FIVE ESTUARIES
OFFSHORE WIND FARM

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10.26 APPLICANT'S COMMENTS ON DEADLINE 3 SUBMISSIONS

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In preparation of this document Five Estuaries Wind Farm Ltd has made reasonable efforts to ensure that the content is accurate, up to date and complete for purpose.

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CONTENTS

DEFINITION OF ACRONYMS

TERM	DEFINITION
AADT	Annual Average Daily Traffic
ADD	Acoustic Deterrent Devices
AEoSI	Adverse Effect on Site Integrity
AIL	Abnormal Indivisible Load
AOE	Area of Effect
CSIP	Cable Specification and Installation Plan
CTMP	Construction Traffic Management Plan
DAS	Digital Aerial Surveys
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
DMRB	Design Manual for Roads and Bridges
DWR	Deep Water Route
EA	Environment Agency
EACN	East Anglia Connection Node
ECC	Essex County Council
ECC	Export Cable Corridor
EDR	Evidence Deterrence Range
EIA	Environmental Impact Assessment
ES	Environmental Statement
EXA	Examination Authority
FEM	Finite Element Modelling
FFC	Flamborough and Filey Coast
FLCP	Fisheries Liaison and Co-existence Plan
GEATM	Guidelines on Environmental Assessment of Traffic and Movement

TERM	DEFINITION
HDD	Horizonal Directional Drilling
ICES	The International Council for the Exploration of the Sea
IEMA	Institute of Environmental Management and Assessment
IHLS	International Herring Larvae Survey
IPMP	In Principle Monitoring Plan
ISH	Issue Specific Hearing
JNCC	Joint Nature Conservation Committee
LAT	Lowest Astronomical Tide
LBBG	Lesser Black Backed Gull
LPA	Local Planning Authority
MCA	Marine and Coastguard Agency
MCAA	Marine and Coastal Access Act 2009
MCZ	Marine Conservation Zone
MDS	Maximum Design Scenario
MLS	Margate and Long Sands
MMMP	Marine Mammal Mitigation Protocol
MMO	Marine Management Organisation
MNR	Marine Noise Registry
NE	Natural England
NERC	Natural Environmental and Rural Communities Act 2006
NF	North Falls Offshore Wind Farm
NGET	National Grid Electricity Transmission
NH	National Highways
NIP	Navigation and Installation Plan
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project

TERM	DEFINITION
OCSS	Offshore Coordination Support Scheme
OTNR	Offshore Transmission Network Review
PADSS	Principal Areas of Disagreement
PAM	Passive Acoustic Monitoring
PEIR	Preliminary Environmental Impact Report
PLA	Port of London Authority
PSA	Particle Size Analysis
PTS	Permanent Threshold Shift
PVA	Population Viability Analyses
RIAA	Report to Inform Appropriate Assessment
RSA	Road Safety Audit
RSPB	The Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SCC	Suffolk County Council
SCHAONB	Suffolk Coast & Heaths Area of Outstanding Natural Beauty
SHC	Suffolk Heritage Coast
SLVIA	Seascape, Landscape and Visual Impact Assessment
SNCB	Statutory Nature Conservation Bodies
SNS	Southern North Sea
SPA	Special Protected Area
SSC	Suspended Sediment Concentration
TCPA	Town and Country Planning Act
TTS	Temporary Threshold Shifts
UWN	Under Water Noise
UXO	Unexploded Ordnance
VE	Five Estuaries Offshore Wind Farm

TERM	DEFINITION
WCS	Worst-case Scenario
WTG	Wind Turbine Generators

1. INTRODUCTION

1.1.1 As per the Rule 8 Letter [PD-009] published by the Examining Authority on 25 September 2024, comments on any submissions received at Deadline 3 are to be included with submissions for Deadline 4.

1.1.2 This document has been prepared to set out the response of Five Estuaries Offshore Wind Farm Limited ('the Applicant') to submissions made at Deadline 3 with regards to the Five Estuaries Offshore Wind Farm Project ('the Project'), application reference: EN010115.

1.1.3 The Applicant has only responded to points where it believes it would be helpful to the ExA. Rather than copying across whole documents, the Applicant has presented the relevant text or a summary of the points made in the Deadline 3 submissions and then responded to them (while being mindful of the context of those excerpts and being careful not to lose context in summaries).

1.1.4 The absence of commentary on a submission should not be taken as implication that the Applicant supports its content.

2. MARINE MANAGEMENT ORGANISATION [REP3-029]

Ref	Summary of Deadline 3 submission OR Excerpt of Deadline 3 submission	Applicant's comments
MMO01	**Fish Ecology** The MMO notes the Applicant has addressed some of the concerns raised, however the back-calculation is still not considered to be appropriate in its current form. The International Herring Larvae Survey (IHLS) data presented by the Applicant now appears to be correct in Table 2-1 of REP1-024. It should be noted that based on this, a different figure for the lowest bottom temperature has been quoted, along with a different percentage of larvae captured with a length below and above 11 millimetres (mm). In addition, the IHLS larval abundance figures have also been re-plotted in REP1-058, however no changes have been made to the presentation of the underwater noise contours (see point 1.2.4 below). The MMO notes that the Applicant has provided additional information regarding the presentation of average temperature at the maximum depth for each station. This is currently under review by the MMO, and additional comments will be provided for Deadline 4. The MMO notes the Applicant has still not clearly presented the 135 decibels (dB) behavioural impact threshold for herring as was requested in our Relevant Representation (RR-070). We note that the Applicant has presented updated figures in REP1-058, however only two of these (Figure 6.15 and 6.22) show the 135 dB noise contour. In addition, these figures still present contours in 5 dB intervals, most of which are not relevant to the assessment. The MMO requests that the original request is actioned.	The Applicant welcomes the MMO's recognition that the IHLS data presented in Table 2-1 of REP1-024 is now correct, and the acknowledgement that the inclusion of the more recent years of IHLS data (survey seasons 2012/2013-2023/2023) has subsequently led to amendments to the parameters used to inform the back-calculations (namely water temperature at maximum sampling depths, and larval lengths). The Applicant also notes that the MMO intend to provide additional feedback at Deadline 4, regarding the presentation of the average temperatures at the maximum depth for each station. Whilst the Applicant does not support the use of the 135dB SEL_{ss} threshold for the assessment of behavioural effects from underwater noise, the Applicant has presented this threshold at ES in Figures 6.22 and 6.23 in 6.2.5 Fish and Shellfish Ecology [APP-075]. Further, in response to the MMO's request in their Relevant Representation [RR-070] to present the threshold relative to the spawning heatmaps, the Applicant has presented this threshold again in Figures 8-2 and 8-4 of 6.5.6.4 Environmental Statement Annex Herring Seasonal Restriction Note [REP1-024] and in Figures 5 and 6 of 10.15 Revised International Herring Larval Survey Heat Map Figures [REP1-058] at Deadline 1. The presentation of the 135dB SEL_{ss} threshold as 5 dB increments was undertaken to reflect the range of potential behavioural responses to underwater noise stimuli, and the influence of factors such as the type of fish/shellfish, sex, age and condition, as well as other stressors to which the fish/shellfish have been exposed. The Applicant's position on the use of the 135dB SELss threshold is as set out in response to point MMO RR-77 in the Applicant's response to relevant representations – Revision B [REP1-049]. Specifically that this is an inappropriate metric to apply to noise impact assessment, the use of which for this purpose was expressly advised against by the authors of the originating paper (Hawkins et al. 2014). Notwithstanding this, the Applicant has submitted the requested revisions to Figures 8-2 and 8-4 within 6.5.6.4 Herring Seasonal Restriction Note – Revision C and to Figures 5 and 6 of 10.15 of Revised International Herring Larval Survey Heat Map Figures – Revision B, to show the 135dB SEL_{ss} threshold, without the 5dB increments. The Applicant does however maintain that it is not appropriate to present these behavioural thresholds relative to injurious and temporary threshold shifts (TTS) (Popper et al., 2014) due to the different noise metrics being presented. The injurious thresholds are therefore shown in separate figures.
MMO02	The back-calculation provided by the Applicant has not followed the instructions provided in our RR-070 and from previous meetings with the Applicant and our technical advisors and still does not represent an acceptable approach. It is important to consider the following factors when carrying out a back-calculation, including details of herring reproduction, the IHLS data itself, along with potential limitations: Key points of understanding on herring reproduction: a) The Downs herring spawning season is understood to take place from 01 November to 31 January (inclusive) (see Ellis et al., 2012). b) It is widely understood that spawning of Downs herring generally occurs earlier in the spawning season in the south in the English Channel, and later in the season further north in the Southern North Sea, as the herring migrate northwards. This is also	The Applicant welcomes the provision of this further information, this information has been drawn upon where appropriate in a revised 6.5.6.4 Herring Seasonal Restriction Note – Revision C submitted with Deadline 4. The Applicant also confirms that a revised 6.5.6.4 Herring Seasonal Restriction Note – Revision C has been submitted to the Planning Inspectorate at Deadline 4, within which further back-calculation scenarios have been undertaken in accordance with the MMO's recommendations for clarity. Nonetheless the Applicant stands by its approach and the peak spawning period that results in a timing restriction from 25th November to 3rd January. The reasons for this are expanded upon in responses to MMO03, 08, 09 and 10.

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	supported by IHLS data (see Cushing & Bridger, 1966, and Burd, 1978). c) Herring do not arrive at their spawning grounds as one big shoal at the same time, but in 'waves' (Lambert, 1987), spawning across areas of suitable spawning habitat (gravel/coarse substrate). d) The eggs develop for a period of days before hatching. The time taken for eggs to develop is dependent on sea bottom temperatures (see Russell, 1976). e) Larvae hatch with yolk-sacs attached which contain nutrients stored in the sac for survival. The newly hatched larvae remain on or close to seabed until their yolk-sacs are absorbed. The time taken for the yolk-sacs to be absorbed is also dependent on sea bottom temperatures (see Russell, 1976). f) When the yolk-sacs have been absorbed, the larvae drift away from the spawning grounds.	
MMO03	Key points of understanding on the IHLS: a) The IHLS is conducted every year across North Sea spawning grounds. The equipment used is a Gulf VII plankton sampler which is towed through the water and samples to a depth of approximately 5 metres (m) above the seabed. b) It is important to note that it does not touch the seabed so does not sample eggs, but 'newly hatched larvae'. c) The International Council for the Exploration of the Sea (ICES) which conducts the IHLS classifies 'newly hatched larvae' as those d) The timing of the IHLS is targeted to the 'peak' of when the herring larvae will be most abundant. The Southern North Sea and eastern English Channel (SNS) IHLS (Downs herring) survey was originally comprised of three separate surveys conducted as three separate sampling events; one in the 3rd quarter of each year undertaken by the Netherlands between 16-31 December, and two in the 1st quarter of each year; between 1-15 January undertaken by Germany, and between 16-31 January undertaken by the Netherlands. However, it should be noted that in 2018, the SNS IHLS survey which took place between 16-31 January by the Netherlands was discontinued. e) Hence, when attempting to determine the 'peak' of herring spawning activity, we can use IHLS data to establish the period when the newly hatched larvae are most abundant and work	The Applicant welcomes the provision of this further information, this information has been drawn upon where appropriate in a revised 6.5.6.4 Herring Seasonal Restriction Note – Revision C submitted with Deadline 4. The Applicant notes the ICES' 2024 advice for herring and agrees that precaution should be applied when defining a piling restriction for spawning herring considering the current status of the spawning population. The Applicant therefore reiterates the levels of precaution already implemented into the definition of the peak herring spawning period, and therefore the piling restriction. These include: > The consideration of a four hatch sizes, from 5mm (the most conservative hatch size to determine the start date) to 11mm (the most conservative hatch size to determine the end date) as informed IHLS survey data; > The inclusion of a 7-day yolk absorption period (based on a study in lower water temperatures) and slower growth rate (0.34 mm d^{-1}); > The inclusion of the yolk absorption period separately to the duration required for larvae to grow to catch length, when in the fact that larvae will be growing during the yolk absorption phase rather than growing and yolk absorption being sequential processes (this results in a degree of double counting); and > The use of the earliest spawning start date and latest spawning end date across all eight back calculation scenarios, extending the seasonal restriction period from 10 days to 39 days.

