or ten years has elapsed since completion of construction (which is relevant to installation of scour or external cable protection in areas where it was not installed during construction; with the time period depending on whether the installation is occurring within or outwith the CSCB MCZ), a new marine licence would be required.

			Regardless of whether or not a new marine licence would be required, amber activities would require approval from the MMO prior to the activities being undertaken. It should also be noted that the Outline OOMP (Revision B) [document reference 9.9] is a live document. The approval and implementation of the OOMP is secured by conditions 13(1)(f) and 15(3) in Schedules 10 and 11 and conditions 12(1)(g) and (14(3) of Schedules 12 and 13. Conditions 13(1)(f) and 14(1)(f) in the relevant DMLs also specify that the OOMP must be resubmitted and reviewed every 3 years therefore ensuring continual review of the position in relation to cable protection and scour protection alongside all other operation and maintenance activities and will enable the MMO to continually review at the appropriate time during operation whether or not a new licence is required for any further deployment of external cable protection or scour protection.
Q1.11.7 Interaction of the dDCO with Other Legislated DCOs, Other Existing Infrastructure and Planned Projects			
Q1.11.7.1	Applicant Vattenfall RWE Renewables Orsted Hornsa Project 3 National Highways Norfolk County Council	**Hillside Parks Ltd v Snowdonia National Park Authority (the Hillside Judgement)** The ExA acknowledge the above judgement relates to a non-Development Consent Order case. However, it occurs to the ExA that the principles of the judgement may be applicable for the Proposed Development given the level of interaction of the scheme with other existing consented DCOs, including land subject of compulsory acquisition. The ability to modify the initial permission in the DCO context is based on the specific power in section 120 of the Planning Act 2008. In this respect: a) would any existing consented DCO need to be modified or amended by the Proposed Development?	**a)** No, the Applicant does not consider that this is necessary. **b)** The Applicant is currently in detailed discussions with the other developers listed as respondees to this question. These discussions will ensure co-ordination between the relevant projects and ensure that SEP and DEP and the other consented schemes can all be constructed and operated within the terms of their consents. Where appropriate, protective provisions and agreements are being negotiated, with the relevant parties to facilitate any necessary co-ordination. In addition, where appropriate, sufficient flexibility has been included within the redline boundary to manage any potential overlap with another project. For example, Hornsea Project Three and SEP and DEP (if also consented) will connect into National Grid's Norwich Main Substation. Therefore the redline boundary provides flexibility for SEP and DEP to connect to either the east or west

		b) would any existing consented DCO be prejudiced in the ability to be implemented, either through works or land take, to the extent it could not come forward in accordance with its terms and management plans? c) provide any other views on the relevance, or otherwise, of the judgement upon this project.	side of Norwich Main to ensure that both projects connections can be accommodated. **c)** Whilst the Applicant accepts that in principle the Hillside judgement is relevant to the implementation of potentially overlapping development consent orders, the Applicant does not consider that the implementation of either the SEP or DEP DCO or any other project's DCO would be prejudiced or prevented in this case for the reasons set out in (b) above.

Q1.12 Habitats and Ecology Offshore			Applicant's Response
Q1.12.1 Effects on Ornithology			
Q1.12.1.1	Natural England Royal Society for the Protection of Birds	**Quality of Data** There are instances within the ES [APP-097, Paragraphs 172, 240, 313] where the Applicant raises issues with data and the approach taken to using it. In these respects: a) Are you concerned that, in several places, the Applicant has stated "it was not considered possible to produce reliable and precise design-based density estimates for offshore ornithology receptors for DEP-N and DEP-S, only DEP as a whole" and, if so, do you consider that this undermines the Applicant's conclusions on the significance of adverse effects? b) Is it appropriate and proportionate for the Applicant to have relied upon written sources to gather data across the export cable corridor rather than undertaking baseline 'on-site' surveys? c) The Applicant acknowledges departing from Natural England's suggested mortality rates, because such rates are higher. Do you consider there to be sufficient justification for this departure and if not, why not? d) Are you content with the approach undertaken with regards to assessing the overall effects of the Proposed Development considered alongside other projects?	In respect of point a) the Applicant refers to its response to Q1.12.1.2 below, as well as Q1.5.1.2 and Q1.14.1.4.
Q1.12.1.2	Applicant	**Population Viability Analysis** Explain why PVAs have not been run for scenarios where the turbines at DEP are all installed in DEP-N, given for sandwich terns the development of DEP-N alone has been assessed to represent a worst-case scenario [APP-097, paragraph 550].	The model-based density estimates used to differentiate the DEP North only *vs*. DEP North and DEP South (herein 'all-DEP') design options have a high degree of uncertainty in the outputs, and the confidence in any differences being real is considered to be low. This is demonstrated by the overlap between the 95% Confidence Intervals (CIs) (e.g. as shown on Plate 5 of Appendix 11.1 – Offshore Ornithology Technical Report [APP-195]), which show that the difference between the two design options does not approach

			statistical significance. As stated in Paragraph 550 of ES Chapter 11 - Offshore Ornithology [APP-097], it is not considered that PVA of the DEP North only option would produce substantially different outputs from the all-DEP option. Therefore, taking into account the uncertainty in the density estimates that would be used as the basis for the PVA, and that the DCO would be for all-DEP (with the Applicant retaining flexibility regarding turbine placement within the DCO boundary) it was not considered necessary to provide a separate PVA for the DEP North only design option.
Q1.12.1.3	Natural England Royal Society for the Protection of Birds	**Use of a Scientific Study** In Relevant Representation [RR-083], in relation to studies on seabird activity, it states that the study undertaken by Cook in 2021 has not been adopted by SNCBs and therefore cannot be relied upon for its data on collision risk modelling. a) Are the findings of Cook 2021 currently disputed? b) What is the process of adoption for a scientific paper and is there a timescale in which such an evidence base would be either adopted or rebuked (reported on)? c) What would be an appropriate equivalent evidence base from which evidence could be relied upon that you say the Applicant should have referred to instead?	**N/A**
Q1.12.1.4	Natural England	**Project Environment Management Plan and Red-throated divers** A number of mitigation measures for red-throated diver are listed in the PEMP [APP-297, Section 5.1]. a) Comment on the effectiveness of the proposed mitigation measures. b) Comment on the Applicant's conclusion on the residual effects as assessed in the ES.	**N/A**

		c) What further measures do you think could be implemented to mitigate the adverse effects upon the species?	
Q1.12.1.5	Applicant	**Red-throated Diver** In Table 11-4 [APP-097], one of the mitigation measures listed is to avoid rafting birds when travelling from the port. Would the port of Great Yarmouth increase or decrease the likelihood of engaging with rafting birds compared to other port options being considered?	For clarity, it is anticipated that both SEP and DEP will be operated from the existing SOW and DOW Operations & Maintenance (O&M) port at Great Yarmouth; however, the construction port/s will not be confirmed until nearer the start of construction. Therefore, the assessment for the construction phase has not assumed a specific port. It is considered possible that a port away from Great Yarmouth could increase or reduce the relative risk of vessels encountering red-throated divers, but with the provision of the embedded mitigation measures to avoid or minimise potential impacts from vessel traffic (Table 11-4 in Section 11.3.3 of ES Chapter 11 - Offshore Ornithology [APP-097]), it is unlikely that the construction port selection would significantly affect the conclusions of the assessment.
Q1.12.2 Effects on Aquatic Wildlife including Mammals, Fish and Shellfish			
Q1.12.2.1	Natural England	**Published Guidance** Update the ExA on any recently published guidance documents by Natural England that are applicable to the Proposed Development, setting out whether the Proposed Development complies with or goes against such guidance.	**N/A**
Q1.12.2.2	Applicant	**Underwater Noise** Explain the assumption that the shift from using gear boxes to direct drive technology is expected to reduce the sound level by 10dB [APP-096, paragraph 595]. Is there any evidence to support this?	This assumption is taken from Stöber and Thomsen (2021)[2] which collected 16 published observations of underwater noise levels generated by geared turbines, however the authors note that newer turbines operate with direct drive technology and because the gear box belongs to the major sound sources, direct drive turbines are expected to generate lower noise levels, especially underwater where sound generated by the blades plays a minor role.

[2] Stöber, U. and Thomsen, F. (2021). How could operational underwater sound from future offshore wind turbines impact marine life? The Journal of the Acoustical Society of America, 149(3), pp.1791-1795.

			Indeed, Elliott et al. (2019)[3] cited in Stöber and Thomsen (2021)[1] conducted underwater noise monitoring for a direct drive wind turbine with a nominal power of 6MW which Stöber and Thomsen (2021) indicate is 10 dB less than the average source level for geared turbines with 6.15MW nominal power. This comparison can provide an estimate of the potential reduction in operational noise levels associated with the replacement of geared turbines with direct drive turbines.
Q1.12.2.3	Applicant Marine Management Organisation	**Herring Spawning and Underwater Noise** Would a seasonal piling restriction to mitigate underwater noise and vibration effects on herring be an effective form of mitigation and, if so, is there any evidence to help define an appropriate and informed exclusion period for such works?	The Applicant agrees with the MMO Relevant Representation (RR-053) that there is an absence of evidence that herring spawn in the vicinity of SEP and DEP and that if herring spawning activity was occurring in the vicinity of the wind farm sites it would likely be at low levels. It should also be noted that whilst relatively old, herring spawning surveys undertaken for the existing SOW and DOW concluded that herring spawning did not occur within the study areas (Brown and May Marine, 2009[4]; Brown and May Marine, 2010[5]). Based on the available evidence outlined above, the area is considered to be unlikely to be a hotspot for herring spawning. Since it is also the case that the underwater noise modelling impact ranges do not overlap with known herring spawning grounds to the northwest, the Applicant considers that mitigation in the form of piling restrictions is not required for SEP and DEP. International Herring Larval Survey (IHLS) data is collected annually in certain regions of the North Sea where herring are known to spawn

[3] Elliott, J., Khan, A. A., Lin, Y.-T., Mason, T., Miller, J. H., Newhall, A. E., Potty, G. R., and Vigness-Raposa, K. J. (2019). “Field observations during wind turbine operations at the Block Island Wind Farm, Rhode Island,”

Report No. OCS Study BOEM 2019-028, U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs, Washington DC, p. 281.

[4] Brown and May Marine (2009). Sheringham Shoal OWF. Pre-Construction Herring Spawning Survey 21st September to 8th December 2009. Final Report.

[5] Brown and May Marine (2010). Sheringham Shoal OWF. Post-Construction Herring Spawning Survey 26th September to 23rd November 2010. Final Report.

			which can be used to identify a consistent peak spawning period and therefore any potential exclusion period for piling works. However, none of these survey areas are within the vicinity of SEP and DEP (reflecting the likely low level of spawning activity in the area) and as noted above the SEP and DEP underwater noise impact ranges (worst case shown on Figure 9.8 [APP-122]) assessed within Chapter 9 Fish and Shellfish Ecology [APP-095] do not overlap with these areas. Whilst seasonal piling restrictions can be an effective mitigation when there are herring spawning areas within the impacted area, the Applicant considers that this would not be effective for SEP and DEP due to the surrounding area having, at most, low levels of herring spawning activity. The Applicant therefore considers that a restriction of this nature would not be justified as a form of mitigation.
Q1.12.2.4	Applicant	**Cable Crossings and Electro-Magnetic Fields** The ES states that loose rock dumping would be avoided to prevent small fish and shellfish being exposed to higher levels of EMF along the offshore cable corridor [APP-095, Paragraph 393]. Where cable crossings are to occur: a) Would there be a cumulative (augmented) magnetic field from multiple cables and, if so, does this dissipate over a greater distance? b) What measures would be in place to prevent small fish and shellfish being at risk to higher exposure in the vicinity of these cable crossings? c) If cable burial was not achieved and cable protection used, how would concrete mattresses or rock bags be effective in limiting exposure of EMF to the aquatic environment?	**a)** Tripp 2021[6] (available on request) assesses the potential cumulative EMF exposure at cable crossings. When more than one source of EMFs are present, such as two different cable circuits, the EMFs can interact with one another, adding or subtracting to the total field. However, this is only the case if the frequencies that the cables operate at are the same. Because of the physical properties of EMFs, specifically that they are what is known as “vectors” not “scalars”, (i.e. have direction as well as magnitude), the magnitudes of the EMFs from two different sources do not simply add together. The addition of EMFs from different sources is complex, but has the general effect that, when the field from one source is larger than the other, the larger field dominates, with the smaller field making only a small difference to the resulting field. There are two cable crossings of active circuits, namely, the existing DOW export cables and the Hornsea Project Three export cables. The

[6] Tripp, H. (2021). Sheringham Shoal and Dudgeon OWF Extension Projects EMF assessment

			assessment in Tripp 2021 assumes that 1m deep cable protection would be installed at cable crossings which would attenuate EMF since magnetic fields from cables are highly non-uniform and the fields reduce extremely quickly with distance. For the DOW crossing, there would be a slight increase in magnetic fields where the cable circuits cross, which would persist for approximately 4 m either side of the crossing point. The maximum magnetic field above the SEP circuit where it crosses the Dudgeon circuit was 19.38 µT, compared to 17.90 µT with no influence of the existing Dudgeon circuits. The maximum magnetic field produced above the DEP circuit where it crosses the Dudgeon circuit was 27.91 µT compared to 24.9 µT, where there was no influence of the existing Dudgeon circuit. For the Hornsea Project Three crossing, a lack of design information has prevented 3D modelling of this particular crossing point. Therefore, a very worst-case assumption was made to add the magnetic fields provided in the Hornsea Project Three ES to the maximum calculated magnetic field from the SEP and DEP circuits. However, as stated above, magnetic fields are vectors so do not directly add to one another and therefore this method results in a significant overestimation of the predicted magnetic fields and is only used in the absence of other alternatives. The maximum magnetic fields are given in Table 6.4 of Tripp 2021. The maximum at the seabed for each option ranges between 25.82 and 34.39 µT. These fields reduce rapidly with distance from the circuits and are highly localised to the crossing points. It is important to reiterate, for the reasons stated above, that these predicted fields are a significant overestimation. **b) & c)** It should be noted that Paragraph 393, [APP-095] refers to cable protection within the MCZ in which there would be no cable crossings (because the Applicant has avoided all crossings in the MCZ to minimise impacts). Detailed methodologies for the crossing of cables

			and pipelines will be determined in consultation with the owners of the infrastructure to be crossed and crossing agreements will be entered into. However, a number of techniques may be utilised, including: • Pre-lay and post lay concrete mattresses; • Pre-lay and post lay rock placement; or • Pre-lay cable with Uraduct shell structure protection and post-lay rock placement / rock bags. This pre-lay and post-lay cable protection would reduce the potential for additive EMF effects at cable crossings and would attenuate EMF by providing a physical barrier. Whilst loose rock placement (which would only be used outside of the MCZ) may leave small gaps through which there is a possibility that very small fish or shellfish could pass through and be exposed to higher levels, this is considered to be unlikely, would be localised to a small number of individuals (and therefore not relevant at the population scale). It should be noted that the magnetic fields from all scenarios assessed reduce to very low levels within a few metres from the circuits and the levels assessed also do not take account of shielding factors of the cable sheath which would further reduce the fields.
Q1.12.2.5	Applicant Marine Management Organisation Natural England	**Recreational Activity** It is known that recreational boat trips take place from Blakeney to view seals along the North Norfolk Coast. a) What would the impacts be on recreational boat trips from the Proposed Development? i) Would there be a cumulative effect upon seals arising from construction/ maintenance vessels for the Proposed Development and the continued recreational tourist boat trips?	**a)** Blakeney Harbour is the closest port to the wind farm sites and is located approximately 11nm to the southwest. Displacement of recreational activities will be associated primarily with installation of the inshore part of the offshore export cable corridor with the nearshore route. Following completion of offshore export cable installation, including HDD exit pits, the impact of displacement will cease. The impact on recreational vessels during the construction phase is, therefore, considered temporary in nature and the magnitude of the impact is considered to be low. Targeted promulgation of information for recreational vessels has been considered as additional mitigation within the Formal Safety Assessment (FSA) where appropriate (Section 21 Appendix 13.1 Navigation Risk Assessment [APP-198])

			noting the specific stakeholders of relevance will be detailed within Appendix 13.1 Navigation Risk Assessment [APP-198] (Section 21.3.1.1). **b)** It is understood that the recreational boat trips transit from the Blakeney area to view seals hauled out along the North Norfolk Coast. It is anticipated that both SEP and DEP will be operated from the existing SOW and DOW O&M port at Great Yarmouth. Therefore there would be no overlap with these recreational vessels. The construction port which, whilst is still to be determined, would not overlap with these recreational vessel trips since construction vessel transits to SEP and DEP would be a sufficient distance offshore not to interact and therefore there would be no potential for a cumulative effect. For wider context and in case this question is in relation to the potential for disturbance at seal-haul out sites by project vessels, the Applicant has provided the following clarification. Studies on the distance of disturbance, on land or in the water, for hauled-out harbour seals have found that the closer the disturbance, the more likely seals are to move into the water. The estimated distance at which most seal movements into the water occurred varies from study site and type of disturbance but has been estimated at typically less than 100m (Wilson, 2014[7]). However, based on a precautionary approach, it is considered that, for grey seal, vessels travelling within 300m of a haul-out site, a grey seal may flee into water, but significant disturbance would be expected at a distance of less than 150m. For harbour seal, if a vessel travels within 600m of a haul-out site, there is the potential for a flee response, and if a vessel is within 300m, a significant number of harbour seal would flee. SEP and DEP are located 12km at the closest point to any seal haul-out site (Sections 10.5.5 and 10.5.6, [APP-096]), there is therefore no

[7] Wilson, S. (2014). The impact of human disturbance at seal haul-outs. A literature review for the Seal Conservation Society.

			potential for any direct disturbance as a result of construction activities within either SEP or DEP (including landfall and the export cable corridor). Therefore, the potential for any increase in disturbance to seal haul-out sites as a result of construction activities at the offshore wind farm sites, activities along the cable route and at the landfall site, or vessels in these areas during construction, will be negligible. Vessel movements to SEP and DEP from the chosen O&M port(s) (anticipated to be Great Yarmouth) and construction port (to be determined) would use direct established routes and are unlikely to be close to the shore, or within the distance required to cause a disturbance impact, based on the distance thresholds as noted above (of 300m for grey seal and 600m for harbour seal), except when near the port to avoid the risk of collision and grounding. In addition, taking into account the proximity of shipping channels to and from existing ports, it is likely that any seals hauled-out along these routes and in the area of the ports would be habituated to the noise, movements and presence of vessels. As outlined in the Outline PEMP (Revision B) [document reference 9.10], where possible and safe to do so, transiting vessels would maintain distances of 600m or more off the coast, particularly in areas near known seal haul-out sites during sensitive periods. All vessel movements will be kept to the minimum number that is required to reduce any potential for disturbance.
Q1.12.2.6	Marine Management Organisation	**Marine Mammals Position Statement** Confirm, in a simple tabular format, whether you are content with the Applicant's assessment of effects, mitigation and conclusions regarding harbour porpoise, minke whale, white-beaked dolphin, grey seal and harbour seal, or if more work is required. Suggested table headings:	**N/A**

		Species / Agree methodology (Y/N) / Agree assessment of effects (Y/N) / mitigation suitable (Y/N) / agree conclusions (Y/N) The table produced will also be requested for the final deadline in the Examination to provide a summary of where outstanding issues, if any, remain.	
Q1.12.2.7	Natural England	**Scope of the Marine Mammal Mitigation Protocol** Your relevant representation [RR-063] states the Marine Mammal Mitigation Protocol, does not provide any mitigation for disturbance. The Applicant said at ISH1 [EV-012] [EV-016] that this document does not serve the purpose of setting out mitigation in relation to disturbance and no other examples apparently do this. Do you have any examples of MMMPs that do provide mitigation for disturbance or what content, in particular, would you expect / wish to see contained in the MMMP?	**N/A**

Q1.13 Habitats and Ecology Onshore			Applicant's Response
Q1.13.1 Effects on European Designated Sites and Sites of Special Scientific Interest			
Q1.13.1.1	Local Authorities Environment Agency Natural England	**Air Quality and Screening of Ecological Sites** Can you confirm if the approach to the selection of all the relevant European sites, the scopes of the in-combination assessment, the assessments and the conclusions reached by the Applicant is acceptable [APP-108, paragraph 138 (though not limited to that paragraph only)].	The Applicant will be submitting a supplementary Technical Note at Deadline 2 (see the Applicant's response to Q1.13.3.2), which it is anticipated may address elements of the responses made to this Written Question by local authorities, the Environment Agency and/or Natural England in the circumstance that their response is to ask for more information to be provided by the Applicant on the screening and assessment of the ecological sites.
Q1.13.2 Effects on Protected and Priority Species			
Q1.13.2.1	Applicant Interested Parties	**Great Crested Newts** The Applicant reports that 15 ponds were inaccessible due to landowner access limitations and a further four ponds were inaccessible due to terrain [APP-106, Paragraph 132]. a) Do you consider that the omission of surveys at these 19 ponds (11% of the total ponds studied) has any impact on the reliability of GCN eDNA results and, if so, what are the implications for the ExA to take into account? b) Do you consider there to be any impediments that would prevent the Applicant from obtaining a full District Level Licence?	**a)** The absence of pre-application survey data on 19 ponds is considered to have no more than a minor impact on the reliability of the GCN eDNA assessment. For large schemes such as SEP & DEP which cover hundreds of ponds, restricted landowner access and terrain/safety issues are an inherent and an unavoidable constraint. The key issue is the effect of any data gaps on the mitigation package; in this respect the absence of survey data is not expected to lead to a lower mitigation requirement (than would have been the case had these 19 ponds had been surveyed) because of the adoption of District Level Licensing (DLL). DLL applies the precautionary principle to non-surveyed ponds. Under DLL, ponds which have been surveyed and in which GCN are found to be present have a 4x multiplier applied when calculating their value; ponds with GCN absent have a 1x multiplier and ponds without survey data have a 2x multiplier. This effectively assumes that GCN are present in non-surveyed ponds at a higher rate than would be expected had the ponds been surveyed. Therefore, DLL will likely lead to a higher mitigation requirement than would be the case if all ponds were surveyed. It is also highlighted that pre-construction surveys of ponds will be completed to inform the updated DLL application, and at pre-construction stage there should not be access

			restrictions meaning it should become possible to survey most of these 19 ponds (i.e. all of them other than the four ponds which were inaccessible due to terrain/safety concerns). **b)** The Applicant has applied for and obtained (in August 2022) a provisional Impact Assessment and Conservation Payment Certificate (IACPC) under the DLL scheme (provisional because a full IACPC can only be issued once DCO is granted). Details of this are included in Appendix 9.1.1 - Details of Other Consents and Licences [APP-286, Annex 3]. The initial conservation payment towards funding GCN-targeted mitigation has been made by the Applicant. Overall, this confirms that Natural England considers that SEP & DEP qualifies for DLL; the Applicant is aware of no impediments, and none have been raised by Natural England regarding the DLL approach.
Q1.13.2.2	Natural England Environment Agency	**Construction Sites and Compounds** ES reports that bat species rely on watercourses for foraging and commuting corridors [APP-106]. For HDD crossings of watercourses, these are to be set a minimum of 9m back from the riverbanks and the compounds would be subject to minimal artificial lighting. Would the 9m setback be sufficient to avoid noise and light disturbance to bat species (and their prey) or should further mitigation be explored by siting such compounds further away given HDD cable lengths can extend approximately up to 1,000m?	**N/A**
Q1.13.2.3	Natural England	**Letters of No Impediment** LoNI are appended to the Planning Statement in respect of badgers and bats [APP-285]. Are there	**N/A**

		any outstanding LoNI that are likely to be forthcoming during the Examination?	
Q1.13.2.4	Applicant Royal Society for the Protection of Birds	**Weybourne Cliffs** It is identified that populations of sand martins nest within the cliffs [APP-106]. Would noise and vibration from the landfall construction operations, with particular regard to vibrations from the HDD, have any effect upon the integrity of the cliffs or the living conditions of the sand martins such that nesting could be abandoned?	No sand martins have been recorded nesting within the Order Limits at the landfall, and the Order Limits do not overlap with Weybourne Cliffs SSSI. The location of Weybourne Cliffs SSSI in relation to the Order Limits is shown in ES Chapter 20 Figures - Onshore Ecology and Ornithology [APP-131, Figure 20.2, Sheet 1]. The closest known extent of the Weybourne Cliffs sand martin colony is >100m from the Order Limits. There are no known studies on vibration and noise thresholds which lead to disturbance of sand martins. However, sand martin colonies are well documented in heavily disturbed sites (subject to more extensive levels of noise and vibration than would be associated with the HDD works) such as active quarries. Sea cliffs, such as these at Weybourne, will also be subject to baseline levels of noise and vibration, such as from waves, wind and nearby recreational activity. As sand martins will be habituated to tolerant of these impacts, the temporary occurrence of HDD at a distance from the cliffs is not expected to lead to disturbance or displacement. Details of pre-construction ecological surveys required are presented in the Outline Ecological Management Plan (Revision B) [document reference 9.19, Appendix 1] and secured via Requirement 13 (Ecological Management Plan) of the draft Development Consent Order (DCO) (Revision C) [document reference 3.1].
Q1.13.2.5	Applicant	**Reptiles** SNDC request that if reptile translocation is required, details are provided to a suitable receptor site and such site is secured for the future [AS-034]. What are your comments regarding this?	The pre-application reptile surveys and associated assessment in ES Appendix 20.8 Reptile Survey Report [APP-221, p33] concluded that impact risks to reptiles can mostly be mitigated through wholesale avoidance of reptile sites or through habitat manipulation to encourage reptiles to leave areas which would then be subject to construction impacts. The only reptile sites with a potential translocation requirement are alongside Hickling Lane at the Onshore Substation Site. Surveys confirmed the presence of slow worms in this area, which are less receptive to habitat manipulation (i.e. more likely to remain in-situ despite short-term habitat changes, whereas grass snakes and common

			lizard, for example, will more actively move away from areas of reduced habitat suitability). ES Appendix 20.8 Reptile Survey Report [APP-221, p34] details the approach to slow worm mitigation at Hickling Lane. The approach will be to complete ongoing reptile monitoring (with translocation, if slow worms remain present) post habitat manipulation. This will involve using artificial refuges deployed in areas of suitable habitat which are within the proposed works footprint, which will then be checked by ecologists. Any slow worms found will be caught by hand and translocated to other suitable habitat bordering Hickling Lane (but outside the construction footprint). Such habitat is present and available for use within the same landholding as the substation, but outside of the construction footprint. In this sense, the translocation would be done at a micro-scale only; no removal of animals to distant/separate sites is expected to be necessary. In the unlikely event that the ongoing monitoring finds slow worms returning to the proposed works footprints, the installation of reptile proof fencing will become necessary to prevent slow worms from moving back into the works areas from the nearby areas to which they are translocated. The approach outlined above is included in the revised Outline Ecological Management Plan (Revision B) [document reference 9.19 , Section 2.3.6] which in turn is secured by Requirement 13 of the draft DCO (Revision C) [document reference 3.1].
Q1.13.2.6	Natural England	**Pink-Footed Goose** Are there any fundamental concerns regarding this species that warrants either more information or the submission of a mitigation plan during the course of the Examination [APP-106]?	**N/A**
Q1.13.3 Effects on Ancient Woodland, Trees and Hedgerows			
Q1.13.3.1	Applicant	**Ancient Woodland** a) Direct impacts are said to be avoided through use of HDD [APP-112]. How deep would the	**a)**

		HDD trench need to be in order to avoid direct impacts on the roots for trees within ancient woodland? b) Is it appropriate to assign ancient woodland and general woodland habitat in the same medium sensitivity rating? c) What effect, if any, would bentonite breakout have upon ancient woodland species? d) In respect of c) above, would the Applicant have sufficient access rights to walk through the affected woodland atop the pathway of the HDD drills to make inspections and remedy any such breakout?	Direct impacts to Ancient Woodlands have been avoided through mitigation by design. SEP and DEP Order Limits avoid all ancient woodlands. Where woodland is within the Order Limits, direct impacts are avoided by trenchless crossing, e.g. HDD. HDD is expected to be at a minimum depth of 2m. The majority of tree roots (up to 90%) are found present in the top 600mm of soil, and although this can be influenced by soil type and conditions, impacts to tree roots are expected to be avoided due to the depth of HDD. **b)** There are no ancient woodlands within the Order Limits. As such, the sensitivity rating applied to ancient woodlands is not considered by the Applicant as a point of relevance, as it does not change the final assessment. However, the Applicant concurs that ancient woodland would be considered a receptor of high sensitivity compared to general woodland habitat which is considered to be of medium sensitivity. **c)** No ancient woodland sites are located within the Order Limits. As such, ancient woodland is not considered to be at risk of bentonite breakout. The effects on ancient woodland species from bentonite break out are therefore not considered. More generally, bentonite is an inert clay-based material (comprising 95% water and 5% clay) and although it does not represent a pollutant it can cause smothering of habitats as detailed the Outline Code of Construction Practice (Revision B) [document reference 9.17, Section 6.1.4]. The Outline Code of Construction Practice (Revision B) [document reference 9.17, Section 6.1.4] includes the requirement for a hydro-fraction survey to be undertaken all drill sites and a site-specific risk assessment to be undertaken as part of the post consent detailed design process. These measures will form a Bentonite Breakout Plan. This is secured via Requirement 19 of the draft DCO (Revision C) [document reference 3.1].No ancient woodland sites are located within the Order Limits. As such, there is no risk of bentonite breakout within ancient woodland and no effects on ancient woodland species from bentonite breakout need to be considered.

			d) The Applicant considers that sufficient access rights are afforded through the land powers sought via the DCO. These land powers over areas where HDD is proposed comprise 'Land in which only new rights, etc. may be acquired' as detailed in the draft DCO (Revision C) [document reference 3.1, Schedule 7]. This allows rights in land to be acquired in connection with the works listed within Schedule 7 and includes the laying of circuits and ducts. Regular walkovers will be undertaken throughout the woodland to check for visible leakage of drilling fluid. Drilling fluid (bentonite) can sometimes break out of the bore in case of highly fissured clay, gravels or where there are large, interconnected fissures in the ground. Breakouts may also occur where man made features are present (e.g. old Site Investigation boreholes). In the event of egress of drilling fluid from the bore it is only likely to reach ground level where there is a continuous path available to the surface. The risk of a bentonite breakout during drilling cannot be fully assessed beforehand, however, any decrease in the mud volume returning to the entry pit will trigger the need for personnel to closely monitor the area around the drilling head. For this reason a close watching brief during drilling activities and a detailed contingency plan is essential to ensure that any drilling fluid breakout is contained, bunded and pumped back to the entry pit with minimum disturbance to the surrounding environment. Further information on bentonite breakout is set out within the Outline Code of Construction Practice (Revision B) [document reference 9.17, Section 6.1.4], and secured via Requirement 19 of the draft DCO (Revision C) [document reference 3.1].
Q1.13.3.2	Applicant	**Presentation of Information** The large exceedances shown in Tables 22.47 and 22.53 [APP-108] are dismissed because *"only a small percentage of impacts at almost all sites is due to the contribution from SEP and DEP together concurrently. Furthermore, as previously discussed,*	The Applicant will be submitting a supplementary Technical Note at Deadline 2 that will provide information on the potential effects of changes in air quality on ecological receptors. This supplementary Technical Note will build on the information already submitted in ES Chapter 22 Air Quality [APP-108], including its Appendix 22.4 Designated Ecological Sites and Critical Level and Load Values in the Air Quality Study Area [APP-262] and Appendix 22.5 Air Quality Ecological Receptor Assessment Tables [APP-263], and already

		impacts from SEP and DEP would be experienced only during construction." ES Chapter 22 suggests that where affected designated sites were above the 1% Critical Load, they were assessed in ES Chapter 20 [APP-106]. It is not readily clear to the ExA which paragraphs or sections of ES Chapter 20 explicitly deal with this, and it does not appear explicitly in the summary tables/ list of impacts at the end of that chapter. The Applicant is therefore requested to signpost/ set out which parts of ES Chapter 20 directly address the effects of NO2, NOx and NH3 on ecological receptors and set out the mitigations for this. In addition, the Applicant should set out clearly and conclusively whether designated ecological assets would suffer degradation or eutrophication as a result of exposure to NO2, NOx, NH3 arising from the Proposed Development in isolation or in-combination with other projects.	submitted in ES Chapter 20 Onshore Ecology and Ornithology [APP-106]. The information will be set out in the same manner as for other impact types in ES Chapter 20 Onshore Ecology and Ornithology [APP-106, Section 20.6.1], providing an assessment of the potential effects of nutrient inputs (NO2, NOx and NH3) and acidification on statutory designated sites, non-statutory designated sites, habitats and species and account for the associated mitigation. It will also demonstrate how a precautionary approach has been included in the assessment methodology.
Q1.13.3.3	South Norfolk District Council	**Moveable Hedgerows** Provide more details on the nature and extent of 'moveable hedgerow' infrastructure [AS-034] and provide any evidence as to their effectiveness.	**N/A**
Q1.13.3.4	South Norfolk District Council	**Management Plans** There is a request that final management plans secure a number of measures over which the Council is concerned, such as floodlighting, generators etc [RR-034]. Do you consider that the current suite of plans and requirements adequately cover these measures and, if so, what amendments	**N/A**

		or additions would give you reassurance that appropriate mitigation was being utilised?	
Q1.13.4 Effects on Rivers and River-Based Wildlife			
Q1.13.4.1	Environment Agency Natural England	**Watercourse Fish Surveys** Do you have any concerns regarding the Applicant's approach and data collection, and the implications for the ExA to take into account [APP-106, Paragraph 165].	**N/A**
Q1.13.4.2	Environment Agency Applicant	**Chalk-based Rivers** For rivers, it is said HDD crossings (or equivalent trenchless technique) would be a minimum of 2m deep under the riverbed [APP-106, paragraph 268]. Knowing that some watercourses, such as the River Wensum, are chalk-based rivers and that the EA [RR-032] notes that rivers Tud, Tiffey and Yare are also classed as chalk streams, would this require a much deeper drill route to be explored to avoid the chalk reserve?	The Applicant confirms that HDD depth under main rivers would be at least 2m below the channel bed. However, it should be noted that the exact depth of the HDD at these rivers would likely be deeper. The drill profiles for rivers, Wensum, Yare, Tud and Tiffey have been produced at a minimum of 10m below riverbed and this will confirmed during detailed design.
Q1.13.4.3	Environment Agency Natural England	**River Crossings** The effects of vibration on sensitive receptors are said to be negligible at distances in excess of 100m [APP-106, Table 20-17]. Given that the drill for HDD under watercourses would only be 2m below each respective riverbed, are there any likely effects upon fish or aquatic animal species from vibration causing displacement or fatality?	**N/A**
Q1.13.4.4	Applicant	**Signal Crayfish**	Construction works would avoid directly working within river channels suitable for signal crayfish; direct works within watercourses would only occur within

		The EA has requested extra attention to biosecurity due to the mobility of signal crayfish, proposing a 'Check, Clean, Dry' measure [RR-032]. Will that measure be adopted and in which management plan will this appear?	small, field boundary ditches which are unsuitable for crayfish. A clean, check, dry procedure would be adopted for any equipment installed within watercourses, as detailed in the Outline Code of Construction Practice (Revision B) [document reference 9.17, Section 8], but no such equipment would enter major rivers and streams where signal crayfish are present. Installation of the cables under all such watercourses would use HDD. Therefore there is considered to be a negligible risk of construction equipment becoming contaminated with crayfish plague or transferring signal crayfish between watercourses.

Q1.14 Habitats Regulation Assessment			**Applicant's Response**
Q1.14.1 Effect of the Proposed Development on its own and In-combination with Other Plans and Projects			
Q1.14.1.1	Marine Management Organisation	**Controlling in-combination impacts on the integrity of the Southern North Sea SAC** What level of confidence does the MMO have that the proposed Southern North Sea SAC site integrity plan for this project, when considered alongside controls in Marine Licence conditions attached to other projects that might affect the harbour porpoise interest feature in-combination, would provide it with sufficient control over the timing and nature of noisy activities across the various projects to ensure that the relevant in-combination disturbance impact thresholds would not be breached? In the event that a number of noisy activities from various concurrent projects became likely, would it be the MMO's intention to use these controls to ensure that no threshold was breached, and, if so, how?	**N/A**
Q1.14.1.2	Applicant	**Report to Inform Appropriate Assessment parameters [APP-059]** a) The RIAA [Section 6.2.1.2] states the effects on species in the River Wensum have been ruled out due to use of trenchless techniques. Has consideration been given to potential bentonite breakout (assuming the use thereof) and, if not, could consideration of this change or alter either the screening matrices or the effects predicted upon said species? b) With reference to table 7.5, why is the worst-case in the first box not representative of the full development potential (53 turbines/ conical foundations) as it is in Table 8-13?	**a)** The potential effects of a bentonite breakout on the River Wensum SAC qualifying features '3260 Watercourses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation' and '1016 Desmoulin's whorl snail *Vertigo moulinsiana*' have been assessed in Sections 6.4.1.1.1 and 6.4.1.1.2 respectively of the Report to Inform Appropriate Assessment (RIAA) [APP-059]. For both qualifying features the conclusion of the assessment was that with the application of the detailed mitigation measures that are described in Section 6.4.1.1.1 paragraph 31, that there will be no adverse effect on the integrity of these two features. The Outline Code of Construction Practice (Revision B) [document reference 9.17] commits to the preparation of a Watercourse Crossing Scheme which will incorporate these mitigation measures. The Code of Construction Practice is secured under

		c) In relation to the development of DEP, why is no differentiation made between the DEP-N option versus the DEP-N and DEP-S option? d) In relation to c) above, is the Applicant's position that the worst-case for DEP (regardless of whether N and S are developed) remains the same? e) Does the in-combination assessment reported in Table 8-50 change in respect of DEP if a proportion of turbines (10%, 20%, 50%) are developed in the DEP-S area?	Requirement 19 of the draft DCO (Revision C) [document reference 3.1]. The three species that are also qualifying features that had previously been screened out: '1092 White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes*'; '1096 Brook lamprey *Lampetra planeri*'; and '1163 Bullhead *Cottus gobio*' are similarly dependent on good water quality free of long-term smothering by fine sediments and the Applicant advises that a conclusion of no adverse effect on integrity can be concluded for these three species as it can for the habitat and species above. The Applicant will confirm this conclusion by the submission of a Technical Note at Deadline 2 that will screen in these three species and provide text on the impact assessment and its conclusion. **b)** This is because the pathway for impact on the 'Sandbanks which are slightly covered by sea water all the time' habitat feature of the Inner Dowsing Race Bank and North Ridge SAC (note the worst-case scenario with respect to the habitat features of the Wash and North Norfolk SAC is in relation to cable protection so not relevant to this question) as assessed in Section 7 of the RIAA [APP-059] is in relation to increases in suspended sediment concentrations, the largest volumes of which are associated with up to 43 18+MW GBS foundations rather than 53 15MW GBS foundations since the worst-case for a single 18+MW GBS foundation with a 60m base plate diameter = 16,964.60m^3 and the worst-case for a single 15MW GBS foundation with a 45m base plate diameter = 9,543m^3. Therefore, 43 18+MW GBS foundations results in a volumetric release of up to 729,477m^3 and 53 15MW GBS foundations results in up to 505,779m^3. Therefore, the worst-case is associated with 43 18+MW GBS foundations. For the mammals assessments, the worst-case scenario reflected in Table 8-13 considers both the temporal aspects of the effect i.e. the maximum length of time that piling could be occurring (which is associated with 53 pin pile foundations = up 636 hours) and also the

			maximum hammer energy (associated with the 18+MW turbine = 5,500kJ). **c) & d)** The impact assessments for offshore receptors consider the following development scenarios in determining the worst-case scenario for each topic: • Build SEP or build DEP in isolation – one OSP only; and • Build SEP and DEP concurrently or sequentially – with either two OSPs, one for SEP and one for DEP (located in the DEP North array area), or with one OSP only (located in the SEP wind farm site) to serve both SEP and DEP. Within the offshore assessments, where relevant, each of these scenarios have considered whether the build out of the DEP North and DEP South array areas, or the build out of the DEP North array area only, represents the worst-case for that topic. Any differences between SEP and DEP, or differences that could result from the manner in which the first and the second projects are built (concurrent or sequential and the length of any gap) are identified and discussed where relevant in the impact assessments. For each potential impact, where necessary, only the worst-case construction scenario for two Projects is presented, i.e. either concurrent or sequential. The justification for what constitutes the worst-case is provided, where necessary, in the assessments however it should be noted that since the majority of offshore assessments relate to the total seabed footprint, total volume of sediment release, maximum number of piles/piling time, maximum cable lengths etc, consideration of DEP North only or DEP North and DEP South impacts or concurrent or sequential construction, is not required to be drawn out within the assessments (except for assessment of effects on Sandwich tern for which model-based density estimates for that species enabled consideration of DEP North only – see response to Q1.5.1.2). This is why the number of OSPs (either one or two) has been used to

			differentiate the worst-case scenario since that is what determines the maximum seabed footprint, number of piles/piling time, maximum cable lengths etc. **e)** Table 8-50 of the RIAA [APP-059], presents the in-combination assessment for two seismic surveys occurring on the same day as piling at SEP and DEP within the North Sea (NS) Management Unit (MU) for harbour porpoise. The assessment of underwater noise from piling at SEP or DEP is based on the 26km Effective Deterrent range (EDR) for piling, with a disturbance area of 2,123.7km^2. This assessment is made in respect of the NS MU, and as the assessments are based on the EDR (which would remain the same at any location), and the worst-case harbour porpoise densities are the same for SEP, DEP north and DEP south array areas, the assessment provided is valid for any piling within the windfarm sites. Therefore, the results of the assessment would not change if a certain proportion of piles were developed in the DEP south array area. However, it should be noted that the assessments of underwater noise from piling within the ES are based on worst-case noise modelling locations which result in the greatest impact ranges. The worst-case noise modelling locations are 'SEP E' and 'DEP SE' as shown on Figure 4-3 of Appendix 10.2 Underwater Noise Modelling Report [APP-192] however underwater noise was also modelled at 'SEP N' and 'DEP NE' modelling locations, largely to inform the fish ecology assessment however the results are also provided for marine mammals. The worst-case underwater noise modelling and marine mammals assessment therefore assume that all piling would be undertaken at the worst-case location in 'DEP SE' which results in the greatest impact ranges and therefore provides a precautionary assessment. The underwater noise modelling results for 'DEP NE' assume that all piling is undertaken at the 'DEP NE' modelling location. The results of the 'DEP NE' modelling indicate that impact ranges from piling in this location are significantly

			lower than at the 'DEP SE' modelling location. Therefore, whilst the underwater noise modelling does not consider different potential piling durations in the DEP North and DEP South array areas depending on the number of turbines to be installed, if all turbines were to be installed in the DEP North array area, this would reduce potential underwater noise effects, including DEP's contribution to in-combination effects. It is standard practice for underwater noise modelling and impact assessments to select one worst-case modelling location within a wind farm site.
Q1.14.1.3	Natural England Marine Management Organisation	**RIAA, Screening and Outstanding Matters** a) Are the screening matrices in the RIAA [APP-059] acceptable or do further features/ sites need to be included? b) An explanation, with evidence as appropriate, as to whether you agree or disagree with the conclusions stated in paragraphs 105 and 106 of the RIAA presented by the Applicant. c) Provide an update on benthic SACs and whether the concerns raised in respect of the DOW have been addressed sufficiently by the Applicant either in advance of the Proposed Development being submitted or through the ES and HRA Reports [APP-059, Table 7-1].	**N/A**
Q1.14.1.4	Applicant	**RIAA and Sandwich Terns** With reference to the RIAA [APP-059]: a) Does this feature have a favourable conservation status in respect of any of the relevant European sites considered as part of the assessment? b) Does paragraph 977 assume DEP-N in isolation or both DEP-N and DEP-S? c) Is it correct that Table 9-12 shows projects including DEP-N are the worst-case scenarios and, if so, would a	**a)** The Applicant has not identified Natural England's published condition assessment information in respect of sites where a measurable effect on Sandwich tern populations could occur (i.e. Greater Wash SPA, North Norfolk Coast SPA and North Norfolk Ramsar Site). This information does not appear to feature on the Natural England Designated Sites System webpages (reviewed by the Applicant at Deadline 1). For these sites, the designated Sandwich tern feature references the same population (i.e. North Norfolk Coast SPA contains the breeding

		greater quantum of development at DEP-S offer greater protection for the species? d) Given the variables presented in paragraphs 1004 to 1010, is it fair to say there is a great deal of scientific doubt as to the extent of the effects on the species (notwithstanding recognition that an adverse effect cannot be ruled out for this at Greater Wash SPA, North Norfolk Coast SPA and North Norfolk Ramsar Site)?	sites, while Greater Wash SPA provides foraging habitat for these colonies). As set out in Section 9.4.3.1 of the RIAA [APP-059], the Sandwich tern population is considered to be increasing, as indicated by Plate 9-2 of the RIAA [APP-59], with 3,700 pairs (7,400 adults) at designation, and 9,196 and 13,170 adults recorded in 2019 and 2020, respectively. Furthermore, Natural England's Supplementary Advice on Conservation Objectives (SACOs) for North Norfolk Coast SPA (Designated Sites View ([redacted])) set a target to *'Restore the size of the breeding population to a level which is above 4,500 pairs, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent'*. On that basis, the Applicant considers it reasonable to conclude that the conservation status of Sandwich tern populations is currently favourable. **b)** The assessment set out in Paragraph 977 of the RIAA [APP-059] has been calculated using design-based population estimates, and therefore considers all of DEP (i.e. DEP North and DEP South together). It is only possible to calculate the DEP North only effect using model-based population estimates. **c)** The model-based density estimates used to calculate the collision mortality have demonstrated a high degree of uncertainty in the outputs in relation to any differences between DEP North only and DEP North and DEP South together (herein 'all-DEP') in this respect. This is shown by the overlapping 95% confidence intervals (CIs) presented in Table 9-12 of the RIAA [APP-059]. Therefore, while the mean values for scenarios comparing all-DEP with DEP North are higher for DEP North, the overlap between the 95% CIs demonstrates that the difference does not approach statistical significance. Therefore, while a 'greater quantum of development in DEP South' *may* reduce mean collision mortality, there is insufficient evidence to be confident that this would offer greater protection for the Sandwich tern population.

			d) The Applicant does not consider that the information presented in Paragraphs 1004 to 1010 of the RIAA [APP-059] is indicative of high levels of scientific doubt. Rather, this is a reflection of the requirement to consider (unrealistic) as-consented, rather than as-built, scenarios for the in-combination assessment. As stated in Paragraph 1007 of the RIAA [APP-059], Scenario B (using as-built OWF designs) is considered to be the most realistic (and hence the most robust) assessment. It is considered extremely unlikely that the unbuilt capacity in any existing OWFs would ever be built out; however, as it is unlikely that these as-built scenarios could be legally secured, aside from the existing Dudgeon OWF, it has therefore been necessary to present a range of scenarios, based on combinations of consented and as-built OWFs. For each scenario considered, however, the confidence in the outputs is high, for the reasons set out in Paragraph 992 of the RIAA [APP-059] and based on the best available scientific information. It should be noted that updated, simplified outputs are presented in the Collision Risk Modelling (CRM) Updates (EIA Context) Technical Note [document reference 13.2] submitted at Deadline 1, using updated parameters as advised by Natural England in their Relevant Representations [RR-063]. Therefore, while a range of outputs are presented, each is considered scientifically robust, on the basis of the inputs used under each scenario. Any uncertainty is a product of the different as-built/consented scenarios considered, rather than any scientific uncertainty.
Q1.14.1.5	Natural England	**RIAA and Gannet** You indicated in the relevant representation [RR-063] that gannet could potentially be excluded from receiving compensation providing that there were no significant changes to collision and displacement modelling results.	**N/A**

		a) Describe what you consider would constitute significant changes to the modelling that would change your view on the necessity for the compensation? b) Describe and explain why, having determined a significant adverse impact on gannet at the EIA scale, you are content that an AEoI can be excluded for the species? c) Would you advise the Applicant, and indeed the ExA, that compensation for gannet should be removed from the Applicant's compensation documents at the close of the Examination, assuming of course that the position remains the same?	
Q1.14.1.6	Natural England	**RIAA, Ornithology and DEP-N** At ISH1 [EV-011] [EV-015], the Applicant stated the mitigation hierarchy of avoid, reduce, mitigate had been followed during the formulation of the 'red line boundary' (i.e. Order limits) thus informing the extent of the application sought. Consequently, there was no need for DEP-N to be reconsidered under this mitigation hierarchy and no need for DEP-N to be sterilised or removed from the dDCO as a result (as suggested in your relevant representation [RR-063]. a) What is your response? b) Why is DEP-N deemed to be in conflict with the mitigation hierarchy?	**N/A**
Q1.14.1.7	Natural England	**The Case for Derogation and Compensatory Measures** In relation to comments made in the Relevant Representation [RR-063]: a) Elaborate on the reasons why it is considered that compensation works on the Farne Islands (in the form of predator exclusion, reduced human disturbance, flood protection and/ or vegetation control [APP-066, Section 3.5]) do not "provide meaningful compensation."	**N/A**

		b) The RSPB has suggested the robustness of bird populations to mortality has decreased following the outbreak of avian influenza [RR-083]. How would you respond to this and what, if any, evidence can be relied upon to demonstrate against this assertion, notwithstanding Relevant Representation [RR-063, Appendix B2]? c) Why is compensation at Loch Ryan in Scotland, a not insignificant distance away, acceptable in this instance [EV-011] [EV-015]?	
Q1.14.1.8	Applicant	**Targeted Consultation on the Derogation Case and Potential Compensation Measures** Is the Applicant content that the targeted consultation on the derogation case and potential compensation measures has been sufficient to satisfy all of the consultation requirements of the relevant legislation? Please systematically relate the answer to those requirements. Would anything further be necessary?	The Applicant is not aware of any statutory consultation requirements relating specifically to the derogation case and potential compensation measures. Any targeted consultation on the derogation case and potential compensation measures has been carried out on a non-statutory basis, although was undertaken at the pre-application stage as part of the Evidence Plan process, in line with the Planning Inspectorate's Advice Note 10. Some information on the derogation case and potential compensation measures was also presented to stakeholders alongside the statutory section 42 consultation on the PEIR, carried out in 2021. The Applicant notes that engagement with key stakeholders on these matters has been an ongoing process, details of which are set out in Annex 1D - Record of HRA Derogation Consultation [APP-068], with an up-to-date record of consultation provided at Deadline 1 in the submitted Habitats Regulations Assessment Derogation and Compensatory Measures Update [document reference 13.7].
Q1.14.1.9	Applicant	**Securing any Derogation Case and Compensatory Measures through a DCO** a) Could the Applicant clarify how any derogation case and compensatory measures would be secured through any DCO should the SoS's HRA demonstrate that they were necessary to address residual AEoI that could not be excluded beyond a reasonable scientific doubt?	**a)** Article 46 of the draft DCO (Revision C) [document reference 3.1] gives effect to Schedule 17 (Compensation Measures) of the draft DCO. Schedule 17 contains detailed provisions that secure the delivery of the compensation measures proposed by the Applicant in the event that the

		b) Provide final, without prejudice compensation measures through a Requirement in the decor, to be activated only if the SoS finds AEoI? c) Alternatively, submit a version of the decoy with the necessary provisions to address the SoS's potential finding of AEoI?	SoS's HRA concludes that AEoI cannot be ruled out beyond reasonable scientific doubt. The Applicant has included provisions within the draft DCO [document reference 3.1] that it considers are sufficient to secure that the necessary compensatory measures will be undertaken for ornithological features and sites where the Applicant has concluded in the Report to Inform Appropriate Assessment (RIAA) [APP-059] that AEoI cannot be ruled out. In response to parts b) and c) below, the Applicant has submitted a new document at Deadline 1, Proposed Without Prejudice DCO Drafting [document reference 3.1.3], which includes wording that would secure the derogation provisions submitted on a "without prejudice" basis should these be required. **b)** See answer to Q.14.1.9 (a) and the new Proposed Without Prejudice DCO Drafting [document reference 3.1.3] document submitted at Deadline 1. **c)** See answer to Q.14.1.9 (a) and the new Proposed Without Prejudice DCO Drafting [document reference 3.1.3] document submitted at Deadline 1.
Q1.14.1.10	Applicant Natural England RSPB	**Norfolk Boreas and Norfolk Vanguard DCO Decisions** Do the SoS's HRAs and decisions on the Norfolk Boreas and Norfolk Vanguard projects affect the process or conclusions of the HRA undertaken for this Proposed Development by the Applicant, including the deliverability and timing of the proposed compensation measures, especially in relation to the kittiwake interest feature of the Flamborough and Filey Coast SPA?	The relevant Secretary of State's (SoS's) Habitats Regulations Assessments (HRAs) and decisions on the Norfolk Boreas and Norfolk Vanguard projects, as well as Hornsea Project Three and East Anglia One North and Two have not necessarily influenced the earlier stages of the HRA process undertaken by the Applicant (i.e. Stage 1 Screening and Stage 2 Appropriate Assessment). However, they have informed the approach taken and the conclusions reached by the Applicant with respect to its HRA Derogation Case (i.e. Stage 3 of the HRA process), specifically in relation to its compensatory proposals. Where applicable,

			the Applicant has taken note of these implications within the relevant DCO application documents (for example, see paragraph 30, 4th bullet point of Appendix 3 - Kittiwake Compensation Document [APP-072]). In the context of the Flamborough and Filey Coast Special Protection Area (FFC SPA) kittiwake interest feature, the relevant SoS's HRAs and decisions for the aforementioned projects determined that the threshold for an in-combination adverse effect on integrity had already been reached, and that project alone effects, however small, could not be treated as *de minimis*. Those other HRAs and decisions have also influenced the Applicant's approach to the deliverability and timing of the proposed compensation measures for kittiwake (and where relevant for other species), particularly with regard to: • The need to mature the development of the measures at the pre-application stage, including consultation with stakeholders. • The timing for implementation relative to the anticipated start of operation of the wind farms. The kittiwake compensation required by the Norfolk Boreas and Norfolk Vanguard projects will be delivered at Lowestoft, and therefore this was taken into account by the Applicant at the pre-application stage. However, it should be noted that the Applicant's proposals for kittiwake compensation are now focussed on Gateshead as the preferred option (as described in further detail in response to Natural England's Relevant Representation [RR-063] within The Applicant's Responses to Relevant Representations [document reference 12.3] and the Habitats Regulations Assessment Derogation and Compensatory Measures Update [document reference 13.7] submitted at Deadline 1).
Q1.14.1.11	Natural England	**Offshore Artificial Nests** In relation to the proposed creation of artificial nests offshore [APP-065]:	**N/A**

		a) Explain whether these are floating features or permanent fixtures (i.e. requiring to be affixed to the seabed). b) Explain how far away from the impacted colonies the artificial nests should be. c) Explain how far away from any offshore wind turbine the artificial nests should be. d) Explain how far away from any primary shipping routes the artificial nests should be. e) Explain, with evidence where possible, the effectiveness of providing such a compensatory measure and why it represents betterment over an onshore nesting site. f) Could NE explain its view [RR-063] that further onshore artificial nesting structures for kittiwake are unlikely to result in sufficient benefits to provide adequate compensation. Nest for nest, why does it consider that offshore nesting structures might provide a higher level of compensation than onshore nesting structures? g) Kittiwakes are known for being exclusively cliff-nesting gulls. In that case, what confidence can be had in the success of offshore nesting sites?	
Q1.14.1.12	Natural England	**Increasing Prey Supply for Sandwich Terns and Kittiwakes** [RR-063] suggests increasing prey supply and availability may be of benefit to the affected species. a) Identify specifically the prey that would need to be increased and what quantities are anticipated to be enough to support the relevant bird species b) Explain the preferred habitat for this prey and whether this exists in enough abundance near to the Proposed Development to support both existing and additional prey numbers	**N/A**

		c) Could artificial habitat be created for these species by the Applicant and, if this is possible, is this something that could be provided as MEEB within the MCZ?	
Q1.14.1.13	Applicant	**Level of Detail and Confidence in Compensation Measures** In its Relevant Representation [RR-063], NE raises concerns that, in the absence of specific locations and delivery mechanisms being identified for guillemot and razorbill, the confidence that any of the proposed compensation measures can or will be secured is significantly reduced. a) Given the lack of refinement of possible sites for the proposed compensation measures, how reliable is the HRA, derogation case and compensation proposals? b) Is there any evidence to support the assertion that bycatch compensation measures are effective and can be relied upon as a compensation measure?	**a)** The Applicant's position as set out in the RIAA [APP-059] is that there will be no adverse effect on integrity with respect to the guillemot and razorbill features of the FFC SPA, either alone or in-combination. The Applicant maintains this position. The compensatory measures are therefore provided on a without prejudice basis. As evidenced in Appendix 4 – Gannet, Guillemot and Razorbill Compensation Document [APP-074], the identification of potential compensation measures for these species is challenging, for a number of reasons. In developing its proposals, the Applicant has therefore sought to identify measures that are firstly proportionate to the comparatively small predicted contribution of SEP and DEP to the in-combination adverse effect (see below) and secondly to not needlessly duplicate similar work and proposals already being progressed by other developers. For example, reference is made in paragraph 216 of Appendix 4 – Gannet, Guillemot and Razorbill Compensation Document [APP-074] to Ørsted's guillemot and razorbill bycatch technology selection trials of looming eye buoys (LEB) off the south coast of England for Hornsea Project Four. It is for these reasons that the Applicant focussed its proposals for fishery bycatch reduction as set out in its compensation document on the northeast, with the information that was available at the time suggesting that the measures in that area would be sufficient to achieve the comparatively small quantum of compensation that is required for SEP and DEP (the predicted impacts set out in the RIAA [APP-059] were up to 6 guillemots and 0.5 razorbill/year. The assessment has since been updated within the Apportioning and HRA Updates Technical Note [document reference 13.3] submitted at Deadline 1 with the impact predicted to be 6 guillemots and 3 razorbills/year).

			Since submission of the DCO application, the Applicant has had further discussions with fisheries stakeholders in the northeast and has ascertained that the level of set net fishing activity and therefore auk bycatch is unlikely to be of a sufficient scale to present a feasible compensation measure. However, and in response to the points raised by Natural England within their Relevant Representation [RR-063], the Applicant is now investigating options for the implementation of the same or similar measures in the southwest of England. The Applicant intends to submit an Auk Bycatch Reduction Feasibility Statement at an early point in the Examination which includes further details on these proposals including evidence of the extent of bycatch in southwest England and the implementation and monitoring of bycatch reduction technologies. It should be noted that the Applicant's proposal also includes measures that could potentially be delivered on either a collaborative (bycatch reduction and predator eradication from a breeding colony) or strategic basis (i.e. contribution to strategic compensation fund such as the Marine Recovery Fund). An update with respect to these delivery models has been provided in the Habitats Regulations Assessment Derogation and Compensatory Measures Update [document reference 13.7] submitted at Deadline 1. **b)** As described above the Auk Bycatch Reduction Feasibility Statement, which will be submitted at an early point in the Examination, will include further details of the evidence of the extent of bycatch in southwest England. Other evidence to support the assertion that bycatch compensation measures are effective and can be relied upon as a compensation measure is included in Appendix 4 – Gannet, Guillemot and Razorbill Compensation Document [APP-074].

Q1.14.1.14	Natural England	**Maximum Parameters, Rochdale Envelope and HRA** If the Applicant committed to reducing the scope of the Rochdale Envelope: a) Would this provide greater certainty to the conclusions of the HRA and RIAA? b) Would any downwards reductions to parameters have any implications for the conclusions of the HRA, or would these be suitably covered by the existing documentation? c) Set out fully the reasons why DEP-N should be excluded from the dDCO and, if the ExA were to agree, what the consequential implications would be for the HRA and RIAA.	**N/A**
Q1.14.1.15	Applicant	**Other OWF** The RIAA, states that other OWF will need to produce their own respective SIP [APP-059, paragraph 503]. a) Is there a possibility of cross-coordination of a joint SIP between various entities? b) Given the suggestion that restrictions on simultaneous piling could be applied on other OWF, do Protective Provisions need to be drafted to regulate this or how else would this be agreed/ secured?	**a)** Condition 14 of marine licence 1 and 2 (Schedules 10 and 11 of the draft Development Consent Order (Revision C) [document reference 3.1] Condition 13 of marine licence 3 and 4 (Site Integrity Plan)(Schedules 12 and 13) requires submission and approval of a Site Integrity Plan which must be in accordance with the in principle site integrity plan for the Southern North Sea Special Area of Conservation before commencement of any piling activities. As set out in Table 8-12 of the RIAA [APP-059], the SIP is an adaptive management tool, which can be used to ensure that the most adequate, effective and appropriate measures, if required, are put in place to reduce the significant disturbance of harbour porpoise in the SNS SAC. The SIP will be developed in the pre-construction period and will be based upon best available information and methodologies at that time, in consultation with the relevant SNCBs and the MMO. As noted at para 504 (and elsewhere) of the RIAA, this is a process managed by the MMO. The Applicant understands that this is achieved

			through the Marine Noise Registry (MNR) Service [8], which is a data input platform where the industry can enter details on their activities (including the location and date of activities during the planning stages and after the activity has occurred). This data will help provide an overview of where and when noisy activities are taking place throughout the year. This is turn will help define baseline levels of impulsive noise in UK waters and inform research on the impacts of noise. **b)** As explained above this is regulated by the MMO using the MNR and therefore Protective Provisions are not required.
Q1.14.1.16	East Suffolk Council	**Kittiwake Compensation and Strategic Approach** Explain what your expectations are with regards to establishing a strategic position on the requirement for kittiwake compensation. Is this specific to your District or something that can be produced to contribute directly to this Examination?	**N/A**
Q1.14.1.17	Applicant	**European Site Citations** NE's [RR-063] notes that the formal citations and conservation objectives for European sites are live documents that are updated on a regular basis to incorporate the most up to date evidence. Nevertheless, it is important that the documents on which the Examination concludes are 'fixed' before its completion, so that the SoS and others are aware of the version used. Could the Applicant confirm an arrangement for ensuring that this is the case and how the appropriate information would be provided in Examination.	The Applicant has a very good working relationship with NE and is engaging regularly via monthly update calls, which provides a communication channel for updates to be shared. Whilst the Applicant anticipates that NE will notify the ExA of any updates, the Applicant will endeavour to include in all written submissions the reference of the citation or conservation objectives used, so there can be no doubt as to the basis of the assessments.

[8] https://mnr.jncc.gov.uk/

Q1.14.1.18	Applicant	**Assumptions Regarding Headroom** Although there is reference to releasing headroom by not implementing the existing s36 consent, the following needs clarifying: a) The ES suggest that the possibility of as-built capacity at OWF being exploited would result in the decommissioning and rebuilding of the existing OWF to their consented designs (or older turbine models being installed) [APP-097, paragraphs 680 to 687]. Both of these scenarios are reported as being 'unrealistic.' If that is the case, and the DOW could not be fully developed in accordance with the s36 consent, what weight or worth is the 'headroom' in the DOW when considering the Proposed Development? b) The ExA understands headroom (crudely) to be that, if DOW was built-out in full, 100% of wildlife would be affected but, with the DOW only built to 80%, only 80% of wildlife would be affected. Then the difference of 20% of affected wildlife could 'passover' to be affected by the SEP/DEP turbines. Is that, in essence what the Applicant's case rests on? c) Signpost where the headroom concept has been assessed in the ES and where its effects have been taken into account in determining impacts on the environment. d) Provide any necessary quantification in relation to how headroom has been calculated and how it has been taken into account within the ES assessments (if it has). See related question in Construction Effects Offshore.	**a)** The ES Chapter 11 – Offshore Ornithology [APP-097] presents a range of cumulative scenarios for Sandwich tern, using various combinations of consented and as-built OWFs. These are presented in order to give the ExA an understanding of the difference between realistic (i.e. as-built) scenarios compared to the unrealistic (consented) scenarios. As the ExA points out, this presents the potential that 'headroom' could be released if the 'realistic' values are used, to reduce the cumulative/in-combination values, when compared to the consented parameters for existing OWFs. The Applicant recognises that use of as-built scenarios are unlikely to be accepted by Natural England unless these can be legally secured. The DOW is the only OWF where the Applicant is able to provide such security, via an amendment to the s36 consent for DOW. However, the Applicant has not relied on any scenario that uses as-built parameters (i.e. headroom) in the assessment conclusions (either in ES Chapter 11 – Offshore Ornithology [APP-097] or the RIAA [RR-059]). Furthermore, the proposed compensatory measures for Sandwich tern (as set out in Appendix 2 - Sandwich Tern Compensation Document [APP-069]) do not assume or rely on any form of headroom, as compensation is provided solely for predicted loss of Sandwich terns from SEP and DEP in-isolation. Whilst Article 45 the draft DCO (Revision C) [document reference 3.1] includes a legal mechanism to secure the as-built design for DOW, there is no reliance on this commitment for the assessment conclusions; however, its consideration provides greater certainty (precaution) to the conclusions of the ES and RIAA. **b)** The ExA's understanding of the principal of headroom is correct, but, as set out in (a) above, this has not been relied on in the assessment

			conclusions presented in the Applicant's DCO application and examination submissions. **c)** As above, the use of headroom has not been used in determining the assessment conclusions set out in the ES Chapter 11 – Offshore Ornithology [APP-097] and the RIAA [RR-059]. The Applicant accepts that an in-combination AEoI on Sandwich terns from Greater Wash SPA and North Norfolk Coast SPA cannot be ruled out, and therefore compensatory measures in respect of this feature are proposed (as set out in Appendix 2 - Sandwich Tern Compensation Document [APP-069]). **d)** As set out above, headroom has not been relied on within the assessment conclusions. However, by way of an example, available headroom can be calculated from the data presented in the Updated Collision Risk Modelling (CRM) Updates (EIA Context) Technical Note [document reference 13.2] submitted at Deadline 1, which uses updated parameters as advised by Natural England in their Relevant Representations [RR-063]. Taking Table 3-5 in this note as an example (using model-based density estimates and the flight speed of Fijn and Collier (2020) as a model input), predicted collision mortality at DOW under Scenario A (as consented) would be 20.05 birds/annum, and under Scenario E (as built) 16.65 birds/annum. Therefore, available headroom assuming that as-built parameters for DOW were legally secured, and all other OWFs were assessed as-consented, would be 3.40 birds/annum (i.e. 20.05-16.65). Under a scenario where all OWFs were assessed as-built (Scenario B; considered to be the most realistic), the total cumulative collision mortality would be 49.69 birds/annum, and under Scenario A (as consented), the total cumulative collision mortality would be 89.24

			birds/annum. Therefore, under this scenario the cumulative available headroom would be 39.55 birds/annum (i.e. 89.24-49.69).
Q1.14.1.19	Applicant Natural England Royal Society for the Protection of Birds Norfolk Wildlife Trust	**Red-Throated Diver Clarification** The RSPB has raised concern that the Applicant has not taken fully into account the conservation objectives for red-throated diver [RR-083]. NE has also raised concerns for this species, but it is not clear to the ExA whether both organisations consider an AEoI on red-throated diver can be ruled out. Can the position be clarified?	The Applicant has provided an updated operational phase displacement assessment on the red-throated diver feature of the Greater Wash SPA within the Apportioning and HRA Updates Technical Note [document reference 13.3] submitted at Deadline 1, which the Applicant considers takes full account of the conservation objectives for red-throated diver. The assessment concludes that an AEoI can be ruled out. The Applicant understands that Natural England and the RSPB are intending to review this updated assessment following which it is anticipated an updated position will be provided. It should also be noted that the Applicant's O&M vessel displacement assessments on the red-throated diver features of the Greater Wash SPA and Outer Thames Estuary SPA conclude that AEoI can be ruled (see the RIAA [APP-059]). Finally, the Applicant is intending to update the export cable laying vessel red-throated diver displacement assessment and provide this at Deadline 2 within an update to the Apportioning and HRA Updates Technical Note [document reference 13.3] to address comments from Natural England; however, this is also very likely to conclude that an AEoI can be ruled out. The assessments for red-throated diver consider the potential area within which birds could be subject to displacement and then, based on various displacement and mortality rates, calculates the number that could be subject to mortality. This is the standard approach for seabird displacement assessments and is considered to allow consideration of the effect against all of the conservation objectives including restoring or maintaining '*The distribution of the qualifying features within the site'* (Natural England 2019[9]).

[9] Natural England (2019)2. Natural England, 2019. European Site Conservation Objectives for Greater Wash SPA (UK9020329)

Q1.14.1.20	Applicant	Marine Recovery Fund a) Is there any more up-to-date information regarding the Government's intention to establish a Marine Recovery Fund? b) Is it premature to consider relying on the availability of this fund to support the derogation case since it will not be available until late 2023, if at all? c) What weight, if any, can the ExA put on the potential future presence of the Marine Recovery Fund given that it may be unlikely to become enacted legislation prior to the current DCO application being determined? d) How is the level of contribution for the fund to be determined and by whom? e) When is the trigger for paying this contribution and how is this accounted for in the dDCO?	**a)** Yes. The Energy Security Bill was amended in committee on 16 January 2023 *inter alia* to enable: • making of regulations about the assessment of the environmental effects on protected sites of offshore wind developments' marine infrastructure, and about compensatory measures for adverse environmental effects; • strategic compensatory measures to be taken or secured; and • making regulations to introduce one or more Marine Recovery Funds, and to allow for delegation of the operation and management of the Funds to other bodies. Copies of the Energy Security Bill (as amended in committee, 16 January 2023) and the Energy Security Bill Policy Statement Offshore Wind Environmental Improvement Package Measures (BEIS, 2023[10]) have been submitted in response to Q1.1.3.1 and are appended to this document. The implications of this latest information to the Applicant's compensation proposals are considered further in the Habitats Regulations Assessment Derogation and Compensatory Measures Update [document reference 13.7] submitted at Deadline 1. **b)** No, the Applicant considers that it would not be premature to take account of the Marine Recovery Fund (MRF) based on its current stage of development. The Applicant has included an option to contribute to a Strategic Compensation Fund (such as the MRF) as a strategic alternative to project-led measures. This would be implemented wholly or partly in

[10] BEIS (2023). Energy Security Bill Policy Statement. Offshore Wind Environmental Improvement Package Measures. Policy Statement Offshore Wind Environmental Improvement Package Measures (publishing.service.gov.uk)

			substitution for the project-led compensation measures or as part of an adaptive management approach. On 30 December BEIS published a factsheet on the Energy Security Bill and, more specifically, the offshore wind environmental improvement package in which it stated the Government's intention was to have the MRF operational from late 2023. If the MRF became available in the anticipated timescale of late 2023, then it is possible that the Applicant would be able to utilise the fund within the existing timetable for delivery of SEP and DEP. **c)** The Applicant considers that the ExA can place weight on the Government's stated intention to introduce the MRF. The MRF is now at a more advanced stage than at the point of application, with enabling legislation being included in the latest amendments to the Energy Security Bill. This can give the ExA confidence that the fund will be established. The Applicant anticipates that the SoS will make a decision on whether to grant development consent for SEP and DEP in Q1 2024, after the Government's target date for the MRF to be established (see part (b) above). The Applicant therefore considers that the MRF should give the ExA comfort that a strategic solution will be in place to support SEP and DEP and can be relied upon by the SoS in their decision to grant development consent for SEP and DEP. For the avoidance of doubt, the Applicant considers that its proposed project-led measures are capable of fully compensating for the predicted impacts from SEP and DEP (if required). However, the MRF provides an additional level of robustness and confidence that the necessary compensation would be delivered as this option could be utilised in place of project-led measures or as an adaptive management measure should project-led measures fail to deliver the necessary level of compensation. **d)**

			The Energy Security Bill Policy Statement (BEIS, 2023) states (on page 15) that *"future regulations will also be used to confirm how payment amounts for Strategic Compensatory Measures will be set, as well as to clarify at what point in the consenting process a payment into the Marine Recovery Fund can be made".* The Applicant anticipates that the level of contribution will be determined by the SoS for Energy Security & Net Zero, as the competent authority in determining the DCO application. The Applicant anticipates that the process for determining the level of contribution will be set out in more detail in the implementing legislation and supporting policy that is still to be published. **e)** As noted in response to part b), BEIS have stated that future regulations will confirm the point in the consenting process that a payment into the MRF would be made. The drafting in schedule 17 of the dDCO allows the relevant undertaker to make a contribution to the fund once it has been established. Any payment triggers would be in line with the rules and provisions for the established fund. There is therefore no need for these to be separately accounted for in the dDCO.
Q1.14.1.21	Natural England RSPB Marine Management Organisation Norfolk Wildlife Trust	**Marine Recovery Fund** The Applicant has set out compensatory measures for those species/ features identified as where an AEoI cannot be ruled out. The Applicant has stated however, that it may not implement such compensatory measures if the 'Marine Recovery Fund' (or equivalent) is introduced by the Government. a) Is it appropriate for the Applicant to substitute in a contribution towards a strategic compensation fund as opposed to proactively implementing its own proposed	**N/A**

		package of physical and proactive compensatory measures (bearing in mind the fund does not yet exist)? b) Would there be any guarantees that the contribution to the fund would be directed specifically towards compensating for the adverse effects of the Proposed Development on sandwich terns and kittiwakes? c) From what you know of the fund, is it purely to be directed to whatever project the Government allocates as needing attention rather than project specific?	
Q1.14.1.22	Applicant	**Nature Recovery Zone** Provide an update whether any meaningful exploration of the nature recovery zone option has taken place since June 2022 and/ or is this likely to result in any conclusions within the Examination period.	The Applicant understands this to be a reference to a suggestion made by Natural England at the HRA Offshore Ornithology Compensation ETG 3 (Annex 1D Record of HRA Derogation Consultation [APP-068]). The Applicant can confirm that no further exploration of a nature recovery zone has taken place since June 2022 and does not consider it likely that any update on this will be able to be provided during the course of Examination. However, the Applicant is continuing to liaise with Defra and Natural England regarding strategic compensation measures.
Q1.14.1.23	Natural England	**Loch Ryan** NPS EN-1 5.3.7 says that where significant harm cannot be avoided, appropriate compensation measures should be sought. You have stated that the current scale of compensation is not yet clearly defined, but that the Applicant should be ambitious. In the context of the national policy, to what extent should compensation be guided by ambition and is there a requirement for compensation to provide betterment or be in excess of that which is being lost?	**N/A**
Q1.14.1.24	Applicant East Suffolk Council	**Compensation Measures for Kittiwake** a) Further to the discussion at ISH1 [EV-011] [EV-015], provide evidence and communication from Gateshead Council to demonstrate the suitability and availability of	**a)** The Applicant has submitted a Habitats Regulations Assessment Derogation and Compensatory Measures Update [document reference 13.7] at Deadline 1. This includes a record of consultation undertaken

		existing compensation measures for kittiwake within its region, indicating process and timescales for securing appropriate sites. b) East Suffolk Council to confirm, at this stage, whether there would be spare capacity for kittiwake compensation measures resulting from other agreed projects, and the possibility of the Applicant 'buying into' that compensation.	since submission of the DCO application in relation to the Applicant's compensatory proposals, and includes the Applicant's communication with Gateshead Council regarding its kittiwake nest site improvements measure. A letter of support from Gateshead Council is appended to this document. It confirms their view that the proposal has "*strong ecological merit*" and aligns "*with the council's long-term intentions for the site and will help ensure the enhanced and continued success of the tower in supporting the local kittiwake colony*". Please see the aforementioned document for further information about the onward process and programme for securing this measure.
Q1.14.1.25	Applicant	**Bycatch Reduction *Measures*** Further to the discussion at ISH1 [EV-011] [EV-015], provide further detail to demonstrate the feasibility of bycatch reduction measures represent an effective compensatory measure.	See the Applicant's response to Q1.14.1.13 a) and b)

Q1.15 Historic Environment and Cultural Heritage			**Applicant's Response**
Offshore Matters			
Q1.15.1 Adequacy of Baseline Surveys and Environmental Information			
Q1.15.1.1	Applicant	**Intertidal Zone, HDD and the Historic Environment** Confirm how deep the HDD ducting would be laid under the intertidal zone and why, at the depth proposed, it is unlikely to have a direct effect on buried archaeology [APP-100, paragraph 220].	In Appendix 3.2 - Cable Landfall Concept Study [APP-176] Figures 1002_000330-MAE-XX-XX-DR-C-0003_P01_S3 - Landfall HDD Profile Weybourne provides indicative depth ranges for HDD. For the intertidal area, this will be between 27.5-28.75m deep. This is addressed in Chapter 14 - Offshore Archaeology and Cultural Heritage [APP-100, Section 14.6.1.1, para 218]. "Within the intertidal zone (see Section 14.5.3), there are 45 HER (Norfolk) records of previously recorded findspots, former Post-Medieval, WWI and WWII defences and military infrastructure and a single record of a possible prehistoric multiphase settlement (MNF6256). During a site walkover survey, however, none of the assets were seen to survive as extant structures and no archaeological material was identified. It is possible that remains related to these records may survive beneath the surface. Until the final design and layouts are confirmed, there will remain uncertainty in the precise nature and extent of any direct impacts, however, it is anticipated that all such remains can be avoided through the use of HDD to install the cable ducts, passing below the beach deposits, and there will be no direct pathway for impact to intertidal assets. The depth of sedimentary sequences of archaeological interest at the landfall will be further clarified through the geoarchaeological assessment of geotechnical data post-consent, and will inform the design of HDD and nearshore cable installation." A consultation response [APP-100, Table 14-1] also addresses this point "The depth of sedimentary sequences of archaeological interest at the landfall, and the potential presence of Palaeolithic material within the shallow subtidal area, will be further clarified through the

			geoarchaeological assessment of geotechnical data acquired post-application/post-consent, and will inform the design of Horizontal Directional Drilling (HDD) and nearshore cable installation"
Q1.15.1.2	Historic England	**AEZs within the Offshore Temporary Works Area** Do you consider any modifications are required to the AEZ limits set out in the ES [APP-100, Table 14-27], or that additional AEZs are required around other identified assets?	**N/A**
Q1.15.1.3	Applicant	**Geotechnical Work** HE has set out that geotechnical work has only been undertaken so far within the export cable corridor [RR-041]. Provide justification as to why such work has not been undertaken within the array areas.	On this point Historic England's relevant rep highlights the importance that the Outline WSI provides for analysis to be conducted on geotechnical materials obtained from the proposed array areas. We can confirm that the Outline Written Scheme of Investigation: Offshore (Doc Ref: 9.11) provided for this analysis. However, it should also be noted that Cone Penetrometer Tests have been carried out in the wind farm sites in 2021, although no sampling was taken (and therefore no archaeological analysis of samples). It is therefore inaccurate to say that no geotechnical work has been carried out within the array areas. Subsequently a borehole campaign was performed between August and December 2022 including array areas. Results are not available yet and laboratory testing is ongoing until summer 2023 due to the extensive scope. The justification for the CPT rather than a borehole and grab scope is that a CPT alone is quite standard for a preliminary campaign where the Applicant has access to data from neighbouring Dudgeon and Sheringham windfarms.
Q1.15.1.4	Applicant	**Gravity Based Structure** Define the excavation depth and levelling requirements for installing 43 gravity-based structures [RR-041].	As noted in Chapter 4 Project Description [APP-090, Table 4.13], the depth of seabed excavation required for GBS seabed preparation is up to 5m. For a single 18+MW GBS foundation (of which there could be up to 43 for SEP and DEP), up to 16,964.6m^3 of sediment could be disturbed during seabed preparation.

Onshore Matters			
Q1.15.2 Adequacy of baseline surveys and information			
Q1.15.2.1	Historic England	**Outline Written Scheme of Investigation** Are you satisfied that the OWSI, and its accompaniments, provides sufficient protection for unknown heritage/ archaeological assets with appropriate mitigation in place to preserve such assets?	**N/A**
Q1.15.2.2	Applicant Historic England	**Swannington** The village of Swannington contains numerous heritage assets including: • St Margarets Church (Grade I) • Swannington Hall (Grade II*) • Swannington Hall Barn (Grade II) • The Old Rectory (Grade II) (list non-exhaustive) Sheet 21/40 of the Works Plans shows a construction access being taken from the end of Church Lane down to Swannington 'From Farm to Fork.' The ExA interpret this that HGVs would drive into Swannington via link 138/139, east along Church Lane, past each of the aforementioned heritage assets, in order to reach the construction access (*the ExA note that Church Lane itself is not identified as a link in the Traffic and Transport Figures*). a) If this is not the case (i.e. the wrong interpretation), explain why there is a construction access shown, what its purpose is and how construction vehicles would access it; or b) If the ExA's assumption is correct, provide justification for there being no assessment of the impacts upon these	The Applicant would like to highlight that the access from Church Lane shown on the Access to Works Plan [APP-014, Sheet 21/40] is notated with an 'E' which the Legend highlights the access as an 'Early Works Access' and not a Construction Access. The access would be used for pre-commencement works only (defined within Article 2(b) of the draft DCO (Revision C) [document reference 3.1]). The number of HGV movements would therefore be low due to the nature of these pre-commencement works. Due to the low numbers of HGV movements no significant effect on the receptor would be expected and consequently, no detailed assessment has been undertaken or included in the ES.

		heritage assets within either ES Chapters 21 or 23 [APP-107], [APP-109].	
Q1.15.3 Effects on Designated and Non-designated Heritage Assets			
Q1.15.3.1	Applicant National Trust	**Archaeological Features at Sheringham Park and Weybourne Woods** With the aid of a plan/ diagram, please set out the broad locations of known medieval, post-medieval, WWI, WWII and barrow features that are referenced in your Relevant Representation [RR-061]. State whether you consider impacts upon these features from the Proposed Development would be direct or indirect.	The location of the known heritage assets as recorded on the Norfolk Historic Environment Record are presented in the Environmental Statement - Figures [APP-230b, Figure 21.1.2, Sheet 1/13]. Detailed mapping from aerial imagery and LiDAR data of these heritage assets is presented in E Annex 21.2.1 [APP-234, Figure 21.1-10, Sheet 1/20]. The trenchless crossings are presented E in Chapter 4 Figures – Project Description [APP-117, Figure 4.10, Sheet 2/18]. Potential for direct physical impacts are considered likely upon the recorded late Saxon to medieval earthwork pits within the southern extent of the National Trust land where a trenchless crossing compound is proposed. No other impacts are considered likely due to the trenchless methodology proposed through Weybourne Woods. The National Trust's Archaeologist will also be consulted where archaeological surveys and investigations are relevant to their land ownership within Weybourne Woods, as part of the National Trust's Sheringham Park Estate. Survey-specific WSIs relevant to the National Trust's land ownership within Weybourne Woods will be agreed following consultations with the National Trust's Archaeologist in addition to NCC HES. Commitment to consultation with National Trust in regards archaeological surveys and investigations at Weybourne Woods has been included within the Outline Written Scheme of Investigation (onshore) (Revision B) [document reference 9.21]. This is secured via Requirement 18 of the draft DCO (Revision C) [document reference 3.1] and requires that the final WSI to be submitted and approved must accord with that outline version.