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	backwards from this to establish the period prior to this when spawning would have been most prolific, and the majority of eggs would have been laid. f) Taking this approach requires an element of conservatism, especially given ICES latest advice on North Sea autumn spawning herring: ICES' 2024 advice for herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners (North Sea, Skagerrak and Kattegat, and eastern English Channel) notes that a continuous decline in the spawning population of North Sea herring has been observed over recent years. Given their concerns, ICES has proposed a reduction in the fishing quota of 22.5% for North Sea herring (to 412,383 tons in 2025). ICES further advises that no activities that might have a negative impact on the spawning habitat of herring (e.g., extraction of gravel and offshore renewable energy) should occur unless the effects of these activities have been assessed and shown to be non- detrimental. At present, ICES is not fully able to quantify the level and relative impact of cumulative non-fisheries anthropogenic factors on the reproductive capacity of the stock. However, the recommendation highlights the important link between habitat protection and population recovery ICES, 2024).	
MMO04	Limitations to be considered when performing a back-calculation: a) See points 1.2.6a and 1.2.6b - whilst a peak in spawning can be established, it can be expected that some spawning may occur at any time between 01 November and 31 January. b) See points 1.2.6d and 1.2.6e – egg development and yolk-sac absorption are temperature dependent. Sea bottom temperature data used in the back-calculation is taken from previous years' IHLS surveys so may not necessarily represent sea bottom temperatures for future years.	The Applicant welcomes the provision of this further information, this information has been drawn upon where appropriate in a revised 6.5.6.4 Herring Seasonal Restriction Note – Revision C submitted with Deadline 4.
MMO05	Some aspects of the back-calculation have been correctly implemented, although the choice of the yolk absorption and egg development period along with growth rate are not correct (see points 1.2.4 and 1.2.5). Some of this stems from not using the correct bottom temperature.	The Applicant's responses below to references MMO08 to MMO10 address this issue.
MMO06	Using the IHLS survey data presented in Figures 2.1 and 2.2 of REP1-024, the Applicant has identified that the peak herring larval abundance occurs during the January surveys when compared to the December survey. The Applicant has then selected the earliest survey date in January of the 3rd, which is an appropriate approach. The continued use of a 5 mm and 11 mm length for hatch and catch length used in the previous back-calculation remain appropriate. All the other factors used	The Applicant welcomes the MMO's agreement on the hatch and catch lengths used to inform the back calculation scenarios. Further the Applicant welcomes the MMO's support in the use of the earliest survey date of the January surveys, the Applicant however would like to reiterate that the use of the of the earliest survey start date and latest survey end dates across all four hatch sizes (and eighty back calculation scenarios) is a highly precautionary approach, which extends the seasonal restriction period from 10 days to 39 days.

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	are inconsistent with those recommended in our relevant representation and meetings with our technical advisors.	With regard to the other factors informed by the sea bottom temperature, the Applicant directs the MMO to the Applicant's responses to references MMO08 to MMO10 where these are discussed further.
MMO07	The MMO notes the Applicant has not presented the IHLS larval abundance data for each day of the survey, which can potentially be used to allow further refinements to the end date of the temporal restriction. The 3rd of January has been chosen as the start date for the back-calculation as this is the earliest survey date in the two January IHLS surveys. This is an appropriate approach, however identifying peak larval abundance to a specific day may allow further refinement of the end date of the restriction (please see point 1.2.19 for further details). It should be noted that the non-complete overlap between survey dates interannually would have to be taken into account.	The Applicant confirms that due consideration has been given to the peak larval abundances recorded on each day of the January surveys undertaken by Germany and the Netherlands, this has been presented in a revised 6.5.6.4 Herring Seasonal Restriction Note – Revision C submitted with Deadline 4.
MMO08	It was requested in our RR-070 that the Applicant use the minimum temperature in the calculation to ensure that there is no scope for underestimating the time from peak spawning. The Applicant however has again used the average temperature of 8.3°C when the minimum bottom temperature recorded was 5.5°C. The MMO asks that this is corrected.	The Applicant maintains their position that it is not appropriate to use the lowest temperature recorded in the southern North Sea across a 12-year period. As evident in Figures 6-1 to 6-10 of 6.5.6.4 Environmental Statement Annex Herring Seasonal Restriction Note – Revision B [REP1-024], lower water temperatures are only apparent outside of any herring larval hotspots. Herring larval hotspots appear to correlate with areas of warmer waters, with the lowest temperature recorded in the hotspots in any year being approximately 10 °C and higher. The purpose of the back-calculation is to define the duration of peak spawning of the Downs herring stock, to use a water temperature, that is only associated with areas of very low intensity herring spawning, is not appropriate to inform the back calculations to define the peak spawning duration of the Downs stock. Further, taking into account the increasing seas temperatures in the North Sea (and globally) as a result of climate change, it is therefore not appropriate to use the lowest temperature recorded in the IHLS surveys to represent sea bottom temperatures for future years. Notwithstanding this, the Applicant has undertaken further back-calculation scenarios, using this overly precautionary variable, and has presented the outputs in a revised 6.5.6.4 Herring Seasonal Restriction Note – Revision C submitted with Deadline 4. Despite presenting this scenario, the Applicant maintains their position, that this scenario as recommended by the MMO, does not define the peak herring spawning period, as it is based on an unrepresentative temperature of 5.5°C, which does not reflect the environmental conditions within which Downs herring spawn.
MMO09	Although the Applicant has used the correct source to identify the egg development period (Russell 1976), the minimum temperature has not been used to identify the correct period (see point 1.2.13). Based on the use of an 8.3°C 'average' temperature, the Applicant has again used a 14-day egg development period. However, based on the minimum 5.5°C temperature recorded, a more conservative egg development period would be 18 days (see Table 1 below, which was also presented in RR-070).	The Applicant's responses above to reference MMO08 address this issue.
MMO10	The MMO notes the yolk absorption duration and growth rate has not been adjusted from the previous back-calculation and therefore this remains inappropriate. As stated in our RR-070, Kiorboe et al., (1985) and Geffen (2002) have been used to inform the yolk absorption period and Oeberst et al. (2009) has been used to inform the growth rate. It should be noted that these studies use herring from the west coast of Scotland (the Clyde stock), Baltic and Limfjord, Denmark (the Dogger	The Applicant responded to this point at Deadline 1 within 10.4 Applicant's response to Relevant Representations [REP1-049], see responses to MMO-RR85, MMO-RR86, MMO-RR88 and MMO-RR89.

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	stock). None of these herring stocks exhibit the same spawning period as the Downs stock (November – January). A comparison of growth rates between stocks which have different spawning characteristics and may be physiologically different is not appropriate. The Applicant should use the yolk absorption periods from Russell (1976) and the growth rates from Heath (1993) which focus on the Downs stock and are therefore appropriate sources.	
MMO11	It should be noted that for the yolk absorption period, 5.5°C (the minimum temperature recorded) is lower that any temperature recorded in Russell, (1976) (see Table 1). Therefore, it is appropriate to use the lowest temperature referenced (10.3°C) and the longest absorption period of 20 days. Regarding the correct growth rate to use from Heath, (1993), despite a range of 0.2–0.3mm d-1 being stated, 0.25 mm d-1 is the rate used by Heath, (1993) and represents a midpoint in the range.	The Applicant's responses above to reference MMO10 address this issue.
MMO12	The MMO is conscious of the ongoing lack of agreement, so in an effort to reach a resolution we have briefly outlined an acceptable approach to determining the 'peak' of herring spawning for the Downs population using a back-calculation approach and have provided an example of workings (see Table 3). Based on the back-calculation presented in Table 3, the start of the peak spawning period can be estimated to be 02 November. The parameters used in Table 1 are considered sufficiently conservative, but not overly conservative, especially given the current state of the stock and ICES' latest advice (see points 1.2.7f & 1.2.8).	The Applicant's responses above to reference MMO8 and MMO3 address this issue.
MMO13	It should be noted that a back-calculation to identify the end of peak spawning as attempted by the Applicant is not an appropriate approach, as eggs and larvae remain sensitive to the impacts of underwater noise (UWN) (Popper et al., 2014). As already discussed in points 1.2.6 d & e and 1.2.7 a & c, the larvae caught in the IHLS are still associated with seabed habitat. This approach was discussed with the Applicant in a meeting dated 08 August 2024. The Applicant will need to interrogate 10 years of IHLS data to identify the end of peak larval abundance. This should allow a determination of the full extent of the egg laying dates in the Southern North Sea spawning ground. This approach should consider the discontinuation of the IHLS survey between 16-31 January by the Netherlands (see point 1.2.7d). As stated in point 1.2.12, it may be possible to refine the end date of the restriction by identifying peak larval densities on a 'per day' basis in order to ascertain if there is a trend for when larval abundance decreases. The MMO highlights that this is a standard request across all offshore wind farms that require seasonal restrictions and should be provided to ensure the seasonal restriction is appropriate.	The Applicant acknowledges that eggs and larvae remain sensitive to underwater noise, however the Applicant would like to raise the following points: > As evidenced by 10 full years of IHLS data (across a 12-year period), areas of high densities of herring eggs and larvae for the Downs herring stock occur consistently in the English Channel. The presence of eggs and larvae within the array areas of VE and across the wider southern North Sea are comparatively much lower. Therefore, there is no evidence that high intensity spawning is occurring in the vicinity of the Proposed Development. The Applicant has already taken a highly precautionary approach in proposing a piling restriction during the Downs stock spawning period, to mitigate against the potential for impacts from piling on spawning herring (albeit of low intensity). > As eggs and larvae lack swim bladders, or the connection between the swim bladder and the inner ear has not yet formed at this stage, they are considered to be less sensitive to underwater noise than spawning adult herring. The impact ranges, using the mortality and potential mortal injury threshold for eggs and larvae (210 dB SEL_{cum}) (as defined by Popper et al., 2014) are presented relative to larvae densities (based on the IHLS data) in Figures 1 to 4 of 10.15 Revised International Herring Larval Survey Heat Map Figures. – Revision B. As evident in the figures, impacts from underwater noise on eggs and larvae are localised to the source, and have no overlaps with any areas of moderate to high densities of herring larvae. Therefore, considering the localised nature of the impacts, and the consistency low densities of herring larvae within the vicinity of the Proposed Development, impacts from underwater noise on herring eggs and larvae will not have a population level effect on Downs stock herring. > Lastly, as stated by the MMO in reference MMO02, the herring larvae drift away from the spawning grounds, once their yolk sacs have been absorbed. As detailed in 6.5.2.1 Physical Processes Baseline Technical Report [APP-099], the direction of net sediment transport is predominantly from north to south, mainly as the result of tidal asymmetry (currents are relatively stronger and/or more prolonged on the southerly flowing tide),

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		larvae are therefore assumed to drift in a southerly direction, away from the Proposed Development, further reducing their potential exposure to underwater noise. Taking into consideration the above points, the Applicant reaffirms, that the focus of the piling restriction should be to mitigate against impacts from underwater noise on spawning adult herring (as these are the sensitive receptors), and not eggs and larvae. Further, the Applicant would like to highlight, that 10 full years of IHLS data (across a 12-year period) have been integrated to define the start and end dates of the peak spawning period for Downs stock herring by identifying peak larval densities on a 'per day' basis, this is detailed in a revised Herring Seasonal Restriction Note – Revision C submitted with Deadline 4.
MMO14	The MMO notes the Applicant has provided comments regarding the impacts of elevated suspended sediment concentration (SSC) and associated redeposition resulting from cable installation and bed preparation works (point MMO-RR91 in REP1-049). This is still under review by the MMO and we aim to provide comments in the next deadline.	This is noted by the Applicant.
MMO15	The MMO does not have concerns regarding the changes to the project design including the reduction in turbine height, removal of gravity-based foundations as an option and reduction in the offshore array boundary. These changes are unlikely to alter the likelihood and/or magnitude of the potential impacts to fish receptors.	This is noted by the Applicant.
MMO16	**Underwater Noise** The MMO notes REP1-045 highlights that underwater noise monitoring is proposed to validate, within reason, the assumptions made within 6.2.7 Marine Mammal Ecology (APP-076) and 6.2.6 Fish and Shellfish Ecology (APP-075). The MMO agrees that underwater noise monitoring will be required during the construction phase to test the validity of the noise modelling presented in the impact assessment. It is appropriate that noise monitoring will be undertaken in line with guidance set out in Good Practice Guide No.133: Underwater Noise Measurement (National Physical Laboratory, 2014). Full specifications and monitoring proposal detailing methodologies will be provided within further iterations of the Offshore In Principle Monitoring Plan (IPMP).	This is noted by the Applicant.
MMO17	The MMO notes there is a discrepancy within the IPMP. Paragraphs 4.7.3 and 4.8.7 in REP1-045 confirm that "where piled foundations are to be employed during construction, underwater noise monitoring of the first four piles of each type of foundation will be undertaken to inform comparison against predictions for received levels and source levels that were made within the ES assessments to validate the conclusions made". However, a new paragraph (4.7.4) has been added (to the Fish and Shellfish Ecology section) to state that "The monitoring locations will be selected from the first 12 foundations to be installed in order to provide for sites with differing seabed conditions (particularly water depths), whilst ensuring data are collected for the earliest pile installations for verification of predicted (modelled) noise levels. The	The Applicant notes the MMO comments and an updated IPMP [REP1-045] will be submitted at Deadline 5 to provide any clarity.

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	Applicant proposes to target two foundation sites of ≤40 m water depth and two sites of ≥40 m depth from the initial 12 foundation locations". If our understanding is correct, then this is somewhat misleading. The plan should make clear that the proposal is either to: (i) monitor the first four piled foundations of each foundation type or (ii) monitor four of the first 12 foundations (of each foundation type), and that this is consistent throughout the plan. The MMO appreciates that the Applicant intends to provide for sites with differing seabed conditions (particularly water depths). The MMO welcomes further discussions with the Applicant regarding monitoring plans. The MMO would also highlight that there is an ongoing discussion with SNCBs in relation to noise monitoring and an updated condition will likely be presented at hopefully Deadline 5, the MMO will engage with the Applicant as soon as this is identified to understand any risks to the project.	
MMO18	The MMO understands the Applicant states in the IPMP that an outline Marine Mammal Mitigation Protocol (MMMP) for piling has been submitted with this DCO application (REP1-033). The MMO notes a Final MMMP for piling will be submitted six months prior to the construction commencement.	This is noted by the Applicant.
MMO19	The MMO has no major comments on the Outline MMMP for piling (REP1-033) at this time. The standard measures have been considered including the predeployment of acoustic deterrent devices (ADDs), Marine Mammal Observation, passive acoustic monitoring (PAM) system and a soft start piling procedure. Furthermore, noise abatement measures will be re-assessed pre-construction taking into account the most recent methods, specifications, industry practices and project site conditions. The specific mitigation measure (or suite of measures) that will be implemented during the construction of the Project will be determined, in consultation with relevant Statutory Nature Conservation Bodies (SNCB), following the appointment of the installation contractors (and therefore, confirmation of final hammer energies and foundation types), collection of additional survey data (further noise and/ or geophysical data) and/ or information on maturation of emerging technologies.	This is noted by the Applicant.
MMO20	The MMO highlights that there is an error in Table 3.1 of REP1-033, the Cumulative PTS (SELcum) range for harbour porpoise is 8,400m for the S-SW location (not 84,000m).	The Applicant notes this error highlighted by the MMO and Table 3.1 within 9.14.1 Outline Marine Mammal Mitigation Protocol – Revision B [REP1-033] has been updated for Deadline 4.
MMO21	The MMO notes that likewise in REP1-035, the UXO clearance mitigation measures for the Project will be determined in consultation with relevant SNCBs once charge weights, survey data, noise data, and information on maturation of emerging technologies are confirmed. This	This is noted by the Applicant.

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	additional data and information will inform noise modelling to be fed into the Final UXO Clearance MMMP and discussions on suitable mitigation measures.	
MMO22	The MMO notes the Applicant's position regarding our point on the worst-case piling parameters presented in the modelling, provided in our Deadline 1 Response (point MMO-RR97 in REP1-064). Although we do acknowledge that the predictions are based on the worst-case piling parameters (such as the hammer energies and time taken to install a pile), we need to base our advice on the worst-case scenarios presented in the assessment. The MMO is, therefore, not in agreement with this point and request that worst-case scenarios are presented.	The Applicant would like to reiterate that worst case parameters have been used as model inputs, and thus the report should be considered a 'worst case' assessment. 'Worst case' should not be interpreted as meaning the maximum noise levels that could possibly be present at all times, but is required to be a 'reasonable' or realistic worst case. Assuming that the maximum theoretical noise occurs at all times is not realistic, and thus unreasonable. Basing the model on an assumption that the maximum noise levels that could potentially occur, layered on the maximum hammer energies and times that they could be present, is not a plausible modelling scenario and would lead to estimations of impacts that would be far in excess of those that could ever occur in practice. Therefore, in order to attempt to produce a noise assessment that resembles a realistic prospect, the Applicant stands by the principle that the maximum noise levels should not be expected at all times, and that this still represents the realistic worst case scenario.
MMO23	The MMO notes the submission of REP2-019 in Deadline 2, where there is an update with the addition of a new section 'Predicted noise levels against range'. The MMO would like to highlight that it has been requested that level vs range plots are included as standard within impact assessments for underwater noise. As per Section 1.4.4, Figure 1.9 presents "the predicted unweighted Peak Sound Pressure Level (SPLpeak) and Single-strike Sound Exposure Level (SELss) noise levels from the North – NE corner location, during the maximum blow energy of the worst-case monopile scenario (15 m diameter pile, and 7,000 kJ blow energy), against range, over the longest calculated transect 002° to the North, which leads into deep water. This is provided on regulatory request". The report notes that this plot has been presented in order to show the noise transmission, which can be used as a basis to compare and validate the levels against any future noise monitoring. It should not be assumed necessarily comparable to any other transect or blow energy. The MMO welcomes the Applicant including this plot in the report.	This is noted by the Applicant.
MMO24	The MMO agrees that the GIS shapefiles (noise contours) showing 5 dB increments of the single strike sound exposure level are a useful addition. It is also requested that the weighted noise contours are also provided, especially those for Very High Frequency cetaceans.	The Applicant is not clear what the MMO is referring to here. As mentioned above in our response regarding fish ecology at MMO01, 5 db increments have now been removed from the figures within 6.5.6.4 Herring Seasonal Restriction Note – Revision C. However, the Applicant believes this is referring to Marine Mammals. We note that the MMO is content with the updated Underwater Noise Technical Report – Revision B [REP2-019] as highlighted within MMO23, MMO25 and MMO26.
MMO25	The MMO is content that the Applicant has addressed and noted our concerns regarding temporary threshold shifts (TTS) predictions in comment MMO-RR105 of REP1-049.	This is noted by the Applicant.
MMO26	The MMO is also content that comment MMO-RR-106 of REP1-049 has been addressed and has no further comments to make on this matter. The MMO is aware that the JNCC MNR applies a 5 kilometre (km) Evidence Deterrence Range (EDR) for low order clearance, and hopefully further monitoring data for UXO clearance, including low order, will become available in due course.	This is noted by the Applicant.
MMO27	The MMO acknowledges the Applicant's comments for MMO-RR107 in REP1-049 about impulsive sound characteristics and threshold shift recovery. However, we believe that these conservatisms may be offset	The Applicant acknowledges that there will be uncertainties in all assessments, although over ten years of development in the model and validation from multiple constructed offshore windfarms in the region should provide considerable comfort in its performance, including its scaling. In respect of flee speeds, while there

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	by the assessment uncertainties, especially regarding the scaling of piling noise and assessment parameters. Furthermore, regarding animal movements, the model may use "typical swimming speeds" rather than fleeing speeds. We still maintain that the concept of continuous fleeing for several hours at a constant speed is not precautionary. This is an idealised assumption when in reality, actual animal responses are uncertain. The MMO requests further consideration on this point.	may be uncertainty in the ability or likelihood of an animal to maintain 'fleeing' over extended periods, it is worth bearing in mind that the greatest 'benefit' of fleeing is over the early period when the animal is closest, and the relative contribution to the animals' noise exposure later in the piling, when an animal may slow or deviate from the direct path, is considerably lower.
MMO28	The MMO acknowledges the comments made by the Applicant in REP1-049 (MMORR111). The Applicant is correct that the MMO meant Figure 7 in the von Pein Paper. However, we believe it is important to highlight recent and relevant findings from the peer-reviewed literature. Quite opposite to the suggestion of a "relatively simplistic calculation" the study of von Pein is based on theoretical considerations backed up by state-of-the-art finite element models (FEM) for pile driving noise radiation and followed up by validation against field measurement data.	The Applicant notes that the von Pein paper contributes to recent and relevant findings. However, there is potential scope for disagreement with some of the findings. The particular element of disagreement is the influence of pile diameter, which has been included with a "relatively simplistic", and we believe misleading, 16.7.log(d/d0) term, which would lead to a substantial excess of noise output.
MMO29	With regard to the scaling of noise levels with hammer strike energy, the authors found that FEM models agreed very well with a linear dependence of the acoustical energy and the strike energy (i.e., a 3 dB increase in noise levels for each doubling of the strike energy). The authors also note that in real life the contact between the pile and the hammer is subject to non-linear changes, although these discrepancies are assumed to be small. Furthermore, the measurement data of Bellman et al. (2020) supports an increase of 2.5 – 3 dB per doubling of strike energy.	The is noted by The Applicant. The Applicant stands by the underwater noise modelling undertaken, which is fitted to a substantially larger database of empirical measurements in the North Sea than was used by von Pein (2022). The model has been used to predict noise levels and impacts from piling at most offshore wind farms constructed in UK waters and subsequent monitoring has validated its accuracy.
MMO30	We are not sure about the meaning of the following statement and request clarification from the Applicant, "In practice it is much more complex than this, and the increases at higher energies lead to an increase much lower than 3dB."	The Applicant can clarify, that in practice, as blow energies increase, the effect of a doubling in energy will be less than 3 dB. For example, the Applicant has found the decibel increase in noise level from 1000 kJ to 2000 kJ will be more than the decibel increase from 2000 kJ to 4000 kJ, and both will be less than 3 dB.
MMO31	The MMO would like to point out that when comparing the noise levels corresponding to strikes of different energies, it is essential to keep all the other relevant parameters (e.g., penetration depth, water depth) constant, and of course to refer to the same piling location and piling sequence, otherwise the change in noise levels will be determined by multiple other factors, not only the change in hammer strike energy.	The Applicant notes this and refers the MMO to the Applicant's response to reference MMO28 and MMO29.
MMO32	Our understanding is that the measurement data in von Pein et al. is intended only as an overall, statistical validation of scaling laws and is not suitable for deriving empirical trends directly from observation, such as the differences between the 3.5m vs the 7.8m piles or the apparent trend reversal at larger pile diameters. Establishing such trend details with any confidence directly from the measurements would require much more comprehensive datasets.	The Applicant notes this, but as above, does not agree with the finding of the influence of pile diameter on noise level output as noted in the Applicants response to MMO28 above.
MMO33	Furthermore, we acknowledge that the validation of the von Pein et al. scaling laws is limited to observations of piles measuring up to 8.1 m diameter (while for the FEM models the upper limit was 12 m). Extrapolating this law to piles of 15 m would indeed indicate an increase of 9-10 dB in noise levels, compared to 4 m pile (however, this increase is about 4.5 dB when compared to an 8 m pile and only 1.5 dB	This is noted by The Applicant. The Applicant refers the MMO to the Applicant's response to reference MMO28 and MMO29 above.