Q1.15.3.2	South Norfolk District Council	**Ketteringham Hall Park** The ExA notes that you consider Ketteringham Hall Park as a non-designated asset [AS-034]. Set out in full your position on the significance of the asset and the features that contribute to its significance and setting. In accordance with paragraph 203 of the NPPF, set out the scale and nature of the harm anticipated and weigh this against the public benefits of the proposal.	**N/A**
Q1.15.3.3	Broadland District Council	**Honingham Hall Park** The ExA notes that you consider Honingham Hall Park as a non-designated asset [AS-033]. Set out in full your position on the significance of the asset and the features that contribute to its significance and setting. In accordance with paragraph 203 of the NPPF, set out the scale and nature of the harm anticipated and weigh this against the public benefits of the proposal.	**N/A**

Q1.16 Land Use			**Response**
Q1.16.1 Effect on Agricultural Land and Businesses and Recreational Assets			
Q1.16.1.1	Applicant	**Methodology** How have the thresholds for loss of agricultural land set out in Table 19-7: Definition of Magnitude for Land use, Agriculture and Recreation Receptor of the assessment [APP-105] been derived?	The thresholds have been derived from a consideration of the following: • Scale or spatial extent (small scale to large scale or a few individuals to most of the population); • Duration (short term to long term); • Likelihood of impact occurring; • Frequency; and • Nature of change relative to the pre-impact condition of the existing environment. ES Chapter 19 Land Use, Agriculture and Recreation [APP-105, Table 19-7] includes descriptions based on professional experience and judgement ensuring definitions are transparent and specific to this particular topic. However, as recognised in ES Chapter 19 Land Use, Agriculture and Recreation, [APP-105, para. 42], it is accepted that the perceptions, particularly so for receptor sensitivity, may differ between individuals. Therefore, the most likely perception is chosen where possible and it is assumed that differences in opinion would balance on average.
Q1.16.1.2	Applicant	**Temporary Loss of Agricultural Land** The ES [APP-105] finds that the sensitivity of the receptor, in accordance with Table 19-6, is considered to be medium in order to reflect the dominance of ALC Grade 3 land. Does this however underplay pockets of ALC Grade 2 land where sensitivity would be classed as high in accordance with Table 19-6?	As per ES Chapter 19 Land Use, Agriculture and Recreation [APP-105, para. 115], the quality of the agricultural land present within the study area primarily consists of ALC Grade 3 (77%), but also includes Grade 2 (17%) and Grade 4 (3%). The Applicant considers this sensitivity to be appropriate and proportionate given the proportions of land present which the cable corridor interacts with. ES Chapter 19 Figures - Land Use, Agriculture

			and Recreation [APP-130, Figure 19.4] provides further information in this regard. As per ES Chapter 19 Land Use, Agriculture and Recreation [APP-105, para. 119], the site selection process for SEP and DEP has sought to minimise land take and avoid wherever possible the likelihood of sterile land parcels resulting from construction activity within the study area. This has involved aligning the study area with field boundaries and utilising existing vehicle access tracks where possible. During construction the working easement will be kept to a minimum and access to severed land for farm vehicles would be maintained using agreed crossing points with landowners and occupiers. Furthermore, an Agricultural Liaison Officer would be appointed to assist with the appropriate planning and timings of works to minimise disruption to agricultural activities.
Q1.16.1.3	Applicant	**Impact to Agri-environment Schemes (Construction and Cumulative)** The ES [APP-105] notes that the impact on specific agreements will only be known once the landowner agreements are in place, confirming the extent and duration of impacts to specific land parcels. Further to discussions at ISH2 [EV-020] [EV-024], provide information in terms of what work is being done to reach such agreements and what confidence can the ExA have that any impacts can be suitably mitigated or compensated?	The Applicant has tried to avoid where possible land managed under an agri-environment scheme. Where the Project has impacts to an existing agreement that can't be avoided, affected landowners and or occupiers will be consulted to enable them to liaise with the Rural Payments Agency. If the project impacts any land subject to schemes where compensation could become payable, the Applicant will review this on a case-by-case basis and will reimburse financial losses where appropriate. Following completion of the construction works, land will be reinstated and would therefore continue to be available for management under an Agri-environment scheme in the future.
Q1.16.1.4	Applicant	**Impact to Agri-environment Schemes** The ES [APP-105] sets out "*Where impacts to an agreement cannot be avoided, the affected landowners and /or occupier will be consulted to enable them to liaise with the Rural Payments Agency. This will include compensation provisions to reimburse a*	If SEL and/or DEL was to exercise powers of compulsory acquisition under the DCO to acquire land or rights which created an impact on agri-environment schemes then any affected landowners/occupiers would be entitled to claim compensation for financial losses in the usual way under the principles of the Compensation Code. Therefore,

		landowner and/or occupiers financial losses, where appropriate". Where are such measures secured in the dDCO?	there is no need for this to be specifically secured in the **dDCO** [AS-009].
Q1.16.1.5	Applicant	**Cumulative Temporary Loss of Land for Agricultural** The cumulative effects assessment [APP-105] finds that following the completion of the construction phase for each of the identified projects and implementation of mitigation measures to restore land to its previous use, the predicted cumulative impact significance to minor adverse during the construction phase. However, the residual impact for all SEP and DEP scenarios is considered to be of moderate adverse significance for the Proposed Development alone. Explain fully how this position has been arrived at and what criteria has been used to reach this conclusion.	When reporting on the likely residual effects of SEP and DEP in all scenarios, the mitigation considers minimising land take and avoiding wherever possible the likelihood of sterile land parcels resulting from construction activity within the study area. The residual effect does not take into account that land will be reinstated post construction, leaving the export cables buried ensuring normal agricultural activities would be able to continue following completion of the construction works. When reporting on the cumulative impacts as a result of temporary land loss for agriculture, ES Chapter 19 Land Use, Agriculture and Recreation [APP-105, Section 19.8.3.2, para. 242] states, "Following the completion of the construction phase for each of the identified projects and implementation of mitigation measures to restore land to its previous use, the predicted cumulative impact significance to minor adverse during the construction phase". This assessment does take into consideration that land will be reinstated post construction ensuring normal agricultural activities would resume.
Q1.16.1.6	Applicant	**Potential Monitoring Requirements** The ES [APP-105] notes that monitoring is proposed for land use, agriculture and recreation via the OLMP [APP-303]. However, little or no reference is made in the OLMP with regard to such matters. Why is this?	The Outline Landscape Management Plan (Revision B) [document reference 9.18, Section 1.4] sets out the landscape management prescriptions (regimes) for proposed vegetation, to be carried out during the first ten years following planting along the onshore cable corridor and for the lifetime of the onshore substation, in accordance with relevant British Standards. The fourth bullet point of paragraph 33 states: *"Replace all plants that die annually at the end of each growing season during the first ten years, or when it is agreed that the woodland or scrub has established effectively, and individual plant replacement is unnecessary. In addition to this, planting at the substation will be maintained for the lifetime of the projects (40 years)."*

			Whilst not explicit, the landscape management prescriptions detailed here imply that monitoring will be undertaken to ensure the successful establishment and growth of the proposed planting and seeding following the construction works. The Applicant also notes that the fifth bullet of paragraph 39 states [text embolden by Applicant for emphasis]: *"Full details of the management activities that will be undertaken at any location with proposed planting to ensure successful establishment of the new planting, including but not limited to ground preparation, planting methods, irrigation, weed control, monitoring, replacement and removal of sundries…"* [APP-303].
Q1.16.1.7	Applicant	**Amount of Agricultural Land Affected** Is the amount of agricultural land permanently and temporarily affected (acres/hectares) set out within the ES? Provide this information if not already within published documentation.	The total area of agricultural land within the Order Land is 313 ha, however the Applicant does not anticipate this being the total area of agricultural land temporarily affected. The area of agricultural land permanently affected by the Project is presented in ES Chapter 19 Land Use, Agriculture and Recreation [APP-105, Section 19.7.2.2]. This accounts for permanent infrastructure and landscaping at the onshore substation and link boxes along the cable corridor. The total area of agricultural land permanently affected is dependent on whether SEP and DEP are constructed concurrently or sequentially (19.54 ha) or one project is constructed in isolation (16.93 ha). The total area of agricultural land temporarily affected by the project during construction would be determined by the scenario that the Project is constructed, e.g. if SEP and DEP are constructed concurrently or sequentially or if one project is constructed in isolation As set out within the Scenarios Statement Document 9.28 [APP-314]. It is not possible to confirm the extent to which agricultural land will be temporarily affected based on each project scenario prior to detailed design. Proceeding on a worst case basis of the full Order Land being required for construction of both Projects, the balance of agricultural

			land once the permanent land take is accounted for is approximately 293.46 ha. The approximate working easements will be less than the full extent of the Order Land depending on the construction scenario. Furthermore, sections of the route will be constructed by HDD. Each of these would mitigate the extent of agricultural land temporarily affected by the Project. 202his
Q1.16.1.8	Applicant National Farmers Union	**Individual Farms and Farm Economics** It is not clear, from ES [APP-105] [APP-113], the actual specific impact on each individual farmstead along the cable corridor. Please set out, in tabular format: a) The name of each farm affected by the cable corridor and construction accesses. b) The amount of land within each farm holding. c) The amount of land to be taken temporarily or permanently from each holding (expressed in both physical size and as a % of the original holding). d) The type of impact on each farm operation and business.	**a)** Details of landowners/occupiers and lessees who land falls within the Order Land are presented in the Book of Reference [APP-026]. **b)** The Applicant does not consider it possible to provide an accurate or meaningful estimate to the amount of land in each holding. Only affected land titles of landowners, lessees and occupiers whose interest falls within the Order Land would be considered. As such, the Applicant is not aware of the total farm holdings where they include land registered or not registered with HMLR outside the Order Land. In addition, the Applicant is not at liberty to oblige such interests to provide information on their overall land holdings , nor would it be reasonable for the Applicant to do so. **c)** It is not possible to ascertain the total land area within each land holding, for the reasons as described in b). As such, the Applicant is unable to derive the amount of land to be taken temporarily or permanently from each holding (either expressed in physical size or as a % of the original holding). **d)**

			Due to the restrictions detailed in b) it is not possible to assess the potential impact on each farm operation and business at this stage in the application. In addition, there is potential and likelihood for farming operations, businesses and ownerships to change year on year. This can lead to changes in, for example, cropping regimes and farm diversification. The Applicant will continue to engage with Landowners, Lessees and Occupiers.
Q1.16.1.9	Applicant	**Disruption to Users of Inland Recreational Assets** The ES [APP-105] finds that for all construction scenarios the implementation of identified air quality, noise, traffic and/or visual mitigation would reduce the magnitude of impact on any affected recreational assets from low to negligible and reduce the residual impact to minor adverse significance. However, for some of these subjects there are findings of minor adverse residual impacts. Therefore, is such a blanket assumption justified?	The Applicant considers that this approach is justified. Mitigation measures for air quality, noise, traffic and visual receptors are set out in the Outline Code of Construction Practice (Revision B) [document reference 9.17] and are secured through Requirement 19 (Code of Construction Practice) of the draft DCO (Revision C) [document reference 3.1] in addition to the Outline Construction Traffic Management Plan (Revision B) [document reference 9.16] which is secured through Requirement 15 (Traffic and Transport) of the draft DCO (Revision C) [document reference 3.1]. These mitigation measures include the use of good practice construction techniques and follow industry best practice guidelines. Where residual impacts have been identified these are minor and therefore not considered significant in EIA terms.
Q1.16.1.10	Applicant National Farmers Union	**Written Ministerial Statement** On 6 December 2022, Rt Hon Michael Gove made a WMS in which he signalled Government's intentions to further change the planning system. It is noted there is reference to further protection being given towards important agricultural land for food production. a) The WMS is capable of being a material planning consideration and therefore the ExA requests the Applicant to submit a copy into the Examination.	**a)** A copy of the Written Ministerial Statement given by Rt Hon Michael Gove on 6 December 2022 is appended to this document. **b)** The National Policy Statements for Energy already include considerable guidance on how Nationally Significant Infrastructure Projects should mitigate impacts on agricultural land (see EN-1 paragraphs 5.10.8, 5.10.15; EN-3 paragraphs 5.11.8, EN-5 paragraph 2.11.14). This includes a requirement to minimise impacts on best and most versatile agricultural land. Section 6.15 of the Planning

		b) In light of this, does the Applicant or National Farmers Union have any comments on the compliance of the Proposed Development with the WMS?	Statement [AS-031] details how SEP and DEP have complied with these policies. In particular, SEP and DEP have sought to minimise land take and avoid wherever possible the likelihood of sterile land parcels resulting from construction activity. This has involved aligning the order limits with field boundaries and utilising existing vehicle access tracks where possible. Furthermore, the location of permanent above ground infrastructure (the substation) avoids the most versatile agricultural land. The Applicant considers that SEP and DEP accord with the policy intention set out in the WMS. For completeness, the Applicant considers that whilst the intention to introduce policy is capable of being a material consideration, the intention expressed in the WMS would not outweigh the policy contained in the National Policy Statements given their status in determining this application See Appendix B.9.
Q1.16.2 Soils and Soil handling, Ground Conditions, Contamination and Minerals			
Q1.16.2.1	Applicant National Farmers Union	**Soil Heating** Is there evidence to demonstrate whether or not the heating of soil, due to its proximity to the cables, damages the soil quality or harms the yields of crops that may be grown on it (above the cables)?	The Applicant has carried out a desk based review of open source literature and there is evidence that heating of soils from radiant energy can damage soil quality . The heating of soils can have an impact on the biological, chemical and physical components of soil. Some of the factors that affect the amount of heat dissipated from the soil profile include moisture content and bulk density. However, there is a lack of evidence on how heat generated from high voltage (HV) electrical cables would affect soil quality or harm the yields of crops that may be grown on it. ES Chapter 4 Project Description [APP-090 para. 287] outlines typical mitigation measures to reduce the effect of heating soils include encasing the ducting with cement bound sand (CBS), this is used to

			ensure that the thermal conductivity of material around the cable is of a known consistent value for the length of the installation. CBS has a low thermal resistance to conduct the heat produced during electricity transmission away from the HV cables.
Q1.16.2.2	National Farmers Union	**Soil Management Plan** a) Is the draft content of the proposed Soil Management Plan [APP-302] sufficient. b) Does the content give you confidence that adverse effects would be minimise as far as reasonably possible?	**N/A**
Q1.16.2.3	Applicant	**Agricultural Drainage (Construction)** The ES [APP-105] notes that in accordance with Table 19-7: Definition of Magnitude for Land use, Agriculture and Recreation Receptor, there is a medium magnitude of effect as >20ha of soil is temporarily unsuitable for agriculture. The assessment then considers mitigation and lowers the magnitude of effect to low. However, given >20ha of soil would still be temporarily unsuitable for agriculture following mitigation, is this justified?	Table 19-7 Definition of Magnitude for Land Use, Agriculture and Recreation Receptor provides a framework for definition of magnitude of effects prior to mitigation being considered and applied. Paragraph 111 states '*Introducing pre-construction drainage and reinstating land drainage as soon as reasonably practicable following the completion of the works reduces both the duration soil is unavailable and the amount of soil affected by poor drainage*'. The appointment of an Agricultural Liaison Officer and land drainage consultant, detailed in the Code of Construction Practice (Revision B) [document reference 9.17] and secured under Requirement 19 of the draft DCO (Revision C)[document reference 3.1], to develop pre and post construction drainage plans combined with the working easement being kept to a minimum all aids in reducing the magnitude of effect to low post mitigation. As per Table 19-8 Impact Significance matrix an impact of low magnitude and medium sensitivity is predicted to result in a minor adverse effect which is not significant.
Q1.16.2.4	Applicant	**Agricultural Software** Concern was raised by the NFU in their Section 42 response that EMFs could affect agricultural software such as Soil Sense Technology. What is the Applicant's reply?	ES Appendix 28.1 [APP-279] states that the inclusion of a metal sheath surrounding the onshore and offshore export cables will mean the electric field generated as a result of SEP and DEP will be confined within the cable and not impact on the accuracy of agricultural software.

			As detailed in ES Chapter 28 Health [APP-114, para.305], the magnetic field of the buried cables will be lower than that generated by some domestic appliances with the strength of the field diminishing to background levels at the Order Limits . ES Chapter 28 Health [APP-114, para. 161] states that the equipment associated with the onshore substation is also capable of generating a magnetic field, however the field falls rapidly with distance, and at the perimeter fence the magnetic field from the substation will be approaching background levels. The Applicant is not aware of any studies that link EMF's with affecting agricultural software such as Soil sense technology.
Q1.16.2.5	Applicant Environment Agency Local Authorities	**Contaminated Land – Approach** The ES [APP-103] notes that potential areas of contamination cannot be avoided. This includes areas such as the disused airfield at Brandiston, railways lines (both historical and active) former pits and historic tanks. The assessment also identifies that targeted ground investigations may be required. a) What options were considered in the optioneering stage to avoid areas of potential contamination (i.e. why did the onshore cable corridor have to go through Brandiston Airfield)? This was not specifically mentioned in ES Chapter 3. b) Are the Order limits and cable corridor widths such that any dense areas of contamination within these areas could be bypassed, by micro-siting the cables away from them (i.e. if there is an aeroplane fuel leak contained in one part of the cable corridor that could be diverted around)? c) Are the EA and LAs content that targeted ground investigations have not yet been undertaken and would be subject to post-consent processes?	**a)** Whilst different options were considered, however, the option to site the cable through Brandiston Airfiled was decided on the basis that the airfield covers a large area, comprises brownfield land and avoids other impacts such as heritage assets. Geophysical surveys at the airfield are ongoing and the initial results indicate that there are areas of rubble present which are likely to be associated with the construction of the airfield. Further surveys will help identify whether any contamination does exist onsite and if so next steps including micro-siting the cable and any remedial works. **b)** Risks associated with potential sources of contamination within the study area as a whole, are discussed in ES **Chapter 17 Ground Conditions and Contamination** [APP-103, Section 17.6.1]. The Applicant confirms that the width of the Order Limits would allow for the micro-siting of the cable to avoid, where possible, any dense areas of contamination. **c)**

			N/A
Q1.16.2.6	Applicant	**Contaminated Land – Operational Impacts** The ES [APP-103] sets out that maintenance workers that are required to undertake ground excavations or enter confined spaces, such as the onshore substation, during the operation of SEP and DEP would be provided with information regarding the nature of ground conditions within each area so that they can develop site and task specific risk assessment and method statements and implement their recommendations. Where is this secured?	Following completion of the construction works, the health and safety folder for SEP and DEP will be handed to the Applicant by the Principal Contractor. The folder will include information in relation to the residual risks relating to ground contamination present along the route and at the substation to enable appropriate risk and task specific assessments to be undertaken for maintenance tasks e.g. If the location is next to a former landfill a risk may be present from ground gas, this risk will be logged as a residual risk to maintenance workers and should be utilised to inform ground breaking activities. The Management of Health and Safety at Work Regulations 1999, Regulation 4, requires employers to have in place health and safety arrangements to ensure the effective planning, organisation, control, monitoring and review of measures in place to protect people. The HSE's HSG65 Managing for Health and Safety describes a Plan–Do–Check–Act practical approach to the management of health and safety, and the health and safety file will form part of such an approach.
Q1.16.2.7	Applicant	**Contaminated Land – Construction Mitigation** The ES [APP-103] notes that the final CoCP will be informed by the findings of pre-construction site investigation and include an assessment of the potential risks to human health and controlled waters receptors from SEP and/or DEP. Where are the pre-construction investigations secured?	Pre-construction investigations and control measures for contaminated land are detailed in Section 4.1 of the Outline Code of Construction Practice (Revision B) [document reference 9.17]. This is secured via Requirement 19 (Code of construction practice) of the draft DCO (Revision C)[document reference 3.1].
Q1.16.2.8	Applicant	**Contamination Land Mitigation - Built Environment** Mitigation for impacts on the built environment includes the reduction of construction activities in proximity to commercial, residential properties and the school where possible. However, where this isn't possible pre-construction site characterisation works in areas identified as potential sources of contamination	Pre-construction investigations and control measures for contaminated land are detailed in Section 4.1 of the Outline Code of Construction Practice (Revision B) [document reference 9.17]. This is secured via Requirement 19 (Code of construction practice) of the draft DCO (Revision C) [document reference 3.1].

		may be required. Explain how reduced construction activities can be achieved along the cable corridor and where are such measures secured in the dDCO?	A reduced impact from construction activities to the built environment can be achieved through targeted ground investigation if a potential source of contamination is identified at a given location. The contaminant linkage will be assessed and if there is a potential linkage risk construction activity and methodology will be reviewed i.e. to avoid the creating pathways inadvertently.
Q1.16.2.9	Applicant	**Minerals – Sterilisation** The ES [APP-103] notes that the Proposed Development has the potential to sterilise the resources present within the narrow linear route of the onshore cable corridor during construction and in all cases, where the onshore cable corridor intersects a Mineral Safeguarding Area only part of each area is impacted and not the whole protected area. However, could the presence of the cable affect the viability of wider areas to be feasibly worked, sterilising needed resource for many years?	Restrictions would be in place in relation to extraction works within the permanent easement of the onshore cable. The permanent easement will be 10m wide along the entire cable corridor if SEP and DEP are constructed in isolation and 20m wide if they are constructed concurrently or sequentially. Outside of the permanent easement, extraction of identified resources would not be restricted. The realistic worst-case scenarios are discussed in ES Chapter 17 Ground Conditions and Contamination [APP-103, Table 17-2].
Q1.16.2.10	Applicant	**Minerals – Mitigation** The ES [APP-103] notes that for the onshore study area, mitigation measures would include consultation with NCC Mineral Planning Authority regarding the practicality and viability of extraction of mineral resources present within the works footprint and the production of a Mineral Resource Assessment where necessary. Where are such measures secured?	Consultation with the NCC Mineral Planning Authority and requirement for the production of a Mineral Resource Assessment detailed in of the Outline Code of Construction Practice (Revision B) [document reference 9.17, Section 4.1]. This is secured via Requirement 19 (Code of construction practice) of the draft DCO (Revision C) [document reference 3.1].
Q1.16.2.11	Applicant	**Gases and Vapours** The ES [APP-103] notes that risks to construction workers in relation to ground gas and vapours would be mitigated by the use of appropriate working methods incorporated within the CoCP and use of PPE. Further, it also sets out that should unexpected sources of ground gas be identified prior to or during construction works, a ground investigation will be undertaken to characterise	In relation to unexpected contamination, which includes gases and vapours, the Outline Code of Construction Practice (Revision B) [document reference 9.17, Section 4, para. 88] states that: “In the event that unexpected contamination is encountered, work in the area will cease on instruction by the Principal Contractor or delegate and be contained and made as safe as reasonably practical pending assessment by a suitably qualified environmental specialist. Consultation with the relevant planning authority and the Environment Agency will be undertaken and agreement reached on plans for further

		ground conditions and assessment of potential risks. Where in the OCoCP are such measures secured?	investigation and remediation measures where necessary. Remedial works would be undertaken should the area be considered to pose an unacceptable risk to human health. These remedial works would be undertaken prior to the operation of SEP and / or DEP." The Outline Code of Construction Practice is secured by Requirement 19 (Code of Construction Practice) of the draft DCO (Revision C) [document reference 3.1].
Q1.16.2.12	Environment Agency Natural England	**Nitrate Vulnerable Zones** The ES [APP-103, Paragraphs 81 and 82] identify that the Proposed Development does not have any direct overlaps with any geological SSSIs, and as such no impacts are anticipated so no further assessment is undertaken by the Applicant. Do you consider this appropriate, or should potential indirect impacts be assessed?	**N/A**
Q1.16.2.13	Applicant	**Monitoring** The ES [APP-103] identifies that groundwater and ground gas monitoring may be required as part of any targeted ground investigations that may be required in order to determine the site characteristics and if they pose a potential risk to human health, groundwater and surface water receptors identified within this chapter. Where is this secured?	The requirement for ground investigations is detailed in Section 4.1 of the Outline Code of Construction Practice (Revision B) [document reference 9.17]. This is secured via Requirement 19 (Code of construction practice) of the draft DCO (Revision C) [document reference 3.1]. The specifics for each investigation will be evaluated for each individual location depending on the nature of the potential source of contamination, this may or may not include the need for monitoring.

Q1.17 Landscape and Visual Effects			**Applicant's Response**
Q1.17.1 Effect on Landscape Character and Views			
Q1.17.1.1	Local Authorities	**LVIA Methodology** The ES states that the LVIA was undertaken both in accordance with GLVIA3 and with direct input from local authorities as to the location and frequency of viewpoint analysis [APP-112]. a) In this context, can you confirm that the selection of receptors (and their sensitivity) is reasonable and that there are no outstanding concerns regarding the process that the Applicant undertook (notwithstanding you may disagree with its results and conclusions). b) Are you satisfied with the study areas adopted by the Applicant for the onshore substation and the landfall site? c) If not, please set out the reasons for this position and indicate what additional areas should be included and the reasons why these areas should be included.	ES **Chapter 26 Landscape and Visual Impact Assessment** (LVIA) [APP-112, Table 26-1] summaries the consultation undertaken with relevant stakeholders throughout the course of the project (prior to submission), which included location and frequency of viewpoints, receptors and their sensitivity, and extent of study areas. Corresponding Statements of Common Ground ('SoCG') set out the agreements reached between the Applicant and relevant stakeholder with regards to questions (a) and (b).
Q1.17.1.2	Applicant	**Substation Landscape Design** There are two options for the size of the proposed substation (3.25ha for a single project or 6ha if both projects come forward) [APP-090]. For each option: a) Explain the extent of landscaping required to be planted to mitigate the visual effects of the Proposed Development (with reference to lands plans and the BoR as appropriate). b) Set out how the various elements (buildings and apparatus) would be arranged within each	**a)** From a landscape and visual perspective, due to the undulating landform and existing vegetation (comprising mature trees and woodlands) of the wider context, the extent of available visibility towards the proposed onshore substation site on-the-ground is limited. In terms of the nature of existing vegetation within the substation's surroundings, to the north and north-east of the proposed substation, a tall belt of woodland is visible from land further north. To the east, established vegetation (comprising woodland, individual tress, and scrub) along the A140 (Ipswich Road) and within

		substation layout in the interests of minimising visual effects. c) Clarify whether it is anticipated that the landscape proposals would fully mitigate the visual effects of the onshore substation elements of the Proposed Development. d) If the adverse effects are not yet understood for some areas, given the flexibility to develop either size substation, what reliance can the ExA or SoS place on the outcomes of the LVIA? e) Is it appropriate to suggest that the 3D models used in the visualisations give an indication of what the substation 'could' or 'might' look like (rather than 'will') as all details are subject to post consent approvals?	Dunston Hall golf course (and in close proximity to) would visually contain the substation from the landscape to the east. To the south, the belt of woodland along Hickling Lane would limit visibility of the substation from further south. A line of pylons and overhead wires extend across the landscape and would be visible in many views from the south, lessening the visual influence of the proposed onshore substation should there be partially visibility from any locations south of this woodland. To the west, views to the proposed substation site are limited to its immediate context as further afield, established vegetation within the landscape would obscure views. The extent of landscape required to be planted at the substation is illustrated in the Outline Landscape Management Plan ('OLMP') (Revision B) [document reference 9.18, Figure 1] and are all contained within the Order Limits. As shown on Figure 1, new planting would reflect existing native species within the context of the substation. Existing vegetation would be strengthened where necessary by planting gaps with new native (and of local provenance) species. New areas of woodland, tree belts and scrub and scrubby grassland planting are proposed around the proposed substation with the objective to improve the green infrastructure network; help screen and filter views of the onshore substation from surrounding landscape and visual receptors; and integrate it into its landscape context. The following landscape proposals at the substation would extend to the following plots, all of which are shown on Sheet 39 of 40 of 2.3 Land Plans - Revision B [AS-002]: • 39-014 – Proposed native tree planting and grassland planting and habitat creation. • 39-015 – Proposed native tree planting, grassland planting and habitat creation. • 39-017 – Retained and enhanced hedgerow • 39-018 – Proposed native tree planting. • 39-019 – Retained and enhanced hedgerow. • 39-021 – Proposed tree planting and native scrub planting. • 39-022 – Proposed tree planting and native scrub planting.

			b) The final design and layout of the electrical equipment and buildings will be determined at the detailed design stage. The LVIA is not sensitive to particular layouts, given the height and scale of the equipment is the main criteria which determines effects, not the precise location of elements on the platform. The LVIA's approach is in line with best practice guidance. **c)** ES Chapter 26 LVIA [APP-112, para. 420] sets out the degree to which it has been judged that effects on visual receptors would be mitigated by the illustrative landscape proposals at the onshore substation (which are documented in the Outline Landscape Management Plan ('OLMP') (Revision B) [document reference 9.18, Section 1.3.2]): *"It is important to note that, whilst the proposed planting would grow to partially screen the buildings and lower parts of the equipment within the site, and help it become more integrated in the landscape, it would not notably reduce the scale of landscape effect over time. Taller parts of the onshore substation would remain visible above and beyond intervening vegetation, especially during the winter month when the vegetation is out-of-leaf as illustrated on the photomontages in Figures 26.17 – 26.35*." [APP-158 to APP-172] **d)** The LVIA approach is detailed in ES Chapter 26 LVIA [APP-112] and is based on *"…the maximum parameters, which would occur as a result of the maximum land-take; the longest durations of construction, operation and decommissioning; and the maximum height/size of the development…",* which represents the Realistic Worst-Case Scenario ('RWCS') for the Projects. In addition, "…*Should a smaller, shorter and/or lower parameters apply, landscape and visual receptors could be affected to a lesser degree."* [APP-112, para. 22]. Therefore, it is the Applicant's position that the greatest effects (some of which are judged to be 'Adverse') have been identified as part of the LVIA, in line with it's, and the EIA's, general approach to assessment. This provides a *"…precautionary but robust impact assessment at this stage of the development process…"* [APP-112, para. 19].

			The approach taken in the LVIA is in accordance with the Rochdale Envelope (set out in Planning Inspectorate Advice Note Nine: Rochdale Envelope (v3, 2018). Details of the EIA's approach is provided in ES Chapter 5 EIA Methodology [APP-091]. The assessment is based on the full 6ha platform option, with a full build out as described in the RWCS parameters. The Applicant considers that the EXA and SoS can place full reliance on the outcomes of the LVIA. **e)** This is correct. As set out in ES Chapter 26 LVIA [APP-112, para. 413]: "...*The photomontages illustrate an indicative 3D model of the proposed substation and landscape works, and the actual design would be finalised post DCO consent.* *The photomontages present an illustrative arrangement of the likely spread of the onshore substation's components, which are judged to represent the RWCS within the full footprint of the onshore substation site. Associated infrastructure, such as the access road, have been illustrated accordingly to generate a realistic impression of how the likely components of the onshore substation would be seen together within the landscape.* *At this stage of the development process, the full extent of the substation platform is shown for illustrative purposes and would be refined in accordance with the final design following DCO consent."*
Q1.17.1.3	Interested Parties	**Lighting Columns** Do you have any comments regarding the appearance of the proposed 30m-high lighting columns, and should these columns have been considered in the modelling of the ZTVs [APP-156]?	Interested Parties' answers should be read in the context of the Applicant's response at Q1.17.1.4 before responding to this question (Q1.17.1.3).
Q1.17.1.4	Applicant	**Lightning Masts**	It is important to clarify at the outset there are no lighting columns or masts proposed at the substation. The parameters include the likelihood of 30m lightning protection masts, which would be the tallest element of the electrical

		It is not apparent to the ExA whether lightning masts to protect apparatus at the onshore substation have been factored into the modelling of the ZTV [APP-156]. a) Explain, with signposting to examination documents wherever possible, how lighting columns and lightning masts have been assessed in the LVIA, in relation to both daytime and night-time views? b) At what range does the Applicant consider the lighting columns and lighting masts would be visible?	equipment, as detailed in ES Chapter 4 Project Description [APP-090]. Furthermore, the Applicant can confirm that, whilst a desktop study has indicated that up to 9 masts may be required, detailed studies considering 'natural components' such as metallic building roofs /structures are expected to reduce this number significantly. These studies are also likely to conclude that masts shorter than 30m would be adequate. **a)** ES Chapter 26 LVIA [APP-112] has assessed the maximum extent and height of the onshore substation's electrical equipment throughout its assessment, in accordance with the RWCS [APP-112, Section 26.3.2]. The Zone of Theoretical Visibility ('ZTV') study modelled the electrical equipment as follows: "*Electrical equipment is modelled at 30m above the platform level. The footprint of the site modelled up to the maximum potential height of electrical equipment. These elements would be the tallest part of the onshore substation, albeit they would have a relatively slender profiled lightning [NB. Corrected text] protection rods. Most other electrical equipment would be below the height of the maximum potential building height*." [APP-112, para. 140] The assessment of the lightning protection rods were considered throughout the assessment. In addition to the ZTV study and fieldwork, wireline and photomontages visualisations were produced to support the LVIA to illustrating the following: • Wireline visualisations have been used to aid the assessment and were generated to show the maximum parameters within which the onshore substation could be buildings. They represent the highest potential platform level, the maximum footprint, and buildings at 15m high and electrical equipment at 30m high above the platform level.

			• Photomontage visualisations present an illustrative arrangement of the likely spread of the onshore substation's components, which are judged to represent the RWCS within the full footprint of the onshore substation site. Associated infrastructure, such as the access road, have been illustrated accordingly to generate a realistic impression of how the likely components of the onshore substation would be seen together within the landscape. **b)** As confirmed above there are no lighting columns. The range at which it has been assessed that lightning protection masts would be visible, and would affect landscape and/or visual receptors, is considered ES Chapter 26 LVIA [APP-112, para. 418 – 419] as follows: "As set out in Section 26.5.3, the anticipated main area of visibility within each of the study area would be contained to the ZVI within the immediate context of the onshore substation. In light of this area of potential visibility, and from the judgements reached on the scale of visual effect from each representative viewpoint, effects would be greatest within the immediate context of the onshore substation, along the ProWs, the main railway line and the A140 which surround the site. The greatest visual effects of the onshore substation would vary dependent on the location of the visual receptors; however overall, it can be seen that large to small scale effects would occur from the ProWs represented by Viewpoints 1 to 3 (Figures 26.17 to 26.19) which all lie within approximately 600m of the onshore substation site and within the ZVI." "*Beyond the extent of the ZVI, views to the onshore substation would be more obscured by vegetation, buildings and landform, with little to no visibility the substation as illustrated in Viewpoints 4 to 9 (Figures 26.20 to 26.25). Effects from viewpoints outside the ZVI would be of a negligible scale*." Clearly, given that the masts are slender, visibility will quickly reduce to negligible at medium distances, such that even in optimum visibility, they are not likely to be visible above a few kilometres away.

			For completeness, and in case the ExA was requesting information on lighting ES Chapter 4 Project Description [APP-090, para. 348] of describes the extent of the lighting proposed at the substation [inter alia]: "*The onshore substation would not be manned; however access would be required periodically for routine maintenance activities, estimated at an average of one visit per week. Normal operating conditions would not require lighting at the onshore substation, although low level movement detecting security lighting may be utilised for health and safety purposes. Temporary lighting during working hours will be provided during maintenance activities only*." ES Chapter 26 LVIA [APP-112, section 26.4.6.2, para. 130] sets out its consideration of potential night-time effects and lighting [inter alia]: "…*The operational onshore substation would operate as an unmanned facility, with security and temporary maintenance lighting only to ensure a safe and secure working environment. Light spill from these elements would be minimised through design, in particular the use of directional lighting. Potential night-time effects have been considered in reaching judgements throughout this assessment*."
Q1.17.1.5	Applicant	**Rooftop Plant and Equipment** Would there be any cooling apparatus or similar equipment installed upon the roofs of the buildings proposed under the Order? If so, have these been taken into account in the LVIA?	There will be no cooling apparatus upon the roofs of the substation buildings. Any such apparatus will be located within the buildings. The LVIA is based on an assessment of the RWCS, which accounts for the maximum height of the onshore substation components, being 15m, comprising the upper roof surface of any such buildings.
Q1.17.1.6	Applicant	**Scope of the ES and LVIA** Did the LVIA [APP-112] include an assessment of sequential views, for instance relating to users of the ProW network? If so, please provide signposting to this information? If not, please explain why this information was not included in the LVIA.	Yes, consideration of *"...sequential views..."* potentially experienced by visual receptors formed an inherent part of the LVIA. ES Chapter 26 LVIA [APP-112] identifies and presents the locations along A-Roads and Railways; Long Distance Walking Routes and National and Regional Cycle Routes; Local Roads; Public Rights of Ways ('ProW') where views towards the construction of the onshore cable corridor and/or operation of the onshore substation would be experienced.

			Within a LVIA, it is not normal practice to consider the view at specific points along a footpath unless it is a highlighted viewpoint and treated as a specific viewpoint. Rather, the experience of walking along a footpath is considered, in the round, albeit perhaps presented by considering sections, if appropriate, depending on context. It is important to note that in order to keep the LVIA proportionate, the LVIA has identified only the sections of visual receptors routes where it has been judged (from the baseline study results) that visual receptors merited detailed consideration in the assessment of effects. The following sections / paragraphs are listed below for reference: <u>Onshore Cable Corridor – Section 26.6.2.2 Effects on Visual Receptors</u> • 26.6.2.2.3 A-Roads and Rail, paragraph 308. • 26.6.2.2.4 Recreational Routes (Long Distance Walking Routes and National and Regional Cycle Routes paragraphs 313 – 317. • 26.6.2.2.6 Local Roads and Public Rights of Way, paragraphs 333 and 335. <u>Onshore Substation – Section 26.6.5.2 Effects on Visual Receptors</u> • 26.6.5.2.2 Roads and Rail (A140 and Norwich-Ipswich Railway Line, paragraphs 424 and 433. • 26.6.5.2.3 Prow, Permissive Bridleway and Gowthorpe Lane within the ZVI, paragraphs 443, 444, 449, 453, 458 and 462.
Q1.17.1.7	Applicant	**Telescopic Cranes** There is no reference in the ES [APP-112] to the use of telescopic cranes for constructing the onshore substation. a) Can the ExA assume from this that none are required and none are to be used? b) If these are going to be used, show how and where they are taken into account in the LVIA and reported in the ES.	**a) and b)** Cranes will be used in the construction of the substation structures, including telescopic cranes with jibs raised and lowered as required for lifting, with jibs lowered when not working. Fixed tower cranes will not be used. The assessment has assumed the normal modes of construction will be used for projects of this nature when considering construction impacts. ES Chapter 26 LVIA [APP-112, para. 269, 271] sets out how the use of cranes, as part of the typical and temporary construction activities that would occur

			during the construction and decommissioning phases of the onshore substation, have been accounted for within the LVIA [inter alia]: "*The construction and decommissioning of the onshore substation would be temporary activities involving the movement of vehicles to transport materials and undertake earthworks; and the use of cranes to erect or dismantle the development. Construction and decommissioning effects are assumed to be similar.* *[…]* *With regards to potential effects on visual receptors during construction and decommissioning, visibility of the plant movements, crane operations, and the construction or dismantling of the substation and its associated equipment would be experienced by people at nearby publicly accessible locations*…" In relation to potential impacts, paragraph 271 to state [inter alia]: "…*These potential effects would be different in nature to those experienced while the onshore substation is in operation, albeit similar or lower (due to shorter duration) in terms of its magnitude and significance*." ES Chapter 26 LVIA [APP-112, Para. 272 and 273] sets out how the LVIA approach to potential impacts arising during the construction / decommission phases [inter alia]: "*Given the temporary duration of the construction and decommissioning phases compared to the longer-term duration of the operational phases of SEP and/or DEP, potential effects during construction and decommissioning would not be greater than those experienced during the operation of the onshore substation and are likely to be less due to the shorter-term duration.* *Therefore, in order to keep the chapter proportionate and present where the greatest potential effects would arise, the assessment will only describe in detail the operational phase impacts of the onshore substation of SEP and/or DEP as set out in Section 26.3.2. A summary of the effects that would arise during*

			construction and decommissioning is presented in Appendix 26.1 LVIA Annexes."
Q1.17.1.8	Applicant	**HDD Compounds** Can the Applicant explain how landscape and visual impacts arising from HDD compounds have been assessed?	The following paragraphs from ES Chapter 26 LVIA [APP-112] describe how the construction activities involved at the HDD compounds along the onshore cable corridor have been assessed, on the basis that all the construction will be low-level i.e. no cranes or other tall plant: • [APP-112, Section 26.6.2.1.2, para. 284] relates to the assessment of landscape character. • [APP-112, Section 26.6.2.2.1, para. 295 – 297] relates to the assessment on visual receptors.
Q1.17.1.9	Local Authorities The Applicant	**Residential Receptors** The Applicant notes that a RVAA has not been undertaken because the nearest receptors would fall below the relevant threshold [APP-112, paragraphs 117-120]. a) Las, is this a reasonable approach? b) Las, what weight should be given to private views from residential properties in the Examination, in the ExA's considerations and in the SoS's decision? Applicant may respond.	**a)** Las to respond, but the Applicant expects all will confirm the approach is reasonable. As set out in ES Chapter 26 LVIA [APP-112, Table 26-2], the attendees at the second Expert Topic Group ('ETG 2') (held on 21 July 2021 after the submission of the Preliminary Environmental Impact Report) confirmed their continued agreement on the LVIA's approach to the approach to the assessment of effects on residential visual amenity. It is important to note that the LVIA's approach to residential Visual Amenity Assessment in the submitted ES chapter, has not been challenged in any discussions on Statement of Common Ground between the Applicant and relevant Las to date. **b)** The Landscape Institutes Technical Guidance Note (TGN 02/2019) provides guidance on RVAA which relates to the visual component of Residential Amenity. A right to a view is not an automatic right, even in the case of significant impacts to residents' outlook. There are, however, situations where the impact on visual amenity is so great that the proposed development is against the public interest.

			However, in this case where all potential impacts are well below the threshold identified by the prevailing guidance, the Applicant considers that no weight should be afforded to private views from residential properties.
Q1.17.1.10	Applicant	**Energy Balancing Infrastructure** There are proposals for infrastructure to the west of the onshore substation by the Hornsea Project 3 made DCO, which come with associated landscape mitigation proposals. a) To what extent would the Proposed Development be relying on the landscape mitigation associated with Hornsea Project 3 b) If so, is this a pragmatic approach given the construction programme or the potential that the other project may not proceed?	**a)** The Project does not rely on landscape mitigation associated with Hornsea Project 3 to mitigate the potential impacts on landscape and visual receptors as set out in ES Chapter 26 LVIA [APP-112]. **b)** Please see response to (a) above.
Q1.17.1.11	Applicant	**Removal of Existing Trees and Hedgerows, Replanting and Management** **a)** Clarify how processes for agreeing tree and hedgerow removal, replanting, aftercare and management and maintenance are undertaken. Refer to the involvement of Las, NE and landowners, including the undertaker. **b)** Provide a plan showing the extent of the woodland/ trees to be removed under the various scenarios (single project or both projects proceeding). Is it anticipated that there may be trees other than in the woodland areas or hedgerows described which would be removed in any Scenario? **c)** What is the Applicant's proposed ratio for tree and hedgerow replacement? **d)** Provide an outline Arboricultural Management Strategy (AMS) or signposting to documents in the examination which provide the information that would otherwise be contained within an outline AMS. Alternatively, explain with reasons why this information should not be submitted to the Examination.	**a)** All tree and hedgerow removal will be shown in the Landscape Management Plan as secured in Requirement 11 of the draft DCO (Revision C) [document reference 3.1]. This would be submitted to the local authority for approval. Natural England would be involved should the tree be found to have a bat roost and a bat mitigation licence would be applied for. The landowner would be compensated for any losses, this commitment is secured via the draft DCO (Revision C) [document reference 9.17, para. 34 (2)]. All tree and hedgerow replanting will be shown in the Landscape Management Plan and be agreed with the relevant landowners as stated in the Outline Landscape Management Plan (Revision B) [document reference 9.18]. Aftercare, management and maintenance of newly planted trees and hedgerows will be for 10 years for the cable corridor and for 40-years at the Onshore Substation, this commitment is secured by Requirement 12 of draft DCO (Revision C) [document reference 3.1]. Instructions for planting and aftercare will also be included in the Landscape Management Plan. **b)**

		e) Set out how the removal of existing trees and hedgerows and the extent of any replanting are adequately controlled and secured within the draft DCO [AS-009] **f)** Provide further explanation to clarify the Applicant's proposed approach to replanting of hedgerows in areas near to where trees are to be felled.	A plan showing the extent of the woodland/ trees to be removed under the various scenarios (single project or both projects proceeding) cannot be provided at this stage. The details are not fully known as full tree survey along the entire route has not yet been undertaken and detailed designs are not available. Full details of tree and hedgerow removals will be included in a Landscape Management Plan, which is secured via Requirement 11 (Provision of landscaping) of the **draft DCO (Revision C)** [document reference 3.1] and will be submitted, and approved by, the relevant planning authority ahead of the each phase of onshore works. commencing. ES Appendix 20.15 **Arboricultural Survey Report** [APP-228] indicates some known tree removals at this stage of the design process (see section 6). There is likely to be a slightly greater arboricultural impact if both projects go ahead either sequentially or concurrently rather than just one project in isolation. Should both projects go ahead then two trenches will be required in open trench sections, rather than one trench for a single project. The working easement for both projects would be 38-45m (going down to 20m at hedgerow crossings) and for one project the working easement would be 27m (going down to 12m at hedgerows). Further micro-siting within these easements should be possible to weave the 3m wide trenches between trees and hedgerows. There are no differences in the number of works compounds needed for one project or two or the size of main and secondary compounds, further details are provided in ES Chapter 4 Project Description [APP-090, Section 4.6.1.2]. Lastly, should both projects go ahead, there will be a permanent easement of 20m in width where no new trees could be planted as stated in the Outline Landscape Management Plan (Revision B) [document reference 9.18]. If only one project goes ahead the permanent easement would be 10m in width. Trees felled within this easement will be replanted in the Order Limits but outside the permanent easement so that compensation is still achieved. **c)** The tree and hedgerow replacement ratio will be 1:1, e.g. one new tree planted to replace a felled tree and 10m of hedgerow planted to replace 10m of hedgerow removed.

			d) It is not understood what the question means by an Arboricultural Management Strategy. An Arboricultural Method Statement will be provided post-DCO consent once detailed design work has taken place for example around the exact location of the cable route and the details of the new substation and access road. Proposed mitigation and compensation options that may be included in an Arboricultural Method Statement are currently provided in ES Appendix 20.15 Arboricultural Survey Report [APP-228, Section 6]. **e)** The removal of existing trees and hedgerows is secu**red in** Part 7 (Miscellaneous and general) of the draft DCO (Revision C) [document reference 3.1], specifically (34) Felling or lopping of trees and removal of hedgerows, and (35) Trees subject to tree preservation orders**.** Schedule 16, Article 34 of the draft DCO [AS-009], provides a list of hedgerows, potentially important hedgerows and important hedgerows required to be removed as part of the construction of the project. These are shown, together with Tree Preservation Orders, on the Tree Preservation Order and Hedgerow Plan [APP-017]. Commitments to and extent of replanting are detailed in the Outline Landscape Management Plan (Revision B) [document reference 9.18] and Outline Ecological Management Plan (Revision B) [document reference 9.19], which in turn are secured via Requirement 11 (Provision of landscaping), Requirement 12 (Maintenance of landscaping) and Requirement 13 (Ecological Management Plan). Of note, Requirement 11(e) of the draft DCO (Revision C) [document reference 3.1] requires details of existing trees and hedges to be removed and details of existing trees and hedges to be retained, with measures for their protection during the construction period where applicable shall be included within the Landscape Management Plan. **f)** As detailed in the Outline Landscape Management Plan (Revision B) [document reference 9.18, Section 1.2.3], where standard trees are located within a hedgerow and are required to be removed for the project (and which cannot be

			avoided through micrositing or horizontal directional drilling) a replacement hedgerow will be planted in the same location in the next planting season following completion of cable installation and haul road removal. Trees cannot be planted within the permanent easement due to potential root impacts on the cables. The permanent easement will be 20m in width should both projects be undertaken sequentially or concurrently, or 10m if one project is undertaken in isolation. Replacement trees will be planted within the Order Limits but not within the permanent easement.
Q1.17.1.12	Applicant	**Tree and Hedgerow Replacement** NPS EN-1 (paras 5.3.15 and 5.3.18) points to making opportunity for beneficial biodiversity, enhancing existing habitats and creating new habitats of value. Explain how the landscape design for the Proposed Development recreates and replaces any ecological connections severed by construction of the onshore project substation and onshore cable corridor and whether there would be less connectivity than the baseline condition.	Ecological connections which would be temporarily severed by the construction works comprise mostly hedgerow boundaries, but also a small number of ditches, field margins and treelines. As detailed in the Outline Biodiversity Net Gain Strategy [APP-306] and Outline Landscape Management Plan (Revision B) [document reference 9.18][APP-303], hedgerow breaches would be replanted post-construction, and other boundary features would also be reinstated (with the exception of tree planting directly overhead the installed cables, although tree planting is proposed elsewhere in the Order Limits). The aim is also to plant new hedgerows on boundaries where there are currently none, to infill gaps in hedgerows which are current defunct (hedges with gaps) and otherwise enhance hedgerows wherever possible, such as by improving species diversity, adding hedgerow/boundary trees (outside the permanent easement) and improving management of boundary features. Therefore, post-construction and post-enhancement, ecological connectivity is expected to be improved relative to the baseline, particularly in the medium- to long-terms once the enhancement and compensation features begin to mature. It is also highlighted that features with higher baseline connectivity values (such as woodland belts, Marriott's Way, major rivers and watercourses) would be avoided via trenchless techniques, e.g. HDD, so these key connections would not be severed. The elements of the onshore works with the greater footprints include the Onshore Substation and some of the HDD entry/exit compounds. In general, these would not have significant impacts on habitat connectivity due to their locations (not affecting key connective habitat), and because of the creation of replacement, compensatory or enhanced habitats around these areas. At a site-

			scale (e.g. at the substation site), it is feasible that individual connections could be severed (such as permanent loss of some sections of hedgerow and woodland habitat), but regardless, a net increase in connections would still be predicted due to the proposed woodland belt planting and habitat enhancements.
Q1.17.1.13	Interested Parties	**The Applicant's Assessment of Effects within its LVIA Documents** Please set out, or provide signposting to where you have set out, any areas of disagreement with the Applicant's baselines, methodologies and assessment of effectiveness of proposed mitigation measures within its Landscape and Visual Impact Assessment [APP-112]. If no areas of disagreement exist, please indicate this with reasons explaining why you believe the application documents provide satisfactory information on this topic.	ES Chapter 26 Landscape and Visual Impact Assessment [APP-112, Table 26-1] summaries the consultation undertaken with relevant stakeholders throughout the course of the project (prior to submission), which included location and frequency of viewpoints, receptors and their sensitivity, and extent of study areas. Corresponding Statements of Common Ground ('SoCG') set out the agreements reached between the Applicant and relevant stakeholder with regards to questions (a) and (b).
Q1.17.2 Effects on designated and historic landscapes, including Areas of Outstanding Natural Beauty and Ancient Woodlands			
Q1.17.2.1	Applicant	**AONB and Construction Programme** Please detail the length of time (anticipated) that construction activities would be taking place within the North Norfolk AONB related to each of the proposed scenarios [APP-314].	For HDDs within Weybourne Woods: • HDD North 12 Weeks • HDD South 12 Weeks For single projects the duration will be 6 weeks for North and 6 weeks for South
Q1.17.2.2	The Countryside Charity (CPRE) Norfolk Norfolk County Council	**AONB** Do you consider that the Proposed Development prejudices the special qualities of the affected AONB and, if so, state which ones and why conflict is considered to arise?	**N/A**

	North Norfolk District Council Norfolk Wildlife Trust		
Q1.17.2.3	The Applicant	**Ringland Covert** The Woodland Trust in their [RR-115] have identified "Ringland Covert" as an area of Ancient Woodland which will be subject to likely direct loss and/or detrimental impact to facilitate the proposed cabling works. **a)** Provide clarification on the impact of the Proposed Development on this specific area of woodland. **b)** Confirm that the Applicant has confidence that the statement within the Applicant's Arboricultural Report [APP-228] which notes that there are no records of ancient trees or ancient woodlands found within the DCO boundary remains accurate.	**a)** Ringland Covert is not identified as an ancient woodland on Natural England's dataset (Ancient Woodland (England) | Ancient Woodland (England) | Natural England Open Data Geoportal [redacted]) and MAGIC maps which was last updated on 20th November 2022. This is the data source advised by The Woodland Trust's Planner's Manual for Ancient Woodland and Veteran Trees (July 2019). Regardless of Ringland Covert's status, negligible impacts are anticipated to this woodland as trenchless techniques, e.g. HDD, is planned in this area. The cables will pass underneath the woodland with no associated haul road. The feasibility of HDD in this area has been confirmed with bore hole ground investigations. HDD will be at a depth of at least 2m under the woodland. Given that the majority of tree roots (90%) are in the top 600mm of soil[11], tree roots are highly unlikely to be impacted. The HDD entry and exit points will be in the agricultural fields to the north-west and south-east of the woodland, these can be situated more than the precautionary 50 metres away from the edge of the woodland as advised by The Woodland Trust's Planner's Manual. No machinery will need to enter the woodland. HDD will involve the use bentonite which will be pumped into the hole to stabilise it. **Bentonite** is naturally biodegradable **b)**

[11] Arboricultural Advisory and Information Service (1995). Tree Root Systems. Arboriculture Research and Information Note 130/95/ARB. Available at: [redacted]

			Data was acquired from the Ancient Tree Inventory for ancient and veteran trees in July 2021. Only one ancient and veteran tree record was located within the Order Limit – a beech tree near Norwich Main Substation. Ground level tree surveys in August and September 2021 found this tree to no longer be present. Ancient woodland data was similarly obtained in 2021 and reviewed. MAGIC maps was re-reviewed in February 2023 and no ancient woodlands were found within the DCO limits. The Applicant therefore has confidence in the statement regarding no pre-existing records of ancient trees and woodlands. It should be noted that ground level tree surveys did find four individual veteran trees and one group of veteran trees within the Order Limits however no impacts to these trees are anticipated at this stage.
Q1.17.3 Effectiveness of mitigation proposals			
Q1.17.3.1	Applicant	**Opportunities for Enhancement** Within the areas of proposed landscape planting at the substation site, have opportunities been explored to provide new pathways or routes to improve user experience and recreation within the countryside?	Yes, as part of the iterative design process, opportunities were explored to provide new pathways and/or routes to improve user experience and recreation within the countryside. However, the Applicant concluded that given the established and well-defined Public Rights of Way networks which surround the onshore substation, the addition of new pathways was judged to be surplus to the needs of the local area and were not needed to provide any specific links currently missing. The Applicant is not aware of any such requests during the consultation.
Q1.17.3.2	Applicant	**Attlebridge Main Compound** It would appear from the ES [APP-112, Paragraphs 286, 295 and 296], that there are no specific intentions to provide landscape mitigation for the Attlebridge compound on the basis it is a temporary feature. a) is this interpretation correct or, if not, signpost where specific mitigation would take place to reduce the visual impression of the compound within the landscape? b) if the interpretation is correct, do you think it appropriate to have such a significant	**a)** There is no specific intention to provide mitigation solely in response to potential landscape and visual effects, however the site activities as described below will provide mitigation of visual effects. **b)** Further to the response to (a) above, the design process has considered siting through options studies, and the site selected is considered to be optimum across environmental consideration, all which of constitute embedded mitigation

		construction feature in the landscape without dedicated visual mitigation, given that it could well be in place for 48 months (4 years)?	measures. The approach to design has also considered the size of the compound, informed by operational requirements. The approach to design allows further details of the construction compound design and operation to be determined and agreed post consent, with contractor input, in line with the final Code of Construction Practice, based upon the Outline Code of Construction Practice (Revision B) [document reference 9.17] secured by Requirement 19 within the draft DCO (Revision C) [document reference 3.1], to include the design of noise mitigation requirements. This is all as normal for projects of this nature. In line with good practice, topsoil (and depending on ground conditions, a depth of subsoil) will be stripped from the entire compound and stored in temporary bunds to agreed heights around the compound to provide a degree of visual and noise screening. Post consent design will determine if any other noise mitigation is required, based on the actual plant and processes to be involved, which would likely provide a degree of visual mitigation in addition. Regarding other construction structures within the compound, this is likely to comprise standard 'portacabin' office/mess accommodation and material racks. The precise detail would be determined at the post construction stage. The Applicant's position is that measures will be taken at the appropriate point in the post-consent design process to mitigate potential and relevant effects.
Q1.17.3.3	Applicant	**Embedded Mitigation** Pages 57 to 68 of GLVIA refers to standard mitigation measures and there should be no assumptions made in relation to standard practice, requiring evidence that it can be secured through a consent. Can the Applicant point to where this has been taken into account? In doing so, does the Applicant believe that it would be useful to separate primary, standard and secondary mitigation in line with GLVIA, referring to how 'embedded' mitigation and best practice working methods are dealt with there?	With reference to GLVIA3 (2013), paragraph 4.22, the following in set out [inter alia]: *"The primary mitigation measures and the construction and operational management practices should ideally be included in the project description/ specification (and also in the design and access statement for the project). So too should the possible effects identified early on and the design responses that have been introduced, for example modification to siting, access , layout, buildings, structures, ground modelling and planting. It can be expected that both these types of mitigation measure will definitely be implemented as they are to be an integral part of the scheme. They could therefore be secured by conditions on a consent…"*

			The Applicant refers to section 26.3, paragraphs 39, which states: *"The LVIA is based on a 'mitigation by design' approach, which means that during the course of the design development of the onshore components for SEP and/or DEP, landscape matters have been considered for as an integral part of the design process. These embedded mitigation measures are described in Chapter 4 Project Description and the OLMP (which is submitted as part of the DCO application, see document reference 9.18)."* It is the Applicant's position that although not detailed explicitly, both primary and standard construction and operational management practices have been clearly identified in the LVIA, Chapter 4 Project Description and OLMP in line with GLVIA3 guidelines. In relation to secondary mitigation measures, which are *"…designed to address any residual adverse effect remaining after primary measures and standard construction practices have been incorporated into the scheme…" (GLVIA3, 2013, para 4.23),* the LVIA states the following at paragraphs 260 – 262: *"260. The assessment set out in this section is based on a 'mitigation by design' approach, as set out in Section 38. This means that during the course of the preliminary design development of the onshore components for SEP and/or DEP, landscape considerations have been accounted for as an integral part of the design process.* *261. It is therefore important to note that appropriate landscape mitigation measures required to reduce the effect of the Proposed Development on landscape character and views have already been incorporated into the design of the project and the assessment of effects, and it is assumed that this mitigation forms part of the final design. No further mitigation measures are proposed, and as such, the residual effects will be the same as those described for long term effects of SEP and/or DEP.* *262. Key embedded mitigation measures, as set out in Section 38, include burying and routing the onshore cable corridors to avoid visual intrusion and sensitive landscape resources and receptors. Site selection was key in choosing the final location of the onshore substation site to avoid visual intrusion (in so far as possible)."* Therefore, no secondary mitigation would be identified in relation to potential landscape and visual effects, given the securement of the Applicant's submitted documentation as part of the DCO consent.

Q1.17.3.4	Local Authorities	**Extent of Mitigation** Would the mitigation planting illustrated by the Applicant be effective in reducing the magnitude and significance of the visual effect of the Proposed Development? If not, why not? What other steps should be considered in order to provide the necessary change in magnitude and significance of the visual effect of the onshore substation buildings and/ or structures?	**N/A**
Q1.17.3.5	Applicant	**Extent of Mitigation** For the onshore substation, set out clearly the extent to which the proposed visual mitigation reduces the visibility of the substation (expressed as a % if practicable) and whether, in light of this, the landscape planting would be beneficial as to justify compulsory acquisition / temporary possession of land.	It is not possible to precisely set out the extent to which the proposed visual mitigation would reduce the visibility of the onshore substation. As noted in ES Chapter 26 Landscape and Visual Impact Assessment [APP-112, para. 420], *"It is important to note that, whilst the proposed planting would grow to partially screen the buildings and lower parts of the equipment within the site, and help it become more integrated in the landscape, it 229ouldd not notably reduce the scale of landscape effect over time. Taller parts of the onshore substation would remain visible above and beyond intervening vegetation, especially during the winter month when the vegetation is out-of-leaf as illustrated on the photomontages in Figures 26.17 – 26.35."* [APP-158 to APP-172] ES Chapter 26 Landscape and Visual Impact Assessment [APP-112, Section 26.5.3] does make clear, however, in that the extent of actual visibility experienced on-the-ground of the substation would be contained to its immediate context. Beyond the immediate context of the onshore substation (expressed as the Zone Visual Influence in the LVIA), there would be limited or no visibility of the onshore substation as a result of the site's locations within the landscape. The present screening provided by the existing vegetation, which surrounds the substation beyond the Order Limits, in combination with localised undulations in the landform would naturally restrict views towards the area in which the substation is located. In combination with proposed planting, the long-term visibility of the substation (from publicly accessible locations) is judged to be minimal and restricted to of the substation. The photomontage visualisations, provided from each of the representative viewpoints captured in support of the LVIA, visualises the onshore substation and the likely views upon completion ('Year 1') and following the establishment of the landscape proposals after 15 years ('Year 15'). The rate of growth of the proposed planting seen within the photomontages assumes that the planting conditions are as expected; the management regime of the OLMP [APP-303] is

			adhered too; and the new vegetation would grow, on average, at approximately 0.45m per annum. In relation to the benefit of proposed planting, set out in detail in the Outline Landscape Management Plan (Revision B) [document reference 9.18, Section 1.3.2, para. 29], it is important to note that its design objectives serve partly to *" Reduce the potential impacts on landscape and visual receptors that would arise as consequence of the onshore substation's built infrastructure. During the operational phase, the proposed planting aims to filter/screen views of the components of the substation and integrate it into its landscape context."* Other and important design objectives include: • Retain and protect all existing trees, hedgerows and other vegetation except where removal is necessary to install, construct and maintain the components of the onshore cables and substation. • Enhance existing landscape features within the immediate context of the onshore substation site, by planting up gaps in hedgerows with native species hedgerow plants and trees. • Compliment, extend and join existing landscape elements and habitats including hedgerows, trees and woodlands to enhance the green infrastructure and landscape fabric within and around the onshore substation site in line with local and regional Green Infrastructure strategies. • Use appropriate native (and of local provenance) species to contribute towards habitat enhancements and in turn to promote biodiversity to achieve Biodiversity Net Gain and bolster the diversity of native species that are present locally. • Minimise where possible offsite deposition of spoil by sensitive incorporation within the locality. Soil will be suitably stored prior to re-use, and topsoil and subsoil may be incorporated to allow for successful establishment of proposed vegetation. • Introduction of a suitable operational drainage system that works with the existing and proposed landscape structure and would not result in any harm to existing water resources or increased risk of flooding. The Applicant considers that the measures proposed would be beneficial for the reasons set out above and that the powers of compulsory acquisition / temporary possession of land sought are justified.

Q1.17.3.6	Local Authorities Interested Parties	**Outline Landscape Management Plan** Are you satisfied that the details of location, number, species, size and density of proposed planting around the onshore substation need not be considered during the Examination [APP-303]?	**N/A**
Q1.17.3.7	Applicant	**Monitoring of Mitigation Planting** Provide further detail, or signposting which indicates where further detail is provided, which clarifies what – if any – remedial action would be implemented as a result of the proposed monitoring. If no remedial action is to be implemented, please explain why not.	Monitoring of Mitigation Planting would be in accordance with the details set out in the Outline Landscape Management Plan (Revision B) [document reference 9.18, Section 1.5, para. 39] in and the Outline Ecological Management Plan (Revision B) [document reference 9.19, Section 5, para. 97 and 102] secured by Requirements 11 and 13 of the draft DCO (Revision C) [document reference 3.1].

Q1.18 Seascape and Visual Effects			Applicant's Response
Q1.18.1 Effect on Seascape Character and Views			
Q1.18.1.1	Local Authorities	**SLVIA Methodology** The ES states that the SLVIA was undertaken both in accordance with direct input from local authorities as to the location and frequency of viewpoint analysis [APP-111]. In this context, can you confirm that the receptors (and their sensitivity) are reasonable and that there are no outstanding concerns regarding the process that the Applicant undertook (notwithstanding you may disagree with its results and conclusions).	Table 25-1 of the ES Chapter 26 SVIA [APP-111] summarises the full consultation undertaken with relevant stakeholders throughout the course of the project (prior to submission), which included the location and frequency of representative viewpoints. Corresponding Statements of Common Ground ('SoCG') set out the agreements reached between the Applicant and relevant stakeholder, including full agreement on methodology.
Q1.18.1.2	Applicant	**Colour Scheme** Have any alternatives been considered to the colour scheme to be applied to the wind turbine generators? Would any other colour make the turbines more recessive?	Para 136 of APP-090 confirms the colour scheme for nacelles, blades and towers is expected to be RAL 7035 (light grey) and foundation steelwork RAL 1023 (traffic yellow) from HAT up to a minimum of 15m. The use of traffic yellow is a standard required by the navigation authorities, to maximise visibility at sea level for navigational safety reasons. No other colours are permissible thus there is no choice available unless the regulatory authority changes their standards. For the remainder of turbine structures, the industry standard is to choose a light grey, or white non reflective coating, reflecting many years' experience of the optimum colour and coating to reduce reflection and make turbines as recessive as possible, accepting light and weather conditions also have a bearing. The standard colours generally used by the industry, worldwide, are RAL 9010 (pure white) or RAL 7035 (light grey). Thus, only white and light grey have been considered, and grey was selected as the applicant's preference as being the most recessive in the likely conditions to be experienced off the Norfolk coast. The existing turbines at SOW and DOW are also light grey. Para 109 of the SVIA [APP-111] provides further information regarding colour, distance and visibility. Seen against a blue or pale sky, but not sunlit, grey turbines can appear dark. As the sky darkens, because of cloud cover or time of day or season, the contrast between sky and turbines decreases. Turbines can

			appear white against a dark sky if they are lit by sun through patches of cloud. Para 109 of the SVIA [APP-111].
Q1.18.2 Effects During Construction			
Q1.18.2.1	Applicant	**Landfall and HDD** Explain to the ExA: a) The approximate duration of construction works to create landfall (offshore works and onshore works combined). b) The approximate distance to shore that the HDD exit pits would emerge (offshore) and therefore the distance a jack-up vessel would be away from the shore. c) The timing of these construction works in the construction programme (including the months when such activity would be undertaken).	**a)** A brief high level summary of durations of construction works is below: • Mobilisation and Site Preparation = 30 days; • HDD Operations including demobilisation = 135 days; • Duct Welding = 35 days; • Launch Duct No1 = 1 day; • Launch Duct No2 = 1 day; • Marine Support at Duct Installation No1 = 10 days; • Marine Support at Duct Installation No2 = 10 days. Total duration from site setup to demob = 26 weeks **b)** The HDD exit point will be approximately 1 km from shore (para 253 and Table 4.31 of the ES Chapter 4 – Project Description, [APP-090]). **c)** The operations will be programmed so that duct installation will be undertaken in the calmer summer (March – September) months as wave heights will govern the operational performance of the works.
Q1.18.2.2	Applicant	**Construction Effects at DEP** Explain whether the conclusion that 'no significant effects have been identified for DEP' means reference to DEP-North, DEP-South, or both [APP-111, Paragraph 547].	The Applicant confirms that the conclusions presented at paragraph 547 are in relation to DEP in its entirety (i.e. DEP-North and DEP-South).
Q1.18.3 Effects on Designated and Historic Landscapes			

Q1.18.3.1	The Applicant Local Authorities, Interested Parties	**The Existing Baseline and its Effect on the Statutory Purpose of the NCAONB** NE states that the existing OWF installations have a compromising effect on the statutory purpose of the NCAONB [RR-063]. Respond, with reasoning.	The existing baseline of the NCAONB is set out in the NCAONB Management Plan 2014-2019. This provides information regarding what makes the AONB a special place and defines the Qualities of Natural Beauty (QNB). The SVIA [APP 111] (and LVIA [APP 112]) set out the baseline fully. In addition, published landscape character assessments by NCC and NNDC provide further detail regarding the character of the landscape and seascape in all its facets. Further it is agreed with Natural England that the baseline for the SVIA and the assessment of the impacts of the Qualities of Natural Beauty of the NCAONB includes the existing OWF in the vicinity of SEP and DEP; namely Race Bank, Sheringham Shoal and Dudgeon OWFs. The NCAONB was designated in 1968, and an assessment of the condition of its 'natural beauty' was undertaken in 1995 (albeit this document is no longer in print or available digitally), at a time when OWFs were not present. 7 Qualities of Natural Beauty (QNB) were identified, including references to remoteness, tranquillity and wildness. The Management Plan Strategy 2014 – 2019 provides an update to the assessment of the Qualities of Natural Beauty ('QNB'), noting recent developments and consents for OWFs have given rise to concerns that the wilderness quality of the seascape (as noted by local observers) have had a significant effect in respect to QNB 6 (Sense of Remoteness, Tranquillity and Wildness), and an effect on QNB 2 (Strong and Distinctive Links between Land and Sea) and QNB 3 (Diversity and integrity of landscape, seascape and settlement character) , albeit the document records the panoramic coastal views and seascapes remain distinctive in character. The Management Plan assesses the status of each QNB at the time of the designation and any change since then. QNB 2 was assessed as Green at designation, with a change to Amber due to existing and consented OWFs, i.e. some grounds for concern. QNB 6 was assessed as Amber at the time of designation and was unchanged due to existing and consented OWFs. QNB 3 considers the diversity and integrity of landscape, seascape and settlement character and records the status of the QNB as Amber at designation and at the time of the reassessment. This is due to a number of changes either within or beyond (thus affecting the AONB's setting) including the development of the A149

			bypass, settlement expansion, building changes, agricultural reservoirs, onshore wind farms as well as the OWFs. It is the applicant's view that whilst the development of offshore wind has had an adverse effect on three of the 7 QNB's, the overall integrity of the AONB, and its statutory purpose has not been undermined to the extent the purpose is compromised. This concurs with the NCAONB Management Plan which assess the QNBs as having a green or amber status (i.e. natural beauty is conserved or enhanced).
Q1.18.3.2	Local Authorities	**The Extent of Additional Harm to the NCAONB** What is your assessment of the effects of the Proposed Development on the NCAONB in EIA terms?	**N/A**
Q1.18.3.3	The Applicant Local Authorities, Interested Parties	**Cumulative Impact Assessment** Should a CIA be undertaken in order to inform the EIA to ensure that the impact of SEP and DEP on the statutory purpose of the NCAONB, in the context of the existing OWF, can be made?	It is assumed this question relates to Natural England's (NE) position that seeks a CIA in which the additional harm arising from SEP and DEP to the harm which arises from the effects of the existing OWF is assessed. This is a not a normal approach, and was not for instance, the approach NE took on Sizewell C in respect to the Suffolk Coasts AONB. It is the agreed position that the existing offshore wind farms (OWF) are part of the baseline, and the SVIA [APP-111] considers the effects arising from SEP and DEP on this baseline, as documented in the Statement of Common Ground (NESoCG) which is to be submitted at Deadline 2. The assessment of the effects on the statutory purposes of the AONB draws on the SVIA [APP 111] and considers the effects on the Qualities of Natural Beauty (QNB) [APP 311] as defined in the published NCAONB Management Plan (2014-2019), on a baseline which includes the existing OWFs, as agreed. APP-311 provides an update on the status as a consequence of SEP and DEP, and no further change is predicted i.e. the addition of SEP and DEP to a baseline of QNBs with OWFs would not change the status of the QNBs to an extent that the QNB would become Red (i.e. the QNB is not being conserved or enhanced). The Applicant does not consider further CIA work is necessary in respect of the assessment of the impacts on QNBs, and the statutory purpose of the NCAONB.
Q1.18.3.4	The Applicant	**Agreement between Parties**	The assumption is this item relates to NE'S position regarding the effect on the NCAONB, given the high level of agreement from a seascape aspect reached with

	Natural England	Set out, in further detail, the specific factors which might prevent agreement being reached on Seascape matters and outline what proposals you can bring forward which could enable agreement to be reached during the course of the examination.	other parties, as confirmed at ISH2 and in the various SoCGs. Factors agreed with NE (and others) include overall methodology (in respect to our approach), and baseline, and the conclusions of the assessment of seascape effects. The main disagreement with NE is the effect on landscape character, a small difference in judgements on receptors (where NE have made a judgement) and the additionality or CIA point which feeds into differences on judgements of significance. The Applicant and Natural England agree adverse effects will occur on the AONB, but there is disagreement about the precise quantum of the effects. So far as possible the applicant has endeavoured to avoid, or where not possible, reduce the effects on the designated landscape, in line with national policy requirements (such as paragraphs 5.9.12 and 5.9.13 of NPS EN-1), and it is the applicant's position that the effect on the AONB is Moderate to Slight adverse, not significant, and the integrity of the NCAONB and its purpose is maintained. The Applicant has undertaken a full and robust SVIA. NE have not, perhaps understandably given resource limitations, and their judgements are based on a peer review of the Applicant's SVIA, site work, but also informed by a mathematical approach to assessing what they refer to as 'apparent height' of the turbines when compared to the existing turbines. This approach was developed for other purposes and perhaps explains some of the differences which are unlikely to narrow. That said, the difference in respect to the effects on receptors, where NE have made a judgement and disagree (4no) is only half a 'notch' (moderate against major moderate) for 3 of these 4 receptors, which includes, importantly (given their remit), the overall assessment on the AONB, and is indicative of the normal range of judgements different landscape architects record in assessments, reflecting the acknowledged subjective nature of the assessment. The applicant and NE agree on 3 receptors, whilst NE do not state a position on 10 other receptors assessed by the applicant, reflecting the fact NE has not undertaken a full assessment. Whilst Natural England consider an 'agree to disagree' position is likely, Natural England's Section 42 response, appended to the Relevant Representation, stated at paragraph 57: *"…there is in fact little difference between the Applicant's*

			judgement and our own…" suggesting this is simply a matter of a difference in professional judgement and interpretation of the evidence. NPS EN-3 (para 2.6.308) acknowledges, due to the nature of the OFW technology, adverse effects are likely to occur which is not a reason to refuse permission. The contrast in scale and arrangement of turbines is inevitable given the projects are extensions of older wind farms, the requirements set out by the Crown Estate at the outset, and the need to deliver renewable energy and maximise capacity in a viable manner. It is these factors which contribute to adverse effects, noting the considerable efforts that have been made to weigh all the environmental and technical factors in the balance and to minimise adverse effects at all stages.
Q1.18.3.5	Local Authorities	**Tourism and Coastal Footpaths** Is there any evidence to suggest that the construction of offshore wind turbines, and their cumulative seascape impact, has impaired, prejudiced or resulted in the loss of tourism activities/ enjoyment along the North Norfolk coast?	**N/A**
Q1.18.3.6	Historic England Norfolk County Council North Norfolk District Council	**North Norfolk Heritage Coast** Explain your respective positions on the qualities and significance of the Heritage Coast, particularly the stretch within which the Proposed Development would be theoretically and actually visible. Set out where you consider harms would occur and what, if anything, could be done to minimise the harm or improve the visitor experience.	**N/A**
Q1.18.3.7	Historic England Norfolk County Council	**Aviation Lighting** Would you wish to see revisions to the quantum aviation lighting across both the Proposed Development together with the existing extent of the SOW and DOW, to minimise it where possible, so as to minimise night-time effects on the historic seascape?	**N/A**

	North Norfolk District Council		
Q1.18.4 Cumulative Effects			
Q1.18.4.1	Local Authorities Interested Parties	**Cumulative Effects** Are you satisfied with the list of projects included in the assessment of potential cumulative landscape and visual effects? If not, identify those projects that you believe should be included and indicate why you believe that they should be included.	**N/A**
Q1.18.4.2	Applicant	**Turbine Height and Power** The Proposed Development would allow for up to 53 turbines. If, however, each turbine was of a greater power generation, the numbers of turbines would reduce. a) Would it be right to say that the lower power generators would be small structures? b) If lower power turbines were opted for, would they still have the 30m air gap clearance between the blade tip and the HAT? c) Would there be any appreciable difference in height between turbines of a different power output? d) If the answer to c) above is yes, although there would be implications for offshore ornithology, would the lower height turbines be the 'best-case' for seascape impacts?	**a)** In most instances, yes, they would be smaller. Wind power output is directly proportional to rotor area. If rotor area is doubled, turbine output also doubles. Rotor area is the area swept by the blades of the wind turbine. Hub height is the blade length, plus the air gap to the sea surface. So, whilst it is reasonable to say the longer the turbine blades, the greater is the power output, and height of the turbine, it does depend on the specific power, e.g. it is possible to have an 18MW turbine with smaller blades than a 17MW. In the context of the question, across the design envelope, it is right to say smaller turbines are less powerful than larger turbines. **b)** Yes. **c)** This would depend on the resulting height difference, and distance offshore given the apparent height of a turbine above the horizon is a factor of its height and distance away, as a result of the shielding effect of the curvature of the earth and the extent the base of the turbine is visible. The effect can be observed by reference to the wirelines in APP-138-152 which show the existing turbines (Sheringham Shoal turbines are 3.6MW 132m tall, and Dudgeon are 6MW and 170m tall) compared to the proposed 330m tall turbines. What can be appreciated is the difference between existing and proposed. The smallest likely proposed

			turbine would be a 15MW turbine in the region of 265m high. The difference in height would still be appreciable, but there would not be a proportionate reduction in assessed effects. The benefits of a larger turbine in relation to power output and meeting need would outweigh the seascape benefits of smaller turbines. **d)** The answer to C partly addresses this question, however the Examining Authority attention is drawn to 25.3.2.1 of APP-111 which considers the realistic worst case. Two scenarios were tested comprising more, smaller turbines (Scenario 1) and fewer larger turbines (Scenario 2). Scenario 1 was considered to potentially represent the worst-case in terms of turbine number and development density. Scenario 2 was considered to potentially represent the worst-case in terms of turbine height and contrast with existing offshore wind farm height and density. It was concluded for SVIA purposes (and subsequently agreed with all stakeholders through ETC presentations) that Scenario 2 represented the RWC. Specifically: • Larger turbines (scenario 2) would be visible from more locations and at further distances than smaller turbines (scenario 1); • Larger turbines (scenario 2) would contrast in size when seen adjacent to the existing SOW and DOW wind turbines to a greater degree compared to smaller turbines (scenario 1); • Wider spaced turbines (scenario 2) would contrast with the spacing and density of turbines of the adjacent existing SOW and DOW wind turbines to a greater degree compared to smaller turbines (scenario 1); and • Conversely, smaller and more closely spaced turbines (scenario 1) would have the potential to 'blend' with the existing SOW and DOW wind farms to a greater degree than larger and more widely spaced turbines (scenario 2). Whilst Scenario 2 is considered to be the worst case, Scenario 1 cannot be considered to be best case, given adverse effects will still arise, the difference in height will still be appreciable, and potentially the extra number of turbines may lead to less ordered arrays when viewed from coastal viewpoints, given the greater density.

Q1.19 Navigation and Shipping			
Q1.19.1 Navigational Risk and Effect on Navigational Safety			
Q1.19.1.1	Applicant	**Working Vessels** There are references throughout the ES, but for the purposes of identification this question focuses on paragraph 452 of ES Chapter 10 [APP-096], that deal with vessels during concurrent construction. In paragraph 452 it states: "*The assessment is based on up to 25 vessels on both sites at the same time (equating to an impact area of 0.75km2 (impact area of <0.03km2 per vessel (Table 10-65) multiplied by 25 vessels))*" Should this read 'a total of 25 vessels across both sites'? Otherwise, the plain reading of it appears that 25 vessels on SEP and on DEP equating to 50 vessels at the same time?	The Applicant confirms that this was a typographical error and should have read 'a total of 25 vessels across both sites'. The calculation in Chapter 10 is based on the worst-case scenario of 25 vessels across both sites not a total of 50 vessels.
Q1.19.1.2	Applicant	**Disturbance Payments** Paragraph 399 [APP-098] is incorrectly sourced/ referenced. Please amend and also provide details whether the FLOWW guidance (and justifiable disturbance payments) are factored into the funding statement for the Proposed Development and if there needs to be a securing of this process within the dDCO.	The reference in Paragraph 399 of [APP-098] should have been to Section 12.6.1.1.4 of that ES chapter. The Applicant confirms that justifiable disturbance payments are factored into the estimated project cost for the Projects, as set out at paragraph 33, Section 1.5 of the Funding Statement [APP-027]. The Applicant considers that this is suitably secured through the draft Development Consent Order (Revision C) (document reference 3.1). Condition 13(d)(v) in Schedules 10 and 11 and Condition 12(d)(v) in Schedules 12 and 13 secures that a fisheries liaison and coexistence plan will be established, which must accord with the Outline Fisheries Liaison and Co-existence Plan [APP-295]. Paragraphs 16 and 25 of [APP-295] set out that liaison activities and compensation will be in line with the FLOWW guidance.

Q1.19.1.3	Applicant Trinity House Maritime and Coastguard Agency	**Vessels and Electro-Magnetic Fields** Within ES Chapter 13 [APP-099], there is no clear reference or assessment as to the potential impact of EMF upon navigation and magnetic compasses, for example. In respect of this: a) Can the Applicant explain why the assessment has not been undertaken or signpost as to where this may have taken place? b) Can Trinity House and MCA set out whether there is a real risk of effects of EMF upon navigating ships and/ or what measures sailors employ to counteract any effect on their navigation equipment.	Paragraph 2.4 of the Navigation Risk Assessment (APP 198) confirms that as the project is proposing at Alternating Current (AC) transmission system there is no impact on vessel magnetic compasses. Unlike Direct Current (DC) AC does not emit an Electromagnetic Field (EMF) significant enough to impact marine magnetic compasses. **a)** As above **b)** As above AC transmission systems do not emit an EMF significant enough to impact marine magnetic compasses.
Q1.19.1.4	Maritime and Coastguard Agency	**Risk Mitigation for Fishing Vessels** Is the Outline Fisheries Co-existence and Liaison Plan [APP-295] as drafted sufficient to mitigate risk to fishing vessels in the vicinity of service vessels working on the Proposed Development?	**N/A**
Q1.19.1.5	Maritime and Coastguard Agency	**Operational Safety Zone for Accommodation Structures** Confirm if you are satisfied with the proposed operational safety zones around offshore accommodation structures and if not, why not and what dimension would you want to be secured?	**N/A**
Q1.19.1.6	Trinity House	**Marine Vessel Safety and Navigational Risk Assessment** Are you satisfied that the Proposed Development, subject to implementation of management plans and	**N/A**

	Maritime Coastguard Agency UK Chamber of Shipping Interested Parties	the level of mitigation proposed by the Applicant, reduces navigational risks and safety hazards to 'as low as reasonably possible' (ALARP)? If not, what more needs to be done to give you reassurance?	
Q1.19.1.7	Applicant	**Impact on Ports** Explain whether the NPS for Ports is important and relevant in respect of the Proposed Development and, where necessary, set out how the Proposed Development is compliant with the policies contained therein.	The NPS for ports is considered within Table 13-4 of the Shipping and Navigation Chapter [APP 125].
Q1.19.1.8	Trinity House Maritime Coastguard Agency UK Chamber of Shipping	**Water Depths over Cables** Is it sufficient that the Applicant would consult with the MCA and Trinity House in any instances where water depths are reduced by more than 5% as a result of external cable protection to determine whether additional mitigation is necessary to ensure the safety of passing vessels? Furthermore, what type or form of mitigation would this likely be if necessary?	N/A
Q1.19.1.9	UK Chamber of Shipping	**Deviation of Routes for Vessels** Chapter 13 of the ES [APP-099] states that *"In terms of main routes, deviations would be required for six out of the 14 main routes identified within the study area assuming both SEP and DEP are constructed, with a maximum 4% change in route length."* Do you agree with the 4% as a likely worst-case scenario for deviation of existing routes as a result of the	A rigorous process of consultation has been ongoing since 2019 including formal consultation such as the scoping opinion and PEIR but also topic specific consultation such as the hazard workshop and individual consultations. During this process the Applicant has liaised with statutory and not statutory consultees and local users of the area such as vessel operators. During consultation (see Sections 4.0 of the Navigation Risk Assessment APP 198) stakeholders including regular operators in the area raised concern over the long-term impacts associated with deviations notably to avoid project vessels in the area. These

		construction of DEP and SEP, and if so, what would be the impacts of this to the shipping industry that uses this area.	concerns were raised at the hazard workshop and individual consultation and following assessment were deemed, both as part of the hazard log but also the risk (impact) assessment contained within the NRA, to be within ALARP levels (not significant within the Chapter). As part of this agreement the Applicant has included a Navigation Management Plan (Section 21.3.1.1 of APP-198)' to mitigate concerns related to project construction, operation and maintenance vessels operating between the sites at the request of those operators and consultees. Therefore, no concerns in relation to navigation safety or commercial concerns remain due to the presence of the proposed SEP and DEP structures, noting that the deviations shown within the NRA are worst case and based on mean route positions.
Q1.19.1.10	Applicant	**Navigational Management Plan** Further to the discussions at ISH1, respond to the points raised by Trinity House with regards to the provision of a navigational management plan, forming a separate entity to the 'Aid to Navigation Plan' and how this would secured through the dDMLs.	Reference to the navigational management plan has been added to the deemed marine licence conditions (see Part 2 of Schedules 10-13) of the draft Order (Revision C) [document reference 3.1].
Q1.19.2 Impact on Radar, Search and Rescue			
Q1.19.2.1	Maritime and Coastguard Agency Trinity House UK Chamber of Shipping	**Layout Principles for Search and Rescue** Are you satisfied that the dDMLs contained with the dDCO would secure the necessary commitments to enable safe and practical search and rescue operations? If not, what additional wording/ drafting would you wish to see inserted?	**N/A**

Q1.20 Noise and Vibration			**Applicant's Response**
Q1.20.1 Adequacy of the Assessments for Construction			
Q1.20.1.1	Applicant Local Authorities	**Methodology – Baseline Noise Survey** The ES [APP-109, Paragraph 51] states that the baseline survey methodology was agreed with BDC. Large parts of the cable corridor, landfall and the substation are located in other local authority areas (NNDC and SNDC). Do NCC, NNDC and SNDC agree with the scope and extent of the baseline survey?	The Applicant and Local Planning Authorities had reached an agreed position on the scope and methodology of the noise surveys. The Applicant considers that the surveys that were carried out at the time and the following assessment remain robust. The Applicant acknowledges that BDC may have additional concerns regarding the noise survey methodology at the Attlebridge compound as a result of recent experience regarding other infrastructure projects. The Applicant will continue to work with BDC and the affected Local Authorities to resolve any outstanding queries.
Q1.20.1.2	Applicant Local Authorities	**Methodology - Baseline Noise Assumptions** a) What is the justification for not undertaking baseline noise surveys at sensitive receptors along the onshore cable route and assuming a Category A threshold value [APP-109]? b) Further, explain why no surveys were undertaken in proximity to the main construction compound at Attlebridge. c) Is it possible that actual baseline levels at the sensitive receptors could be lower than assumed? d) If so, what impact would this have on the assessment?	**a)** The baseline used for the assessment of noise impacts is described in Environmental Statement Volume 1 Chapter 23 Noise and Vibration [APP-109] Section 23.5. Baseline noise level measurements were undertaken to inform the assessment of noise impacts at the landfall and substation. Measurements were not deemed necessary to inform assessments of impacts along the cable corridor, this approach is deemed robust and was agreed with the Expert Topic Group during consultation [paragraphs 59 and 122, APP-109]. Measurements were also not required to assess construction road traffic noise impacts as this is based on calculations (described in Section 23.4.3.4, [APP-109]). As discussed in paragraph 122, [APP-109], receptors along the cable corridor (including around the main construction compound) are assumed to be "Category A" as per BS 5228-1. This applies the lowest possible threshold value for the onset of potentially significant effects; hence the assessment considers the worst-case for potential noise impacts on these receptors. If baseline measurements had been undertaken at these receptors, the only change to the assessment criteria would have been if high baseline noise levels were to be

			measured, thereby increasing the threshold value and making the assessment less onerous. The methodology therefore ensured that the worst case scenario was assessed and potential effects were assessed at their highest level, making it unnecessary to undertake further baseline noise surveys. The adopted approach is also in alignment with the method for the assessment of construction noise impacts specified in BS 5228-1 Section E.2. This method applies fixed limits without the need to measure baseline noise levels, stating that "*Noise levels, between say 07.00 and 19.00 hours, outside the nearest window of the occupied room closest to the site boundary should not exceed:* • *70 decibels (dBA) in rural, suburban and urban areas away from main road traffic and industrial noise;* • *75 decibels (dBA) in urban areas near main roads in heavy industrial areas.*" **b)** No surveys were deemed necessary adjacent to the main construction compound because the nearby receptors were assumed to be Category A, thereby ensuring potential worst-case impacts were assessed without the need to undertake measurements, as per the answer to Q1.20.1.2.a. **c)** For the purposes of the construction noise assessment, the only assumption regarding baseline noise levels (as set out in BS 5228-1) is that they are at least 5 dB below the minimum (i.e. category A) threshold values specified in Table E.1 of BS 5228-1, provided in Table 23-10 of APP-109. How much the actual baseline levels are below these minimum criteria is not relevant to the impact assessment, a specific baseline noise level has not been assumed, only that they are

			below the minimum threshold level at which there could be a possible onset of potentially significant effects.. **d)** How much the baseline levels are below these minimum criteria is not relevant to the impact assessment as the threshold values provide the lowest possible threshold for the onset of potentially significant effects.
Q1.20.1.3	Applicant	**Main Construction Compound** It was put to the Applicant at ISH2 [EV-020] [EV-024], in relation to the Attlebridge main compound noise assessment, that 8 years is not a temporary period and the use of construction noise standards rather than operational noise standards would be more appropriate. Respond to these suggestions.	It is understood that the reference to 8 years of construction compound use is the DEP and SEP sequential construction scenario. Under this Project scenario, the compound will be used for around 2 years per project, with a break of approximately 3 years between. This pattern of proposed usage is considered temporary and is similar to other projects (e.g. HS2 and Lower Thames Crossing) where construction noise has been assessed using BS 5228-1, as per the construction noise assessment methodology described in Section 23.4.3.3 of [APP-109]. The actual works undertaken in the main construction compound will be task-specific and intermittent, with only short periods of relatively high noise levels in comparison to the overall 2-year usage period. The Control of Pollution Act 1974 (CoPA) is the primary piece of legislation related to construction noise impacts in the UK. Section 60 of CoPA provides local authorities with the power to serve a notice imposing working restrictions to control of noise from construction works, defined as: "*(a) the erection, construction, alteration, repair or maintenance of buildings, structures or roads;* *(b) breaking up, opening or boring under any road or adjacent land in connection with the construction, inspection, maintenance or removal of works;* *(c) demolition or dredging work; and*

			(d) (whether or not also comprised in paragraph (a), (b) or (c) above) any work of engineering construction." It is apparent that the main compound works fall into this description. Section 71 of CoPA requires the Secretary of State to "*approve a code of practice for the carrying out of works to which section 60 of this Act applies*". The Control of Noise (Code of Practice for Construction and Open Sites) (England) Order 2015 identifies BS 5228:2009+A1:2014 Part 1: Noise and Part 2: Vibration as approved codes of practice under CoPA. Hence, BS 5228-1 should be used to determine the impact of the noise from the main compound. As an example, HS2 Phase 1 requires construction compounds along the entire proposed train route. Many of these compounds will be utilised for periods well in excess of 3 years, for example, according to Hertfordshire Councty Council, HS2 will involve "*building three large construction compounds within the county that would house 250 and be in use for up to 12 years*."[12] HS2 uses the guidance in BS5228-1 to assess and control all construction noise impacts, including that from compounds[13, 14 & 15]. It is recognised that SNDC and BDC have requested an assessment of main compound noise impacts using British Standard 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'. According to this standard (paragraph 1.2), it should be used for "*rating and assessing sound of an industrial and/or commercial nature, which includes:* *a) sound from industrial and manufacturing processes;*

[12] https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/planning-in-hertfordshire/hs2-high-speed-railway-project.aspx

[13] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/628750/E61_SV-001-000_WEB.pdf

[14] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/672398/E23_-_Control_of_construction_noise_and_vibration_v1.7.pdf

[15] [redacted]

			b) sound from fixed installations which comprise mechanical and electrical plant and equipment; *c) sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and* *d) sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from fork-lift trucks, or that from train or ship movements on or around an industrial and/or commercial site.*" The standard goes on to state (paragraph 1.3) that it "*is not intended to be applied to the rating and assessment of sound from:* *… d) construction and demolition;*" Based on the above, the criteria in BS 5228 are considered applicable and those related to operational noise are not appropriate.
Q1.20.1.4	Local Authorities	**Methodologies – Noise and Vibration** Do NCC, NNDC, SNDC and BDC agree with the Construction Phase Noise, Road Traffic Noise Assessment and Construction Phase Vibration Assessment Methodologies adopted in the ES [APP-109], including the predicted construction noise and vibration levels?	**N/A**
Q1.20.1.5	Applicant	**Methodology – Construction Traffic Vibrations Assumptions** The assessment of vibration impacts due to construction traffic using public roads has been excluded from the assessment scope, noting that DMRB LA111 states *"a maintained road surface will be free of irregularities as part of project design and under general maintenance, so operational vibration will not have the potential to lead to significant adverse effects".* The ExA observed on the USI [EV-001] visit that many of the roads that would be used by HGVs are rural in nature with	It is acknowledged that some roads in the region are rural in nature and have irregularities. HGVs driving over irregularities in a road surface can generate vibration which is perceptible in nearby buildings. However, that does not change the assessment position because the additional HGVs introduced by the construction of the project will generate vibration which is at a similar level to that caused by HGVs currently using the road. Whilst the additional HGVs will increase the frequency of passbys, and therefore the frequency of potential exposure to perceptible vibration, vibration levels are not calculated cumulatively in the way that noise is. The impact assessment criteria for

		irregularities in the road surface. Is this position therefore justified?	both building damage (Table 23-14, [APP-109]) and human disturbance (Table 23-16, [APP-109]) are based on exceedance of a fixed limit (specified in peak particle velocity (PPV)) by one event (in this case, one HGV passby). The number of HGVs passing a property would therefore not affect the PPV experienced at a receptor in the way that it does for noise and hence, annoyance impacts due to vibration associated with construction traffic will be no worse than those due to noise. Research undertaken by the Transport and Road Research Laboratory[i] (TRRL Report 246) confirms this assertion, concluding that "*Overall, fewer people are bothered by vibration from traffic than by traffic noise. However, the proportion of residents seriously bothered by vibration (8%) is similar to the percentage seriously bothered by noise (9%).*" In accordance with best practice in the UK acoustics industry, the assessment therefore focusses on the potential for annoyance due to change in noise levels caused by construction traffic (Section 23.6.1.4 of [APP-109]), concluding that residual effects will be not significant. Hence, the impact of annoyance due to vibration generated by the Project construction traffic will be not significant. Section 23.4.3.5 of [APP-109] describes the construction vibration assessment methodology and identifies the potential impacts of vibration as annoyance and building damage. TRRL Report 246 concluded that "*there is no evidence to support the assertion that traffic vibration has a significant damaging effect on buildings*". Hence, the impact of building damage due to vibration generated by the Project construction traffic will also be not significant. Significant deterioration of the road surface could increase ground vibration levels. Paragraph 120 of the Outline Construction Traffic Management Plan (Revision B) [document reference 9.16] states "*Where emerging issues are identified as a result of SEP and DEP construction traffic, the PC* [Principal Contractor] *would notify NCC* [Norfolk County Council] *and either repair the issue or ask NCC to undertake the repairs (with costs being recharged to the PC).*" Hence,

			vibration level increases due to road surface deterioration are not anticipated.
Q1.20.1.6	Applicant	**Methodology – Identification of Sensitive Receptors** The Applicant accepted at ISH2 [EV-020] [EV-024] that not all sensitive receptors (residential properties) that will be affected by construction works along the cable corridor have been identified and assessed in the ES. a) Provide justification for this. b) Set out how mitigation for such omitted properties will be secured if they are not identified or assessed in any of the application documentation.	**a)** In accordance with good practice for Environmental Impact Assessment, the noise and vibration chapter has taken a proportionate approach which involved selection of the closest receptors to the works for the assessment, thereby ensuring that worst-case impacts of the project are assessed. Nevertheless, to inform the mitigation analysis to be undertaken in the Construction Noise Management Plan (required for inclusion in the final CoCP by paragraph 146 of the OcoCP), a CNMP study area has been defined which is 300m from the construction works. This is based on the Design Manual for Roads and Bridges LA111 Noise and Vibration (Revision 2) which, in relation to a construction noise study area, states "*300m from the closest construction activity is normally sufficient to encompass noise sensitive receptors*." This study area is shown on Figure 2 in Appendix A.2 which has been prepared to accompany this response. In conclusion, the approach taken in the EIA was appropriate (and in line with guidance) in assessing the significance of effects on residential receptors. The final mitigation plan is a separate matter and will involve further work post-consent (which is standard practice). See Appendix A2 **b)** The construction noise mitigation is secured by DCO Requirement 19, which requires that construction works "*must be undertaken in accordance with the relevant approved code of construction practice*" which must accord with the Outline Code of Construction Practice (OCoCP) (Revision B) [document reference 9.17]. This is secured by Requirement 19 of the draft DCO (Revision C) [document reference 3.1]. Section 9.1 of the OCoCP states that a "*Construction Noise (and vibration) Management Plan (CNMP) will be included in the CoCP…*