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	over a 12 m pile). We note that Subacoustech's research indicates that pile diameter, although contributory, has a relatively small effect on noise emission. However, to our knowledge, the details of this research have not been disclosed to the scientific community, while the currently available observational datasets do not extend to the pile diameter values anticipated for this development.	
MMO34	The MMO would like to highlight that the study of von Pein et al. acknowledges the various limitations of their modelling and analysis (including limitations of the available validation datasets). However, we highlighted this study as the potential implications of diameter scaling law on the modelling predictions and the magnitude of their impacts can be quite considerable.	This is noted by the Applicant. The Applicant refers the MMO to the Applicants response to reference MMO28 and MMO29 above.
MMO35	In response to the following statement: "We would suggest that for site validation, the use of predicted noise levels at 750m will be of the greatest usefulness", we strongly believe that model validation should cover all aspects that are relevant for the model predictions, since the cumulative sound exposure level (SELcum) effects ranges are often much larger than 750m, and the affected fleeing receptors accumulate noise exposure even further downrange. The modelling predictions are crucially dependent on the Received Level (RL) beyond 750m, as well as on the spectral composition of the received levels (i.e., not solely on the unweighted SELss).	The Applicant agrees and expects that this will be done during modelling validation exercise during the early construction phase. However, as the SELcum exposure depends on many factors which will naturally vary during any piling event, the noise level at 750m does represent one particularly useful reference point.
MMO36	In regard to the Applicant's comments for MMO-RR115 in REP1-049, the MMO acknowledges and agrees that the transmission of sound is influenced by water depth. However, we maintain our position that the source levels used in the modelling are still low and we do not believe that sufficient evidence has been presented to justify the levels. Evidence could, for example, be presented in the form of existing measurements from similar projects and environments.	The Applicant stands by its predictions of underwater noise as presented. Focus on apparent source levels in the INSPIRE underwater noise model is not recommended by the model's authors. These are only tools to acquire predicted noise levels at range (i.e. typically greater than 500 m). They vary with site and circumstance and may change on model redevelopment; they are connected intrinsically with INSPIRE's propagation model. The apparent source levels at Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects were produced with an older version of the model, and this has now been updated, and consequently predictions have slightly changed.
MMO37	**Benthic Ecology** The MMO welcomes the Applicant confirming that they will define the minimum acceptable cable burial depth in a pre-construction Cable Burial Risk Assessment (REP1-050).	This is noted by the Applicant.
MMO38	The MMO welcomes the inclusion of the additional text within Section 4.6.3 of REP1- 045, to confirm the approach to determine the presence and extent of Sabellaria spinulosa reef. In summary, in areas where potential Sabellaria spinulosa reef features are identified from the geophysical dataset, drop down video (and still photography) will be acquired to confirm presence and determine reef extent.	This is noted by the Applicant.
MMO39	The MMO notes that Annex 1 Sabellaria spinulosa reef has not yet been identified during site specific surveys. However, should biogenic (and or geogenic) reef features be identified within the proposed works area during pre-construction assessments, it is noted that the Applicant is committed to conducting appropriate post-construction monitoring to determine any change in the location, extent and composition of such feature using the same method that was used for the pre-construction monitoring.	This is noted by the Applicant.

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MMO40	The MMO defers to the relevant Statutory Nature Conservation Body regarding the proposed pre-construction and approach to post-construction monitoring within the Margate and Long Sands Special Area of Conservation (MLS SAC).	This is noted by the Applicant.
MMO41	**Coastal Processes** The MMO notes that the Applicant's Environmental Statement Chapter (6.2.2 Marine Geology, Oceanography and Physical Processes - APP-071) previously presented results from spreadsheet-based models describing patterns of suspended sediment concentration (SSC) and thickness of deposition representative of a range of different construction related activities. However, it was noted that the results presented were largely qualitative. The MMO notes that in order to address this concern, the Applicant has commissioned numerical sediment plume modelling to supplement the existing spreadsheet-based analysis. REP1-057 presents information on the numerical sediment plume modelling undertaken. The near-field spreadsheet model provides a more realistic range of potential deposition area/thickness combination estimates in the nearfield, i.e. for sediment of any type that is deposited more rapidly to the seabed in timescales less than 1 hour and distances less than 500-1000 m. Such estimates can provide a more reliable description of details in the nearfield that were not resolved spatially or temporally by the previous sediment plume model. The new method uses volume of sediment displaced from the trench which is finite and proportional to the trench cross section (up to 6m²) and so it is possible to estimate the maximum average sediment thickness for a range of realistic downstream dispersion distances. All the calculated values are presented in Table 5.1 of REP1-057. The MMO considers the changes made and the new method used, to be sufficient and alleviates any concerns previously raised, relating to broad scale modelling to resolve the sediment deposition and other coastal processes issues.	This is noted by the Applicant.
MMO42	The MMO notes that the Applicant has alleviated some concerns raised in our RR-070, however there are still significant information gaps in relation to the raw data for sediment quality and the survey strategy which should be addressed.	The Applicant will endeavour to provide the raw data in the required format following discussions with the MMO. The Applicant draws attention to the pre-survey meetings held between Natural England, the MMO and the Applicant to discuss sample methodologies, including locations. A letter to the MMO and Natural England confirming the benthic sampling locations along with a history of the consultation regarding this matter is appended to this document – see Appendix 1 (Section 13).

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MMO43	**Dredge and Disposal** Although the Applicant has provided the raw data for sediment quality within annexes 6.5.5.1 Main Array Benthic Ecology Monitoring Report (APP-119) and 6.5.5.2 Export Cable Route and Intertidal Benthic Ecology Monitoring Report (APP-120), these have been provided in PDF format and not in an extractable format such as the MMO excel template, as is standard practice. The template can be found at https://www.gov.uk/guidance/marine-licensing-sediment-analysis-and-sample-plans. The MMO understands the Examining Authority prefers documents to be provided, however due to the size of the document, this has been included as a link. The MMO is in discussion with the Applicant regarding this point and will provide them with the document. In the current format, the MMO is unable to fully interrogate the data without manually transcribing the data into the excel template, which carries a high risk of human error. This is necessary to fully understand the levels of contamination present within the area. As such, the MMO is unable to agree with the conclusions reached regarding contaminants until the raw data can be provided in the required format.	The Applicant notes the MMO commitment to provide the MMO excel template and welcomes the opportunity to discuss its submission to the Examining Authority. The Applicant will endeavour to provide the raw data in the required format following discussions with the MMO.
MMO44	The MMO understands that the survey strategy within APP-119 was designed to target sediments with the greatest predicted mud content, however it is not clear why the Applicant has applied a threshold of 6% to determine whether a sample should be included for contaminant analysis. This threshold appears to be somewhat arbitrary having only been applied within the array area. For example, the MMO notes there are multiple samples within the Export Corridor Cable (ECC), such as FE6_01, FE7c_01 and FE7e_03, which have not been included for contaminant analysis yet comprise a silt/clay component which exceeds the 6% threshold. The MMO asks the Applicant to clarify why a 6% threshold has been applied in this instance.	The Applicant welcomes MMO's agreement that the survey strategy within the 6.5.5.1 Main Array - Benthic Ecology Monitoring Report [APP-119] was designed to target sediments with the greatest predicted mud content. The Applicant would like to clarify that a threshold of 6% was not applied to determine whether a sample should be included for contaminant analysis. The Applicant assumes that the MMO is referring to the response provided to the MMO Relevant Representation comment RR50 within 10.4 Applicant's Response to Relevant Representations – Revision B [REP1-049]. Here, the Applicant provided comment that those array area samples which were analysed for contaminants incidentally all contained a mud fraction higher than 6%.
MMO45	Moreover, although the sediment does not appear to comprise a large proportion of silt/clay, the MMO would not consider it appropriate to describe silt/clay to be absent from the array area. Based on the maximum design scenario parameters provided in Table 3.20 of 6.2.7 Marine Water and Sediment Quality (APP-072), the maximum volume of material estimated to be disturbed within the array area is in the region of ~27 Million cubic metres (m^3). As such, what might be considered a small silt/clay fraction may still represent a significant volume of material (e.g. 6% silt/clay would equate to a volume of ~1.6 M m3).	The Applicant agrees that, upon scaling up, a small percentage of fines within a sample may represent a large volume within sediment disturbed. The Applicant notes that the sediment contaminant analysis of those samples within the array area indicates levels below AL1 and AL2. Therefore, it is suggested that a scaling up of fines within a finite sediment volume will not result in an increase in sediment contamination levels.
MMO46	The MMO notes that additional samples are considered unlikely to provide additional information in terms of contaminant levels, however without access to the raw data in the standard MMO excel template, we	This is noted by the Applicant.

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	are unable to fully assess the contaminant levels present. Therefore, the MMO asks for the Applicant to provide this.	The Applicant will endeavour to provide the raw data in the required format following discussions with the MMO.
MMO47	The MMO would like to highlight that the concerns raised during the Preliminary Environmental Information Report (PEIR), including any resolved in following discussions, should be clearly and appropriately addressed within the stakeholder consultation section of APP-072 for transparency and completeness. This also includes justification regarding sample numbers being provided within the relevant chapters.	The Applicant considers that the MMO responses from PEIR have already been considered and responded to within Table 3.2 of 6.2.3 Marine Water and Sediment Quality [APP-072]. Furthermore, as the Applicant is not proposing to collect further samples then no further justification is required to be added to the chapters and believe responses during examination are a sufficient record. The appended letters contribute further to that justification – see Appendix 1 (Section 13).
MMO48	The MMO notes that Figure 2.1 of 6.5.5.2 Export Cable Route and Intertidal Benthic Ecology Monitoring Report (APP-120) does not indicate which transect corresponds with the three samples that have been analysed for contaminants. Based on the coordinates provided within Table 4.1 of APP-120, intertidal transect 'I_TR05' appears centrally located within the intertidal area (fourth from right within Figure 2.1). The MMO notes that this transect was selected for contaminant analysis to target finer sediments and has provided further comments below (please see point 1.6.10).	This is noted and the Applicant can confirm that transect 'I_TR05' was the transect where samples have been analysed by contaminants, see section 4.1.1 which states "Sediment chemistry samples were acquired at high, mid and low water locations along transect I_TR05 (Table 4.1)."
MMO49	The MMO notes the PSA results provided in Table 4.4 and Figure 4.2 of 6.5.5.2 Export Cable Route and Intertidal Benthic Ecology Monitoring Report indicate the material to consist of gravel - fine sand (2mm to 125 µm), with very little (if any) material classed as very fine sand (62.5 to 125 µm) and no material classed as silt/clay (0.98 to 62.5 µm). Furthermore, the maximum design parameters provided in Table 3.20 of 6.2.7 Marine Water and Sediment Quality, estimate the maximum volume of material to be distributed within the intertidal area as 23,145 m^3. This is in line with OSPAR guidelines (Agreement 14-06) which recommend up to three samples for dredges of up to 25,000 m3 . As such, the MMO is content that three samples are likely sufficient to represent the intertidal region. However, the raw contaminant data should be provided within the standard MMO template to confirm this.	This is noted by the Applicant. The Applicant will endeavour to provide the raw data in the required format following discussions with the MMO.
MMO50	The MMO noted the Applicant confirming the contracted MMO accredited laboratories for analyses undertaken, in regard to MMO-RR55 of our REP1-064. The MMO would like to reiterate that whilst SOCOTEC has been referenced as an accredited laboratory for sediment contaminant analysis within Section 3.6.4 of APP-072, SOCOTEC are not validated to undertake Particle Size Analysis. As such, for future reference please ensure all contracted laboratories are clearly stated within the relevant chapter.	This is noted by the Applicant.