			The CNMP will be developed based on the confirmed list of plant and equipment proposed by the appointed Principal Contractor for that phase of the works, i.e. confirming the actual expected noise levels and location of works during construction activities… Should any residual impacts remain following the application of BPM these would be reduced to non-significant with the addition of site-specific solutions such as increased separation distance of noisy plant and the use of temporary noise barriers… If the implementation of all reasonable mitigation measures and BPM still results in construction noise levels exceeding the Threshold Values, BS 5228-1 does recommend further options such as the provision of noise insulation to affected habitable rooms." This requirement is applicable to all sensitive receptors potentially affected by the works (as shown in Figure 2, Appendix A.2), not just those at the properties identified in the application documentation.
Q1.20.2 Construction Effects on Sensitive Receptors			
Q1.20.2.1	Applicant	**Potential Impacts – Cable Corridor** For construction works along the cable corridor (i.e. installation of temporary access tracks and work areas and cable duct and installation) a number of moderate and major adverse effects to sensitive receptors are identified in Table 23-24 of the ES [APP-109]. The ES [APP-109] sets out that these are linear in nature and are expected to be undertaken in 1km sections, requiring a construction presence for up to 4 weeks per section. The ES [APP-109] also notes that for these linear activities, to identify the impact duration, it is necessary to calculate the maximum distance from the activity to the sensitive receptor at which it could cause an exceedance of the Threshold Value. a) How have these distances [APP-109, Paragraph 153] been calculated and where is this set out?	**a)** The distances in paragraph 153, [APP-109] are based on noise level calculations undertaken in accordance with the calculation procedure in BS 5228-1. They are the calculated distance at which the works won't exceed the Threshold Value, with all construction plant located at the specified distance and working simultaneously, which is an absolute potential worst-case. **b)** The actual distances at which construction noise exceeds the Threshold Value will depend on site specific circumstances. The calculation methodology used is described in paragraph 64, APP-109, the corrections which are site specific depend on the following between the works and the receptors: • any screening, either due to structures or ground levels

		b) Would such distances not depend on the site-specific nature of the area?	• the type of ground (acoustically absorptive or reflective) The calculations have assumed a worst-case in terms of these corrections, in that there has been assumed to be no screening and all ground has been taken to be hard. Hence, any site-specific corrections would only increase the distance at which the works could cause an exceedance of the Threshold Value.
Q1.20.2.2	Applicant	**Cable Corridor** The ES [APP-109, Paragraph 154] sets out that to identify whether a significant effect is likely to occur, it is necessary to establish the length of time the works will be less than the maximum distance from each sensitive receptor. The ES [APP-109, Paragraph 155] uses an example of one activity as a worse case 'cable duct and installation works'. The assessment finds that the exceedance of the Threshold Value at a receptor would only last for one week and therefore highly unlikely to exceed the Threshold Value for more than 40 days in any 6-month period or 10 days in any 15. The ES [APP-109, Paragraph 155] then concludes that the identified moderate and major adverse impacts due to construction works along the cable corridor route are considered not significant. Further to discussions at ISH2 [EV-020] [EV-024], provide additional justification in terms of whether such an approach ignores the likelihood of different construction activities being undertaken straight after one another resulting in noise levels over the Threshold Value for 10 days or more in any 15 day period?	[APP-109, Paragraph 153] states "*The construction works on the cable corridor (i.e. installation of temporary access tracks and work areas, cable duct and installation) are linear in nature and for all scenarios, SEP or DEP in isolation, SEP/DEP concurrent or sequential, they are expected to be undertaken in 1km sections, requiring a construction presence for up to 4 weeks per section*." This shows that the entire cable corridor construction will be completed at a rate of 250m per week i.e. all construction activities. Hence, the assumptions account for the fact that different construction activities will be undertaken one after another. The one week duration quoted in the question is the worst-case for the loudest activity, but the identified duration applies to the combined noise from all 4 activities identified in [APP-109, Paragraph 153] (installation of temporary access tracks, establishing temporary work areas, cable duct and installation and cable pull) occurring consecutively. Construction activities being undertaken straight after one another are not expected to result in noise levels over the Threshold Value for 10 days or more in any 15 day period. Nevertheless, a mitigation measure has been added to Section 9.1.2 of the Outline Code of Construction Practice (Revision B) [document reference 9.17] which requires that, where practicable, works are scheduled to avoid high noise levels at receptors for more than 10 days in any 15 consecutive days, or 40 days in any 6 consecutive months.
Q1.20.2.3	Applicant	**Construction Traffic at Link 137** The ES [APP-109, Paragraph 187] finds that mitigation measures are required for construction traffic flows on link 137	This is an error in the ES Chapter [APP-109, Paragraph 187], the mitigation measure is included in the Outline Construction Traffic Management Plan (Revision B) [document reference 9.16] Section 4.2.

		in order to ensure additional traffic does not result in a change in the basic noise level of 3dB or more for a period of 40 or more days in any 6-month period. It is set out that this is secured through the OCoCP [APP-302]. Where is this secured in the OCoCP?	
Q1.20.2.4	Applicant	**Construction Traffic at Links 58 and 90** The ES [APP-109, Paragraph 182] sets out that the significance of impacts on these links (58 and 90) are considered no worse than moderate adverse i.e. not significant. In other subject matters in the ES, moderate adverse has been considered as significant. Why it is different here?	This is an error in [APP-109, Paragraph 184]. The text should state that impacts are no worse than minor adverse i.e. not significant.
Q1.20.2.5	Applicant	**Operational** a) The ES [APP-109] finds that it is necessary to define operational noise level limits which will need to be complied with by the original equipment manufacturer, based on predictive noise modelling and assessment to be undertaken during the detailed design phase. It is set out that compliance with these limits is secured by R21 - Control of Noise During Operational Phase. R21 does not include any specified noise levels. Explain why this is the case? b) Further, the need to incorporate noise mitigation measures around some components within the substation is referred to in the ES. Where are these measures specifically secured?	**a)** Requirement 21 within the dDCO (Revision C) [document reference 3.1]) has been revised to include noise level limits specified to ensure that impacts are no worse than of minor significance, based on a criterion from British Standard 4142:2014+A1:2019 that the *rating level* of the operational noise does not exceed the *background sound level* by more than 5 dB. **b)** Mitigation of operational noise impacts are secured by the revised Requirement 21 within the dDCO (Revision C) [document reference 3.1]. The mitigation measures identified in the ES are based on the design information available at the time, which may change, and therefore the required mitigation measures may also change. It is not necessary to secure specific mitigation measures, as the impact of the substation noise will be mitigated in accordance with the requirements set out in Requirement 21 within the dDCO (Revision C) [document reference 3.1].

Q1.20.2.6	Applicant	**Vibration Assessment** The ES [APP-109] sets out that the predicted PPV levels are between 10 and 15 $mm.s^{-1}$ at receptor CCR9. How was this calculated and has there been an assessment for all other sensitive receptors?	Table 23-6 [APP-109] provides set back distances from works at which specific vibration levels are predicted. Paragraph 203 (APP-109) states "Set back distances were derived using the calculation methods provided in BS 5228-2." The quoted PPV levels in the question, of between 10 and 15 $mm.s^{-1}$ at receptor CCR9, are due to ground compaction activities. This level was calculated assuming that vibratory compaction is undertaken at the closest point of the Order Limits (7m from the property), using the equations in Table E.1 in BS 5228-2 for the prediction of groundborne vibration from vibratory compaction. Further details on the assumptions made in these calculations are provided in Environmental Statement Appendix 23.3 - Construction Noise Assessment [APP-266, Section 23.3.5]. This calculation was presented to demonstrate the potential worst-case highest vibration levels which could occur at a receptor. Mitigation measures for the control of construction vibration are detailed in paragraph 212 of [APP-109]. This includes a requirement that ground compaction is at least 8m from any residential property to minimise the potential for cosmetic damage. With this mitigation in place, Table 23-6 [APP-109] shows that the actual maximum vibration levels to which occupants could be exposed is between 1 and 10 $mm.s^{-1}$. Table 23-16 of the ES [APP-109] states that vibration levels of between 1 and 10 $mm.s^{-1}$ can be tolerated with prior warning and explanation. Paragraph 210 of the ES identifies that ground compaction is only anticipated to result in exceedance of the 1$mm.s^{-1}$ threshold for less than one day and concludes that effects will not be significant, without the need to calculate maximum vibration levels at each receptor.
Q1.20.2.7	Applicant	**Potential Impacts – Vibration Effects** The ES [APP-109] notes that to control the risk of vibration-induced cosmetic damage to no greater than 5%, any vibratory compaction should be at least 8m from a residential property. Given some receptors are within this distance, does such mitigation need to be secured and specifically referred to in the	The OCoCP has been revised to include the mitigation measures set out in paragraph 212 of the ES [APP-109].

		noise and vibration section of the OCoCP [APP-302], along with all of potential mitigation measures set out in Paragraph 212 of the ES [APP-109]?	
Q1.20.2.8	Applicant	**Potential Impacts – Vibration Effects** The ES [APP-109] concludes that, ground compaction is only likely to be within 48m of any sensitive receptors for less than one day and that such a short duration of exposure means that vibration impacts on human receptors due to ground compaction will be no greater than minor adverse significance i.e. not significant. a) Is there any guidance that supports taking duration into account? b) Does this overlook the level/ intensity of vibration experienced at each receptor?	***a)*** BS5228-2 states that "*A number of factors are likely to affect the acceptability of vibration arising from construction sites and the degree of control necessary… These are described as follows:…* *c) Duration of site operations. In general, the longer the duration of activities on a site, the more likely it is that vibration from the site will prove to be an issue. In this context, good public relations and communication are important. Local residents might be willing to accept higher levels of vibration if they know that such levels will only last for a short time. It is then important that site operations are carried out according to the stated schedule and that the community is informed of their likely durations.* *d) … adverse community reaction is sometimes based upon concern over building damage, even when the vibration is just perceptible. It is therefore important to assure the community that vibration levels generally have to be of significant magnitude for even cosmetic damage to occur.* **b)** The level/intensity of vibration experienced at each receptor is controlled by avoiding works within 8m of the property, to ensure that building damage will not occur. As discussed in the above quote from BS 5228-2, adverse reaction regarding high vibration levels is typically due to concerns around building damage.
Q1.20.3 Cumulative Effects Assessment			
Q1.20.3.1	Applicant	**Cumulative Noise Assessment Scenarios**	The '2025 Factored Base versus 2025 Factored Base + Peak Construction SEP/DEP concurrent plus NV and HOW03' scenario

		What is the difference between the '2025 Factored Base versus 2025 Factored Base + Peak Construction SEP/DEP concurrent plus NV and HOW03' and '2025 Factored Base + Peak Construction SEP/DEP concurrent versus 2025 Factored Base + Peak Construction Tandem (SEP/DEP concurrent) plus NV and HOW03' scenarios [APP-109]?	presents the impact of the combined traffic associated with SEP and DEP plus the cumulative projects against the baseline traffic flows. The '2025 Factored Base + Peak Construction SEP/DEP concurrent versus 2025 Factored Base + Peak Construction Tandem (SEP/DEP concurrent) plus NV and HOW03' scenario presents the noise impact of the additional traffic introduced by the cumulative projects, compared against the combined baseline and SEP and DEP construction traffic flows. By undertaking both these comparisons, the cause of any significant effects can be more accurately attributed to either SEP and DEP or the cumulative projects.
Q1.20.3.2	Applicant	**Cumulative Noise Potential Impacts** Where have the figures/findings in Sections 23.7.3.3.1, 23.7.3.3.2 and 23.7.3.3.4 of the ES [APP-109] been derived, as they do not reflect the results of Tables 23.2.5 and 23.2.6 of the Road Traffic Noise Assessment [APP-265] in terms of number of links assessed or magnitude of effects?	The findings of Sections 23.7.3.3.1, 23.7.3.3.2, 27.7.3.3.4, 27.7.3.3.5 and 27.7.3.3.6 are out of date, based on previous iterations of traffic flow data for the project. The results in Tables 23.2.5 and 23.2.6 [APP-265] are correct. For both calculation scenarios, the number of overlapping links is 63. For the '2025 Factored Base versus 2025 Factored Base + Peak Construction SEP/DEP concurrent plus NV and HOW03' scenario, the effect magnitude from peak construction traffic is calculated to be negligible at 22 road links and minor across 41 road links. The residual impact is therefore not significant. For the '2025 Factored Base + Peak Construction SEP/DEP concurrent versus 2025 Factored Base + Peak Construction Tandem (SEP/DEP concurrent) plus NV and HOW03' scenario, the effect magnitude from peak construction traffic is calculated to be negligible at 44 road links and minor across 19 road links. The residual impact is therefore not significant.
Q1.20.3.3	Applicant	**Cumulative Noise Impacts at Landfall** Is reliance on mitigation from Hornsea Project Three OWF and this project sufficient to ensure that no significant adverse	Hornsea Project Three OWF is committed to implementing mitigation which ensures that its residual effects are not significant, it is standard EIA practice to rely on such commitments.

		effects would occur? Is there a need for a commitment to ensure that works do not take place at the same time?	The OCoCP has been revised to include a requirement that, if the relevant project construction schedules overlap, the SEP/DEP Principal Contractor will liaise with the principal contractors for the Hornsea Project Three and Norfolk Vanguard projects, as well as the Local Planning Authorities. This liaison will ensure that simultaneous working at similar locations will be considered (alongside appropriate mitigation measures), thereby minimising the potential for cumulative construction noise effects to occur.
Q1.20.4 Adequacy and Design of Proposed Mitigation			
Q1.20.4.1	Applicant	**Potential Impacts – Adequacy of Proposed Onshore Mitigation** The ES [APP-109] finds that there are many sensitive receptors where moderate or major adverse impacts during construction activities are identified, including the night-time period from trenchless crossing works. In some cases (as shown in [APP-266, Table 23.3.4]), the exceedance of the threshold is significant. The ES [APP-109] sets out a number of generic mitigation measures, including the use of a CNMP. a) Applicant, set out the typical noise level reduction that such generic mitigation measures could feasibly achieve. b) Receptor CCR2C has an anticipated noise level for trenchless crossings of 89db (one of the highest examples). Based on Table 23-11: Construction Noise Magnitude of Effect Criteria of the ES [APP-109] to ensure no significant effect there would need to be no greater than 50db during the night time period. A reduction of 39db would therefore be required from the proposed mitigation. Provide a detailed mitigation scheme for receptor CCR2C to demonstrate this can be realistically achieved.	**a)** The mitigation measures for the control of impacts from trenchless crossing works are presented in Section 23.6.1.2.3 of the ES [APP-109]. The potential effectiveness of each of these measures is described below • Temporary screening – 5 to 10 dB for overall site noise emissions (taken from BS 5228-1) • Use of exhaust silencers – for items of plant where the dominant noise source is the exhaust, sound emissions can be reduced by 5 to 15 dB, depending on the manufacturer's specification for the acoustic performance • Reduced numbers of plant – for a group of identical plant items, according to standard acoustic theory, halving the number of plant would reduce the combined sound emissions by 3 dB • Reduced on-time – based on the calculation procedure in BS 5228-1, halving the time within a working day which a plant item would work would reduce sound levels by 3 dB • Increased separation distance – in the calculations, it has been assumed that all plant are at the closest approach of the Order Limits or trenchless crossing location to the property. In most

			cases, this will not occur and the works are likely to be in the centre of the cable corridor and wherever practicable, plant will be located away from receptors. At property CCR2C, the distance adopted in the calculation is 7m. The intention is to site the shaft in the centre of the corridor at this location, due to the presence of noise sensitive properties on both sides of the corridor. On this basis, the construction works will be at least 36m from the property. Based on the calculation procedure in BS 5228-1, this reduces the predicted construction noise levels at the property by 19 dB. It is not possible to quantify the effectiveness of the remaining mitigation measures in dB; however, according to BS 5228-1, these additional measures will help to minimise the potential for negative community response to the works. As described in paragraph 61 of the ES [APP-109], the impact significance depends on some additional factors, not just the construction noise level. Of particular relevance to this question is the duration of the effect, as impacts which last for less than 10 days in any 15 consecutive days, or 40 days in any 6-month period, would not be considered significant. Hence, mitigation may not be needed if high noise levels from the trenchless crossing works is of a shorter duration. In respect of the proposed trenchless crossing works: • Drilling works will comprise up to six separate “drill profiles”, each drill profile will be completed at a rate of around 40m per day (daytime working only) or 80m per day (24-hour working where required); • Where practicable, the trenchless crossing shaft from which the drilling is undertaken will be located as far as possible away from the closest sensitive receptor; and • Night-time trenchless crossing works are only proposed where absolutely necessary e.g. at railway crossings, due to a Network

			Rail requirement. At most trenchless crossings, night-time work would only be undertaken in an emergency, the only anticipated reason for this is due to the collapse of a tunnel, requiring the drill head to be rescued. This would only require night-time working for the remainder of that drill profile, which would be completed at a rate of 80m per day. Therefore, based on these initial estimates and working practices, the potential for the construction noise impacts to result in adverse community reaction (which depends on factors including noise levels, works duration and timing) is much lower than what has been assessed in the worst-case scenario presented in the Environmental Statement. **b)** The proposed trenchless crossing causing the predicted noise impacts at CCR2C is RDX001, which is approximately 80 m long (see Trenchless Crossing Schedule [ASS-022]). The trenchless crossing works are anticipated to last around 3 weeks; although, with site preparation works etc. the total duration of works is likely to be longer than this. Night-time working will not be undertaken at this location except in the emergency scenario described in the answer to Q1.20.4.1.a. The intention is to site the shaft in the centre of the corridor at this location, due to the presence of noise sensitive properties on both sides of the corridor. On this basis, the shaft will be at least 36m from the property, reducing the predicted noise level at the property without mitigation to 70 dB L_{Aeq}. With screening, this noise level will be reduced by 5 to 10 dB i.e 60 to 65 dB L_{Aeq}. For daytime working, using the criteria in Table 23-11 [APP-109], this equates to an effect of low magnitude i.e. impacts are not significant. Night-time working would only be undertaken in an emergency and this would only be for the duration of one drill profile. For this crossing length, the maximum period of night-time working is anticipated to be 3

			days, unless multiple drills fail which is extremely unlikely. In any event, two drill failures (and the subsequent need for night-time working) would be separated by a period of daytime only working. On that basis, trenchless crossing works during the evening and weekends or night-time periods is not anticipated to last for more than 10 days in any 15 consecutive days; hence, impacts during these time periods will be not significant.
Q1.20.4.2	Applicant	**Potential Impacts –** Construction Traffic Within the ES [APP-109] is it appropriate to apply the parameters of duration of effects set out in BS 5228-1 (40 days in any 6-month period)? Also, where in BS 5228-1 is this set out?	The application of duration of effects to the assessment of construction noise is best practice in the UK acoustics industry and has been used on many of the recent major project examples, such as HS2. This parameter is specified in Section E.4 of BS 5228-1, which states: "*Noise insulation, or the reasonable costs thereof, will be offered by the developer or promoter… where the construction of the development causes, or is expected to cause, a measured or predicted airborne construction noise level that exceeds either of the following at property lawfully occupied as a permanent dwelling:* *• the noise insulation trigger levels presented in Table E.2 for the corresponding times of day;* *• a noise level 5 dB or more above the existing pre-construction ambient noise level for the corresponding times of day;* *whichever is the higher;* *and for a period of 10 or more days of working in any 15 consecutive days or for a total number of days exceeding 40 in any 6 consecutive months*." The DMRB LA111 Noise and Vibration also states "*Construction noise and construction traffic noise shall constitute a significant effect where it is determined that a major or moderate magnitude of impact will occur for a duration exceeding:* *1) 10 or more days or nights in any 15 consecutive days or nights;*

			2) a total number of days exceeding 40 in any 6 consecutive months"
Q1.20.4.3	Applicant Local Authorities	**Potential Impacts –** Monitoring Operational Noise To be effective should dDCO R21 be explicit about where monitoring should be done, such as the onshore substation? Provide revised wording if so.	It is not standard practice to specify the locations at which monitoring is required in DCO Requirements. Monitoring may be undertaken at the substation boundary, at receptor locations and/or intermediate locations and will be subject to the detailed design of the substation. This will depend on factors such as whether it is possible to accurately measure the substation noise levels at the nearby properties, which would depend on the ambient noise levels at the property in question. Monitoring requirements will be specified in the noise management plan secured by dDCO (Revision C) [document reference 3.1] Requirement 21.

Q1.21 Oil, Gas and Other offshore infrastructure and activities			**Applicant's Response**
Q1.21.1 Safety measures			
Q1.21.1.1	Applicant Statutory Undertakers	Diagrams Provide maps and diagrams showing the extent, path and location of all offshore infrastructure assets within 2km of the Proposed Development. Where there is overlap with the Order limits, denote this with a light pink shading. Where there is an overlap that causes concern or potential conflict (for example, with exclusion zones), denote these with a darker red shading. This exercise will assist in identifying where concerns are and the degree of interaction between various projects.	Please refer to Appendix A.4 for figure.
Q1.21.1.2	Statutory Undertakers Interested Parties	Protective Provisions Set out clearly, if these are not already covered within the schedules to the dDCO, the specific protective provisions you would require in order to be satisfied that the infrastructure and assets you own/ operate would be safe and secure. Provide reasoning behind each of the specified provisions.	**N/A**
Q1.21.2 Effectiveness of Proposed Mitigation			
Q1.21.2.1	Applicant	Mitigation Options ES Chapter 16 [APP-102], paragraphs 95 (16.6.1.1.4) and 142 (16.6.2.1.4) sets out 'additional mitigation options.' How are these to be consulted upon, selected and secured within the dDCO, within either the Protective Provisions or the suite of management plans?	The Applicant does not propose to have protective provisions with offshore oil and gas operators as, following initial contact with the relevant operators, it was understood from initial discussions that protective provisions were not required. Please refer to the Current Status of Statutory Undertaker Negotiations in Appendix A of the Applicant's Responses to the Examining Authority's First Written Questions [document reference 12.4.1]. The Applicant is in ongoing

			discussions with the relevant operators and agreement on particular areas is being noted in statements of common ground. Please refer to Q1.4.2.3 for further detail. The Applicant continues to be in ongoing discussions with the MCA and Trinity House and will seek their views on potential mitigation options proposed.
Q1.21.2.2	Applicant	Cable Crossings Update the Examination on negotiations with undertakers on the design and feasibility of providing cable crossings over other cables and pipes on the sea bed.	Please refer to the Current Status of Statutory Undertaker Negotiations in Appendix A of the Applicant's Responses to the Examining Authority's First Written Questions [document reference 12.4.1] for a general update. The established industry practice is that crossing and proximity agreements are finalised post-consent with the relevant asset owners, with consideration given to the 'OIL AND GAS UK – Pipelines Crossing Agreement and Proximity Agreement Pack (OIL AND GAS UK, 2015)' . The agreements with operators would therefore be based on this cross-industry guidance. The design of such crossings would be finalised at the detailed design stage. The Applicant considers that there is nothing unusual about the anticipated crossings and therefore does not expect there to be any difficulties in the feasibility of crossings and agreeing a suitable design.

Q1.22 Socio-economics effects			Applicant's Responses
Q1.22.1 Effects on recreation, tourism and business			
Q1.22.1.1	Applicant	**Change in Demographics** The ES [APP-113, Paragraph 131] sets out that given the type of accommodation that would typically be used by these construction workers it is assumed that these workers will not compete with and displace homeless people and their families. What is the justification for this assumption, and could both not compete for B&B or hotel bedspaces?	Data published by the Department for Levelling Up, Homes and Communities (DLUHC)[16] shows there were 690 households living in temporary accommodation in East Anglia in 2022 (387 in Norfolk and 303 in Suffolk). Of these, 313 are living in local authority or housing association stock. Only 291 households are living in visitor accommodation, including bed and breakfast hotels (77), hostels (101) and non-serviced accommodation (113). Visit Britain's most recent Accommodation Stock Audit[17] showed there were 24,976 rooms in serviced and non-serviced accommodation in East Anglia, which cumulatively provide over 68,500 bedspaces. Therefore, assuming each household takes up one room, this means they account for 1.2% of visitor accommodation in East Anglia. Visit Britain's occupancy data for 2022 shows that occupancy rates were at their highest in the month of July (85%), and this will include those rooms taken up by households staying in temporary accommodation. Under the worst case scenario, ES Chapter 27 Socio-Economics and Tourism [APP-113] estimated that 330 non-East Anglia based workers would require accommodation in the study area. Assuming each worker required one room, these would account for an additional 1.3% of rooms in East Anglia. Therefore, even during peak months, more than 13% of rooms would be unoccupied. It is therefore highly unlikely that these workers would displace households in temporary accommodation.
Q1.22.1.2	Applicant	**Change in Demographics**	The occupancy rate data is not intended to reflect a worst case scenario as this is contextual baseline information which is used to assess the effects of non-East Anglia based workers moving in to the area on the availability of visitor

[16] Department for Levelling Up, Homes & Communities (2022): Statutory homelessness: Detailed local authority level tables, April to June 2022

[17] Visit Britain (2016). Accommodation Stock Audit.

		The ES [APP-113, Paragraph 132] refers to the Visit England (Visit England, 2022) latest data on occupancy rates for May 2022 and shows that room occupancy rates in the East of England are currently at an average of 79% during 2022 (compared to pre pandemic levels of 78% during 2019). a) Does this represent the worst-case scenario? b) Can the applicant provide room occupancy data for the summer period, including the school holidays?	accommodation. However it is recognised that it is helpful to consider the data for peak periods where there is a risk of limited accommodation availability. The latest data for 2022[18] (which was not available at the time of submission of the application) shows that monthly average occupancy rates for the East of England for 2022 peaked in July 2022 at 85%. The equivalent figures for the summer months of June, August and September were 82%, 81% and 83% respectively. While there may be some fluctuation in future years, the Applicant considers it is reasonable to assume that at least 10% of rooms and bedspaces in visitor accommodation across East Anglia will be available in any given month.
Q1.22.1.3	Applicant	**Cumulative Effects – Change in Demographics** The ES [APP-113, Section 27.7.3.5] considers the cumulative impacts with other projects on the change in demographics during construction. This focuses largely on the workforce required for the Sizewell C project. How many bedspaces are likely to be required cumulatively from the relevant projects and are there likely to be sufficient bedspaces in the area?	The focus of the cumulative assessment is on Sizewell C as this project generates the largest construction workforce, and therefore is likely to generate the greatest demand for bedspaces. In addition, the application provides the most detailed assessment of change in demographics. An accommodation strategy was produced as part of the developer application for Sizewell C. A substantial proportion (over half of the 5,900 non home-based workers at peak construction) of Sizewell C construction workers will be staying in purpose-built accommodation. Around 800 workers would be expected to seek visitor accommodation in a range of types (e.g. serviced, self-catering, caravans) depending on price, location, and availability. Around 1,200 workers would be expected to seek tenancies in the private rented sector. It is not possible to robustly quantify the demand for bedspaces across all cumulative projects because of the limited information in the planning applications for other projects. This is dependent on a wide range of factors, including the scale of the wind farm, the approach to procurement and the location of the ports used during the construction process. This makes it very difficult to make informed estimates. For illustrative purposes, if it was assumed that each of the eight wind farm projects in the cumulative assessment also resulted in 330 workers seeking

[18] Visit Britain (2023). Accommodation Occupancy: Latest Results.

			visitor accommodation (the same as SEP and DEP), this would result in a total demand for 2,640 bedspaces during construction. Adding in the 800 workers from Sizewell C would generate total demand for around 3,500 bedspaces. Assuming one room per worker these would account for 14% of all rooms in visitor accommodation in East Anglia (based on the most recent accommodation audit from 2016). Given a maximum occupancy rate of 85% in peak months, this level of demand could potentially mean there is an undersupply of visitor accommodation, which could result in some displacement of other markets. In practice, it is highly unlikely that this demand will be focused on the same areas at the same time. The decisions of where workers stay will be influenced by numerous factors including the location of the port and the location of onshore infrastructure. In the case of Hornsea Project Three, most of the demand will be in Humber, well outside the East Anglia study area. It should also be noted that the accommodation stock audit is several years out of date. According to ONS UK Business Counts data, the number of businesses in the visitor accommodation sector in East Anglia increased by 28% between 2016 and 2022. That means the total supply of rooms is likely to be much higher than the illustrative example above suggests. Demand for rooms would also be lower if some workers shared rooms.
Q1.22.1.4	Norfolk County Council Norfolk District Council	**Tourist Income** In respect of the tourism assets on offer: a) Explain the main forms of tourism within Norfolk and, if possible, specifically in the areas where the Proposed Development would be located. b) Explain the revenue that is derived from tourists visiting Weybourne Beach. c) Explain how construction works, particularly road closures and traffic management measures, deter or otherwise impinge on a tourist's desire to visit and explore Norfolk.	**a)** and **b)** N/A **c)** Localised onshore construction works have potential to cause additional noise, disruption to traffic (e.g. congestion) and visual impacts that may influence a tourist's desire to visit a local area. This is due to the (traffic) disruption a tourist may experience and the extent to which the construction process will detract from the qualities that draw visitors to the area (e.g. clean air, aesthetics, tranquillity, specific visitor attractions etc).

			The extent to which the construction works for SEP and DEPs influence tourists' decisions to visit and explore Norfolk therefore depends on the scale of disruption to their visit, the nature of the area and its visitor offer. An assessment of the impact of SEP and/or DEP construction traffic is presented in ES Chapter 24 Traffic and Transport of the ES [APP-110]. Notably, impact 7: Driver Delay (Road Closures) includes an assessment of the potential delays due to traffic management to divert traffic due to road closures necessitated by 'open cut' trench cable road crossings. It can be identified from ES Chapter 24 Traffic and Transport [APP-110] that for all effects, with the application of additional mitigation measures, the residual impact upon all road users (including tourists) are assessed to be not significant. The construction traffic forecast presented in ES Chapter 24 Traffic and Transport [APP-110] has also been used to inform an assessment of the traffic borne air quality effects and noise and vibration effects. It can be identified from ES Chapter 23 Noise and Vibration [APP-109] that, with the application of additional mitigation measures, the residual impacts are assessed to be not significant. ES Chapter 26 Landscape and Visual Impact Assessment [APP-112] found a number of significant effects from onshore construction works that are described in Section 27.6.4.6 of ES Chapter 27 - Socio-Economics and Tourism [APP-113]. The findings of all of these chapters have been considered in the socio-economic and tourism assessment of SEP and DEP when determining the overall magnitude of impact on volume and value of tourism from onshore works (within Section 27.6.4.6 of ES Chapter 27 Socio-Economics and Tourism [APP-113]). The implementation of the relevant mitigation measures referred to in Section 27.6.4.6 of ES Chapter 27 Socio-Economics and Tourism [APP-113] will minimise the overall impact on the volume and value of tourism activity. Therefore, the impact of onshore construction on the volume and value of tourism activity is anticipated to result in a minor adverse effect in the landfall and cable corridor area within the North Norfolk AONB, the main onshore cable

			corridor from the North Norfolk AONB to the substation and the area around substation for connection to the National Grid (at Norwich Main Substation). The assessment therefore concludes that the effect on volume and value of tourism resulting onshore works is not significant and would be temporary, short-term and reversible in nature. It should be caveated that the assessment does not specifically assess the impact on individual businesses who are within the tourism sector and located close to the onshore cable works. There may be instances where particular businesses are significantly impacted by construction works. The assessment considers the overall impact on tourism value and volume in the local study area. As set out within Outline Code of Construction Plan (Revision B) [document reference 9.17], a Stakeholder Communications Plan will be prepared with the aim of ensuring effective and open communication with local residents and businesses (including tourist related) that may be affected by the works.
Q1.22.1.5	Applicant	**Visual Impact of Offshore Works on Volume and Value of Tourism Activity** The ES [APP-113] finds a magnitude of effect of negligible (construction, operation and cumulative), which is largely based on a limited amount of research examining the relationship between the visual impacts of OWF and their construction upon tourism activity and the associated visitor economy. In these circumstances, should a precautionary approach be taken, and can a negligible effect be justified?	It is not the case that there is a limited amount of research examining the relationship between wind farms and tourism activity. ES Chapter 27 Socio-Economics and Tourism [APP-113] and the Technical Baseline refer to a large number of studies which have explored this relationship. However, the majority of these have been ex-ante studies (conducted before the wind farm has been built or asking questions about how visitors would react to wind farms) as opposed to ex-post research (conducted after the wind farm has been built). Ex-post studies are considered to be more robust because they assess actual changes in visitor behaviour as opposed to predicted behaviour. There is a limited amount of ex post evidence assessing the relationship between offshore wind development and volume and value of tourism. However, one example is a 2021 study by BiGGAR Economics19. This conducted an analysis of 44 onshore wind farm case studies in Scotland and found no evidence of a link between wind farm development and trends in tourism employment. In addition, BiGGAR Economics also conducted a similar study of

[19] Onshore Wind and Tourism in Scotland - BiGGAR Economics

			offshore wind farms in 202020. The study analysed indicators of the tourism industry in 11 comparable cases, including one location adjacent to an Area of Outstanding Natural Beauty (Norfolk Coast AONB) and one location adjacent to a National Park, to identify any relationship between offshore wind farms and changes in visitor behaviour or spending during the construction periods. In the majority of cases tourism employment in the local district performed better during the construction period than the long term average. In North Norfolk itself, it found that tourism related employment grew at a faster rate than the regional and national average while onshore construction was taking place. It should also be noted that coastal districts of East Anglia (East Suffolk, Great Yarmouth, Kings Lynn and West Norfolk and North Norfolk) have continued to experience high levels of growth in tourism related industries (e.g. accommodation and food service activities) over the period when a number of wind farms have been operational, including Sheringham Shoal and Dudgeon. Cumulatively, the number of jobs in these sectors in coastal districts increased by 20% between 2015 and 2021, compared to 14% in the East of England and 12% in England as a whole. The increase was even higher in North Norfolk where the wind farms are most visible (25%). Furthermore, while the development of offshore wind farms could deter some visitors, they can also attract other visitors to the area. For example, there were 12,830 visitors to Sheringham Shoal Visitor Centre up to October 2022. The Brighton and Hove area has also seen similar results through the development of Rampion visitor centre. The assessment also considered a number of other relevant factors when considering the magnitude of effect. This includes the characteristics of visitors and the nature of tourism in the study area, which the literature shows are also important factors influencing an area's sensitivity to wind farm development.

[20] Offshore Wind Farm Construction and Tourism - BiGGAR Economics

			Taking all of these factors into consideration, the assessors do not believe there are any grounds to take a precautionary approach and believe the negligible effect is justified.
Q1.22.1.6	Applicant	**Impact of Onshore Works on Volume and Value of Tourism Activity** Given the findings of other assessments in the ES (such as Landscape and Visual Impact, Noise and Vibration and Traffic and Transport) can findings of a negligible magnitude of effect at the 'Landfall and cable corridor within the North Norfolk AONB' and the 'Main onshore cable corridor from the North Norfolk AONB to the substation' be justified?	The findings of other relevant chapters in the ES are important when assessing the impact of onshore works on the volume and value of tourism activity. However, it should be noted an adverse effect from the other assessments does not mean that the same scale of negative effect would apply to tourism volume and value. While disruption due to traffic or noise may detract from the visitor experience, this does not necessarily deter people from visiting and spending money in tourism locations if the benefits of visiting are still perceived to outweigh any negatives. An example of this is the millions of holidaymakers that visit the Lake District and Cornwall each year despite well-known issues with traffic congestion. The findings of other assessments and their relevance to tourism and recreation are described in section 27.6.4.6.1 of ES Chapter 27 Socio-Economics and Tourism [APP-113]. In most cases, the other chapters find that effects on the local environment are not significant after embedded mitigation measures are taken into account. The main exceptions to this are in Chapter 26 (Landscape and Visual Impact) which found some moderate adverse effects on the Coast Path and other long-distance walking routes, and on Weybourne beach. While the Coast Path and other long distance walking routes are important visitor assets, it is unlikely that disruption that walkers would experience would be on a large enough scale to deter them from visiting the area all together. Chapter 26 Landscape and Visual Impact Assessment [APP112] states that the construction activity "would be seen over short sections of these routes" (paragraph 313 of section 26.2.2.2.4) meaning visitors would only experience visual impacts in passing. While this may detract from their visitor experience, it is unlikely to deter the vast majority of people from walking the Coast Path. Weybourne Beach would also experience temporary disruption, although ES Chapter 26 Landscape and Visual Impact Assessment [APP112] states that the works "should not require any prolonged periods of restrictions or closures to the beach for public access" (paragraph 323). This is a long, pebble beach which is

			more popular with anglers and walkers than families. Given the nature of most visits, it is unlikely that temporary disruption in one part of the beach would deter people from visiting the area. For other visitor assets such as the Norfolk Coast AONB and the North Norfolk Heritage Coast, ES Chapter 26 Landscape and Visual Impact Assessment [APP112] found "limited potential for construction of the onshore cable corridor to affect the natural beauty or visual amenity" (paragraph 367) of both assets. On these grounds, the assessors conclude that the assessment of negligible magnitude is justified.
Q1.22.1.7	Applicant	**Impact of Onshore Works on Volume and Value of Tourism Activity** What is the justification for the ES [APP-113] finding that the main onshore cable corridor from the North Norfolk AONB to the substation has a sensitivity of receptor of medium? Provide further commentary on this matter.	Table 27.7 in ES Chapter 27 Socio-Economics and Tourism [APP-113] notes "The receptor is of medium sensitivity where it is not identified as a policy priority (as a result of economic potential and/ or need). There is however evidence of considerable socio-economic challenges and/ or opportunities for the receptor within the study area." The sensitivity is therefore also related to the importance of visitor assets in an area to the overall local tourism offer and how sensitive such assets are to disruption from onshore works (post embedded mitigation). The tourism assets within 1km of the onshore cable corridor are identified in Table 27-2-23 of ES Chapter 27 Socio-Economics and Tourism [APP-113]. The following assets in Table 27-2-23 are located within the study area of the main onshore cable corridor from the North Norfolk AONB to the substation: • Baconsthorpe castle**;** • Marriots Way**;** • Royal Norwich Golf Club**;** • Imagine Spa Park Farm Hethersett**; and** • Ketteringham Hall**.** As noted in Section 27.6.4.6.3 of ES Chapter 27 Socio-Economics and Tourism [APP-113] the "Socio-Economics and Tourism Technical Baseline identifies several assets located within close proximity of the onshore cable corridor, which despite playing a role and contributing to the area's tourism economy, attract

			substantially fewer visitors relative to the North Norfolk coastline (including Weybourne)."
Q1.22.1.8	Applicant	**Cumulative Impacts of Onshore Works on Volume and Value of Tourism A**ctivity The cumulative effects assessment [APP-113] for onshore works on volume and value of tourism activity sets out that this project, Hornsea Project Three, Norfolk Vanguard and Norfolk Boreas (who's construction activity would overlap) would all have minor adverse impacts in their own right. Consequently, is the cumulative effects assessment's overall finding that there would be a minor adverse cumulative effect justified?	The onshore works associated with each of the wind farms will mostly occur in different locations. Interactions between visitor assets may occur at landfall for SEP and DEP and Hornsea Project Three near Weybourne which are both within the Norfolk AONB, and include sections of the Norfolk Coast Path. Even here, the works for Hornsea would be at Kelling Beach, roughly one mile away from the landfall for SEP and DEP. This is a much quieter beach than at Weybourne with few visitor facilities and therefore of lower value in tourism terms. It is also understood that the onshore construction programme for Hornsea Project Three will work from north to south (Weybourne to Norwich Main) starting in 2023 and completing by late 2025/early 2026. There is therefore minimal risk of the two construction programmes overlapping. SEP and DEP and Hornsea Project Three have committed to the implementation of embedded mitigation measures which will ensure that safe and effective access to the coast and other key recreational assets is maintained for visitors throughout the onshore works. Both projects will use trenchless crossing methods to cross the Norfolk Coastal Path to minimise disruption. Although there may be some access restrictions, these would be short term and temporary.
Q1.22.1.9	Applicant	**Woodlands Farm and Swannington 'From Farm to Fork'** During the USI [EV-001], the ExA travelled along the single track lane to the premises of Swannington 'From Farm to Fork'. The works plans [AS-005, Sheet 21/40] show the road and several farm tracks being utilised as construction accesses. Whilst explaining the necessity for these tracks, can the Applicant set out the duration of works within the vicinity and the likely impacts upon the business in terms of customer	The access from Church Lane shown on Sheet 21/40 of the Access to Works Plan [APP-014] is notated with an 'E' which the Legend which highlights the access as an 'Early Works Access' and not a Construction Access. The access would be used for pre-commencement works only (as defined within the draft DCO (Revision C) [document reference 3.1, Part 1 (section 2. (b)) page 6]. The nature of these pre-commencement works would not be expected to generate significant numbers of vehicle movements and therefore is not anticipated to have significant impacts upon the business activities served by this lane. As set out within section 2.4 of the Outline Code of Construction Practice (Revision B) [document reference 9.17], a Stakeholder Communications Plan will be developed that will ensure that the Applicant adopts effective and open

		access, deliveries and general farm/ sales operations.	communication with local residents and business. This is secured under Requirement 19 (Code of Construction Practice) of the draft DCO (Revision C) [document reference 3.1].
Q1.22.1.10	Lighthouse Development Consulting and Applicant	**Interaction with Solar Farm** Works 12A/B or 12C involve the laying of cables within proximity to the permitted solar farm. Your relevant representation [RR-051] suggests cables should be laid via HDD at a depth of 10-20m. a) What is the justification for this suggested depth and what subterranean infrastructure is being laid as part of the solar farm apparatus? c) Applicant, provide details of the proposed HDD depth underneath the solar farm.	**a)** N/A **b)** The depth of the HDD underneath the solar farm is likely to be between 10-20m.
Q1.22.2 Effects on jobs and skills			
Q1.22.2.1	Applicant	**Methodology – Magnitude of Effect** The ES [APP-113, Table 27.8] sets out the criteria for assessing magnitude of effect related to economic and employment receptors. It is noted that the ranges set out in the table are based on professional judgement, and are informed by experience from other, similar projects. a) What has informed these professional judgements? b) What other projects are the ones referred to? c) Are the criteria justified and do they allow the benefits associated with the varying construction scenarios (including local or UK based port options) to be fully appreciated?	On reflection, the assessors consider that the thresholds for assessing magnitude of impacts on employment are too high. These should have been consistent with the thresholds for assessing impacts on GVA, where an impact of less than 0.1% of current GVA is considered to be negligible. However, it should be noted that this would not change the conclusions of the chapter as employment effects would still be below 0.1% and therefore assessed as negligible. There is no guidance on what thresholds to use for assessing magnitude of effect. However, setting thresholds is beneficial as it provides a consistent and transparent means of assessing magnitude based on the current size of the economy or employment base. The thresholds themselves are based on professional judgment, and have been informed by Hatch's experience of undertaking or reviewing economic impact assessments across a range of energy investments, including offshore wind farms (Awel-y-Mor, Rampion, Hornsea, Thanet Extension), nuclear new build (Hinkley Point C, Moorside and Sizewell B) and underground gas storage projects.