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MMO51	**Shell fisheries** The MMO notes that no monitoring in relation to commercial fisheries is considered necessary by the Applicant other than the standard arrangements for fisheries liaison, which will be agreed in the Fisheries Liaison and Co-existence Plan (FLCP) prior to the start of construction. The MMO believes it would be best practice to consider monitoring the fishing activity of the potting fleet during the operational phase. This would allow a comparison against the baseline (pre-construction) to ensure that the impacts on the potting fishery are in line with the expected impacts (minor adverse). Furthermore, the Applicant mentions that significant impacts on fishing fleets during the operational phase of the Project are not anticipated. A monitoring during operational phase would reduce the uncertainty around the anticipated impacts on the potting fishing fleet.	With specific reference to the potting fleet as identified in the MMO comment, the Applicant notes that within the commercial fisheries study area, higher levels of potting activity are relatively focused within the offshore ECC, rather than in the Array Area. As set out in ES Chapter 6.2.8 Commercial Fisheries [APP-077], the assessment concludes that there will be no significant residual impacts upon commercial fisheries receptors during the operational phase of the Project. This reflects that fishing, inclusive of potting methods, will be able to resume during the operational phase across both the offshore Export Cable Corridor and Array Areas. This is supported by evidence that more widely in the North Sea, resumption of potting across operational subsea cables and within operational offshore wind farm arrays has occurred. As set out in APP-077, potential significant temporary impacts are identified for specific commercial fisheries receptors - including the UK potting fishery - during the construction phase, with proposed approaches and commitment to mitigating these impacts set out in APP-077, such that there will be no significant residual impacts upon commercial fisheries receptors during the construction phase of the Project. The Applicant has submitted 9.16 Outline Fisheries Liaison and Coexistence Plan (FLCP) – Revision B [REP1-037] which contains a number of measures that follow industry good practice and which are intended to ensure co-existence between the Project and the fishing industry. The Applicant continues to engage with the Commercial Fisheries Working Group and will do so in finalising the FLCP post-consent. The Applicant maintains its position as set out within 9.32 Offshore In-Principle Monitoring Plan – Revision B [REP-1045] which states that future monitoring would only be committed to in support of the conclusions of the Environmental Impact Assessment (EIA) where significant residual impacts have been identified. Therefore, in relation to commercial fisheries, monitoring is not considered to be required.
MMO52	**REP2-039 – 10.22 Applicant's Response to EXQ1** The MMO notes the Applicant's response to GC.1.17 with regards to the submission of the Technical note - Offshore Decommissioning (REP2-028). The MMO will provide comments on this document in due course.	This is noted by the Applicant.
MMO53	The MMO agrees with the Applicant's response to DCO.1.02 d). Whilst the MMO agrees that duplication should be avoided, the DMLs must have definitions within them as they should be read as standalone documents.	This is noted by the Applicant.
MMO54	The MMO notes the Applicant's response to DCO.1.20-DCO.1.21, which the MMO will provide responses to in due course to the Examining Authority.	This is noted by the Applicant.
MMO55	The MMO notes the Applicant's response to DCO.1.25 about Force Majure. The MMO is still under review of this condition and the comments raised and will provide our response in due course. The MMO currently still maintains our position that we request this condition is removed. As stated in REP1-064, the MMO has previously requested the removal of this clause as it unnecessarily duplicates the effect of s.86 of the 2009 Act. If it is to be retained, then the relationship between this clause and section 86 of the 2009 Act should be clarified. The MMO would like to reiterate that whilst we accept that there is a need for consistency in decision making, a decision maker is not bound by previous decisions and can depart from them where there is good reason to do so.	The Applicant maintains its position as set out in 10.22 Applicant's Response to EXQ1 [REP2-039], response to the question DCO.1.025. Section 86 of the MCAA provides a defence to offences under section 85 of that act where action is taken in an emergency for specified actions, which would not clearly cover deposits as covered by the condition. The Applicant does not consider that the drafting creates any conflict but rather acts to prevent disposal necessary to protect safety from being offences to which s86 would then apply. The master of a vessel must be able to take necessary actions to preserve the safety of their vessel and persons on it. The Applicant notes that 'any other cause' is the wording used in precedent licences, including the 2024 Sheringham and Dudgeon order.

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MMO56	The MMO notes the Applicant's response to DCO.1.26 about MCA's suggested changes to the DMLs in their Deadline 1 submission (REP1-065). The MMO agrees that as the statutory body that manages marine licences, any conditions to be added to the DMLs will need to be agreed with us. The MMO is in discussion with MCA regarding the suggested changes, and our comments will be provided in due course.	This is noted by the Applicant.
MMO57	The MMO notes the Applicant's response to DCO.1.27 regarding the Maximum Design Scenario. The MMO will maintain a watching brief for the next updated draft DCO to check this is included.	This is noted by the Applicant.
MMO58	The MMO notes the Applicant's comments to ME.1.01. The MMO has provided our response to this question in Section 4.	This is noted by the Applicant.
MMO59	**REP2-020 and REP12-021 – 9.13 Margate and Long Sands Special Area of Conservation Benthic Mitigation Plan - Revision B (Clean and Tracked)** The MMO notes that the changes made to REP2-020 have been made in response to comments received from Natural England and the Examining Authority. The MMO agrees with the inclusion of "habitats of principle importance (Section 41 of the 2006 Natural Environmental and Rural Communities (NERC) Act" in response to Natural England's recommended mitigation regarding cable micro siting (Table 2.1 of REP2-020). The MMO notes the clarification regarding the theoretical length of cable (2.5 km) within the Margate and Long Sands SAC and the current indicative length (0.4 – 1.5 km) which will be updated following pre-construction works. The MMO notes the Applicant included additional cable protection mitigation commitments. This includes not trial trenching within MLS SAC site boundary and should cable repair be required, the maximum conducted (5,400 metres squared (m2)) will be within the limit of that already assessed. The MMO welcomes the inclusion that should cable repair and protection be required within the MLS SAC outside of the construction period, then an addition Marine Licence will be required. The MMO also notes that the Applicant considers it very likely that cable burial within the SAC will be successful and the maximum design scenario for cable protection is based on a precautionary worst-case scenario. The MMO defers to the relevant Statutory Nature Conservation Body (SNCB) regarding their comments on the updates of the MLS SAC Benthic Mitigation Plan.	This is noted by the Applicant.

3. NICHOLAS GOLD FOR COBRA MIST LIMITED [REP3-041]

Ref	Summary of Deadline 3 submission OR Excerpt of Deadline 3 submission	Applicant's comments
CM01	We are writing to inform you that, further to previous written submissions and correspondence from the Applicants/developers, ourselves and others regarding the possible creation of a compensation nesting site for Lesser Black Backed Gulls (LBBG) on Orford Ness in Suffolk in connection with the above projects, we believe that such site is now unlikely to come into effect for the purpose of the Five Estuaries and North Falls wind farms. We fear this may be a disappointment to many. Regrettably, despite there being an immediately adjacent LBBG nesting site for a number of other wind farms and after many months of discussion, the developers have proposed financial terms, conditions and practicalities which make the provision of such site neither feasible nor appropriate for the Five Estuaries and North Falls wind farms. We thought you should know as soon as possible. We realise the complexity of the task on your plate and please be assured that we tried to clarify matters as soon as possible. The Applicants/developers will presumably be in touch separately.	The Applicant has received comments from Mr Gold on the financial aspects of the Heads of Terms, to which the Applicant will respond after consideration. Points of difference are commercial in nature. The Applicant does wish to continue dialogue with Mr Gold for Cobra Mist Limited.

4. ROYAL SOCIETY FOR THE PROTECTION OF BIRDS [REP3-036]

Ref	Summary of Deadline 3 submission OR Excerpt of Deadline 3 submission	Applicant's comments
RSPB01	The RSPB have submitted a summary of their Written Representations, which were originally submitted at Deadline 2.	The Applicant has previously responded to the RSPBs Written Representations at Deadline 3, see 10.26 Applicant's comments on Deadline 2 submissions [REP3-037] and also their Relevant Representations, see 10.4 Applicant's Response to Relevant Representations [REP1-049]. The Applicant is currently working with the RSPB on a Statement of Common Ground.

5. NATURAL ENGLAND [REP3-031 TO REP3-034]

Ref	Summary of Deadline 3 submission OR Excerpt of Deadline 3 submission	Applicant's comments
NE01	**Covering Letter** **Outstanding ExQ regarding Seagrass** Question: Seagrass habitat creation/restoration compensatory measure At F32 in [PD2-008] you have stated that you would submit further comment on the technical feasibility of the proposed seagrass habitat creation/restoration compensatory measure included within the Applicant's without prejudice derogations case at Deadline 1. This does not appear to have been provided to date. Natural England should therefore submit this information by Deadline 4. Natural England Response: Because no further evidence and/or information has become available in support of seagrass restoration as a benthic compensation measure; Natural England's advice on seagrass restoration only being considered as a modest part of a package of compensation measures remains unchanged. As does our advice included within in our Relevant/Written Representation [RR-081] on the uncertainties relating to the deliverability of the measure. However, as highlighted in our response on ExQ ME.1.10 this measure is not considered to be the preferred option from an ecological perspective, therefore we do not believe that there is merit in progressing and/or providing further advice on this project specific benthic compensation measure during the Five Estuaries Examination.	The Applicant notes Natural England's response with regards to seagrass restoration as a benthic compensation measure. Following developments in terms of strategic benthic compensation and the impending guidance from Defra, it remains the Applicant's position that the preference is to contribute to such a strategic measure i.e. an SAC extension. Natural England's position, which they highlighted in response to ExQ1 [REP2-057], is that they believe that there is no merit in progressing and/or placing reliance upon project specific benthic compensation measures. Despite the Applicant's and Natural England's preference in a strategic compensation measure, the Applicant still sees merit in retaining the option for project specific measures at this current time. A without prejudice dDCO schedule for benthic compensation will be provided at Deadline 5.
NE02	**Draft DCO** Natural England has reviewed the updated Development Consent Orders (DCOs) and the schedule of changes to the DCO submitted at Deadline 1 and submitted as part of their change request (Ref: REP1-002, REP1-008, AS-032 and AS-061). The changes proposed have resolved one outstanding issue and our Risk and Issues log, Annex L3, has been updated to note the issue has been resolved.	This is noted by the Applicant.
NE03	**Marine Geology, Oceanography and Physical Processes Sediment Plume Modelling** Natural England welcomes the additional sediment plume modelling carried out by the Applicant. This additional modelling provides a more detailed analysis of suspended sediment concentration (SSC) and sediment deposition patterns compared to the original spreadsheet based methods carried out by the Applicant. The modelling results show that some elevated suspended sediment concentration (SSC) levels and subsequent sediment deposition does extend background levels within the nearshore zone and Blackwater Crouch and Roach Estuaries Marine Conservation Zone (MCZ) due to pre-lay trenching works and sandwave clearance. However, it appears unlikely that these elevated SSCs and sediment deposition would impact the foreshore areas of Clacton Cliffs or any areas where Native Oyster beds are recorded. Moreover, the nature of the coast here is dynamic, and SSC levels are already highly variable. Consequently, we are content that our concerns for the Blackwater Crouch and Roach Estuaries MCZ have been resolved with regards to elevated SSCs and sediment deposition due to construction-related activities.	Potential cumulative effects and impacts are assessed in Section 2.13 of 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071]. These mainly relate to the potential for spatial overlap of sediment plumes causing an increase in suspended sediment concentration or sediment deposition thickness that could be greater that described for the Project alone. In relation to sediment deposition thickness, the assessment finds that "If activities causing sediment disturbance occur at any time in locations that are closely aligned with respect to direction of the ambient tidal currents, the total sediment thickness deposited is locally additive in the area of overlap." As such, the WCS for sediment deposition thickness due to multiple, adjacent, and/or simultaneous construction-related activities is not specifically prescribed or limited (and so also cannot be 'clarified') and includes any worst case scenario that could be realistically relevant to a given receptor location. More detailed clarification would not be practicable as the results would be dependent on the particular combination of activity type, intensity,

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	Construction-related elevated SSCs along the offshore export cable corridor (including at Margate and Long Sands Special Area of Conservation and Kentish Knock East MCZ) and within the array areas appear to dissipate quickly. However, coarser sand and gravel fractions deposited by construction-related activities, result in local average thicknesses of 50-500mm in the array area and 50-800mm within the export cable corridor, albeit within a relatively small footprint (up to 200m). Therefore, the thickness of subsequent sediment deposition within the array areas and at/near designated areas of seabed remains a concern, particularly in regard to impacts on sensitive receptors such as benthic habitats or fish spawning areas. We, therefore, advise that the worst-case scenario (WCS) for sediment deposition thickness due to multiple, adjacent, and/or simultaneous construction-related activities should be clarified. We have updated our Risks and Issues log Annex L3 to reflect our updated position.	timing, separation distance and orientation, relative to the speed and direction of tidal currents at the time of the event (for which there are many possible permutations). It is, however, noted in each of the activity type assessments "that measurable thicknesses of deposition are only expected within relatively small distances (tens of metres) from the site of the activity, extending in the direction of tidal current at the time of the work. Therefore, there is a very low likelihood of a large total area of overlapping measurable local thicknesses of deposition resulting from overlapping plume effects." If a given volume of sediment is spread over a larger area or extent, the thickness of that deposit will become smaller, and vice versa. As such, only the smaller estimates of thickness for a single deposit (order of 0.05 m) are realistically likely at or over the larger distances (200m) from activities indicated in the comment. It is noted that any sediment deposited to the seabed will immediately rejoin the natural sedimentary environment and will be mobilised at the ambient rate and direction. Due to frequent sediment mobility in all of the study area, it is reasonable to assume that any deposits (overlapping or otherwise) will be reworked over time. For activities on the export cable corridor, it is also noted that there are only a limited number of activity types and occurrences that are likely to happen in one area or location.
NE04	**Appendix I3 Comments on Seascape Landscape and Visual Assessment** Natural England welcome the further updated Maximum Design Scenario (MDS) for the maximum height to turbine blade tip metric from 399m LAT to 370m LAT. While the new maximum height to turbine blade tip of 370m LAT is more acceptable than the 399m LAT scenario, this reduction in height does not change Natural England's advice on the significance of impacts to the Suffolk Coast Heaths Area of Outstanding Natural Beauty (SCHAONB), the Suffolk Heritage Coast (SHC), and their seascape settings**.**	The Applicant notes Natural England's advice that the new maximum height to turbine blade tip of 370m LAT is more acceptable than the 399m LAT scenario. The Applicant also notes that this reduction in height does not change Natural England's advice on the significance of impacts to the SCHAONB. The Applicant does, however, consider that Natural England should provide an update to Table 1 of Appendix I to the Relevant Representations of Natural England [PD2-011] (showing apparent heights of the closest WTG from selected viewpoints) to reflect the reduced maximum turbine blade tip of 370m LAT. The Applicant notes this may reduce the apparent height to below 0.4 degrees in certain views, below which Natural England have advised that effects may not be significant (noting that the Applicant does not consider this to be an appropriate metric by which to judge significance of impact).
NE05	Key concern and/or update: Natural England welcome the provision of SLVIA Figures 10.54 to 10.68 into examination as visualisations of the 324m LAT design scenario were not originally made available. Natural England's Advice to Resolve Issue: Upon review of these figures, Natural England's concerns remain the same, and therefore our Relevant Representations still stand in full.	The Applicant notes that the Relevant Representations of Natural England (Appendix I) [PD2-011] stated that *"the ~320m blade tip height design is more acceptable"* and Table 1 confirmed that from all viewpoints, the apparent height of the closest 324m WTG is below 0.4 degrees (with the exception of Orford Ness), which is below the height at which Natural England have advised that effects may not be significant. The Applicant notes that Natural England's concerns remain the same, however the Applicant argues based on the reasoning provided above, that it would be unreasonable to maintain that there is a significant impact from the indicative 324 m assessment parameter without providing any further evidence, and refers to the Applicant's response to the Relevant Representations of Natural England submitted at Deadline 1 [REP1-051] (Table 2.10).
	Key concern and/or update: The viewpoints chosen for updated wireframes for 370m LAT option are the key viewpoints within the SCHAONB. The 29m reduction in the height to turbine blade tip has not changed Natural England's advice in relation to the significance of	The Applicant notes Natural England's advice that the viewpoints chosen for updated wirelines showing the 370m blade tip height WTGs are the key viewpoints within the SCHAONB. The Applicant notes that the height reduction does not change Natural

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	seascape and visual effects associated with the statutory purposes of the SCHAONB, SHC, and their seascape settings. Natural England's Advice to Resolve Issue: Natural England's advice remains unchanged.	England's advice in relation to the significance of seascape and visual effects associated with the SCHAONB. As noted above, the Applicant considers that Table 1 of Appendix I to the Relevant Representations of Natural England [PD2-011] should be updated to reflect the reduced maximum turbine blade tip of 370m LAT to determine if this may influence Natural England's advice on the significance of impacts relative to the reduced apparent height of the WTGs. The Applicant has fully considered the likely significant effects of the VE array areas on the special qualities of the SCHAONB in 6.2.10 Seascape, Landscape and Visual Assessment [APP-079] (pages 208-227 and Table 10.26) and concludes that significant adverse effects on special qualities of the SCHAONB will be avoided and the assessed effects would not undermine the statutory purpose of the SCHAONB. The Applicant considers that Natural England has not engaged with the substance of the Applicant's response on this matter, and that to maintain a position of concluding significant effects at a distance of over 37km from the coast, which is not supported by either the Applicant's technical assessment nor the addendum to the Suffolk seascape sensitivity to offshore wind farms report (White Consultants, June 2023) is not reasonable or justified.
NE06	**Natural England's comments on the Examining Authority's Written Questions (ExQ1)** **IP Methodological Concerns** A number of methodological concerns have been raised by NE [RR-081], the Maritime Management Organisation (MMO) [RR-070] and the RSPB [RR-094]. An update should be provided explaining how the Applicant is addressing the IPs' methodological concerns. The ExA notes the documents submitted by the Applicant, together with updates to the Environmental Statement, pursuant to addressing the methodological concerns of Interested Parties. This includes a Herring Seasonal Restriction Note [REP1-024], an Apportioning Note [REP1-020], Guillemot and Razorbill Survey Reports [REP1-054], Population Viability Analysis [REP1-022] and Marine Mammal Modelling [REP1-056]. Can the Parties identify areas of outstanding disagreement with regard to assessment methodologies, as well as provide an update in relation to how such concerns are being addressed. **Fish Ecology (Herring) Methodological Concerns** Natural England will respond on fish ecology (herring) methodological concerns at Deadline 4. **Marine Mammal Methodological Concerns** Natural England will respond on marine mammal methodological concerns at Deadline 4.	This is noted by the Applicant.
NE07	**Ornithology Methodological Concerns** <u>Overview</u>	This is noted by the Applicant. The Applicant has addressed these key concerns below where relevant.

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	Referring to the Apportioning note [REP1-020], Population Viability Analysis [REP1-022], and Guillemot and Razorbill Survey Report [REP1-054], Natural England highlight the key areas of disagreement concerning: i) the apportioning of adult age lesser black-backed gull (LBBG) to the Alde-Ore Estuary SPA, in particular the use of a stable age structure based on generic data and sabbaticals to do so; and ii) the construct of the population viability analyses (PVAs) run without a 'burn in' period. Both actions have the effect of potentially underestimating impacts over the lifetime of the project for the reasons outlined in more detail below. These concerns can be addressed if the Applicant completes their assessment using Natural England's advised approach and then applying the findings to the PVAs with an appropriate 'burn in' period to determine the impacts over the lifetime of the project. The mortalities estimates derived using the Natural England approach should also be used to calculate the compensation quanta for all species where Adverse Effect on Site Integrity (AEoSI) cannot be ruled out and form the basis of each derogation case. In addition, whilst we welcome the progress made by the Applicant in progressing the evidence base for their proposed guillemot and razorbill compensation, we highlight that some key uncertainties remain and will require addressing in due course.	
NE08	<u>Apportioning of adult age class LBBG to the breeding population at Alde-Ore Estuary SPA</u> With reference to Apportioning note [REP1-020], section 3.1.2 and PVA [REP1-022], section 3.2.1., Natural England notes that the stable age structure used in the assessment is derived from Furness (2015) and the predicted numbers of adults and juveniles present in the biogeographic region (the UK North Sea and Channel) during the non-breeding season only. Furness (2015) does not present a stable age structure for the breeding season. Natural England consider that apportioning according to the stable age structure ratio risks significantly underestimating impacts on adult breeding birds. This is because the UK North Sea and Channel area is vast and extends well beyond the foraging range of the LBBG that nest in the Alde-Ore SPA during the breeding season. The ratio of adults to immature birds over such a large area are likely to be highly spatially variable, and there is no basis for assumption that the ratio is applicable at a small project study area. In fact, it is noted by Furness (2015) that, "*at sea distribution of seabirds differs between age classes, with youngest birds tending to spend their time in the winter quarters even during summer, breeding adults tending to stay closest to their breeding area, and immature birds probably at sea in areas that have good food supplies but are away from large colonies. Therefore, it is not clear that any at sea data on proportions of different age classes would provide a secure test of the estimated proportions based on demographic data*." We note the relative proximity of colonies to the project, which will inevitably lead to a higher proportion of adults present in the breeding season.	The Applicant has already presented the Natural England advised approach (using site specific DAS data) for LBBG regarding aging of adults in the assessment alongside the Applicants preferred approach, see 6.5.4.15 Apportioning Note – Revision B [REP1-020]. The Applicant considers the data reviewed and analysed in Furness (2015) to be more appropriate for LBBG as it draws from many studies across many years rather than a snapshot of one day per month over two years. In addition, aging from DAS data is not accurate and clearly over estimates the numbers of adults when assuming all 'adult-like' birds are actually adults. This is especially true when a low proportion of birds can be aged, because adults are easier to age than immatures, and consequently more likely to be aged.

Ref	Summary of Deadline 3 submission OR Excerpt of Deadline 3 submission	Applicant's comments
	Furthermore. the stable age structures (Furness, 2015) have been calculated using a simple Leslie matrix model. Survival rates are highly uncertain, and were iteratively adjusted until the model stabilised, i.e. showed zero population growth. The model then assumes consistent productivity and survival rates. Therefore, we consider the model results unvalidated. The demographic data considered is now dated too, e.g. productivity data considered are from the period 1986-2006. The model does not consider current population trends, or indeed contemporary population count data.	
NE09	<u>Application of a sabbatical rate to discount the proportion of adults not nesting each year</u> With reference to Apportioning note [REP1-020] section 3.1.2, PVA [REP1-022] section 3.2.1., Natural England does not consider the current evidence base sufficient to recommend sabbatical rates of >0 for any species. We therefore recommend that no apportioning is applied to account for sabbatical rates. Natural England acknowledge a proportion of the LBBG breeding population do not nest every year; however, it remains unclear what proportion of these birds attend the colonies but also how these birds behave offshore if they do, and where the birds go to if they do not. There is good evidence from a variety of seabird species including the larger gulls that a proportion of breeding adults take 'sabbaticals' where they skip a nesting attempt but continue to breed at the same colony in subsequent years (Horswill and Robinson 2015). However, there is not good evidence available about how these birds behave. with some indication that these birds may return to their nesting colonies or breeding range during sabbatical years (Calladine and Harris 1997, O'Connell et al. 1997), and show similar foraging patterns (Kazama et al. 2013). In which case they would remain at risk. Indeed, under this scenario, those birds would remain part of the breeding population. Therefore, Natural England believes it is appropriately precautionary to not disregard these birds from the assessment until better evidence suggests otherwise.	The Applicant considers its approach to be evidence driven, which provides a balanced and appropriately conservative assessment of the impacts. Uncertainties in parameters have been included in collision risk modelling and results have been presented with associated confidence intervals. Even if sabbatical birds were to attend the colony during the breeding season they would not be constrained by the need to incubate or provide for chicks and therefore are highly unlikely to attend the colony to the same extent, or behave in a similar way to breeding birds (Kazama *et al*., 2013; Maynard *et al*., 2022; Stahl and Sagar, 2006) . Therefore, they should not be assessed as breeding birds. The approach advocated by Natural England has also been presented for comparison.
NE10	<u>Omission of a 'burn in' period for PVA</u> With reference to PVA [REP1-022] section 2.2.5, PVA can be used to assess impacts on seabird population sizes and growth rates over the lifetime of a project. As part of Natural England's best practice guidelines Natural England and JNCC have published the 'Seabird PVA Tool'. This has been created to enable PVAs to be developed using a standard approach that allows the recommended criteria to be used in construction of the models. In Natural England's best practice, PVAs should estimate the impacted and unimpacted populations over the lifetime of the project and include a 'burn-in' period (5 years) to allow the model to reach stability prior to the projection period beginning (Parker et al. 2022). Importantly, impacts predicted by PVAs run with a 'burn in' period can be greater than those run without. though we recognise the difference may be marginal in some instances. Running the PVAs without a 'burn in' period departs from best practice guidelines and, may present lower impacts over the lifetime of the project than doing so with a 'burn in' period. VE have not provided an explanation for why best practice guidance has not been followed. Furthermore, Natural England's advice to VE to run the PVAs with a period of 'burn in' is consistent with our advice given elsewhere and would have the additional benefit of providing results that can be better compared with other OWF environmental assessments.	The Applicant has re-run the PVA with a burn-in of 5 years for the in-combination impacts to all the relevant species in the updated assessment, which was presented in the updated RIAA – Revision B [REP1-016]. The interpretation of the model outputs and assessment conclusions did not change based on the re-analysis after PVA was re-run. No burn-in period could be included for lesser black backed gull at Alde Ore Estuary because the model failed to run over the required timeframe, this is a common issue with the model where the SPA population sizes are relatively small. The Applicant could not rule out an adverse effect on site integrity for lesser black backed gull feature of Alde Ore Estuary and has provided a full derogation case for this species. Therefore, the absence of burn-in for this species has not altered the conclusions or interpretation of the model outputs.