			Section 27.6.4.2.4 of ES Chapter 27 Socio-Economics & Tourism [APP-113] estimates that in the maximum impact scenario, the development of SEP and DEP would create 450 FTE jobs on average during the construction period in East Anglia. This would be a one-off and temporary increase in employment of 0.08%. To put this figure in to context, the East Anglia economy has on average, created around 6,400 jobs each year over the past 20 years (0.9% p.a.). Therefore, in the context of the East Anglia economy as a whole and when compared to other projects such as Sizewell B, this would represent a negligible change. Nevertheless, it is agreed that the quantitative estimates of GVA and employment should be considered alongside the magnitude of impact when assessing the merits of different construction scenarios.
Q1.22.2.2	Applicant	**Methodology – Accommodation Assumptions** The ES [APP-113] at several points sets out that under the worst-case scenario, it is assumed that half of all (i.e. 330) non-East Anglia-based workers would require accommodation within the study area. What is the justification for this assumption?	As noted in Section 27.6.4.3 paragraph 130 of ES Chapter 27 Socio-Economics & Tourism [APP-113] "SEP and DEPs Offshore installation, foundation, wind turbines, cable, offshore substation workers will stay on the respective installation vessels. As will also be the case for the commissioning team (who will stay on the service operation vessel). Before going on board workers are assumed to require one night in a hotel. Where this will be, depends on where the vessel mobilises. The commissioning team will travel with the service operation vessel from Great Yarmouth. It should be noted that this minimal demand for accommodation onshore only applies to certain elements of the offshore wind farm construction. There will be other workers at the port involved in fabrication and other activities that will not be staying on these vessels. However, the fact that the offshore installation and commissioning teams will be staying on vessels will substantially reduce demand for onshore accommodation." The assumption is also informed by the relative split between onshore and offshore expenditure on installation and commissioning related costs (the cost and sourcing details are set out in more detail in Appendix 27.1 Socio-Economics Construction Costs and Sourcing Assumptions Note [APP-276]) and therefore assumed construction worker requirements.

Q1.22.2.3	Applicant	**Economic and Employment Benefits – Port Option** It is clear in the ES [APP-113] that the local port option would secure much greater economic benefits and employment opportunities from the project in the East Anglia area. In order to maximise local benefits would the Applicant be content for this to be secured in the dDCO?	At this stage no decision has been made regarding which port(s) would be used for the construction and operation of the Projects. A decision upon port(s) would not be made post DCO determination and until the agreement of a Contract for Difference (assuming DCO consent). A decision will be influenced by a number of factors including commercial, environmental and planning considerations. The Applicant is therefore unable to commit to a local port within the dDCO. Please see the Outline Skills and Employment Plan [APP-310] which is secured by Requirement 6 of the draft DCO (Revision C) [document reference 3.1].
Q1.22.2.4	Applicant	**Economic Benefits – Scenarios** The ES [APP-113, Table 27.14] sets out that if there were to be concurrent or sequential construction of SEP and DEP there would be £7 million GVA generated per annum (in the East Anglia area) during operation. The table also shows that in isolation DEP would generate £5.8 million GVA and SEP £5.3 million GVA. In isolation the total GVA generated across the two projects would be £11.1 million. Why does GVA generated drop so significantly if both SEP and DEP are in operation at the same time?	There is a considerable cost saving associated with operation of SEP and DEP concurrently. This is demonstrated by the fact that direct employment requirement is just 1.2 times higher when SEP and DEP are operational compared to if only one of SEP or DEP is operational. There are many other examples of where economies of scale and efficiencies exist through concurrent operational activities. The driver of GVA impact is expenditure retained in the study area and therefore cost savings and economies of scale ultimately lead to lower levels of GVA delivered by a project than if those savings had not been made.
Q1.22.2.5	Applicant	**Employment** Where have the figures set out in the ES [APP-113, Paragraph 186] been derived, as they do not reflect those set out in Table 27.15?	The figures in Table 27.15 of ES Chapter 27 Socio-Economics and Tourism [APP-113] are rounded to the nearest five. The estimated "*67 full-time equivalent (FTE)*" and "*53 direct O&M jobs posts"* (FTE) highlighted in paragraph 186 are rounded to 65 and 55 in Table 27.15 and within the rest of Section 27.6.5.2.
Q1.22.2.6	Applicant	**Change in Demographics** The ES [APP-113, Paragraph 130] sets out that: *"SEP and DEPs Offshore installation, foundation, wind turbines, cable, offshore substation workers will stay on the respective installation vessels. As will also be the case for the commissioning team (who*	Paragraph 130 should be read in its full context. This section is setting out a worst case assumption which has been used to inform the magnitude of impact for the assessment being undertaken with the demand for workers fluctuating over time. This is not something that is appropriate to secure in the dDCO.

		will stay on the service operation vessel)". Is this secured in the dDCO?	
Q1.22.2.7	Applicant	**Outline Skills and Employment Plan** Where have the figures in the Paragraph 24 of the OSEP [APP-310] been derived, as they do not reflect those in the Table 27.15 of the ES [APP-113]?	For the operations period (expected to be 40 years), if SEP and DEP are constructed concurrently, there will be a predicted 85 direct and indirect FTEs per year in the East Anglia study region with 55 direct FTE jobs linked to operations and maintenance (O&M). These O&M roles are likely to be based in the current Equinor Great Yarmouth O&M Hub. The rest will be supported elsewhere within SEP and DEP supply chain throughout the East Anglia area.
Q1.22.2.8	Applicant Local Authorities	**Outline Skills and Employment Plan** The OSEP [APP-310] sets out that the Applicant intends to work with the relevant sector and local authority bodies to help secure economic benefits of the OWF to the local area and identifies a number of general outline commitment examples. Is the OSEP currently sufficient to ensure local socio-economic benefits are secured and maximised, and are firmer commitments and targets for local employment and skills/training needed, particularly to realise the potential benefits set out in the ES [APP-113]?	Following early engagement with Norfolk County Council's Employment and Skills Manager, the Outline Skills and Employment Plan (9.23/APP-310) was initially shared in July 2022. On the 8.11.22 detailed feedback from NCC was received. The following actions have been agreed whereby the applicant will: 1) Integrate NCC suggestions and insights appropriately into the Outline Skills and Employment Strategy for deadline 3 (2nd May); **2)** Initiate a consultation with Norfolk and Suffolk LSIP collaboration/Norfolk Chambers regards the Local Skills Improvement Plan, so that there is time for this relationship to inform the final Skills and Employment Plan and the skills section of the Allocation Round Supply Chain Plan Questionnaire**;** 3) Develop draft KPI's that will bridge the 'possible' commitments in section 9 with what will form part of the Supply Chain Plan commitments to be formally delivered and monitored through each project phase. When the Supply Chain Plan is submitted and approved, the ongoing monitoring will then become part of this formal process; 4) Capture early phase (development) activity – record, monitor, evaluate and communicate good practice and lessons learned; 5) Start a proactive discussion with the emerging Great Yarmouth O&M Campus (GYBC) to seek further synergies linked to skills, training, and employment; 6) Engage with Apprenticeships Norfolk (part of NCC Skills and Employment Team) to understand and maximise opportunities for the effective transfer of unspent Apprenticeship Levy Funding;

			7) Engage with other developers working in Norfolk through NCC facilitated dialogue to maximise opportunities, avoid duplication and to jointly develop and deliver initiatives as appropriate; and 8) Continue to engage regularly with NCC skills and employment team in seeking to maximise socio- economic opportunities locally. These actions will help maximise skills and employment outcomes, which will evolve as the projects reaches CFD and which are dependent on a successful CFD.
Q1.22.3 Effects on Individuals and Communities			
Q1.22.3.1	Applicant	**Determination of Project Benefits** The ExA consider that the benefits set out in the Planning Statement represent the maximum implementation of the Proposed Development (i.e. if SEP and DEP were developed in full). However, the dDCO [AS-009] allows for either project to be developed in isolation. Therefore: a) Would it be appropriate to say any benefits from the scheme would be halved if only one project went ahead? b) Would it be appropriate to say the benefits would be reduced if only the minimum number of turbines was constructed (bottom of the ranges)? c) In a situation where only one project went ahead, with the minimum number of turbines being provided, that could be argued to be the worst-case scenario in terms of delivering benefits. At what point, therefore, would the Applicant consider that the benefits would not outweigh the adverse effects? d) It is implied (for example in Paragraph 1008 of the RIAA) that none of the consented OWF are being built to their build-out capacity and design. The DOW itself is said not to have been fully	**a)** Different considerations will apply to different categories of benefit. For example, although the economic model used to calculate the socio-economic benefits (jobs and GVA) of SEP and DEP is a linear model the model is more complex than simply doubling the benefits as the capacity increase. One key reason why this is the case is because the onshore infrastructure expenditure is assumed to be influenced by the length of the onshore cable as well as project capacity. It should be noted that the model has its limitations and in reality the relationship between economic benefits (jobs and GVA) and capacity is unlikely to a be a perfectly linear relationship. The DCO has included two projects which would normally have been consented separately, as they have different ownership groups. If one project never ultimately proceeds, then, of course, the benefits of that project will not be delivered and that will be a substantial difference from the situation where both projects are delivered. **b)** As a general rule, the smaller the project which is delivered the smaller the overall benefits of the project. **c)** The Applicant is simply not in a position to say definitively what the “minimum” number of turbines for a commercially viable project might be. This depends on

		constructed. To this extent, what confidence can the ExA have that the current Proposed Development would be fully built out and what weight can the ExA place on the scheme's benefits when there appears a likelihood the full capacity of the project may not be realised?	the outcome of a future CfD auction and other market and commercial factors at the time of a post-consent future investment decision. **d)** It is correct that some offshore wind projects have not been built out to their full consented capacity, including DOW. That will have arisen for a range of commercial reasons, particular to each project and the financial investment decision at the time. No developer can predict in advance what precise capacity will be constructed pursuant to a particular consent. There is, however, a general tendency for consents to be built out at or near full capacity. A consent for this form of development (or any development), however, is necessarily permissive. In the end, the UK electricity system is market driven – both at the industry level and the project level, meaning that final capacity will be determined by commercial considerations. The Applicant's working assumption is that SEP and DEP will be constructed to full capacity, but it cannot make a specific commitment to that effect and no offshore wind developer would do so, or has ever been required to do so. The planning system does not, in fact, include a legal mechanism to require this. In terms of placing weight on the benefits of SEP and DEP the normal approach is to assume the full capacity will be constructed. The Applicant is not aware of DCO decisions for offshore wind farms being made on any other basis.
Q1.22.3.2	Local Authorities	**Development Consent Obligations** NNDC [RR-069] reference potential community benefits being secured through an obligation. Describe to the Examination the nature and extent of any benefits you consider are necessary relative to the impacts of the Proposed Development, setting out how these comply with the CIL Regulations and the justification for them.	**N/A**
Q1.22.3.3	Applicant	**Disturbance to Social, Community and Healthcare Infrastructure** The ES [APP-113, Paragraph 147] notes that the sensitivity of the receptor is assessed as high. However, Paragraph 146 concluded that the receptor	The statement of "*high*" sensitivity in paragraph 147 of ES Chapter 27 Socio-Economics and Tourism **[APP-113]** is incorrect. As noted in paragraph 146 and Table 27.22 the sensitivity of the Disturbance to Social, Community and Healthcare Infrastructure is assessed as medium.

		had a medium sensitivity. Please can the applicant confirm which is correct?	
Q1.22.3.4	Applicant	**Disturbance to Healthcare Infrastructure** The ES [APP-113, Paragraph 143] notes that using benchmark estimates of 1,800 patient registrations per one FTE GP (developed by the London Healthy Urban Development Unit (HUDU), 2019), it is estimated that the additional 330 non-East Anglia-based workers would generate demand for 0.2 FTE GP during construction and 0.1 FTE GP during operation within the study area. What is the justification for the project not providing a contribution to meeting these increased demands?	Data collected in the ES chapter for the NHS Norfolk & Waveney Clinical Commissioning Group indicated that at the Norfolk level, there was an overall average of 1,716 registered patients per FTE GP against a maximum benchmark of 1,800 patients per FTE GP. The increase in non-home based FTEs would increase the patient per FTE GP ratio by 0.2 FTE GPs per patient in the construction phase and 0.1 FTE GPs per patient in the operation phase. This represents an increase of 0.01% on the baseline patient per FTE GP which is assessed as a negligible impact. It should be stressed that the assessment above is a hypothetical and a relatively unrealistic maximum impact scenario used to demonstrate that even if every non-home based worker did demand GP services there would still be a negligible impact on the North Norfolk baseline patient per FTE position. In reality temporary construction workers are unlikely to register with a local (North Norfolk) GP due to the short term nature of their move into the area. There is therefore likely to be smaller demand on GPs as a result of the construction of SEP and DEP. Given there is no significant effect assessed for disturbance to healthcare infrastructure there is no requirement for additional mitigation to be proposed as part of the ES socio-economic assessment.
Q1.22.3.5	Applicant	**Disturbance to Social, Community and Healthcare Infrastructure** Where have the figures set out in Paragraph 204 of the ES [APP-113] been derived, as they do not reflect those set out in Table 27.15?	It is noted there are errors in paragraph 204. The text has been adjusted below to correct the errors. *The analysis above indicates that the annual operation of SEP and DEP is estimated to support around **85** FTE jobs within the East Anglia study area, **55** FTE jobs of which will be directly involved in operation activity (**an estimated 85%, or 45, of which would based within East Anglia at** the projects' O&M port). Under the worst-case scenario, it is assumed that half of all jobs supported as a result of SEP and DEP will be taken up by in-migrant workers to the East Anglia study area.* The changes above have no impact on the rest of the chapter.

Q1.22.3.6	Applicant	**Potential Cumulative Impacts – Disturbance to Social, Community and Healthcare Infrastructure** Can the applicant provide further details on the likely impact of the projects cumulatively with other relevant projects on healthcare such as demand for GP FTE?	Given the maximum impact predicted on demand for GPs as a result of the development of SEP and DEP is 0.2FTE it is estimated that the development of other wind farms would result in a maximum impact on demand for GP's of around 1 FTE GP dispersed across the wide area in which construction workers would be accommodated. 1 FTE GP would represent less than a 0.1% increase on the patient per GP ratio. Given that in reality many of the construction workers are unlikely to register with a GP the assessment of negligible magnitude of impact is justified.
Q1.22.3.7	Applicant	**Potential Cumulative Impacts – Disturbance to Social, Community and Healthcare Infrastructure** The cumulative effects assessment [APP-113] finds minor adverse impacts for disturbance to social, community and health infrastructure for both the construction and operation phase. Given the far greater number of workers associated with construction for this scheme than operation and given this is likely to be the same for the other relevant projects, can the finding of the same level of adverse effect be justified?	It is recognised that cumulative impacts on social, community and healthcare infrastructure will be lower in the operational phase than the construction phase. Nevertheless, as explained above in the response to Q1.22.3.6, the assessors conclude that the assessment of negligible magnitude is justified for the construction phase. It then follows that impacts will also be negligible in the operational phase.
Q1.22.4 Inter-related Effects on Human Health and Community Well-being			
Q1.22.4.1	Applicant	**Community Fund/ Compensation** The ExA understands that the existing OWF have established community funds. The ES [APP-113] does not propose such a fund in this case as mitigation. It has been suggested by several interested parties that one should be provided to off-set any impacts on local communities. Why is this project different to the existing OWF in this regard?	The Applicant notes the comment in respect of community benefits and is keen to continue to work with the local community to deliver benefits to the area. As noted within Section 1.1 of the Outline Skills and Employment Plan [APP-310], the Applicant is a long-term partner in Norfolk and the East of England and has been an active member of the community for over a decade through its Sheringham Shoal and Dudgeon Offshore Wind Farms that it operates off the Norfolk coast [APP-310, para. 5]. Both existing wind farms have established community funds. Each fund allocates £100,000 of funds per year to Norfolk community groups including schools and non-governmental organisations seeking financial assistance for projects or initiatives that focus on renewable energy, marine environment and safety, sustainability or education. The

			Dudgeon Fund has also enabled the use of a cumulative fund underspend to create a new/additional Skills and Employability Fund for 2023 with extended age focus of 16-30 year olds [APP-310, paragraph 7]. Furthermore the benefits linked to skills and employment is secured by Requirement 26 (Local skills and employment) of the draft DCO [AS-009] which states that no phase of the onshore works may commence until a skills and employment plan (which accords with the outline skills and employment plan) for that phase has been submitted to and approved by the relevant planning authority. Further information about the Sheringham Shoal and Dudgeon community funds is provided in the response to the relevant representation by Norfolk County Council.

Q1.23 Traffic and Transport			**Applicant's Response**
Q1.23.1 Effects from Construction Vehicles on the Highway Network and Living Conditions			
Q1.23.1.1	Applicant Norfolk County Council	**Methodology – Summer Peak** The ES [APP-110, Table 24-10] includes links that have 'summer peak' sensitive periods. The ExA asked the Applicant at ISH2 [EV-020] [EV-024] what had been done to assess summer peaks. The Applicant and NCC set out that they were in discussions about 'sensitivity checking' on such matters. Provide an update on these discussions.	Table 24-10 of Chapter 24 Traffic and Transport of the ES [APP-110] identifies 59 links (out of a total of 140) which Norfolk County Council (NCC) considered to be 'particularly sensitive to driver delay effects'. The sensitive periods are identified in Table 24-10 and include the morning, peak evening peak and/or summer peak. All 59 links, have been subject to assessment for driver delay (capacity) impacts. This assessment is presented within section 24.6.1.7.1.2 of the ES Chapter 24 Traffic and Transport [APP-110]. Section 24.6.1.7.1.2 outlines that (with the application of mitigation) residual impacts would be no greater than minor adverse. The Applicant has hosted three meetings (17.11.2022, 08.12.2022 and 11.01.2023) with NCC post DCO submission to discuss traffic and transport matters (including impacts upon summer peaks). The Applicant considers that all matters raised by NCC to date have been agreed as set out in the Statement of Common Ground between both parties submitted at Deadline 1.
Q1.23.1.2	Applicant	**Methodology – Movement Assumptions** The ES [APP-110] sets out in several places that in order to consider a worst-case scenario, the peak demand hour flows include the assumption that employees (LVs) will arrive and depart within a single hour and that HGV movements would be one-tenth of the daily demand. a) Would there not likely be a peak of HGV traffic in the am period to deliver materials needed for that day?	**a)** Requirement 20 of the draft DCO (Revision C) [document reference 3.1] outlines the working hours and hours during which construction related traffic can take place for the construction of SEP and DEP. In general working hours would be Monday to Friday are 07:00 to 19:00, i.e. a total of 12 hours. ES Chapter 24 – Traffic and Transport [APP-110] assesses a worst case whereby HGV traffic is distributed over a 10 hour period (equivalent to one tenth) rather than 12 hours (one twelfth) as per the proposed working hours. The nature of construction works is that contractors will profile vehicle arrivals throughout the day to ensure that deliveries can be efficiently processed and managed and supplier's fleets are optimised. In support of this, Section 2.3.1 of

		b) If so, are the assumptions used for HGVs justified?	the outline Construction Traffic Management Plan (OCTMP) (Revision B) [document reference 9.16] outlines that: *"… a booking system for deliveries would be established by the CTMPCo [Construction Traffic Management Plan Co-ordinator]. The booking system would enable a daily profile of deliveries to be maintained and allow the CTMPCo to ensure that the required deliveries are forecast and planned"* The CTMP is secured by Requirement 15 of the draft DCO (Revision C) [document reference 3.1]. **b)** Noting the worst case assessment and commitments to controlling the daily profile of deliveries, the Applicant maintains that the assumptions for HGVs are justified.
Q1.23.1.3	National Highways Norfolk County Council	**Methodology – Trip Generation and Construction Traffic Assignment** Are the Highway Authorities content with the methodology and forecasts for trip generation and construction traffic assignment?	**N/A**
Q1.23.1.4	Applicant Norfolk County Council	**Potential Impacts – Driver Delay (Capacity)** The ES [APP-110, Table 24-43] shows that there are increases in traffic above 10% (considered to be within daily fluctuations) for numerous links (9, 11, 14, 15, 49, 51, 54, 56, 59, 72, 73, 79 and 98). Some of the traffic increases are up to 32% on what are already deemed to be sensitive roads by NCC. a) Is the judgement of a low magnitude of effect on these links justified? b) Do NCC have any concerns in this regard?	The Applicant would respond as follows: **a)** Section 24.6.1.7.1.2 of the ES Chapter 24 Traffic and Transport [APP-110] identifies that the increases in traffic would be greater than day to day fluctuations in traffic and therefore the magnitude of impact would be greater than negligible, i.e. low to high. Considering the forecast percentage changes in peak daily traffic (between 11 and 32%) and the magnitude of total traffic the assessor has evaluated the magnitude of impact to be low. Notwithstanding, noting that the links are assigned the highest degree of sensitivity by the Applicant, significant impacts are identified even for a low magnitude of effect and mitigation measures are therefore required to reduce

			the significance of impact to negligible. Additional mitigation measures for all links listed by the ExA are outlined in Section 24.6.1.7.2.2 of the ES Chapter 24 Traffic and Transport [APP-110] and controlled through measures within the OCTMP (Revision B) [document reference 9.16] which is secured by Requirement 15 of the draft DCO (Revision C) [document reference 3.1]. **b)** The Applicant has hosted three meetings (17.11.2022, 08.12.2022 and 11.01.2023) with NCC post DCO submission to discuss traffic and transport matters (including driver delay (capacity)). The Applicant consider that all matters raised by NCC to date have been agreed as set out in the Statement of Common Ground between both parties submitted at Deadline 1.
Q1.23.1.5	Applicant	**Potential Impacts – Driver Delay (Capacity)** The ES [APP-110, Paragraph 534] suggests that proposed mitigation for links 7, 9 and 11 (limiting peak HGV movements) would by definition reduce the peak HGV movements on links 14 and 15, as HGV traffic travelling to links 7, 9 and 11 from Lowestoft and Great Yarmouth pass via these links. a) Having regard to the study area, would HGVs travel along links 15, 14, 13 and then 12 instead to reach the Weybourne area? b) If so, is this assumption justified?	**a)** and **b)** Figure 24.6 (Sheet 1 of 18) of the ES [APP-134] shows that: • Link 9 provides access for construction traffic via accesses ACC01 and ACC02 (via link 7); and • Link 11 provides access for construction traffic to access ACC05 (via link 141). A cap on HGV flows is proposed upon links 7, 9 and 11 (detailed in Annex A of the OCTMP (Revision B) [document reference 9.16]). With reference to Figure 24.1 of the ES [APP-134] it can be identified that traffic travelling to links 7, 9 and 11 from the port origins (Lowestoft and Great Yarmouth) would need to first travel along links 14 and 15 (and therefore would be subject to limited HGV movements). Should HGVs be routed via link 12 or 13 (as suggested) they would still need to route via links (9 and 11) to reach accesses ACC01, ACC02 and ACC05 and would therefore be subject to limited HGV movements. Notwithstanding, the Applicant has committed to including updates within the OCTMP to address comments from NCC (as part of their review) and therefore

			as part of this will include a revision to Figure 1 of the OCTMP (Revision B) [document reference 9.16] to explicitly prevent HGVs travelling north of ACC07 on link 12 (towards links 9, 10 and 11). This revision will be included within the OCTMP to be submitted at Deadline 1.
Q1.23.1.6	Applicant	**Potential Impacts – Driver Delay (Capacity)** The ES [APP-110, Paragraph 539] proposes that vehicle movements via links 72, 73, 79 and 98 are capped to not exceed those proposed for SEP or DEP in isolation. However, this does not appear to have been secured in the OCTMP [APP-301]. What is the reason for this?	The Applicant acknowledges that this cap has not been included within the OCTMP (Revision B) [document reference 9.16] and intends to submit a revision of the OCTMP at Deadline 1 to correct this.
Q1.23.1.7	Applicant	**Potential Impacts – Driver Delay (Highway Constraints)** What is the justification for a low magnitude of effect for Link 8 in the concurrent scenario [APP-110, Table 24-45], when it was judged to be of medium magnitude for the isolation scenario [APP-110, Table 24-44] where there would be less traffic?	The Applicant clarifies that the magnitude of effect for SEP and DEP Concurrently along link 8 (presented in Table 24-45 of the ES, [APP-110]) should read medium as opposed to low. Notwithstanding, as the link is assessed as of high sensitivity by the Applicant mitigation measures are necessary in both scenarios to reduce the impact significance. Table 24-48 of the ES Chapter 24 Traffic and Transport [APP-110] outlines mitigation measures that are equally applicable to both scenarios to ensure that residual impacts are not significant. These measures are included within the OCTMP (Revision B) [document reference 9.16] which is secured by Requirement 15 of the draft DCO (Revision C) [document reference 3.1].
Q1.23.1.8	Oulton Parish Council	**Oulton** At OFH1 [EV-009] [EV-010], Oulton Parish Council set out that it is concerned about traffic on the local roads around Oulton. Provide a description and a map if possible, showing the specific areas of concern.	**N/A**

Q1.23.1.9	Cawston Parish Council	**Cawston** Cawston Parish Council at OFH1 [EV-009] [EV-010] referred to transport evidence and photos that were provided to the examinations of previous OWF projects. Provide copies of any of relevance to the Proposed Development.	**N/A**
Q1.23.2 Traffic Management Proposals and Impacts on the Highway Network			
Q1.23.2.1	Applicant	**Methodology – Magnitude of Effects** The ES [APP-110, Table 24-13] sets out the magnitude of effects for each potential effect. Is the lack of any defined thresholds for driver delay (capacity and highway constraints) for low to high effects justified?	There are no national recognised thresholds/criteria for quantifying the magnitude of effect for delayed traffic. The Guidelines for the Environmental Assessment of Road Traffic (Institute of Environmental Assessment, 1993) however notes that vehicle delays are only likely to be significant when the surrounding highway network is at, or close to capacity. It is therefore difficult to define 'generic' order of magnitude values and rather each junction and link are assessed individually by a competent assessor to understand the magnitude of effect having consideration for: • the baseline characteristics (to comprehend existing levels of delay); and • the potential for material changes in delays. By way of example, the magnitude of effect would be different for a driver travelling through a junction/link which commonly experiences significant delays to a driver travelling through a junction/link where delays are less common. In accordance with The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Clause 14 (4) (a))) Chapter 24 Traffic and Transport [APP-110] of the ES has been prepared by competent experts.
Q1.23.2.2	Applicant	**Methodology – TA** The TA [APP-268, Table 2] shows that some of the data sources date back to 2017. Can these	The Transport Assessment (TA) [APP-268] outlines that during the data collection process for SEP and DEP, traffic flows were impacted by restrictions due to Covid-19. Therefore, where historic traffic count data was available (i.e.

		be considered representative of the current highway network?	before Covid-19) it was agreed with NCC (at the second ETG meeting on the 18 September 2022) that the traffic data could be used. Table 2 of the TA [APP-268] outlines that these historic baseline data sources include traffic counts undertaken by the Department for Transport in 2018/2019, and traffic counts undertaken by Hornsea Project Three and Norfolk Vanguard for their DCO applications in 2017 and 2019. Of the 140 links forming the TTSA, traffic counts undertaken in 2017 were utilised for 10 links. For the purposes of assessing traffic and transport impacts, these baseline flows were then factored up to a future year (2025) using nationally agreed factors. This process is detailed within section 24.1.2.3 of the TA [APP-268]. Paragraph 33 of the TA [APP-268] outlines the baseline traffic flows have been agreed with NCC. However, at the request of NCC the OCTMP (Revision B) [document reference 9.16] also contains a clause that permits further assessment of network capacity constraints if baseline conditions are evidenced to have materially changed from those of the DCO application (see section 5.2.2 of the OCTMP).
Q1.23.2.3	Norfolk County Council	**The A140** In proximity to the entrance into Mangreen Road and the location of the substation, theExA noted signage regarding a “Bridge Safety Scheme”, and this appeared to be speed related. Could the exact nature of the safety scheme be described and, subsequently, whether the Proposed Development would have any implications or adverse effects in this regard?	**N/A**
Q1.23.3 Cumulative Traffic Effects with Other Local Projects			
Q1.23.3.1	Applicant	**Cumulative Effects - Construction Compounds**	Figure 3 in Appendix A.3 illustrates the location of the construction compounds for Hornsea Project Three, the mobilisation areas for Norfolk Boreas and

		Explain, with the use of maps as necessary, the location of the main and secondary construction compounds for Hornsea Project 3, Norfolk Boreas and Norfolk Vanguard, showing their proximity to those compounds suggested for the Proposed Development.	Norfolk Vanguard showing their proximity to those compounds suggested for SEP and DEP.
Q1.23.3.2	Applicant	**Cumulative Effects Methodology – Norfolk Boreas OWF** The Norfolk Boreas OWF is listed as one that could act cumulatively with this project [APP-110, Paragraph 574]. However, the cumulative assessment link screening [APP-110, Table 24-54] does not include the development. At ISH2 [EV-020] [EV-024] the Applicant set out that this is because Norfolk Vanguard project will lay ducts for the Norfolk Boreas project. Confirm, with supporting evidence, that all construction traffic from the Norfolk Boreas project has been taken into account in the cumulative effects assessment for traffic and transport.	The cumulative impact assessment considers a worst-case scenario whereby the peak traffic for SEP/DEP overlaps with the peak for Norfolk Vanguard and Hornsea Project Three. Chapter 24 Traffic and Transport of the ES [APP-134] Section 24.4.4 considers a worst-case cumulative scenario for the three identified offshore windfarm schemes of Norfolk Vanguard (NV), Hornsea Project Three (HP3) and Norfolk Boreas (NB) and notes the following: *"NB is a sister project to NV and it is understood that NV are proposing to proceed to construction prior to NB and would therefore install ducts and other shared enabling works for NB which represent the maximum construction intensity for NB. On this basis it is considered that the NV assessment also includes the worst-case scenario of NB and thus NB is not considered as a separate project further in this cumulative assessment."* Based on this evaluation, NV traffic metrics from the Norfolk Vanguard Outline Traffic Management Plan were used to inform the cumulative impact assessment for traffic and transport. Following submission of the DCO application it has been confirmed that NV is scheduled to commence in 2023 (Both NV and NB enabling works). This confirms that NV represents a worst case cumulative scenario both in terms of traffic generation and timing. Furthermore, within the cumulative impact assessment in the Norfolk Boreas Traffic and Transport Chapter 24 (Norfolk Boreas application reference [APP-237]) it is noted at Paragraphs 430 and 431 that: *"Noting that Scenario 2* [Norfolk Vanguard does not proceed to construction and Norfolk Boreas proceeds alone. Norfolk Boreas undertakes all works required as an independent project] *would only occur if Norfolk Vanguard does not*

			proceed to construction, there would be no cumulative impacts between Norfolk Vanguard and Norfolk Boreas under Scenario 2. *The indicative programmes for both Norfolk Vanguard and Norfolk Boreas indicates that Norfolk Vanguard would be completing its cable pulling phase at the same time that Norfolk Boreas commences construction at the onshore project substation and landfall. The cumulative traffic demand of these phases would not result in a greater impact than that of the assessed Norfolk Boreas Scenario 2 worst case."* This approach to cumulative assessment for NV and NB was accepted by the Secretary of State in the determination of those applications and has therefore been adopted for the assessment of cumulative impacts for SEP and DEP.
Q1.23.3.3	Applicant National Highways	**Cumulative Effects Methodology – Highway Schemes** It is noted in the cumulative effects methodology [APP-110, Paragraphs 148-150] that the identified highway improvement schemes are all currently scheduled to be complete by 2025 and as such there may be no overlap with the construction phase of SEP and DEP. Is this still anticipated to be the case for all highway schemes?	The Applicant is in regular dialog with National Highways and NCC to understand their potential forward programme of works for the delivery of their major highway improvement schemes. Section 4.10.2 of the OCTMP (Revision B) [document reference 9.16] details an approach (agreed with the National Highways and NCC) for managing the uncertainties associated with major scheme progression and the potential for cumulative effects.
Q1.23.3.4	Applicant	**Cumulative Effects – Assessment** The ES [APP-110, Table 24-51 (Impact 5)] under rationale sets out that there may be cumulative effects possible at links 9, 11, 53, 54, 56 and 59, where the magnitude of effect is greater than negligible. Explain why only those links have been referenced when the ES [APP-110, Paragraph 526] identifies that links 14, 15,	The Applicant acknowledges that there are links that experience a magnitude of effect greater than negligible that are omitted by error from Table 24-51 for Impact 5 (links 14, 15, 49, 51, 72, 73, 79 and 98). However, the Applicant would clarify that all links are included within the assessment of cumulative impacts (for Impact 5) as evidenced at Paragraph 616 of Chapter 24 Traffic and Transport of the ES [APP-110].

		49, 51, 72, 73, 79 and 98 also would have a magnitude of effect is greater than negligible?	
Q1.23.3.5	Applicant	**Cumulative Effects – Assessment** Explain why the figures in ES [APP-110] Table 24-54 for links 47, 80 and 90 do not match those in ES [APP-110] Table 24-20?	The Applicant acknowledges that the numbers presented in Table 24-54 of Chapter 24 Traffic and Transport of the ES [APP-110] for SEP and DEP construction traffic differ slightly from those within Table 24-20 of the ES for links 47 and 90. The Applicant however notes that the numbers for link 80 do match between Table 24-54 and Table 24-20 of the ES. The Applicant clarifies that for link 47 the All vehicle number includes a typo and should be 1,035 as opposed to 1,025 stated within Table 24-54 of Chapter 24 Traffic and Transport of the ES [APP-110]. However, the percentage change in traffic is correct at 15%. Therefore, it can be evidenced that the assessment parameters for link 47 would not be impacted. The Applicant clarifies that for link 90 the correct numbers are as follows (published numbers in italics) All vehicles 281 (*246*) and HGVs 137 (*102*), resulting in a 191% (*175%*) change in all vehicles and 1,577% (*1,275%*) change in HGVs. However, the conclusions of the subsequent cumulative impact assessment would not be impacted as clarified below: **Impact 1 (Severance)** - Paragraph 594 of Chapter 24 Traffic and Transport of the ES [APP-110] identifies that total daily flows along link 90 would be significantly less than 4,000 vehicles per day and therefore the magnitude of effect be assessed as low. The corrected value would not impact this assessment. **Impact 2 (Amenity)** – Both the published and corrected figures sit within the banding rating of high magnitude of effect. Therefore there is no change to the cumulative impact significance. **Impact 4 (Road Safety)** - Link 90 is identified to impact cluster C20. It can be noted from Table 24-59 of Chapter 24 Traffic and Transport of the ES [APP-110] that the correct percentages are utilised in the assessment. **Impact 5 (Capacity)** - Link 90 is identified in Table 24-60 of Chapter 24 Traffic and Transport of the ES [APP-110] as experiencing potentially significant driver

			delay (highway constraints) impacts. It can be identified from Table 24-60 that the correct numbers have been applied.
Q1.23.3.6	Applicant	**Cumulative Effects – Cross project co-operation** A proposed mitigation to minimise the effects of construction traffic in the ES [APP-110] is to agree a 'cap' on vehicle movements on some links. This requires agreement with other existing consented NSIP projects. a) Is there any evidence before the Examination that negotiations/ discussions are ongoing or likely to reach a positive conclusion? b) What weight should the ExA be giving to this mitigation when it relies on third parties to secure the measure? c) At ISH2 [EV-020] [EV-024] the Applicant set out that if the other NSIP projects would not 'share' their cap on the affected links with them that construction traffic would need to be diverted to other routes. Provide evidence to show this is feasible.	The Applicant would preface its answer by noting that the assessment presented with the ES [APP-110] assumed a worst case that there could be an overlap between the peak construction traffic for SEP and DEP and the peak construction traffic for Hornsea Project 3 and the Norfolk Projects (Norfolk Vanguard/Boreas). Hornsea Project 3 has started enabling works and the Norfolk Projects estimated starting time is also 2023. Consequently, both projects will be significantly advanced at the estimated time of SEP and/or DEP construction and their traffic peaks will have likely already passed. Cumulative impacts will therefore likely be either avoided or reduced at the time of SEP and/or DEP construction. In the event that there is an overlap with the other windfarm projects and SEP and/or DEP, the Applicant would respond to the points raised by the ExA as follows: **a)** and **b)** Annex A of the OCTMP (Revision B) [document reference 9.16] outlines that caps on HGV movements could be required along some links to manage the potential for cumulative impacts with the Norfolk Projects and Hornsea Project 3. The CTMP is secured by Requirement 15 of the draft DCO (Revision C) [document reference 3.1]. The OCTMP (Revision B) [document reference 9.16], Plate 1-1 outlines a governance structure for the purpose of managing the implementation of the Construction Traffic Management Plan (CTMP). The governance structure acknowledges that consented NSIPs within the TTSA are Highway Stakeholders and identifies the role of a CTMP co-ordinator to support the Applicant with engagement.

			The CTMP co-ordinator will be appointed by the Principal Contractor and by definition, the role will have contractual accountability. The text below outlines further CTMP co-ordinator roles and responsibilities including: • Developing and agreeing mitigation strategies in the event of major project cumulative overlap; • Ensuring compliance with the cumulative caps (outlined in Annex A); • Monitoring and reporting; • Enforcement actions. The Applicant has provided further explanation (below) of how it intends that this process would operate (in the event that there is a potential overlap). The CTMPCo (working for the Applicant) will engage with Hornsea Project 3 and the Norfolk Projects to understand their forward programme of works and if there may be a potential overlap. If an overlap is identified, the contractor will request a forward programme of deliveries from Hornsea Project 3 and the Norfolk Projects. The Applicant would note that both Hornsea Project 3 and the Norfolk Projects are subject to a DCO Requirement to produce a CTMP and manage traffic movements in accordance with the agreed cumulative caps. To achieve this, both Hornsea Project 3 and the Norfolk Projects will need to produce a forward plan of their deliveries and share this information with NCC. This information on forward programme of deliveries will then be compared to the contractors forward programme of deliveries to understand if there could be any exceedances of the cumulative caps. In the event that there could be an exceedance, SEP and DEP will reschedule deliveries to ensure that cumulative caps are not exceeded. In summary, the Applicants position that the mitigation does not rely upon third parties, as noted the CTMPCo for SEP and / or DEP will reschedule deliveries as required to ensure the cumulative caps are not exceeded. A governance structure supported by contractual obligations is outlined in the OCTMP (Revision B) [document reference 9.16, as secured by Requirement 15 of the draft DCO (Revision C) [document reference 3.1], that ensures that Hornsea

			Project Three or the Norfolk Projects are fully engaged in the development of cumulative traffic measures during the implementation of SEP and / or DEP. **c)** The point the Applicant made was if there was a potential exceedance, the Applicant would not ask other developers to reduce their traffic flows but would reschedule their works. The Applicant gave an example that this could include working in other areas, which would serve to assign traffic away from the cumulative routes under 'stress' to other routes in the TTSA that have been assessed as suitable. There is no suggestion that traffic would be routinely re-assigned to routes not previously assessed in Chapter 24 Traffic and Transport of the ES [APP-110].
Q1.23.3.7	Applicant	**Cumulative Effects – A1067 at Attlebridge** Vattenfall [RR-119] has noted that the A1067 (the main route serving the preferred DEP/SEP main construction compound location) is also a road link for construction traffic for Norfolk Vanguard and have raised concern whether assessment of cumulative traffic impacts on the A1067 has taken this into account. The ExA note that Link 80 considers such cumulative movements. However, are there any other links along the A1067 which will be affected by traffic from both projects?	Section 24.7.4 of Chapter 24 Traffic and Transport of the ES [APP-110] provides a detailed explanation of the approach to assessing cumulative impacts with other Wind Farm Schemes, including Norfolk Vanguard. With regard to the A1067 it can be identified from Figure 24.1 of the ES [APP-134] that within the traffic and transport study area, the A1067 comprises of links 76, 77, 79 and 80. Whilst all four links will be used by both SEP and DEP and the Norfolk Projects (as detailed in Appendix 24.4 of the ES [APP-272]), it can be noted from Table 24-19 and 24-20 of Chapter 24 Traffic and Transport of the ES [APP-110] that links 76, 77 and 79 experience changes in traffic flows below the Guidelines for the Environmental Assessment of Road Traffic (GEART) screening thresholds. These links are assessed to result in negligible environmental effects in the primary assessment for SEP and DEP and are therefore not assessed further within the cumulative assessment (i.e. those assessed as 'negligible' are not taken forward as there is no potential for them to contribute to a cumulative impact).
Q1.23.4 Effects on Recreational Routes, such as Public Rights of Way			
Q1.23.4.1	Applicant	**Pedestrian Delay Assessment**	The Applicant will submit a revised Appendix 24.3 correcting this error at Deadline 1.

		Provide Appendix 24.3 - Pedestrian Delay Assessment [APP-271] with all figures showing. Some columns have '#VALUE!' throughout.	
Q1.23.5 Suitability of Access Strategy			
Q1.23.5.1	National Highways	**Abnormal Indivisible Loads** NH (responsible for the A47) have not been able to structurally confirm the route for abnormal indivisible loads [APP-270] as there are two structures of concern (Scarning Bridge and a culvert located between Kings Lynn and Swaffham). It is set out that NH is still reviewing these structures to establish if the route can be cleared. What is the up-to-date position on this?	**N/A**
Q1.23.5.2	Applicant	**Access Strategy** Explain the rationale behind the number of accesses required during construction and how these have been minimised as far as possible?	The general approach to selecting access locations is to (where possible) locate access points where the impacts of construction traffic upon sensitive receptors, road safety and local routes will be minimised. Initially for the Preliminary Environmental Information Report (PEIR), a total of 78 access points were proposed. Following submission of the PEIR and stakeholder and community feedback, the number of accesses has been reduced to 67 for the DCO submission. These 67 accesses are provided at approximately 41 locations (at many locations, one access is provided on either side of the road). The total number of accesses is minimised by the inclusion of a temporary haul road to link access points and bypass sensitive locations. The selection of access locations was also informed by wider engineering and environmental considerations, such as, areas where it would not be appropriate to provide a continuous haul road, e.g. over some watercourse, through woodlands, over railways, etc.

			The final number of access locations equates to approximately one access location every 1.5km (based upon an onshore export cable route of approximately 60km in length).
Q1.23.5.3	Applicant	**Access Strategy** The Access to Works Plans [AS-006] include 'Early Works Accesses' what are these and will they have any potential highway effects? Further, why can't the locations of the construction work accesses be used?	The Early Works accesses shown on the Access to Works Plans [AS-006] would be used for pre-commencement works only (as defined within the definition of "commencement" within Article 2 of the dDCO (Revision C) [document reference 3.1]. These are existing accesses that would facilitate early access for pre-commencement activities. The nature of these pre-commencement works (such as, archaeological investigations, environmental surveys, assessment of ground conditions) would not generate a quantum of vehicles trips that would give rise to significant impacts. Consequently, no assessment of impacts is presented. With regard to the second part of the ExA question "why can't the locations of the construction work accesses be used", the Applicant would respond as follows: The construction accesses in many locations would utilise the same location as the early works accesses (for example ACC010 and ACEW11, shown on sheet 5 of the Access to Works Plan [AS-006]). However, the construction accesses will typically require works to provide a new junction (bellmouth) to accommodate the proposed levels of construction traffic, and as outlined at Q1.23.5.2, to reduce the number of accesses a temporary haul road will be installed. As such at many locations, until the accesses, haul road and crossing points are installed, access for the pre-commencement activities would not be possible. It is for this reason that early works accesses are proposed to allow access for pre-commencement activities at certain areas.
Q1.23.5.4	Applicant	**Access Strategy – Substation** Is there any update on the likely arrangements for access to the substation?	The Applicant wishes to retain all three options to access the onshore substation at this stage. Should new information become available to delimit the number of the options the Applicant will advise the ExA accordingly.
Q1.23.5.5	Applicant	**Access Strategy**	During engagement with NCC and National Highways, access locations that had the potential to be spatially constrained were identified and it was agreed

		Is leaving detailed design of the required accesses to the CTMP appropriate and what likelihood is there that a suitable design with adequate visibility splays can be achieved within the order limits or the public highway in all cases?	outline access designs (with details of visibility splays) would be required for the DCO submission. These locations include compound accesses, the onshore substation access and access from the Strategic Road Network. Further details are provided within Section 24.1.5 of the Transport Assessment [APP-268]. For the remaining access locations, a suite of access and crossing concepts have been developed which are specific to road classification but not site location. These concepts will form the basis for micro-siting and detailed design post determination. This approach was also agreed for Norfolk Vanguard and Hornsea Project Three by NCC and accepted by the Secretary of State in determining those applications. With regard to whether a suitable design with adequate visibility splays can be achieved within the order limits or the public highway, the Applicant would respond as follows. Paragraph 111 of the Transport Assessment (APP-268) outlines that: *"Any future design changes are anticipated to be minor in nature and would not materially alter the assessment presented within ES Chapter 24 Traffic and Transport. The visibility splay requirements for each access and crossing would be determined based upon measured speeds and provided in accordance with the requirements of the DMRB [Design Manual for Roads and Bridges]. Where the visibility splay requirements could not be fully achieved or may have significant adverse environmental impacts (e.g. extensive tree/hedgerow removal) a reduction in the visibility requirement (through temporary speed limit reductions) would be discussed and agreed with NCC"* Prior to the commencement of construction, the technical approvals for the access designs will be submitted to and agreed with NCC. The technical approval process will include submission of finalised drawings, showing full details of access and crossing improvements, including drainage, lighting, signing, and standard construction details. The technical approval documentation will also include an independent assessment of road safety, known as a Road Safety Audit. This commitment is secured by Requirement 17 of the draft DCO (Revision C) [document reference 3.1].