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NE11	<u>Apportioning of adult age class gannets (GX) to the breeding population at Flamborough and Filey Coast SPA</u> With reference to Apportioning note [REP1-020], section 3.1.2., we highlight that the gannet apportioning for the breeding season is presented in agreement with Natural England, however, we note that 26% of the birds were apportioned to the Alderney West Coast and Burhou Islands Ramsar site in the Channel Islands but omitted from the screening process for transboundary effects ([APP-065] 6.1.3.2 Transboundary Screening). Impacts on this population may warrant investigation and we recommend the Applicant liaise with the appropriate nature conservation authorities if they have not done so already.	Within 5.4 RIAA [REP1-017] and 6.5.4.15 Apportioning Note – Revision B [REP1-020] breeding season impacts were apportioned to FFC SPA (74%) and 26% to the Channel Islands sites for gannet. No impacts were apportioned to any other transboundary sites.
NE12	<u>2024 Guillemot and Razorbill Survey Report [REP1-054]</u> Natural England welcome the work undertaken. The information gained from the site visits has addressed some of our concerns iterated in our relevant reps [PD2-006] Appendix D to the relevant representations of Natural England ornithology compensation case). In particular plausible sites have been identified where mitigation of human induced disturbance could benefit local nesting populations of guillemot and razorbill, and the benefits could be measured through diligent on-shore monitoring. Nevertheless, some key concerns remain and still require addressing [PD2-006]. Notably, the scale of compensation has yet to be agreed and will need to be sought once the PVAs have been undertaken following Natural England guidelines (see note above regarding our comments on the PVAs). In addition, stakeholder participation has not been secured yet and will be essential. Further research is required as well to determine disturbance distance thresholds and the safe 'set back' distances to advocate. The proposed timetable also needs to be agreed so that management can be in place 3-4 years in advance of operations. Two years of surveying will be necessary to establish baselines and verify likely safe 'set-back' distances. An adaptive management plan will be needed too should measures not yield the predicted outcomes and alternative action becomes necessary.	This is noted by the Applicant. The Applicant is progressing this measure and has on-going discussions with potential partners in the southwest that have the expertise and experience to collaborate with to implement effective measures. The Applicant considers the scale of the without prejudice compensation proposed is appropriate for the very limited effect of the project (should an AEoI not be ruled out) and considers through engagement on this topic with Natural England that this point is broadly agreed. In addition, the PVA updates were provided at deadline 1 and are presented in the RIAA – Revision B [REP1-016]. The Applicant will provide further clarity and a detailed roadmap to implementation at a later Deadline in an updated 5.5.8 Guillemot and Razorbill Implementation and Monitoring Plan – Revision B [REP2-016]. This will confirm the stakeholders/partners involved and provide details of a two year trial period prior to construction to test these measures. The success of the trial will be evaluated after 2 years and any adaptive management measures will be implemented to ensure success. It is likely that this measure will be carried out in collaboration with other OWF projects, as advised by Natural England.
NE13	**Designated Sites** Table 5.1 within NE's Cover Letter to its Relevant Representations [PD2-002] identifies designated sites for which NE is not content that adverse effects on site integrity (as a result of the Proposed Development alone or in combination) can be excluded beyond reasonable scientific doubt. Are you content with the Applicant's conclusions in its Habitats Regulations Assessment in relation to other designated sites not listed in Table 5.1. If not, explain why that is the case? NE Response: Natural England is content that sufficient information has been provided within the applicant's RIAA to support a conclusion of no AEoI for those sites not listed in Table 5.1 within Natural England's cover letter [PD2-002].	This is noted by the Applicant.
NE14	Natural England provided an update to their PADSS and Risks and Issues log [REP3-033].	The Applicant welcomes the resolution of apportioning of adults (other than AOE SPA LBBG) during the breeding season in Natural England's PADSS. The Applicant will provide further comment on Natural England's PADSS at Deadline 5, after Natural England have made substantive updates at Deadline 4.

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		The Applicant welcomes the resolution of the following issues in the risks and issues log: • B4, B9 Resolved. The Applicant has confirmed [REP1-051] use of the assumption that up to 100% of material will be fluidised and displaced from the trench • B6 Resolved. The Applicant has provided sediment plume modelling results [REP1-057] which coupled with a better understanding of the onshoring works overlap with North Falls has resolved this issue • C6, C31 Resolved. The Applicant has provided updated PVA for guillemot and razorbill • C27 Resolved. The Applicant has provided updated apportioning for the breeding population of gannets at the FFC SPA • C38 Resolved. The Applicant has provided clarity on apportioning of adults at AOE SPA for LBBG • E39 Resolved. The Applicant has appropriately considered priority habitats as listed under Section 41 of the NERC Act 2006 in the Offshore In-Principle Monitoring Plan • H13, H14, H15, H16, H17, H18 Resolved. The Applicant has provided an updated Outline Marine Mammal Mitigation Protocol – UXO [REP1-056] which has addressed these issues. • I9 Resolved. The Applicant has now provided Visualisations of the ~320 m design scenario (79 turbines) are shown in Figure 10.47 – Figure 10.67 [PD4-010] The Applicant will continue to engage with Natural England to progress the remaining risks and issues.

6. PORT OF LONDON AUTHORITY [REP3-035 AND REP3-036]

Ref	Summary of Deadline 3 submission OR Excerpt of Deadline 3 submission	Applicant's comments
PLA01	**Written Submission of Oral Representations** The Port of London Authority submitted a written summary of their Oral Representations made at ISH3 and ISH4.	This is noted by the Applicant.
PLA02	**PLA's Comments on Submission Received at Deadline 2** **Applicant's Comments on Deadline 1 Submissions** The Applicant has responded to the PLA's Relevant Representation (RR-090) on pages 18-20. Their response reflects what was said by both the Applicant and the PLA at Issue Specific Hearing 3 ("ISH3") that meetings have been held between the Ports and the Applicant; the Applicant accepts that deeper cable burial (to at least 22m below chart datum) will be required over the deep water routes and that whilst discussions continue over the area for deeper cable burial, it is expected that agreement can be reached by the close of the examination. The PLA can confirm that it has received from the Applicant the plan that was referred to at ISH3 which shows the areas over which the Applicant is proposing deeper cable burial. The PLA is currently reviewing the plan and discussions continue with the Applicant.	This is noted by the Applicant.
PLA03	Since the close of ISH3, the PLA and the Applicant have met and have reached agreement that chart datum is the datum to be used in the application documents.	This is noted by the Applicant.
PLA04	In relation to concurrent works, again the Applicant's response reflects what the Applicant said in oral submissions at ISH3. In relation to the Applicant's comment on page 19 that similar commitments should be request by the PLA for potentially overlapping projects, the PLA is an Interested Party for the North Falls development consent order ("DCO") application, and the PLA can confirm that the application documents submitted in relation to North Falls include an outline navigation installation plan which includes information on restrictions on concurrent working. The PLA will be making comments on this plan as part of the North Falls DCO application process.	This is noted by the Applicant.
PLA05	SeaLink is at the pre application stage, and the PLA would expect the SeaLink application to include an outline navigation installation plan. The PLA would comment on that plan, or the absence of any plan, as part of that DCO application process.	This is noted by the Applicant.
PLA06	The PLA disagrees with the comment that approval of the Navigation Installation Plan ("NIP") can only be granted by the Marine Management Organisation ("MMO") as regulator. There is no reason why the PLA could not be given approval of the NIP as part of protective provisions for the PLA. Whilst accepting that this application is outside of the PLA's area of jurisdiction, dual consenting is not uncommon on the river Thames and there are many examples of DCO's where there are protective provisions for the PLA and a deemed marine licence. See for example The Thames Water Utilities Limited (Thames Tideway Tunnel) Order 2014, The Silvertown Tunnel Order 2018, The Port of Tilbury (Expansion) Order 2019 and the proposed A122 (Lower Thames Crossing) Development Consent Order. This means that approval is required from both the PLA and the MMO. It is also not uncommon for plans to be approved by multiple parties for example, The Silvertown Tunnel Order Schedule 2 Requirements set out at Part 1 (5) various plans that are required to be produced and approved prior to the authorised development being	The NIP contains the obligation to seek agreement from all relevant parties including the PLA prior to submitting the final version to the MMO for approval. The Applicant notes that dual approval has been applied to the projects listed which are all within the PLA harbour limits and therefore their jurisdiction. Of the eleven documents referred to in the Silvertown Tunnel DCO Schedule 2 Part 1 (5) only the Archaeological Written Scheme of Investigation (in respect of elements within the river Thames) and the Passage Plan require approval by the PLA. In the case of that project it is entirely reasonable that the PLA may approve such matters where they interact with the rights of the PLA as statutory harbour authority, however Five Estuaries is outside the PLA's jurisdiction, the circumstances are therefore clearly distinguishable and as such the appropriate mechanism for approval is to submit to the MMO. Further, the NIP applies to an area (defined as the area of interest in the NIP [REP1-039] which covers navigational routes and locations (e.g. the Sunk pilot boarding area, the

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	commenced. These include at 5(3) eleven documents that must be approved by the relevant planning authority, the Environment Agency or the PLA. The Thames Water Utilities (Thames Tideway Tunnel) Order 2014 requires the approval of the Scour and Accretion Monitoring and Mitigation Plan by the PLA under its protective provisions, by the Environment Agency under its protective provisions and by the MMO through its deemed marine licence. The PLA considers that it is entirely appropriate for it to approve the NIP, a document that will have significant implications for vessels entering and exiting the largest Port in the Country, noting the MMO's deferral to the PLA and MCA regarding navigational concerns (para 3.7.4 PD4-014).	Medway approach channel and the Harwich deep water channel) of importance for competitor ports to the London ports. It would therefore not be appropriate for a single port to have right of approval over matters that may impact other related parties. The Applicant remains committed to engaging with all interested parties on the NIP to ensure construction activities that have the potential to impact marine traffic are carefully managed.
PLA07	The PLA notes the Applicant's comments in relation to dredging and await either an updated version of the outline cable specification and installation plan or a separate sediment disposal plan.	This is noted by the Applicant. A 10.30 Outline Sediment Disposal Plan and updated 9.12 Outline CSIP – Revision B have been submitted at Deadline 4.
PLA08	As noted by the PLA at ISH4 the PLA has received a heavily amended version of the protective provisions (drafted for the PLA's benefit) from the Applicant on the morning of ISH4. As explained at ISH4 the PLA wish to ensure that it has sufficient oversight of the activities that potentially affect the Deep Water Routes (DWRs) and that this is not left to the MMO. The Applicant's comments on the protective provisions confirm a reluctance on the part of the Applicant to give the PLA the approvals the PLA requires and discussions will continue on the matters that remain to be agreed.	As set out above, the Applicant is very happy to engage with the PLA however what is sought is formal approval of a plan which must be approved by the MMO for an area which is outside the PLA's jurisdiction. The Applicant does not agree that dual approval is appropriate in that circumstance.
PLA09	**Applicant's Responses to ExQ1** The PLA notes the Applicant's response regarding concurrent working and would reiterate its comments set out at paragraph 2.3 and 2.4 above regarding North Falls and SeaLink.	This is noted by the Applicant.
PLA10	**Marine Management Organisation deadline 2 submission** The PLA supports the MMOs comments regarding the definition of maintain and agrees with the MMO's definition of maintain: "upkeep or repair an existing structure or asset wholly within its existing three-dimensional boundaries." The PLA considers that the Applicant's current definition of maintain would allow for the cables to be adjusted and altered and they could therefore be maintained at a different depth to that which they were originally laid. This would not be acceptable at the DWRs.	The definition of maintain follows precedent and applies to all of the structures, the Applicant does not agree it is appropriate to limit it due to a concern on a specific point which is fully addressed through other controls. The issue of depth in the DWRs is specifically secured in the 9.12 Outline CSIP – Revision B has been submitted at Deadline 4, which provides that the cables must be maintained at the required depth and would not allow for the scenario hypothesised.
PLA11	The MMO's response also provides comments on Stakeholders' Deadline 1 submissions. The PLA notes at paragraph 5.3.12 that the MCA and the MMO are discussing an amendment to Schedule 11, Part 2, 4(3) so that it would read: "the undertaker must not reduce water depth by more than 5% of navigable depth referenced to chart datum unless agreed with the MMO and MCA in writing"	Please see response to PLA12 below.
PLA12	As the PLA has set out in its previous written submissions and at issue specific hearings there can be no reductions in under keel clearance at the Sunk and Trinity DWRs if these routes are to be dredged in the future to 22m CD. The PLA considers that this highlights why protective provisions are required for the PLA so that the PLA can ensure that the required water depths are protected at the DWRs into the Port of London.	The Applicant notes this position with regards to the under keel clearance at the Sunk and Trinity DWRs. Detailed discussions with regards to cable installation depth to 22m below chart have taken place, and the 22m below chart datum requirement in proximity to the DWRs has been incorporated into 9.12 Outline CSIP - Revision B submitted at Deadline 4. The Applicant is continuing to engage with the PLA with regards to protective provisions.