Q1.23.5.6	Applicant	**East of England Ambulance Service NHS Trust** The Trust [RR-029] is concerned that information to determine the traffic and transport effects arising from the construction phase of the Proposed Development and the likely impact on EEAST's operational capacity, efficiency and resources (including the likely highway disruption and delay) is currently absent from the application documentation and its related mitigation measures. a) Have you done any modelling or assessment to determine delays? b) Are further discussions between the parties taking place and what is the scope of any potential mitigation measures that might be being considered (if any)?	**a)** Chapter 24 Traffic and Transport of the ES [APP-110] includes an assessment of three potential impacts that could lead to delays to drivers. These include: • Impact 5: Driver Delay (Capacity) - delays induced by the highway networks' lack of spare capacity to accommodate additional traffic flow; • Impact 6: Driver Delay (Highway Constraints) – delays induced by constrained road space forcing vehicles to slow or stop to traverse the highway network; and • Impact 7: Driver Delay (Road Closures) – delays to diverted traffic re-routing on the highway network due to road closures necessitated by 'open cut' trench cable road crossings. It can be identified from Chapter 24 Traffic and Transport of the ES [APP-110] that with the application of additional mitigation measures, the residual driver delay impacts are assessed to be not significant. The Applicant has undertaken an extensive programme of stakeholder engagement with NCC and National Highways who have a statutory duty under the Traffic Management Act 2004 to ensure the expeditious movement of traffic on their road network, i.e. to manage disruption and delays. The ES [APP-110] and OCTMP (Revision B) [document reference 9.16] outlines an extensive range of mitigation measures to ensure delays are not significant. The relevant highway authorities will take a view on the assessed impact significance in accordance with their duty under the Traffic Management Act 2004. Following submission of the DCO, the Applicant continues to engage with NCC and National Highways and is in the process of agreeing a Statement of Common Ground with both Stakeholders. **b)** The Applicant has provided a detailed response to all comments from the East of England Ambulance Service [RR-029] and had a meeting for the 14th February 2023 to discuss their representation.

Q1.23.6 Effectiveness of Proposed Mitigation Measures			
Q1.23.6.1	Applicant National Highways Norfolk County Council	**Mitigation – A47** The TA [APP-268] identifies significant impacts on two junctions of the A47 that fall within the study area. Both of these junctions are proposed to be removed by highway improvement schemes. a) What is the latest position on these improvement projects (A47 North Tuddenham to Easton Development Consent Order and A47-A11 Thickthorn Junction Development Consent Order) and are they still forecast to be completed before the construction of the Proposed Development starts? j) Should they not be delivered are the mitigation measures set out in the OCTMP sufficient as a 'fallback' to ensure there are not any significant impacts on the road network? k) If the improvement works under either of the DCOs were to be delayed and occur concurrently with the onshore construction programme of this project, would the OCTMP for the Proposed Development, taken together with other OCTMP, provide adequate 'fallback' mitigation for the cumulative effects of both projects on the road network? l) Further to b) and c) above, what confidence can the ExA have that adequate mitigation measures are available and achievable in these scenarios?	The Applicant responds as follows: **a)** Please refer to the Applicant's response to Q1.23.3.3. **b)** In the event that the A47 improvements are not delivered in time for the commencement of construction of SEP and DEP, Paragraph 90 and 91 of the OCTMP (Revision B) [document reference 9.16] outlines the approach to ensure that impacts are not significant: *"The CTMPCo will commission revised junction capacity modelling utilising refined construction parameters from the PC [Principal Contractor] as well as latest surveys of background traffic and forecast for cumulative traffic. This modelling would be submitted to National Highways, who would be requested to advise if they consider mitigation measures would be required.* *Should National Highways identify the requirement for further mitigation, demand management measures would be proposed to ensure impacts are not significant. Potential mitigation measures could include car-sharing, spreading of arrival/finish times, etc."* The Applicants response to the ExA question 1.23.6.3 provides further details of the range of mitigation measures that could be adopted in the event that the highway improvements have not been delivered by National Highways prior to commencement of SEP and/or DEP. **c)** Paragraph 578 of the ES Chapter 24 – Traffic and Transport [APP-110] outlines a summary of an agreement between National Highway and NCC that "potential cumulative impacts between the construction phases of the highway schemes plus SEP and DEP could therefore be managed through the respective CTMPs".

			Section 4.10.2 of the OCTMP (Revision B) [document reference 9.16] provides an outline of the approach. This approach was adopted recognising the uncertainties regarding timing of the respective highway schemes and that measures to manage cumulative impacts would be more appropriately addressed once contractors are appointed and a detailed programme of works and refined logistics strategy is known. A review of the DCO application documents for the Highway Schemes (by the Applicant) identifies that the deliveries would be expected to travel via the Strategic Road Network and would be within day to day fluctuations in traffic. Anticipated cumulative impacts upon capacity and road safety would therefore not be significant. In developing the respective CTMPs, the Applicant and National Highways would therefore focus upon co-ordinating road works. For example, if road or lane closures are required by National Highways, the Applicant would look to reschedule deliveries/ abnormal load movements so as not to exacerbate the impact of traffic diverting to the local road network. **d)** The Applicant refers to their response to ExA Q1.23.1.1 a) and b).
Q1.23.6.2	Applicant	**Mitigation – Controls on HGV Routes** The OCTMP [APP-301] sets out that there will be no HGV traffic through: Attlebridge, Barford, Blind Lane, Cantley Road, Cawston, Horsford, Oulton and Weston Longville. How are the measures set out within the OCTMP [APP-301] sufficient to ensure that this does not occur?	Figure 1 of the OCTMP (Revision B) [document reference 9.16] details the permitted HGV routes. Section 2.3 of the OCTMP sets out a range of measures to ensure that HGV drivers follow the prescribed routes. Section 5 of the OCTMP sets out how HGV routing will be monitored and defines enforcement measures for dealing with any breaches of the agreed routes. The OCTMP is secured by Requirement 15 of the draft DCO (Revision C) [document reference 3.1], the implementation of finalised CTMP will be a contractual obligation for the appointed Principal Contractor.
Q1.23.6.3	Applicant	**Mitigation – Traffic Limits** To reduce some identified impacts the ES [APP-110] sets out that peak daily HGV and LV	**a)** The ES [APP-110] outlines that for some links there would be a requirement to limit the number of peak daily HGV and / or LV trips to not exceed the average numbers.

		demand on several links should not exceed the forecast average daily demand. a) What affect would this have on construction practices and timeframes? b) Further, would some HGVs be re-routed on to other nearby roads potentially increasing impacts on those links?	The Transport Assessment [APP-268] outlines that the worst case traffic demand scenario (for the assessment of traffic and transport impacts) has been developed by examining: • The likely minimum construction programme (and therefore maximum activity intensity); • Peak demand for materials and personnel; • Likely mode share; and • The assignment of traffic. These worst case parameters have been adopted for the purposes of assessing peak impacts, however, a range of measurers as outlined below could be adopted to reduce the intensity of peak deliveries. ***Programming*** The TA [APP-268] outlines that worst case traffic demand has been developed by examining the minimum construction programme and therefore the maximum intensity of deliveries. To reduce the intensity of deliveries to certain areas, the contractor may choose to optimise the resource programme for certain locations and activities, or stock pile materials. This could allow the intensity of peak deliveries or resourcing to be reduced. These measures could result in certain activities taking longer that optimum, albeit still allowing the wider project to be built to the same programme. ***Optimisation of materials/fleet*** The worst case assumptions derived in the TA [APP-268] are based upon, the use of standard 20tonne tippers for the import of stone; no backhauling, limited reuse of materials and a full haul road. The contractor could explore opportunities to optimise the number of vehicles, through measures such as: • Backhauling, i.e. using laden vehicles to import stone and export excavated material;

			• Optimising the size of HGVs to reduce the total number; • Seeking engineering refinements to reduce material quantities and therefore HGV numbers, e.g. recuing the volumes of imported stone for haul roads; and • The reuse of materials onsite to reduce offsite HGV trips, e.g. using excavated materials to form bunds, etc. These types of measures could reduce the numbers of vehicle movements whilst having limited impacts upon programme. ***Mode Share*** The TA [APP-268] outlines that worst case traffic demand has been developed by assuming all employees travel to site on their own (single occupancy). A reduction in peak LV trips could be achieved through the promotion of car-sharing or contractor provided minibuses, etc. This measure would not be expected to impact upon timeframes or working practices and is common practice for most construction projects. Travel Planning measures are promoted as best practice through the OCTMP (Revision B) [document reference 9.16] which is secured by Requirement 15 of the draft DCO (Revision C) [document reference 3.1]. ***Local Supply Chain*** The TA [APP-268] adopts a worst case that assumes all material deliveries are new trips and sourced from the wider ports of Lowestoft, Great Yarmouth or Kings Lynn, rather than local suppliers. Many materials (e.g. sand and stone) could be partially sourced from local suppliers within the traffic and transport study area. Materials sourced from local supply chains, could reduce the overall distance vehicles need to be transported and may constitute reassignment of existing traffic, rather than additional new trips. For example, many HGVs would already be on the local network serving existing construction projects and may reassign to serve SEP and DEP when their existing contracts are complete. **b)**

			The OCTMP (Revision B) [document reference 9.16] contains the control measures and monitoring procedures for managing the potential traffic and transport impacts of constructing SEP and DEP. The objective of the OCTMP is to define a strategy to ensure that the construction traffic parameters (e.g. traffic numbers and routes) assessed within the ES are managed and not exceeded. The Contractor would be required to comply with this CTMP (which is secured by Requirement 15 in the draft DCO (Revision C) [document reference 3.1]) and ensure that traffic numbers and routes are in accordance with the OCTMP.
Q1.23.6.4	Applicant	**Mitigation – Highway Constraints** Where there would be the potential for significant effects, the ES [APP-110, Table 24-48] states that mitigation options would include creating or widening passing places. What work has been done to consider whether this is likely to be possible at each link and whether such land would be within the highway boundary?	Table 24-48 of Chapter 24 Traffic and Transport of the ES [APP-110] outlines a range of measures to manage the potential for significant driver delay (highway constraints) impacts. It is clarified that creating new passing places or widening existing passing places are identified as one option, however an option to use mobile traffic management (such as an escort vehicle) is also proposed. Paragraph 551 of Chapter 24 Traffic and Transport of the ES [APP-110] further outlines that: *"The measures … are intended to provide an indicative and proportionate means of mitigating the potential impacts. The final measures and details will be agreed with the NCC through the development of the CTMP…"* Section 4.4 of the OCTMP (Revision B) [document reference 9.16] provides further detail of the approach to agreeing the final measures with NCC and notes that: *"…the CTMPCo would formalise and agree the measures to be adopted for each road. The final choice of the measures would be agreed in liaison with NCC, the CTMPCo would also seek the views of the local community upon their preference for types and location of measures".* With regard to whether the passing places would be within the public highway, Paragraph 78 of the OCTMP (Revision B) [document reference 9.16] also outlines that: *"Where road/junction widening or new/improved passing places are proposed, they would be contained within the public highway and the technical approvals*

			for the designs will be submitted to and agreed with the highway authorities under Section 278 of the Highways Act (1980)". It is clarified that where there is not space to provide passing places or passing places cannot be provided within the public highway, mobile traffic management measures will be utilised.
Q1.23.6.5	Applicant	**Mitigation – Link 61** The ES [APP-110, Table 24-33] sets out that Link 61 should have a limit on LVs imposed (average peak hour demand) to mitigate impacts on amenity. What is the justification for not requiring a HGV trip limit on this link?	Table 24-33 of Chapter 24 Traffic and Transport of the ES [APP-110] outlines that there would be an intensification of vehicle movements for two hours a day when construction personnel are arriving and departing. It is identified that during these hours the major contributor to increases in traffic demand is associated with LVs, hence the mitigation directed at LVs.
Q1.23.6.6	Applicant	**Outline Construction Traffic Management Plan / dDCO** The OCTMP [APP-301] refers to the potential need to undertake highway improvements under Section 278 of the Highways Act 1980 (as amended). In order for such works are appropriately secured should this be referred to within the dDCO itself?	The precise scale and scope of the highway improvements are difficult to determine until a contractor is appointed and able to determine construction methods and associated vehicle fleet and plant requirements. In some cases, it may transpire that highway intervention is not require and a traffic management solution may suffice. The Applicant has therefore taken a proportionate approach, identifying in a worst case which routes may require highway improvements, ensuring the legal powers are available to implement such measures if required and captured with the OCTMP (Revision B) [document reference 9.16]. The OCTMP is secured by Requirement 15 of the draft DCO (Revision C) [document reference 3.1]. This approach is consistent with that adopted by Norfolk Projects and Hornsea Project Three.
Q1.23.6.7	Applicant	**Outline Construction Traffic Management Plan** The OCTMP [APP-301] sets out at Table A1.1 peak vehicle trips per link. Why do many of the figures not match those in Table 24-19 and	The Applicant acknowledges there are some errors within Table A1.1 of the OCTMP and will submit a revision to the OCTMP at Deadline 1 to correct this.

		Table 24-20 of the ES, including some that require limits (Links 84 and 90)?	
Q1.23.6.8	Applicant	**Outline Construction Traffic Management Plan** The OCTMP [APP-301] sets out at Table A1.1 peak vehicle trips per link. Should the figures for 'All' for Link 7 match those for HGVs, as no LVs are forecast to use the link?	The Applicant acknowledges that the 'All' vehicle number for link 7 in Table A1.1 of the OCTMP should align with the HGV number as identified by the ExA. The Applicant will submit a revision to the OCTMP at Deadline 1 to correct this.
Q1.23.6.9	Applicant	**Outline Construction Traffic Management Plan** The OCTMP [APP-301] sets out at Table A1.1 peak vehicle trips per link. For Link 61 the 'All vehicle' limits are higher than the HGV limits. Is this an error?	Measures to mitigate potentially significant amenity impacts upon link 61 are outlined in Table 24-33 of Chapter 24 Traffic and Transport of the ES [APP-110]. The mitigation measures include limiting peak LV demand to not exceed average peak hour LV demand. The Applicant has incorrectly included the all vehicle number (rather than the LV number) within Table A1.1 of the OCTMP. The Applicant will submit a revision to the OCTMP at Deadline 1 to correct this.
Q1.23.6.10	Applicant	**Outline Construction Traffic Management Plan** The OCTMP [APP-301] sets out at Table A1.1 peak vehicle trips per link. The overall caps for HGVs are different in each scenario for Link 90. What is the reason for this?	The Applicant accepts that for simplicity the caps should the same for both scenarios and this will be amended as part of the revisions to Table A1.1 of the OCTMP that will be submitted at Deadline 1.
Q1.23.6.11	National Rail (Network Rail)	**Protection of Railway Assets** The Proposed Development comes into close proximity to: • The North Norfolk Railway at Sheringham/ Weybourne; • The line into Norwich north of Ketteringham; and	**N/A**

		• The line into Norwich running adjacent to the A140. a) In each instance, do you consider a sufficient distance/ margin/ offset has been provided between the edge of the construction works and the edge of the railway embankments/ tracks? b) If not, explain why and what is required to reassure that railway assets would not be adversely affected.	
Q1.23.6.12	Applicant	**Harbour Revision Order** In the OCTMP [APP-301, Paragraph 13], the following is written: "*The Applicant is currently considering ports suitable for the construction base for the offshore elements of SEP and DEP, but no decision has been made at the time of writing over which to utilise. As such, the DCO application for SEP and DEP does not seek development consent for activities at potential construction ports. Where necessary, any such development activity would be subject to separate consent(s) such as a planning permission or a Harbour Revision Order and would therefore be subject to a separate Transport Assessment and/or CTMP*." Explain: a) Should the construction traffic associated with port activities not be factored into the ES? b) How would a Harbour Revision Order be applied for and in what way would this	The Applicant responds as follows: **a)** At this stage no decision has been made regarding which port(s) would be used for the construction and operation of SEP and DEP. A decision upon construction port(s) would not be made until post DCO determination and until the agreement of a Contract for Difference (assuming DCO consent). It is therefore not possible at this stage to include construction traffic movements to the base port within the assessment. As outlined in Table 24-1 of Chapter 24 Traffic and Transport of the ES [APP-110], this approach to scoping out the assessment of onshore construction traffic movements associated with offshore construction was agreed with NCC and National Highways. This approach has also been accepted by the Secretary of State in the determination of other recently consented offshore wind farm projects in the area, including Norfolk Vanguard, Boreas, and Hornsea Three. **b)** The choice of port(s) by the Applicant would naturally favour ports which have existing permissions. For example, there are ports within the UK with existing permissions or permitted development rights which could be utilised for the construction of SEP and DEP. If a port(s) is selected by the Applicant which does not have the requisite permissions, new permissions would need to be

		interact with the Development Consent Order sought? c) If traffic going to a port is subject of a separate consent, transport assessment and CTMP, should this not feature in the cumulative effects assessment?	sought. Typically, these permissions would be sought from the Marine Management Organisation (MMO) and comprise a Harbour Revision Order. As outlined in the Applicants response to part a) any decision upon port(s) location would not be taken until post DCO determination. There would therefore be no interaction between the DCO process for SEP and DEP and any possible future Harbour Revision Order. **c)** If new port permissions are required, the scope of the associated traffic and transport assessment would need to be agreed with the relevant planning and highway authorities at the time of application (post DCO determination for SEP & DEP). This scoping process would include agreeing the scope of any transport assessment (including consideration of the potential for cumulative impacts from other plans and projects).

Q1.24 Water quality and resources			**Response**
Q1.24.1 Effects on Flood Risk and Drainage, including Adequacy of Sequential and Exception Tests			
Q1.24.1.1	Applicant	**Revisions to Planning Practice Guidance** As discussed at ISH2 [EV-021] [EV-025], on 25 August 2022, significant updates were made to guidance on flood risk and coastal change within the Planning Practice Guidance. Provide a note setting out what implications this has for the submitted FRA [AS-014] and if necessary provide a revised FRA or an addendum, with a summary of key changes.	As noted at ISH2 updates to the Planning Practice Guidance (PPG) were published on 25th August 2022 and the DCO application was submitted on 2nd September 2022. The updated PPG aimed to bring the guidance in line with the latest flood risk policy set out in the National Planning Policy Framework (NPPF), most recently updated in July 2021. In particular the updated PPG confirms the approach to be taken to surface water flood risk in applying the Sequential Test to the locating of development. The updates to the PPG had been expected for some time and elements of the requirements likely to be included within the updated PPG, including revised guidance on the application of the Sequential Test to all sources of flooding, had been anticipated by the Applicant. As such these had been considered within both the site selection process recorded in the Onshore Substation Site Selection Report [APP-175] and the FRA [AS-023] submitted as part of the DCO. A Technical Note summarising the main changes set out within the PPG and their implication for SEP and DEP has been provided Flood Risk and Planning Practice Guidance Technical Note [document reference 13.8], to accompany this response. In addition, the Applicant is preparing an Addendum to the submitted FRA [AS-023], to address comments received from Norfolk County Council, as the LLFA, in their Relevant Representation [RR-064]. This will include the confirmed approach with regard to drainage as well as providing a summary of updated policy and guidance documents including, but not limited to, the updated PPG and clarifying whether these updated documents alter the conclusions of the FRA. This Addendum to the FRA will be submitted at Deadline 2, as Addendum to the Flood Risk Assessment (Revision A) [document reference 12.61].
Q1.24.1.2	Applicant	**Flood Zone and Vulnerability Classification**	The Applicant notes that the latest version of the FRA within the Examination Library is Revision B [AS-023]. The missing headings for Table 18.2.4 were inadvertently turned to white text such that they were not visible. Table 18.2.4 has been provided below for reference.

<table>
<tr>
<td></td>
<td></td>
<td>Table 18.2.4 of the FRA [AS-014] appears to be missing the headings. Provide a revised version with the headings in place.</td>
<td>
<table>
<tr><th>Flood Zone</th><th colspan="5">Flood Risk Vulnerability Classification</th></tr>
<tr><td></td><td>Essential Infrastructure</td><td>Highly Vulnerable</td><td>More Vulnerable</td><td>Less Vulnerable</td><td>Water Compatible</td></tr>
<tr><td>1</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr>
<tr><td>2</td><td>✓</td><td>Exception Test required</td><td>✓</td><td>✓</td><td>✓</td></tr>
<tr><td>3a</td><td>Exception Test required</td><td>x</td><td>Exception Test required</td><td>✓</td><td>✓</td></tr>
<tr><td>3b</td><td>Exception Test required</td><td>x</td><td>x</td><td>x</td><td>✓</td></tr>
</table>
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<tr>
<td>Q1.24.1.3</td>
<td>Applicant

Environment Agency</td>
<td>Sequential Test

As discussed at ISH2 [EV-021] [EV-025], the FRA [AS-014] does not appear to apply the sequential test before considering the exception test.

a) Applicant, demonstrate how the sequential test has been met and whether any areas of flood risk encountered by the Proposed Development at landfall, the cable corridor and the onshore substation could have feasibly been avoided.

b) What is the view of the EA on this matter?</td>
<td>With regard to bullet point a), as noted at ISH2, updates to the Planning Practice Guidance (PPG) were published on 25th August 2022 and the DCO application was submitted on 2nd September 2022. The updated PPG aimed to bring the guidance in line with the latest flood risk policy set out in the National Planning Policy Framework (NPPF), most recently updated in July 2021. In particular the new PPG confirms the approach to be taken to surface water flood risk in applying the Sequential Test to the locating of development. The updates to the PPG had been expected for some time and elements of the requirements likely to be included within the updated PPG, including revised guidance on the application of the Sequential Test to all sources of flooding, had been anticipated by the Applicant.

Consistent with Environment Agency Guidance[21] and Diagram 3 of PPG paragraph 033, which both set out the Sequential Test should be applied at an early stage. The Sequential Test was applied at the early stages of consideration of alternative sites and site selection, and is therefore primarily recorded in Environmental Statement Chapter 3 - Site Selection & Assessment of Alternatives [APP-089], which in this respect forms a part of the wider flood risk assessment for the project (the above Environment Agency Guidance refers to the “sequential test and your flood risk assessment” as separate documents and states that the Sequential Test can be submitted "in any format"). NPS EN-1 policy in paragraph 5.7.9 is also clear that the requirement is that “the Sequential Test has been applied as part of site selection” and that</td>
</tr>
</table>

[21] https://www.gov.uk/guidance/flood-risk-assessment-the-sequential-test-for-applicants

			"a sequential approach has been applied at the site level to minimise risk by directing the most vulnerable uses to areas of lowest flood risk". As above, therefore the approach followed to meet the Sequential Test is recorded in Environmental Statement Chapter 3 - Site Selection & Assessment of Alternatives [APP-089]. Following the selection of sites, the FRA [AS-023] and the Onshore Substation Site Selection Report [APP-175] submitted as part of the DCO provide further evidence of the application of the Sequential Test, including in relation to surface water flood risk, within the proposed order limits of the individual sites following their selection for the development. All these documents are relevant to and form a part of the wider flood risk assessment. As such the requirements of the new PPG were already fully taken into account in the site selection process above and considered within the FRA [AS-023] submitted as part of the DCO. The Project has sought to apply the Sequential Test in the location of all infrastructure, as evidenced by the consideration of risk from a range of sources of flooding in the Site Selection & Assessment of Alternatives report [APP-089] and this has been summarised in Section 18.2.5 of the FRA [AS-023]. This provides clarification in Paragraphs 380 – 382 that all elements have been sited, wherever possible in locations at low risk of fluvial / coastal and surface water flooding. It acknowledges there are locations where the Project will interact with Flood Zone 3 as these comprise areas where the Project is required to pass under, or in proximity to, existing watercourses. Furthermore, Paragraph 386 acknowledges the Sequential Test in relation to surface water flooding, which is of specific relevance to the OnSS. It also notes the approach adopted to understanding surface water flood risk in greater detail, as set out in Annex 18.2.2 Onshore Substation Hydraulic Modelling Technical Note [APP-211]. It should be noted that Environment Agency Guidance[22] makes clear that applicants *"don't need to do a sequential test for a development in flood zone 1"* unless there are flooding issues in the area. Both the landfall location, onshore substation and most of the onshore cable corridor are located in Flood Zone 1. Despite this the Applicant considered the Sequential Test and approach including flood risk criteria was applied to the site selection of these elements of the Project, even though this was not strictly required even by the newly updated suite of guidance.

[22] https://www.gov.uk/guidance/flood-risk-assessment-the-sequential-test-for-applicants#developments-that-dont-need-a-sequential-test

			A Technical Note summarising the main changes set out within the PPG, including how the Sequential Test has been met by the Project, is provided as Flood Risk and Planning Practice Guidance Technical Note [document reference 13.8]. For completeness, the FRA [AS-023] considers the Exception Test in Section 18.2.5.
Q1.24.1.4	Applicant	**Substation Footprint Siting** Several of the drawings in the FRA [AS-014], most namely Plate 3: 1 in 100 Year Plus 40% for Climate Change Extent in Comparison with the Onshore Substation Layout and those within the Onshore Substation Hydraulic Modelling Technical Note [APP-211], show the proposed footprint of the substation falling slightly within the overland flow pathway. Why can this area not be avoided all together?	The Applicant notes that the Plates within the FRA [AS-023] are taken from the Onshore Substation Hydraulic Modelling Technical Note [APP-211]. The hydraulic model has been re-run for the 1 in 100 year (+45%CC) event for the baseline and all option scenarios, including depth difference and change in flood extent mapping for the proposed scenario compared with the baseline scenario. The results of this have been included within Annex 18.2.2: Onshore Substation Hydraulic Modelling Report (Revision B) [document reference 6.3.18.2.2], to be submitted at Deadline 2. In addition, Annex 18.2.2: Onshore Substation Hydraulic Modelling Report (Revision B) [document reference 6.3.18.2.2] summarises the iterative design process adopted for the location of the Onshore Substation platform. Several design iterations to the Onshore Substation platform have been considered to minimise the potential surface water flood risk both to and from the proposed development. Following an initial iteration, whereby the Onshore Substation platform was reduced in size and moved towards the southern end of the Site, a further design iteration was developed comprising a slightly smaller, irregular shaped platform. This shape has been developed to enable either a N-S orientation or an E-W orientation for the Onshore Substation platform. Whilst the iterative design process limits the interaction with the potential area of surface water flooding, the location and layout of the Onshore Substation platform is also influenced by other environmental factors including visual, landscaping and cut and fill requirements (see Environmental Statement Appendix 3.1 – Onshore Substation Site Selection Report [APP-175]). Annex 18.2.2: Onshore Substation Hydraulic Modelling Report (Revision B) [document reference 6.3.18.2.2] demonstrates that the current footprint of the Onshore Substation platform comprises the largest conservative shape likely to be required and confirms that the area required is likely to be smaller than the footprint shown. Furthermore, it demonstrates there is limited change to the flood extent as a result of the proposed layout and there is no flood risk impact to either the Onshore Substation or off-site receptors.

			The Applicant will seek to refine the layout during the detailed design process such that the interaction with the area at increased risk of surface water flooding is avoided, where possible, taking into account the wider constraints of the other design factors listed above. By applying the Sequential Test and approach within the DCO limits for the Onshore Substation the Applicant has successfully ensured that there will be minimal interaction between the development and the area shown as being at increased risk of surface water flooding, whilst also demonstrating it would have no impact on flood risk in the wider area. The Applicant considers this approach to be in accordance with the guidance provided in Paragraph 023 of the PPG which notes, with regard to the Sequential Test, that areas at low risk should be developed in preference to areas at medium or high risk and that areas at increased risk are avoided, "so far as possible", when considering all sources of flooding.
Q1.24.1.5	Applicant	**Substation Modelling - Climate Change Allowances** NCC [RR-064] notes that in Plates 2 to 5 (Pages 69-72) of the FRA [AS-014], the surface water hydraulic modelling results are not consistent with the latest national guidance for climate change allowances. Please provide updated modelling to incorporate the latest climate change allowances.	The Applicant notes that during ETG meeting 7 with the LLFA on 6th December 2022, the discussion included consideration of appropriate climate change allowances to apply. It was agreed, with the LLFA, that given information related to the Decommissioning Phase of the Project was limited, an allowance of 45% for climate change would be applied within the hydraulic model. The hydraulic model has been re-run for the 1 in 100 year (+45%CC) event for the baseline and all option scenarios. The results of this have been included within Annex 18.2.2: Onshore Substation Hydraulic Modelling Report (Revision B) [document reference 6.3.18.2.2], to be submitted at Deadline 2.
Q1.24.1.6	Applicant	**Substation Drainage** The FRA [AS-014] sets out that "*As part of the assessment undertaken to date, the scope for using infiltration as the primary option for the surface water drainage continues to be investigated. Initial results from the soakaway testing indicated relatively poor infiltration capacity. However, the geophysical surveys and supplementary ground*	Ongoing investigations have been undertaken including obtaining further information for the area of the proposed Onshore Substation during a geophysical survey undertaken in April 2022 and subsequent supplementary ground investigation works, in June 2022. The exploratory holes installed as part of the supplementary ground investigations in June 2022 have been subject to ongoing monitoring to record information related to groundwater levels. As the data from the exploratory holes became available this enabled the Applicant to further consider the options for the proposed surface water drainage for the Onshore Substation platform.

		investigation has found there may be areas of the onshore substation site with relatively good infiltration capacity and these locations are subject to further ongoing investigation". The Applicant has advised [AS-036] that after further investigations it is now likely to be possible to utilise infiltration directly into the shallow granular zone for drainage. Provide further information on the findings of the investigations and in relation to what discussions have taken place with the EA and NCC on this matter.	The initial ground investigations in 2021 returned results showing no water within the boreholes. In addition, the geophysical surveys in April 2022 identified shallow granular zones potentially suitable for infiltration. The survey noted that these appear to be linked to a historic river channel that had been infilled with granular deposits to a depth of approximately 10m. All groundwater monitoring shows there is no groundwater encountered in any of the exploratory holes. The results of the supplementary ground investigations also indicated beneficial infiltration rates in key locations around the Onshore Substation site. These rates are in excess of those that would be needed to deliver an infiltration solution. A cut and fill exercise has been undertaken to aid in the development of the outline design for the Onshore Substation platform. As part of this exercise, it has been identified that removal of the overlying material will result in the shallow granular material being present at the Onshore Substation platform level. The Applicant notes this was discussed during ETG meeting 7 with the LLFA on 6th December 2022 and a further meeting with the Environment Agency to discuss their relevant representation on 12th January 2023. At the meeting with the LLFA it was also confirmed that monitoring data from the exploratory holes will continue to be collected and reviewed to inform the detailed design, with the aim of achieving a minimum of 12 months of data records. Further information on the results of the supplementary ground investigations are included in the Outline Operational Drainage Strategy (onshore substation) (formally referred to as the Outline Operational Drainage Plan (onshore substation)) (Revision B) [document reference 9.20], to be submitted at Deadline 2**.** All of the investigations have therefore given the Applicant sufficient certainty that shallow infiltration will be a suitable drainage solution at the onshore substation site and a non-material change application will be made at Deadline 2 to remove the Anglian Water connection as an option. Both the LLFA and EA are both supportive of this approach.
Q1.24.1.7	Environment Agency	**Groundwater Flooding – Substation Site** The FRA [AS-014, Paragraph 312] notes the substation site as having a 25% to 50% susceptibility to groundwater flood risk. In the same document, at Paragraph	**N/A**

		399, it is said that there is a low risk based upon information obtained to date. Would you agree?	
Q1.24.1.8	Applicant	**Groundwater Flooding** The FRA [AS-014, Paragraph 399] refers to ongoing groundwater monitoring. Can the most recent monitoring data be provided to the Examination (if not already included in the ES).	The Applicant confirms that as part of the supplementary groundwater investigations in June 2022, three boreholes BH21-71, BH21-72 & BH21-73 shown in Figure 2 of the Outline Operational Drainage Plan [APP-307] were bored to ground truth the geophysical surveys undertaken in April 2022. Each borehole included a groundwater monitoring installation which is monitoring the granular horizon. Monitoring data from these boreholes is downloaded on a monthly basis and has been provided to the Examination as Appendix B.10. The Applicant also confirms that monitoring data from the exploratory holes will continue to be collected and reviewed to inform the detailed design, with the aim of achieving a minimum of 12 months of data records. See Appendix B.10
Q1.24.1.9	Applicant	**Temporary Compounds Surface Water Drainage** The Proposed Development includes numerous temporary construction compounds. To ensure that drainage matters are suitably considered, should drainage strategies for each temporary construction compound be agreed with the EA and NCC?	The Applicant notes that control measures related to drainage from the construction phase are summarised in Section 6.1 of the Outline Code of Construction Practice (Revision B) [document reference 9.17], which will be secured under Requirement 19 of the draft DCO (Revision C) [document reference 3.1]. Specifically, the 2nd bullet point of Paragraph 98 confirms this relates to works along the onshore cable corridor, as well as at the Onshore Substation, and the measures identified will be undertaken in consultation with the Environment Agency and Norfolk County Council, in their role as the LLFA. The above measures should be considered alongside the specific surface water drainage considerations set out in Section 6.1.5 of the Outline Code of Construction Practice (Revision B) [document reference 9.17], which confirms in Paragraph 118 that "*A Construction Surface Water Drainage Plan will be developed, as part of the CoCP, and agreed with the relevant regulators and implemented to minimise water within the cable trench and other working areas and ensure ongoing drainage of surrounding land.*" Therefore, the Applicant can confirm that drainage strategies for the construction phase, including temporary compounds, will be agreed with the Environment Agency and Norfolk County Council, in their role as the LLFA, as appropriate.

			It should also be noted that the application of the Sequential Test and approach to the selection of locations for the Main Construction Compound as recorded in the Site Selection & Assessment of Alternatives report [APP-089] ensured that an area at low risk of flooding was selected for this element of the Project.
Q1.24.1.10	Environment Agency	**Surface Water Drainage** With reference to the FRA [AS-014, Paragraphs 400 – 402] confirm whether the EA is, or is not, content that sufficient drainage information and mitigation is before the Examination to reassure the ExA that the approach to surface water drainage is sound?	**N/A**
Q1.24.1.11	Applicant	**Receptor Sensitivity** The ES [APP-104, Table 18-7] sets out that in terms of flood risk, land with between 1 and 100 residential properties or more than 10 industrial premises is considered to be of a medium sensitivity? Provide further justification for this threshold?	The sensitivity thresholds for flood risk presented in Table 18-7 of 6.1.18 Environmental Statement Chapter 18 Water Resources and Flood Risk [APP-104] were derived with reference to Annex IV Table A4.3 “Estimating the Importance of Water Environment Attributes” in Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 10 HD45/09 Road Drainage and the Water Environment of the Design Manual for Roads and Bridges (Highways Agency, November 2009). This guidance is available online: The Applicant acknowledges that this guidance has now been withdrawn and replaced with LA113 Road Drainage and the Water Environment (Highways Agency, 2020), which includes reference to the flood risk vulnerability categories set out in Annex 3 of the National Planning Policy Framework (Department for Levelling Up, Housing and Communities, 2021), but notes that these categories have also been included in Table 18-7 of 6.1.18 Environmental Statement Chapter 18 Water Resources and Flood Risk [APP-104]. The guidance from HD45/09 was retained in the examples of receptor sensitivity presented in Table 18-7 because the Applicant considers that the guidance remains a useful indicator of sensitivity to flood risk alongside the NPPF definitions.
Q1.24.1.12	Applicant	**Magnitude of Effects – Ordinary Watercourses**	The Applicant would like to clarify that the impact of watercourse crossings during the construction phase presented in Section 18.6.1.1 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104] is only intended to consider changes to the hydrology,

		The ES [APP-104, Table 18-14] identifies the magnitude of effect resulting from trenched crossings of ordinary watercourses. The EA [RR-032] raise concern that the assessment does not appear to assess the magnitude of flood risk effects resulting from trenched crossings of ordinary watercourses that are in Fluvial Flood Zones 2 and 3a. What is the applicant's reply and explain further how the thresholds in Table 18-14 were derived?	geomorphology, water quality and, by extension, habitat quality of the surface drainage network. Flood risk impacts associated with watercourse crossings are instead considered alongside other potential impacts on flood risk receptors in Section 18.6.1.4 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104]. This includes a discussion in Paragraphs 144 and 150, and further details with regards to individual receptors are provided in Table 18-24 and Table 18-25. However, the Applicant acknowledges that the text in Paragraph 150, which explains that flood risk impacts during construction have been derived as a function of the number of watercourse crossings and the area of land affected within a given catchment, does not make explicit reference to Table 18-14, which has resulted in the Environment Agency's request for clarification in its Relevant Representations [RR-032]. There is no established guidance relating to assessments of the impacts of watercourse crossings on surface watercourses. The thresholds presented in Table 18-14 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104] were therefore developed using the judgement of an experienced Chartered Geomorphologist to provide a semi-quantitative means of ensuring consistency of approach within the ES chapter. These thresholds were previously presented in the Preliminary Environmental Information Report and were agreed in advance with the Environment Agency as part of the consultation process prior to DCO submission.
Q1.24.1.13	Applicant	**Magnitude of Effects** With regard to the ES [APP-104, Table 18-8], what does possible failure of sequential or exception test mean in practice?	As set out in the response to Written Questions 1.24.1.1 and 1.24.1.3 and the accompanying Flood Risk and Planning Practice Guidance Technical Note [document reference 13.8], the sequential approach and Sequential Test in respect of flood risk (including risk of flooding from surface water) was applied to the Project, as required by NPPF policy and consistent with PPG, including the updated PPG published shortly before completion of the documents in August 2022. This was achieved because the principle of taking surface water flooding into account in the Sequential Test had already been established by the NPPF and was in any event applied as a matter of good practice. As made clear in Environment Agency Guidance on Flood Risk Assessment and the Sequential Test, the Sequential Test may be presented "in any format" and, collectively, the Environmental Statement Chapter 3 – Site Selection & Assessment of Alternatives [APP-089],

			FRA [AS-023] and the Onshore Substation Site Selection Report [APP-175] all evidence ways in which the sequential approach has been followed and the Sequential Test applied to minimise flood risk (including from surface water) across all elements of the Project. In the hypothetical instance that the development had instead failed the Sequential or Exception Tests (which is not the case), Table 18-8 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104] "Definition of Magnitude for A Water Resources and Flood Risk Receptor", indicates that this would result in a high magnitude impact on flood risk receptors. In practice, this would only be realised if a sequential approach to siting the development had not been used to minimise potential impacts to and from the Project which, as evidenced above, is not the case. It should be noted that paragraph 378 of the FRA [AS-023] concludes that the Project has successfully applied the Sequential Test, as evidenced above and paragraphs 383 to 385 explain how the development passes the Exception Test with respect to the minimal elements of the Project (i.e. some sections of the onshore cable corridor) which unavoidably pass through short sections of Flood Zone 3. Even if the development had not applied the sequential approach and the Sequential Test the principal national policy test for the application is not the NPPF or the PPG but the NPS, with which the development must accord (S104 Planning Act 2008). NPS EN-1[23] states at paragraph 5.7.13 "nationally significant energy infrastructure projects can be located in Flood Zone 3 … subject to the Exception Test". S104(3) requires that the Secretary of State "must decide the application in accordance with any relevant national policy statement, except to the extent that a number of factors apply including where they are "satisfied that the adverse impact of the proposed development would outweigh its benefits". As well as the impacts set out in the Environmental Statement the need for the project and its other benefits are set out in the Planning Statement. NPS EN-1 also requires that: *"4.1.3 In considering any proposed development, and in particular when weighing its adverse impacts against its benefits, the IPC should take into account:*

[23]Department of Energy and Climate, Overarching National Policy Statement for Energy (EN-1), July 2011

			● *its potential benefits including its contribution to meeting the need for energy infrastructure, job creation and any long-term or wider benefits; and* ● *its potential adverse impacts, including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts".* Ultimately therefore it is for the Examining Authority and the Secretary of State to weigh any impacts, including flooding impacts, against the benefits of the scheme. It is respectfully submitted that a failure of the Sequential Test would not be considered contrary to NPS policy by virtue of EN-1 paragraph 5.7.13 and any failure of the Exception Test, which is only required to be applied to short sections of the subterranean onshore cable corridor, would not outweigh the benefits of doubling the energy generated by the existing windfarms in accordance with government offshore wind, renewable energy and international climate emissions targets. However, for the reasons set out above, the Applicant is of the position that there has been no failure of the sequential or exception test in the siting and design of SEP and DEP.
Q1.24.1.14	Applicant	**Significance of Effects** In the ES [APP-104, Table 18-10] is the introduction of a 'no impact' classification justified, is it supported by the overall methodology set out in the ES [APP-091] and is there any other ES topic that contains such a category?	The Applicant considers the introduction of a 'no impact' classification is justified in Table 18-10 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104]. The "no change" category represents cases where there is no reasonable mechanism pathway for an activity to result in any changes in the condition of a given receptor. This is intended to be distinct from the "negligible" category described in Table 18-10, in which there is a reasonable mechanism for impact but no discernible change in receptor condition. As set out in Section 18.4.3 and Table 18-13 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104], the surface or groundwater catchments in the study area have been used to define receptors against which impacts are subsequently assessed. A conservative approach has been adopted so that the "no impact" category is only applied where project activities would not occur within a given receptor catchment and no direct or indirect mechanism for impact has been identified. "Negligible" impacts have been predicted where project activities would occur within a given receptor catchment, but no changes are likely to occur (i.e. there is a mechanism for impact but the impact itself is not realised). The Applicant considers that ES [APP-104]), Table 18-10 is supported by the overall methodology set out in ES Chapter 5 EIA Methodology [APP-091]. The overall methodology set out in the ES [APP-091] is a framework methodology for the assessment with each

			technical chapter providing details of how the methodology has been applied for that topic. Paragraph 73 states '*For each topic within the EIA, best practice methodology (based on the latest available guidance) has been followed, which may augment the assessment framework presented above [Table 5-6 Impact Significance Definitions]. In all cases the specific approach taken to assess impacts is described within each technical chapter*'. The following ES topic chapters also contain the 'no impact' category: • ES Chapter 17 Ground Conditions and Contamination, Table 17-10 (APP-103); • ES Chapter 18 Water Resources and Flood Risk, Table 18-10 (APP-104); • ES Chapter 19 Land Use, Agriculture and Recreation, Table 19-9 (APP-105); • ES Chapter 21 Onshore Archaeology and Cultural Heritage, Table 21-8 (APP-107); • ES Chapter 24 Traffic and Transport, Table 24-15 (APP-110); • ES Chapter 27 Socio-economics, Table 27-11 (APP-113).
Q1.24.1.15	Applicant	**Potential Construction Impacts – Direct Disturbance of Surface Water Bodies** The ES [APP-104] finds that there would be a negligible magnitude of effect on the River Glaven, River Bure, River Yare, River Tiffey and the Intwood Stream from trenched crossings. Table 18-8 sets out that to be considered a negligible magnitude there should be 'no effect on usability, risk or value'. The ES [APP-104, Paragraph 105], when considering such matters, identifies: "*It is likely that in-channel vegetation would be removed in the localised area of trenching, and the structure of the bed and banks of the watercourse would be disturbed. This*	Section 18.6.1.1 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104] describes the likely impacts of the installation of cable infrastructure and temporary access arrangements across surface watercourses. In the case of trenched crossings, this would include vegetation clearance and the physical modification of the bed and banks of the watercourse prior to reinstatement. Table 18-15 provides a breakdown of the number of trenched crossings within each receptor, all of which would be on ordinary watercourses within the catchment (1 each in the Glaven and Yare catchments, 2 each in the Bure and Intwood Stream catchments, and 3 in the Tiffey catchment). Given the very small number of trenched watercourse crossings in each receptor catchment and the temporary nature of construction works, the Applicant stands by the assertion that impacts on each receptor would be negligible at a catchment scale. Furthermore, the mitigation set out in Paragraph 113 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104] would further reduce any short term and geographically constrained impacts. The Applicant acknowledges that the magnitude of impact following mitigation in the Glaven, Bure, Yare and Tiffey should be classified as "negligible" rather than "no impact" (noting that

		would temporarily affect the habitat quality and geomorphology and may therefore impact the health of the wider catchment due to the cumulative effect of more than one watercourse within the catchment suffering degradation. However, this effect will be very localised to the affected watercourses and, with reinstatement, would be temporary". Is a finding of negligible magnitude therefore justified and is a finding (in many cases) of no effect after mitigation realistic?	this is already the case for the Intwood Stream catchment). This change in residual impact in these receptors would not result in any significant residual impacts, however.
Q1.24.1.16	Applicant	**Watercourse at Little Barningham** The EA [RR-032] raise concern specifically regarding the ordinary watercourse crossing at Little Barningham (PRoW003) and the potential increase of flood risk to several homes arising from the use of a trenched crossing technique. Can such a crossing be undertaken without increasing flood risk elsewhere?	The Applicant can confirm that a meeting was held with the Environment Agency on 12th January 2023 with regards to the ordinary watercourse to the south of Little Barningham and the flood extent in this location. The Applicant can confirm that a review of flood risk in this location has been undertaken, as discussed with the Environment Agency, and a Technical Note summarising the outcomes of this review will be submitted at Deadline 2. The review of the flood risk in this location identified a limited risk to property as a result of the Project. Furthermore, given the timescales associated with the works and the mitigation measures in place to further limit the flood risk, secured through the Outline Code of Construction Practice (Revision B) [document reference 9.17], the Applicant concludes that the crossing of the ordinary watercourse in this location can be undertaken without increasing flood risk to the off-site receptors.
Q1.24.1.17	Environment Agency	**Spring Beck Chalk Stream** The upper reaches of this water feature are within a small natural flood management scheme. Set out in detail the nature and requirements of this scheme, its ultimate purpose and what effects, if unmitigated, the Proposed	Noted.

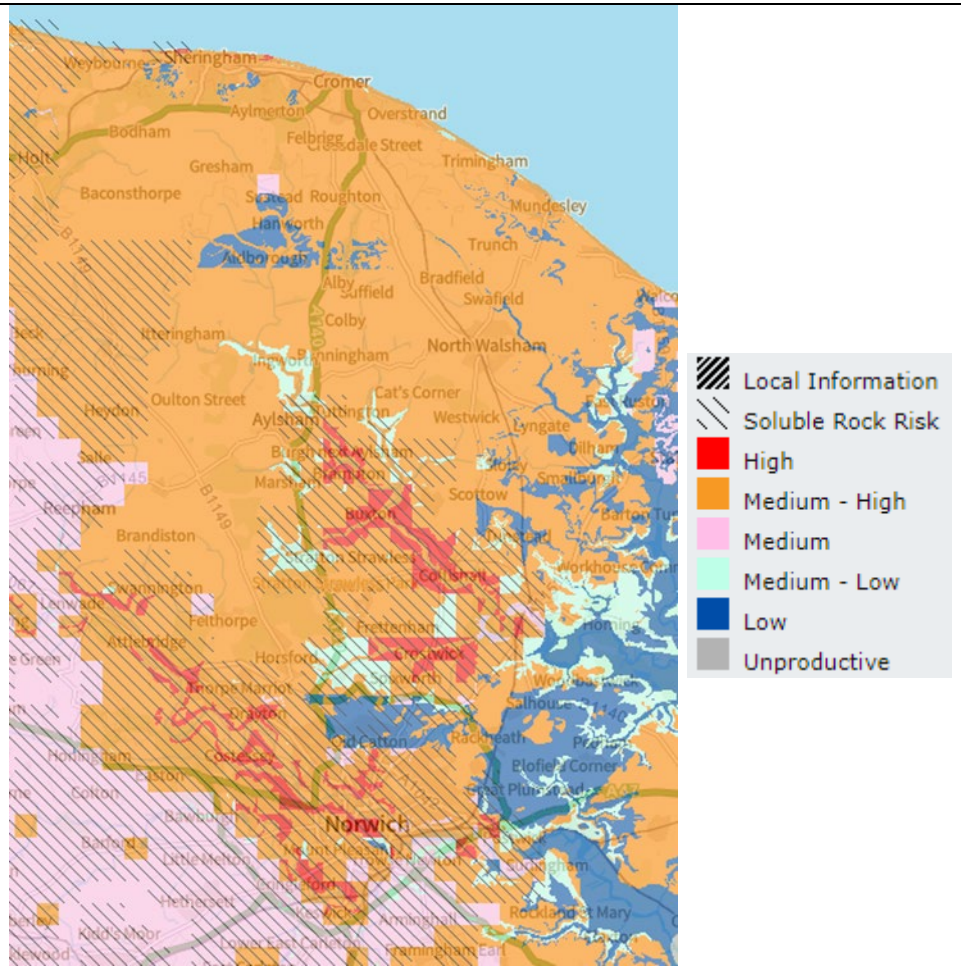
		Development could have on the operation of the scheme.	
Q1.24.1.18	Applicant	**Potential Construction Impacts – Changes to Surface and Groundwater Flows and Flood Risk** The ES [APP-104, Paragraphs 148 and 149] set out that the magnitude of effects as a result of the construction of SEP or DEP in isolation or concurrently range from negligible to medium related to the number of watercourse crossings and the area of land affected. However, there are no medium magnitude of effects identified in the related Table 18-24 and Table 18-25. Confirm which is correct.	The Applicant can confirm that "medium" is referenced in Paragraphs 148 and 150 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104] in error. The magnitude and impact significance prior to mitigation set out in Tables 18-24 and 18-25, which ranges from "negligible" to "low", is therefore considered to be correct.
Q1.24.1.19	Applicant	**Potential Construction Impacts - Changes to Surface and Groundwater Flows and Flood Risk** The ES [APP-104, Paragraphs 159 and 161] set out that after mitigation the magnitude of effect would be negligible, representing an impact of minor adverse or negligible significance. However, corresponding Tables 18-24 and 18-25 show many as 'no impact'. c) Confirm which is correct. d) Further, can the risk of changes to surface and groundwater flows and flood risk be completely ruled out?	The Applicant can confirm that "negligible" is referenced correctly in Paragraphs 159 and 161 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104]. The magnitude following mitigation set out in Tables 18-24 and 18-25 has therefore been stated as "no impact" in error and should rather read 'negligible' for all receptors. This results in a residual impact of negligible significance for the coastal catchment and Spring Beck, and minor adverse significance for all other surface and groundwater receptors. This change in residual impact would not therefore result in any significant residual impacts.

		e) If not, can a finding of no impact be justified?	
Q1.24.1.20	Applicant	**Potential Operational Impacts - Changes to Surface and Groundwater Flows and Flood Risk** In the ES [APP-104], is basing the magnitude of effect solely on the area of maximum area of permanent development in each water body catchment justified? What thresholds were used to distinguish between, high, medium, low and negligible and how were these derived?	Potential impacts on changes to surface and groundwater flows and flood risk during the operational phase of the Project are considered in Section 18.6.2.2 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104]. Paragraphs 185 and 187 explain that the impact has been determined based on the permanent area of Project development (e.g., the onshore cable corridor, onshore substation and permanent access road) in each receptor catchment. There is no established guidance relating to assessments of the impacts of operational infrastructure on surface and groundwater flows and flood risk. As such, thresholds were developed using the judgement of an experienced Chartered Geomorphologist to provide a semi-quantitative means of ensuring consistency of approach within the ES chapter. These are presented in Table 18-19 in 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104]. The Applicant acknowledges that a cross reference to this table in the operational impact sections would be useful. In addition, impact magnitude has also been determined based on the type as well as the area of operational infrastructure that would be located within each catchment. Permanent infrastructure along the cable route would be limited to buried cable ducting, joint bays and link boxes and would have a very small footprint within each catchment (cf. Tables 18-30 and 18-31). The majority of this infrastructure would be located below ground, with only a very small proportion of the infrastructure located above ground level. The magnitude of impact resulting from this infrastructure has therefore been based on the area within each catchment alone, which the Applicant considers justifiable. There would, however, be a greater proportion of surface infrastructure located at the onshore substation site. This has been considered as a modifier to the area-based thresholds presented in Table 18-19, thereby increasing the magnitude of impact identified for the relevant receptors. The Applicant acknowledges that this has not been made clear in Paragraphs 185 and 187 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104], but notes that some explanation is provided in Tables 18-30 and 18-31 for the Intwood Stream and River Tas catchments.

			This approach was previously presented in the Preliminary Environmental Information Report and was agreed in advance with the Environment Agency as part of the consultation process prior to DCO submission.
Q1.24.1.21	Applicant	**Potential Operational Impacts - Changes to Surface and Groundwater Flows and Flood Risk** The ES [APP-104, Table 18-30 and Table 18-31] both show that for groundwater bodies (North Norfolk Chalk and Broadland Rivers Chalk and Crag) there would be minor adverse impact significance before mitigation and no impact after mitigation. f) What mitigation would be put in place, as there is no reference to this in the ES? g) Can the risk of changes to surface and groundwater flows and flood risk be completely ruled out? h) If not, can a finding of no impact be justified?	The Applicant can confirm that “no impact” is referenced in error in the magnitude of mitigation column in Tables 18-30 and 18-31 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104]. The magnitude of effect should remain “negligible” given that no specific mitigation has been identified for groundwater receptors, resulting in a residual impact of minor adverse significance for both groundwater receptors.
Q1.24.1.22	Applicant	**Cumulative Construction Effects – Changes to Surface and Groundwater Flows and Flood Risk** Where have the residual impacts for SEP and DEP in the ES [APP-104, Table 18-37] been derived, as they do not always match those shown in Table 18-24 and Table 18-25? Confirm which are correct.	As stated in the response to Q1.24.1.19, the Applicant can confirm that the magnitude following mitigation and residual impact significance set out in Tables 18-24 and 18-25 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104] has been stated as “no impact” in error and should instead be “negligible”. This results in a residual impact of negligible significance for the coastal catchment and Spring Beck, and minor adverse significance for all other surface and groundwater receptors.

Q1.24.2 Effects on Water Resources and Water Quality, including Measures to Prevent Pollution of Aquifers

Q1.24.2.1	Applicant Environment Agency	**Magic Maps** With reference to Paragraphs 70 and 81 of ES [APP-104], can the magic maps (or the data/ or a polygon on a map matching that of the magic map) be submitted to the Examination to give a visual representation of what is being described here?	The Applicant refers to the image below which provides a visual representation of the Drinking Water Protected Areas described in paragraph 70 . Image (c) Crown Copyright and database rights 2023. Ordnance Survey 100022861. The Applicant also refers to the image below which provides a visual representation of the Groundwater Vulnerability mapping described in paragraph 81.



Q1.24.2.2	Applicant	**Potential Construction Impacts - Increased Sediment Supply and Supply of Contaminants to Surface and Groundwaters** Is basing the magnitude of effect in the ES [APP-104, Table 18-19] solely on the area of exposed ground per catchment during construction justified, how were the thresholds derived and what other matters could factor into such considerations?	There is no established guidance relating to the assessment of the impacts of construction of major infrastructure projects on water receptors. As explained in Section 18.6.1.2 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104], impacts relating to the supply of fine sediment have been assessed on the basis of the spatial extent of construction activities (expressed in real terms and as a proportion of the catchment area for each receptor in Table 18-18). This was selected because the spatial extent of construction activities provides an easily quantified proxy for the level of risk associated with those activities. The proportion of catchment disturbed was compared to the thresholds presented in Table 18-19 of ES Chapter 18 Water Resources and Flood Risk [APP-104] in order to determine the magnitude of effect for each receptor. These were developed using the judgement of an experienced Chartered Geomorphologist to provide a semi-quantitative means of ensuring consistency of approach within the ES chapter. These thresholds were previously presented in the Preliminary Environmental Information Report and were agreed in advance with the Environment Agency as part of the consultation process prior to DCO submission. The Applicant recognises that the approach described above is relatively simple but believes that it provides a robust indication of the likely magnitude of effect that is more able to differentiate between the effects in different receptor catchments than purely qualitative assessment methods. The Applicant does not believe that the detailed consideration of other factors (e.g., proximity to the drainage network, erodibility of soils, local sediment characteristics) would identify a different magnitude of effect to those predicted in Section 18.6.1.2 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104].
Q1.24.2.3	Applicant	**Potential Construction Impacts – Increased Sediment Supply and Supply of Contaminants to Surface and Groundwaters** The ES [APP-104] finds that in many cases after mitigation measures are applied that the magnitude of effect alters from negligible to no impact. Can the risk of increased sediment supply and supply	The Applicant can confirm that “no impact” is referenced in Tables 18-20 and 18-21 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104] in error. The magnitude of effect following mitigation should in these cases remain “negligible”. This results in a residual impact of negligible significance for the coastal catchment, Spring Beck and Intwood Stream, and minor adverse significance for the River Glaven, River Bure, Scarrow Beck, Mermaid Stream, Blackwater Drain, River Wensum, River Tud, Swannington Beck, River Yare, River Tiffey and River Tas.

		of contaminants to surface and groundwaters be completely ruled out? If not, can a finding of no impact be justified?	
Q1.24.2.4	Applicant	**Potential Construction Impacts – Increased Sediment Supply** The residual impact findings for Swannington Beck in the ES [APP-104, Paragraphs 131 and 132] do not match those in Tables 18-20 and 18-21. Confirm which are correct.	As stated in Tables 18-20 and 18-21 of ES Chapter 18 Water Resources and Flood Risk [APP-104], the impact on Swannington Beck resulting from increased sediment supply would be negligible following mitigation. Given the high sensitivity of the water body, this would result in a minor adverse residual impact for both the in isolation and concurrent scenarios. This has been incorrectly stated in Paragraphs 131 and 132 which should read "minor adverse".
Q1.24.2.5	Applicant	**Potential Construction Impacts – Supply of Contaminants to Surface and Groundwaters** The residual impact findings for Swannington Beck in the ES [APP-104, Paragraphs 142 and 143] do not match those in Tables 18-22 and 18-23. Confirm which are correct.	As stated in Tables 18-22 and 18-23 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104], the impact on Swannington Beck resulting from the accidental release of contaminants would be negligible following mitigation. Given the high sensitivity of the water body, this would result in a minor adverse residual impact for both the in isolation and concurrent scenarios. This has been incorrectly stated in Paragraphs 142 and 143 which should read ”minor adverse”.
Q1.24.2.6	Applicant	**Potential Operational Impacts – Supply of Contaminants to Surface and Groundwater** Is basing the magnitude of effect in the assessment [APP-104] solely on the area of maximum area of permanent development in each water body catchment justified? What thresholds were used to distinguish between, high,	There is no established guidance relating to the assessment of the impacts of construction of major infrastructure projects on water receptors. As explained in Section 18.6.1.3 of ES Chapter 18 Water Resources and Flood Risk [APP-104], impacts relating to the accidental release or disturbance of contaminants have been assessed on the basis of the spatial extent of construction activities (expressed in real terms and as a proportion of the catchment area for each receptor in Table 18-18). This was selected because the spatial extent of construction activities provides an easily quantified proxy for the level of risk associated with those activities. The proportion of catchment in which ground disturbance and vehicle operations would occur was compared to the thresholds presented in Table 18-19 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104] in order to determine the magnitude of effect in each

		medium, low and negligible and how were these derived?	receptor. These were developed using the judgement of an experienced Chartered Geomorphologist to provide a semi-quantitative means of ensuring consistency of approach within the ES chapter. These thresholds were previously presented in the Preliminary Environmental Information Report and were agreed in advance with the Environment Agency as part of the consultation process prior to DCO submission. The Applicant recognises that the approach described above is relatively simple but believes that it provides a robust indication of the likely magnitude of effect that is more able to differentiate between the effects in different receptor catchments than purely qualitative assessment methods. The Applicant does not believe that the detailed consideration of other factors (e.g., proximity to the drainage network, source-pathway-receptor models for various contaminants) would identify a different magnitude of effect to those predicted in Section 18.6.1.3 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104].
Q1.24.2.7	Applicant	**Potential Operational Impacts – Supply of Contaminants to Surface and Groundwater** The ES [APP-104] finds that in many cases after mitigation measures are applied that the magnitude of effect alters from negligible to no impact. However, can the risk of increased supply of contaminants to surface and groundwaters be completely ruled out during operation at these receptors? If not, can a finding of no impact be justified?	The Applicant can confirm that “no impact” is referenced in Tables 18-22 and 18-23 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104] in error. The magnitude of effect following mitigation should in these cases remain “negligible”.
Q1.24.2.8	Applicant	**Cumulative Construction Impacts – Increased Supply of Sediment** Where have the residual impacts for SEP and DEP in the ES [APP-104, Table 18-	As stated in the response to Q1.24.2.7, the Applicant can confirm that the magnitude following mitigation and residual impact significance set out in Tables 18-20 and 18-21 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104] has been stated as “no impact” in error and should instead be “negligible”.

		35] been derived, as they do not match those shown in Table 18-20 and Table 18-21? Confirm which are correct.	
Q1.24.2.9	Applicant	**Cumulative Construction Impacts – Increased Supply of Sediment** The ES [APP-104] lists residual impacts for SEP and DEP and those for relevant projects along with mitigation measures that would be implemented for the other schemes, but it does not then always assess what the impact of the combined project would be (For example: Hornsea Project Three). Does this represent a robust assessment?	The standard industry approach is that the CIA is based on the residual effects, as identified in the assessments for other projects. The Applicant makes the reasonable assumption that all considered projects will incorporate any legal minimum requirements (for example Contractors will deploy standard pollution prevention mitigation or will adhere to legal noise limits). The Applicant believes that cumulative impacts resulting from increased sediment supply would be highly unlikely given the mitigation measures set out for both the Project and other projects such as Hornsea Project Three. This is stated in Table 18-35 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104]. The Applicant considers this approach to be robust.
Q1.24.2.10	Applicant	**Cumulative Construction Impacts – Supply of Contaminants** Where have the residual impacts for SEP and DEP in the ES [APP-104, Table 18-36] been derived, as they do not match those shown in Table 18-22 and Table 18-23? Confirm which are correct.	As stated in the response to Q1.24.2.7, the Applicant can confirm that the magnitude following mitigation and residual impact significance set out in Tables 18-22 and 18-23 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104] has been stated as “no impact” in error and should instead be “negligible”.
Q1.24.2.11	Applicant	**Cumulative Operational Impacts – Supply of Contaminants** The ES [APP-104, Paragraph 219] sets out for Hornsea Project 3 that it is considered that operational processes would have a minor adverse impact in the catchments of the River Tas and Intwood Stream which contain the substation for both Hornsea Project 3	The Applicant can confirm that the magnitude following mitigation and residual impact significance set out in Tables 18-28 and 18-29 of 6.1.18 ES Chapter 18 Water Resources and Flood Risk [APP-104] has been correctly stated as “minor adverse” and has been stated as “negligible” in Paragraph 219 in error.

		and SEP and DEP, whereas SEP and DEP residual impacts would be negligible. However, Table 18-28 and Table 18-29 identify that SEP and DEP would have a minor adverse impact on the River Tas and Intwood Stream. Confirm which is correct.	
Q1.24.2.12	Environment Agency	**Water Framework Directive** For both onshore and offshore WFD water bodies, are the EA satisfied with the Applicant's assessments and conclusions from the ES, or are there any areas of concern?	**N/A**
Q1.24.2.13		**Water Framework Directive Waters and Bentonite** With regards the ES [APP-093, Paragraph 121]: a) How have you concluded that 25m3 bentonite loss would occur, given that bentonite breakout is, in itself, an uncontrolled accident? b) How far is the HDD site from the WFD water bodies and bathing areas? c) Would the plume of any suspended bentonite be visible from, or be swept into the region of, the WFD bathing waters?	**a)** As stated in Paragraph 114 of 6.1.7 ES Chapter 7 Marine Water and Sediment Quality [APP-093], bentonite is a non-toxic natural clay material (<63µm particle diameter) that is mixed with water to create a drilling fluid. Bentonite is included in the List of Notified Chemicals approved for use and discharge into the marine environment and is classified as a Group E substance under the Offshore Chemical Notification Scheme. This means that it is "readily biodegradable and non-bioaccumulative" and unlikely to cause environmental harm. Bentonite is also included on the OSPAR List of Substances Used and Discharged Offshore which are considered to Pose Little or No Risk to the Environment (PLONOR). Table 7.2 of 6.1.7 ES Chapter 7 Marine Water and Sediment Quality [APP-093] states that, as a worst case, up to 25m^2 of bentonite (derived from two HDD ducts) could be discharged into the sea during punchout at the exit point. As the drilling head breaks through the seabed a volume of bentonite will be discharged and as reaming operations continue further, drilling fluid losses will be encountered. These additional losses shall be determined during detailed design once ground conditions, reaming times, and downhole tooling specifications are known. **b)**

			Paragraph 58 of 6.1.7 ES Chapter 7 Marine Water and Sediment Quality [APP-093] states that the WFD bathing waters in closest proximity to the offshore cable corridor are Sheringham and West Runton, 4.6km and 7.7km from the proposed offshore export cable corridor respectively. **c)** Paragraph 117 of 6.1.7 ES Chapter 7 Marine Water and Sediment Quality [APP-093] reports the results of sediment transport modelling, which suggests that clay-sized material could potentially be visible at the Sheringham and West Runton bathing waters. However, the worst-case sediment plume would disperse within a single tidal cycle (i.e., a day). Concentrations of suspended sediment in the plume would be up to a maximum of 20mg/l, which is within the natural variation that is expected in coastal waters. On the basis of this information, the Applicant concludes that if unplanned bentonite loss did occur, the resulting sediment plume would not contain any toxic substances and would only be visible at the nearest bathing waters for a maximum of a day. This is not considered to be a significant impact.
Q1.24.2.14	Applicant	**Marine Disposal Site** Figure 1 of the Disposal Site Characterisation Report [APP-300] identifies those materials 'won' from the installation process would be disposed of within the confines of the respective OWF construction locations. In the ES [APP-089, Paragraph 23], there is reference to the Cromer Knoll area (and shallow areas) being excluded from the boundary of the DEP North site. How would disposal (and associated plumes of material being carried as suspended sediment) affect these excluded areas?	The disposal and associated suspended sediment plumes would have little impact on the excluded areas. ES Chapter 6 Marine Geology, Oceanography and Physical Processes [APP-092] predicts that although the footprint of silt deposition would extend over a wide area, it would be at an undetectable thickness. Even under slack water conditions, the maximum rate of deposition would be less than 0.8mm in the areas of greatest deposition, and in the footprint across the excluded areas (further away from the deposition centre location), the rate would be far less. This result is anticipated as the deposited fines will be re-suspended on each tide, with no measurable sediment left in place.
Q1.24.2.15	Applicant	**Source Protection Zone 2**	Paragraph, 83 of APP-104 ES Chapter 18 Water Resources and Flood Risk states '*In addition to the Principal Aquifer underlying the project area, there are also Groundwater Source*

		There is a written commitment in the ES [APP-104, Paragraph 83] that there will not be any intrusive works within SPZ2. Signpost where this specific measure is provided for in the dDCO and its suite of management plans.	*Protection Zones (SPZs) (Figure 18.4). These zones show the risk of contamination from any activities that might cause pollution in the area, with a lesser distance causing greater risk. There are therefore three main zones, the inner zone (Zone 1), the outer zone (Zone 2) and the total catchment (Zone 3). Through the site selection process, Zones 1 and 2 have been avoided by the onshore cable corridor and substation (and operational access), although the majority of the onshore cable corridor passes through Zone 3. There is a very small area where construction access for the substation site overlaps with Zone 2, however no intrusive works will happen within this zone*'. This small overlap covers an area of the proposed onshore substation temporary construction access road where it leaves the A140 Ipswich Road (illustrated on ES Figure 18.4 Groundwater Receptors, Sheet 6 of 6 [APP-129]). Works here will be limited to a maximum depth of 600mm below the ground surface to assist in minor road widening, making the ground suitable for construction traffic use. The Outline Code of Construction Practice (Revision B) [document reference 9.17] is secured in the draft DCO (Revision C) [document reference 3.1] by Requirement 19. Paragraph 115, bullets 1 and 3 state: *'To prevent deterioration in water body status, the following groundwater control measures will be implemented during construction phase:* • *Use of best practice techniques and due diligence regarding the potential for pollution throughout all construction, operation and maintenance, and decommissioning activities. This provides a robust approach to managing pollution incidents on site to reduce the probability and impact of leaks and spills'; and* *A written scheme dealing with contamination of any land and groundwater will be submitted and approved by the Local Planning Authority before construction activities commence.*
Q1.24.2.16	Norfolk Rivers Internal Drainage Board	**Area of Authority** Within your RR [RR-067] it is identified that the Proposed Development partially falls within an area of your jurisdiction. By way of a map or diagram, please set out where NRIDB's authority extends to and,	**N/A**

		by way of annotation, which watercourses are within the body's jurisdiction.	
Q1.24.2.17	Applicant Interested Parties	**Private Water Supplies** Is it justified to address impacts on private water supplies post-consent? If so and further, how is this secured in the dDCO?	Paragraph 84 of ES Chapter 18 Water Resources and Flood Risk [APP-104] notes that data provided by the Environment Agency indicates that there are 94 groundwater abstractions that provide a private domestic water supply, and a further 39 deregulated groundwater abstractions (i.e., with abstraction volumes below the threshold for an abstraction licence) that are used to provide a water supply for general agriculture. These are shown on Figure 20.4 of 6.2.18 ES Chapter 18 Water Resources and Flood Risk Figures [APP-129]. Paragraphs 136 and 163 of ES Chapter 18 Water Resources and Flood Risk [APP-104] note that accidental contamination during construction and operation could potentially affect the water quality of unlicensed groundwater abstractions but does not identify any significant impacts on the basis of the mitigation to protect surface and groundwater quality set out in Sections 18.6.1.3.7 and 18.6.2.1.5 and secured through Sections 3.9 and 6 of the Outline Code of Construction Practice (Revision B) [document reference 9.17], which is secured through Requirement 19 of the draft DCO (Revision C) [document reference 3.1]. Specific measures to mitigate potential effects on private water supplies will be identified post-consent, given that appropriate ground investigation data used to inform the detailed design process was not available at the time of DCO submission. The Applicant is confident that suitable mitigation measures can be agreed with relevant water supply owners during the detailed design process.
Q1.24.2.18	Applicant	**Drinking Water Protected Areas** The ES [APP-104, Paragraph 70] notes that the onshore cable corridor passes through a surface water DWPA towards its southern extent. DWPAs are designated under the WFD where raw water is extracted from rivers and reservoirs and therefore requires additional protection to ensure it is not	The mitigation measures presented in Sections 18.6.1.2.5 and 18.6.1.3.7 of ES Chapter 18 Water Resources and Flood Risk [APP-104] and secured through the Outline Code of Construction Practice (Revision B) [document reference 9.17] and Requirement 19 of the dDCO (Revision C) [document reference 3.1] have been developed to prevent significant adverse impacts on surface and groundwater quality during the construction phase. Similarly, Section 18.6.2.1.5 of ES Chapter 18 Water Resources and Flood Risk [APP-104] sets out a series of mitigation measures to prevent significant adverse impacts on surface and groundwater quality during the operational phase.

		polluted. What has been done to ensure this?	The Applicant believes that these measures are sufficient to protect water quality in the DWPA and does not consider that any additional measures are required.
Effects on Rivers, Streams, Canals and Ditches from Proposed Construction Methods and Crossing			
Q1.24.3.1	Environment Agency Norfolk County Council	**Watercourse Crossings** Comment on whether the proposed watercourse avoidance measures, as set out in the FRA [AS-014, Paragraph 158], provide sufficient security for those watercourses and the hydrological systems that feed into them.	**N/A**
Q1.24.3.2	Environment Agency	**River Crossings and HDD** The Applicant proposes to cross all major rivers using HDD, stating entry and exit pits will be at least 9m away from riverbanks and the cable depth will be 2m below the channel of each river. d) Are the dimensions from the Applicant sufficient to avoid direct impacts on the watercourses? e) Are the dimensions from the Applicant sufficient to avoid indirect impacts on the watercourses? f) Given the potential for water run-off and the spread of contaminants from a HDD works compound (75m x 75m), should a greater margin than 9m from a riverbank be sought?	**N/A**

Q1.24.3.3	Applicant	**Soil Storage** With reference to the ES [APP-104, Paragraph 140], would soil/ spoil storage also be a minimum of 10m back from any watercourse to avoid potential contamination or excess sediment discharge?	The Applicant notes that Paragraph 64 of the Outline Code of Construction Practice [APP-302] indicates that spoil will not be stored in the functional floodplain (Flood Zones 3b), directly on watercourse banks and, where possible, will be set back from watercourses by 5m. This will prevent excessive loading and minimise the risk of stored material entering the watercourse. This will be updated in the Outline Code of Construction Practice (Revision B) (at Deadline 1) to 9m set back from watercourses in line with the permitting requirement for EA/IDB. Paragraph 112 the Outline Code of Construction Practice (Revision B) [document reference 9.17] also states '*A Construction Surface Water Drainage Plan will be developed, as part of the CoCP, and agreed with the relevant regulators and implemented to minimise water within the cable trench and other working areas and ensure ongoing drainage of surrounding land. This typically includes interceptor drainage ditches being temporarily installed parallel to the trenches and soil storage areas to provide interception of surface water runoff and the use of pumps to remove water from the trenches during cable installation'*.
Q1.24.3.4	Environment Agency Norfolk County Council	**Ordinary Watercourses** With reference to the ES [APP-104, Paragraphs 104-106], given the extremes of climate that are being experienced, when would the temporary damming of watercourses be scheduled in the construction programme to have the least impact?	Noted.
Q1.24.4 Effectiveness of Mitigation Measures			
Q1.24.4.1	Applicant	**Watercourse Consents** The FRA [AS-014, Paragraph 69] sets out that all necessary applications for watercourse consents will be made to and agreed with the appropriate authority post-DCO consent. Where is this secured in the dDCO?	The draft DCO (Revision C) [document reference 3.1] sets out in Part 2 Section 6 Disapplication and modification of legislative provisions that permitting and consents required under the Land Drainage 1991 and the Environmental Permitting (England and Wales) Regulations 2016 will be disapplied as part of the DCO. The Applicant is in discussions with the Environment Agency, Norfolk County Council, in its capacity as the LLFA, and the Water Management Alliance on behalf of the relevant Internal Drainage Boards with regards to confirming their consent to the disapplication of the relevant provisions and with regards to securing appropriate protective provisions which will govern the process for securing the

			relevant watercourse consents. In addition, the Applicant notes that under Requirement 19 of the draft DCO (Revision C) [document reference 3.1] the Code of Construction Practice needs to be approved with the relevant Planning Authorities, following consultation with key stakeholders. Paragraph 97 of the Outline Code of Construction Practice (Revision B) [document reference 9.17] confirms that the Applicant has committed to develop a scheme and programme for each watercourse crossing, diversion and reinstatement, which will include site-specific details. This scheme will be submitted, as part of the final Code of Construction Practice, to the relevant planning authority. This will inform the environmental permitting process.
Q1.24.4.2	Applicant	**Perched Groundwater Mitigation** The FRA [AS-014, Paragraph 173] sets out that the risk to the onshore export cables from perched groundwater, if encountered, would need to be mitigated by appropriate construction techniques and in accordance with an appropriate method statement to ensure Health and Safety and Environmental Permitting requirements are satisfied. Is this fully reflected in the OCoCP [APP-302]?	Paragraph 109 of Outline Code of Construction Practice (Revision B) [document reference 9.17] provides details of the proposed mitigation for managing perched waters; these will be collected within a tank or lagoon and either discharged to a foul sewer or discharged to surface water under an Environmental Permit. The final Code of Construction Practice will include Construction Method Statements identifying the approach to be adopted with regards to the above. This will be secured under Requirement 19 of the draft DCO (Revision C) [document reference 3.1].
Q1.24.4.3	Applicant	**Trenched Crossing Mitigation** The FRA [AS-014, Paragraph 194] notes that *"Where the onshore cable corridor crosses the Ordinary Watercourses, these will be crossed using trenched techniques in some instances. The risk to the onshore export cables will be mitigated by appropriate construction techniques and in accordance with an appropriate method statement to ensure Health and Safety and Environmental*	Paragraphs 111 and 112 of Outline Code of Construction Practice (Revision B) [document reference 9.17] provide details of the measures that would be in place to minimise the effects of trenched watercourse crossings and temporary access arrangements. This includes the following commitments that will prevent an increase in flood risk: • Ensure that any pumps, flumes, pipes or diversion channels are appropriately sized to maintain flows downstream of temporary dams whilst minimising upstream impoundment. • Ensure that any temporary culverts would be adequately sized to avoid impounding flows, including an allowance for potential increases in winter flows as a result of projected climate change.

		Permitting requirements are satisfied". Is this fully reflected in the OCoCP [APP-302]?	Furthermore, it is noted that Section 2.2 Health and Safety Principles of Outline Code of Construction Practice (Revision B) [document reference 9.17] acknowledges the role of the Applicant, with regard to its responsibilities under Health & Safety legislation, including but not limited to the Construction (Design and Management) (CDM) Regulations 2015. Further details on the principles within which the Construction Method Statements will be developed are provided in Section 2.3.1 of the same document. Paragraph 104, bullet point 2, of the Outline Code of Construction Practice (Revision B) [document reference 9.17] notes that requirements with regard to surface water runoff discharge rates would be confirmed in consultation with the relevant authorities. With regard to additional permitting requirements, Paragraph 103 of the Outline Code of Construction Practice (Revision B) [document reference 9.17] confirms that the Applicant has committed to develop a scheme and programme for each watercourse crossing, diversion and reinstatement, which will include site-specific details. This scheme will be submitted, as part of the final Code of Construction Practice, to the relevant planning authority, following consultation with key stakeholders. This will inform the environmental permitting process. See also the response to Q1.24.4.1.
Q1.24.4.4	Applicant	**Ground Levels** The FRA [AS-014, Paragraph 210] sets out that *"The land will be reinstated, and existing ground levels will be maintained. Mitigation during construction is discussed in Section 18.2.8 in relation to both surface water and Ordinary Watercourses"*. Is this fully reflected in the OCoCP [APP-302]?	Paragraph 95 of the Outline Code of Construction Practice (Revision B) [document reference 9.17] notes that land would be reinstated to its pre-construction condition as soon as reasonably possible following onshore cable installation. Furthermore, Paragraphs 116 and 120 of the Outline Code of Construction Practice (Revision B) [document reference 9.17] note that existing land drains along the onshore cable route and at the Onshore Substation will be reinstated following construction. A local specialist drainage contractor will undertake surveys to locate drains and create drawings both pre- and post-construction and ensure appropriate reinstatement. The Construction Surface Water Drainage Plan will include provisions to minimise water within the working area and ensure ongoing drainage of surrounding land. This will be secured under Requirement 19 of the draft DCO (Revision C) [document reference 3.1].
Q1.24.4.5	Applicant	**Substation Site** The FRA [AS-014, Paragraph 328] recommends that any permanent or	The Applicant notes that details of the design are secured under Requirement 10 of the draft DCO (Revision C) [document reference 3.1], including the access road at the Onshore Substation.

		temporary access routes, welfare and ancillary infrastructure associated with the onshore substation should be located away from the area of increased surface water flood risk near the northern boundary of the site, where reasonably practical, or designed in such a way so as not to interfere with the area at increased flood risk, to ensure the risk of flooding is minimised and flow conveyance is not inhibited. Where are such measures secured in the dDCO?	The Applicant also notes that control measures during the construction phase, including surface water drainage, are summarised in Section 6.1 of the Outline Code of Construction Practice (Revision B) [document reference 9.17]. The Code of Construction Practice is secured under Requirement 19 of the draft DCO (Revision C) [document reference 3.1].
Q1.24.4.6	Applicant	**Substation Site and Overland Flow Pathway** In relation to the Substation Site, the FRA [AS-014, Paragraph 329] states *"Alteration of ground levels within the overland flow pathway should be avoided, where possible. However, further information relating to ground levels will be obtained as part of more detailed site investigations, which will inform the development of appropriate mitigation measures. This will be secured within the Outline Code of Construction Practice (Document reference 9.17)'. In addition, it is also stated at Paragraph 333 that: 'Further mitigation measures related to the access road will be required to ensure the development does not increase surface water runoff or exacerbate the flood risk associated with the overland flow pathway. This will be*	The Applicant notes that details of the design at the Onshore Substation, including the access road, are secured under Requirement 10 of the draft DCO (Revision C) [document reference 3.1]. Additionally, control measures related to drainage from the construction phase are summarised in Section 6.1 of the Outline Code of Construction Practice (Revision B) [document reference 9.17], which will be secured under Requirement 19 of the draft DCO (Revision C) [document reference 3.1]. Furthermore, for the operational phase the details of the surface water drainage will be set out in the Operational Drainage Plan which is secured under Requirement 17 of the draft DCO (Revision C) [document reference 3.1]. The Applicant notes that consideration of the potential change in surface water flood risk, at the Onshore Substation and access road, has been subject to hydraulic modelling. Further information on the surface water flood risk both to and from the Onshore Substation, including the access road, is provided in Annex 18.2.2: Onshore Substation Hydraulic Modelling Report (Revision B) [document reference 6.3.18.2.2], to be submitted at Deadline 2.

		secured within the Outline Code of Construction Practice (Document reference 9.17) and Outline Operational Drainage Plan (Document reference 9.20)". Identify where in these documents such measures are secured.	
Q1.24.4.7	Applicant	**Landfall Compound** The FRA [AS-014, Paragraph 342] sets out that *"In the event of a tidal flood being forecast, mitigation measures will need to be put in place to ensure that materials remain confined to the compound and portable offices, welfare facilities and storage are secured, to prevent and minimise damages from flood waters. This will be secured within the Outline Code of Construction Practice (Document reference 9.17)"*. Where are such measures secured in the OCoCP [APP-302]?	The Applicant notes that whilst the Landfall Compound is not explicitly discussed in the Outline Code of Construction Practice (Revision B) [document reference 9.17], the control measures set out therein are applicable to all working areas of the Project and therefore this includes the Landfall Compound. This includes the measures set out in Section 6.1.8 Flood Warning and Evacuation. The final Code of Construction Practice will be updated to provide greater clarification in relation to the inclusion of the Landfall Compound. This will be secured under Requirement 19 of the draft DCO (Revision C) [document reference 3.1].
Q1.24.4.8	Applicant Environment Agency Norfolk County Council	**Site-Specific Investigations at Crossings** The FRA [AS-014, Paragraph 410] identifies that site-specific investigations will be carried out and crossing methodologies produced at detailed design stage to identify the local ground and groundwater conditions, enable a site-specific hydrogeological risk assessment to be undertaken and to understand the potential impact of any	The commitment to undertake a site-specific hydrogeological risk assessment at each trenchless crossing location is stated in Paragraphs 110 and 121 of Outline Code of Construction Practice (Revision B) [document reference 9.17] which is secured under Requirement 19 of the draft DCO (Revision C)[document reference 3.1]. The Applicant considers that, given the requirement for appropriate ground investigation data to inform the hydrogeological risk assessments (obtained through intrusive surveys), it is appropriate to undertake these assessments once consent has been secured. The Applicant is confident that suitable mitigation measures can be identified to avoid impacts on watercourses or flood risk during the detailed design process.

		works on flows along the watercourse and flood risk in the local area. Is it appropriate to undertake these post-consent and where are these measures secured in the OCoCP [APP-302]?	
Q1.24.4.9	Applicant	**Methodology for Temporary Construction at Crossing Points** It is set out in the FRA [AS-014, Paragraph 412] that *"The detailed methodology to be used for any temporary construction at crossing points over existing ditches and watercourses shall be agreed with the Environment Agency, Local Authority and / or Internal Drainage Board. To manage this ahead of the main works, the Principal Contractor will develop the construction drainage in consultation with the landowner and other statutory stakeholders"*. Where are such measures secured in the OCoCP [APP-302]?	Paragraphs 116 and 117 of Outline Code of Construction Practice (Revision B) [document reference 9.17] provide details of the measures that would be in place to minimise the effects of trenched watercourse crossings and temporary access arrangements during construction. This includes the following commitments that will prevent an increase in flood risk: • Ensure that any pumps, flumes, pipes or diversion channels are appropriately sized to maintain flows downstream of temporary dams whilst minimising upstream impoundment. • Ensure that any temporary culverts would be adequately sized to avoid impounding flows, including an allowance for potential increases in winter flows as a result of projected climate change. In addition, Paragraph 119 of Outline Code of Construction Practice (Revision B) [document reference 9.17] includes a commitment to produce a Construction Surface Water Drainage Plan which will set out measures to maintain existing drainage systems during construction. Although consultation is not explicitly mentioned, the Applicant can confirm that this will form an integral part of the development of the plan. The Outline Code of Construction Practice is secured under Requirement 19 of the draft DCO (Revision C) [document reference 3.1.
Q1.24.4.10	Applicant	**Operational Drainage Plan** The Outline Operational Drainage Plan [APP-307] only deals with the onshore substation. Is there a need for such a plan for the cable corridor or landfall? If not, explain why.	The Applicant notes that the Outline Operational Drainage Plan [APP-307] is being updated to reflect the confirmed approach to surface water drainage from the OnSS. This will be submitted as the Outline Operational Drainage Strategy (onshore substation) (formally referred to as the Outline Operational Drainage Plan (onshore substation)) (Revision B) [document reference 9.20], at Deadline 2. The Applicant can confirm that the Outline Operational Drainage Strategy (formally referred to as the Outline Operational Drainage Plan [APP-307]) only addresses drainage at the Onshore Substation on the basis that, following construction, this is the only element of the Project

			located above ground and therefore requiring the provision of surface water drainage during the operational phase of the Project. The Outline Operational Drainage Strategy (onshore substation) (formally referred to as the Outline Operational Drainage Plan (onshore substation)) (Revision B) [document reference 9.20] is secured via Requirement 17 of the draft DCO (Revision C) [document reference 3.1]. Drainage matters related to the construction phase are considered within the Outline Code of Construction Practice (Revision B) [document reference 9.17] which is secured by Requirement 19 of the draft DCO (Revision C) [document reference 3.1].
Q1.24.4.11	Applicant	**Structure Resilience** In the summer heatwaves, hydrology was severely affected, and land heave/ fall occurred across the nation. How would the onshore substation be future proofed against such conditions when extreme heat arises?	The Applicant will consider land instability issues during detailed design and the construction phase following Building Regulations on control to prevent the impact of ground stability (Building Regulations 2000 (Structure) Approved Document A 2004), whereby 'the building shall be constructed so that ground movement caused by': 'Swelling, shrinkage or freezing of the subsoil', 'Landslip or subsidence (other than subsidence arising from shrinkage), in so far as the risk can reasonably foreseen, will not impair the stability of any part of the building'. Details of the onshore substation will be submitted for approval by the Local Planning Authority in accordance with Requirement 10 of the draft DCO (Revision C) [document reference 3.1].

ANNEX A: Schedule of <u>all agreements, negotiations and objections</u> to the grant of Compulsory Acquisition or Temporary Possession powers for Application by Equinor New Energy Limited for an Order Granting Development Consent for the Sheringham Shoal Offshore and Dudgeon Offshore Wind Farm Extension Project

Unique reference number and status key[ii]	Name	EL reference numbers[iii]	Interest[iv]	Type of Rights relating to specified plot(s)[v]		Update on agreement, negotiations and objection, including indicative timescales
				Plots	Type of rights	
					Permanent	
					Temporary	
					Temporary with permanent rights	
					Permanent	
					Temporary	
					Temporary with permanent rights	
					Permanent	
					Temporary	
					Temporary with permanent rights	

[i] Watts, GR (1990). Transport and Road Research Laboratory (TRRL) Research Report 246 'Traffic induced vibrations by buildings'. TRRL, Berkshire. Available at [redacted]

ii Assign a unique number, in sequence, to all agreements, negotiations and objections listed in this table. Indicate the status using the Status Key. You may add more categories to the Status Key if more detailed information is available.

Status Key	
	Agreement signed
	All matters agreed, signing pending
	No objection, and negotiations ongoing
	No objection, negotiation not commenced
	Objection, but ongoing negotiation
	Objection, agreement unlikely before close of Examination
	No responses so far to correspondence from the Applicant

iii List the Examination Library (EL) reference numbers for all representations made by the party to the Examination, including Relevant Representation, Written Representation, other written submissions, oral submissions at Hearings, and appearance at Accompanied Site Inspection(s).

iv Identify the parts of the Book of Reference relating to the entry, and if the IP or AP is Category 1, 2, or 3.

v Indicates whether the Applicant is seeking compulsory acquisition or temporary possession of land/rights, or temporary possession with permanent rights. The Applicant may edit these categories, if required.