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PLA13	**Historic England Written Representation** The PLA notes the comment at paragraph 2.101 of Historic England's Written Representation (REP2-053) regarding the Applicants Outline Marine Written Scheme of Investigation (APP251) which states: "Section 6.7.16 discusses the strategies that will be needed for items removed from the seabed. It is stated that conservation strategies will be included in the relevant method statements, but would recommend that a relocation and recovery strategy should also be developed." The PLA set out at paragraph 5.2.3 of its Written Representation (REP2-066) how the PLA would want to approve any pre-construction activities that could affect the DWRs because there may need to be restrictions on how the pre-construction activity can be undertaken. The PLA 4 specifically cited the example of not relocating an archaeological find to or within a DWR. Again the PLA considers that this highlights why the PLA requires protective provisions in order to ensure that the DWRs are not detrimentally impacted by decisions made by others.	The Applicant would not seek to relocate any archaeological finds within any of the DWRs. The Marine Archaeological Written Scheme of Investigation Rev C has been submitted at Deadline 4 to clarify this commitment. The Applicant is continuing to engage with the PLA with regards to protective provisions.

7. ESSEX COUNTY COUNCIL [REP3-027]

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ECC01	a) Road traffic surveys and predicted traffic generation and impacts on junctions during construction The Council's Local Impact Report outlines all of the concerns we have raised with the assessment method (some of which have been addressed by the Applicant in the most recent iteration [REP1-018], which is appreciated). The Council had discussions with the Applicant on our comments on the management plans, and they felt very productive, we are awaiting feedback on our comments, but are hopeful that we will be able to reach common ground of the majority of the points raised to date. This should significantly reduce the areas of disagreement.	The Applicant issued Essex County Council with some additional information related to the concerns raised in the Local Impact Report in advance of a meeting held on the 28th November 2024 to endeavour to address as many points as possible. This included updated drafts of the 9.24 Outline Construction Traffic Management Plan [AS-055] and 9.26 Outline Workforce Travel Plan [APP-259] to allow discussion and revisions if necessary before submitting these into the examination at Deadline 5. A large majority of open points raised by Essex County Council in relation to the 9.24 Outline Construction Traffic Management Plan – Revision B [AS-055], 9.26 Outline Workforce Travel Plan [APP-259], and assessment in 6.3.8 Traffic and Transport – Revision C [AS-043] have now been addressed. The Applicant is updating some of the additional information provided and undertaking some further minor updates of the 9.24 Outline Construction Traffic Management Plan [AS-055] and 9.26 Outline Workforce Travel Plan [APP-259] following discussion at the meeting with Essex County Council. Any residual points will be included within the SoCG to be submitted at Deadline 5.
ECC02	b) Assessment of cumulative impacts during construction of Five Estuaries at the junction of the A120 and Bentley Road The Council have concerns over communities experiencing repeated impacts as a result of numerous projects. This was covered by the examining authority and previously set out in our response to item (d) [REP1-062].	The Applicant has updated 6.3.8 Traffic and Transport – Revision C [AS-043] with a high level assessment of VE build-out Scenario 3 where there would be a greater than three years between the construction of VE and NF OWF. The extract of the Traffic and Transport chapter is included in Appendix 3 of 10.25 Applicant's Responses to Action Points - ISH3, CAH2, ISH4 [REP1-061].
ECC03	c) Mitigation works proposed at the junction of the A120 and Bentley Road Subject to National Highways being content, in principle we do not have any concerns with the design at this stage, however, the Council have not yet identified a Stage 1 Road Safety Audit for the widening works and footway/cycleway prior to the end of the DCO. Although not considered likely, it may identify requirements for the design, which may result in the need for additional land that may not have been identified.	The Applicant undertook the Stage 1 RSA on 14 November 2024. This was accompanied by National Highways. The audit report has now been issued and will be provided to Essex County Council and submitted into the Examination at a future deadline. The highway improvement designer (Mott MacDonald) will review the audit report and provide a Designer's Response Report. This will include responses to each of the two issues identified in the audit report, together with any changes to design (where the recommended changes are agreed). The Designer's Response Report and updated design drawing (as appropriate) will also be issued to Essex County Council once agreed with National Highways.
ECC04	d) Routeing of Abnormal Indivisible Loads As per the Council's Local Impact Report, there are concerns around the access for AILs for cable drums associated with all of the accesses on the route, particularly the number and frequency of AIL movements. As well as what assessment has been undertaken of the routes, including whether a structural assessment has been undertaken to ensure the deliverability of their routes i.e. can the local road network accommodate these movements. The Applicant has submitted Technical Note – Abnormal Indivisible Loads [REP2-029] at Deadline 2, which provides useful information on the AIL strategy. The assessment includes: • The types of AILs required for the project. • What constitutes an AIL.	The Applicant has updated the 9.24 Outline Construction Traffic Management Plan [AS-055] and has provided a draft to Essex County Council for discussion. This includes the suggested roads that could be subject to road condition surveys. Should it be identified that the vehicle used in the swept path analyses in 10.20.3 Technical Note – Abnormal Indivisible Loads [REP2-029], which is the largest possible vehicle type to deliver two cable drums, cannot make the manoeuvre following further investigations or a trial run, a smaller vehicle would be used with one cable drum. Potential delays to other road users from AIL deliveries would only occur when the vehicle is turning at a sharp bend or moving slowly with an escort/pilot vehicle, and

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	• The AIL process. • An indication of the number of AILs: Between 560 and 580 cable drums (to cable corridor accesses). Between 10 and 30 large electrical equipment (to Onshore Substation). Between 2 and 4 transformers (to Onshore Substation). • Swept paths are provided for junctions along the routes providing access to the cable corridor. The AIL route for cable drums has been set out and indicates the following: • Potential requirement for vehicles to U-Turn at Harwich Road roundabout when accessing Routes Sections 5 (north of A120 to Bentley Road), 6 (between Bentley Road and Ardleigh Road) and 7 (Little Bromley Road / Ardleigh Road) • Requirement to U-Turn at A12 Junction 29 for vehicles accessing Route Section 1 to 4a (south of A120). • Requirement for AIL movements through Weeley for accessing Routes Sections 2 (south of B1033 to railway line), 3 (north of B1033 to B1035) and 4a (B1035 to south of A120). • Requirement for AIL movements through Thorpe Green for Route Sections 3 (north of B1033 to B1035) and 4a (B1035 to south of A120). • Requirement for AIL movements through Weeley Heath and parts of Thorpe Le Soken for accessing Routes Sections 2 (south of B1033 to railway line), 3 (north of B1033 to B1035 • Requirement for AIL movements through Clacton when accessing Route Section 1 (Beach landing to south of railway line). The Council welcomes the commitment to undertake Road Condition Surveys, as per [REP1-043], and are having internal discussions around the requirements for the level of survey works due to the road status. The Council would request that the list of roads to be surveyed is agreed within the OCTMP. There is concern that • the vehicles to undertake these movements within the highway network without overrunning of the kerb and potential damage. • about the ability to rectify damage to the highway quickly through the project. It is worth considering whether there is opportunity for a trial run on the highway network (without the cable drum) to understand the impact. The large number of AILs providing access to the cable corridor would result in increased delay to users of the local road network.	therefore infrequent, and for a short period of time, which would not be considered a significant effect.
	e) Control and mitigation measures set out in the Outline Construction Traffic Management Plan (CTMP) and the Outline Workforce Travel Plan The Council had discussions with the Applicant on our comments on the management plans, and they felt very productive, we are awaiting feedback on our comments, but are hopeful that we will be able to reach common ground of the majority of the points raised to date. This should significantly reduce the areas of disagreement.	The Applicant has provided updated drafts of the 9.24 Outline Construction Traffic Management Plan [AS-055] and 9.26 Outline Workforce Travel Plan [APP-259] to Essex County Council for comment before submitting these into the examination at Deadline 5.
ECC05	Explanatory Memorandum [REP1-011] While this is a matter for Natural England (NE), and the Council will no doubt await NE's comments with interest, it would be helpful if the Applicant could explain the consequences of a hydro-fracture breakout and to point to relevant provisions of the ES which deal with this eventuality.	The Applicant responded to this point in paragraphs 3.2.3 to 3.2.5 of 10.24 Applicant's Summaries of Oral Submissions - ISH3, CAH2, ISH4 [REP3-022]. It should be noted that bentonite is an inert material. i.e. mud/clay.

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ECC06	Article 9 (Defense to proceedings in respect of statutory nuisance) A minor drafting point: the new wording in article 9(2)(a) needs to be recast as follows – "… relates to premises used by the undertaker for the purposes of or in connection with the construction, maintenance or decommissioning of the authorised development that the nuisance and that the nuisance is attributable to the carrying out of the authorised development in accordance with a notice served under section 60 (control of noise on construction sites), or a consent given under section 61 (prior consent for work on construction sites), of the Control of Pollution Act 1974".	The Applicant has made a minor amend to this paragraph in the dDCO submitted at this Deadline, but not to the wording sought which retains an error.
ECC07	Article 16 (traffic regulations) First, a drafting point: the numbering of paragraphs has gone awry. Paragraph (2) to (6) are subparagraphs under paragraph (1) and should be recast as subparagraphs (a) to (f). (If this change is not made, the internal cross-references in the article do not work). Second, the powers under existing paragraphs (2) to (6) – which we say should be (1)(a) to (f) can be operated "in connection with, or in consequence of, the construction of the authorised development". Does this mean they can be exercised after construction has completed? If so, for how long and what is the justification for this? If this does not mean the powers can be exercised after construction has been completed, what does it mean? Third, in paragraph (7), - which we say should be paragraph (2) – for consistency with paragraph (1), shouldn't the reference to "maintenance works" be omitted? If not, why not? Also, for clarity, what is the "the exception set out in paragraph (1)"? Fourth, what is the justification for including new paragraph (20) – which we say should be paragraph (15)? Is it precedented in any other DCOs? Why is it relevant here? The relevant paragraph states – "No speed limit imposed by or under this Order applies to vehicles falling within regulation 3(4) of the Road Traffic Exemptions (Special Forces) (Variation and Amendment) Regulations 2011(b) when in accordance with regulation 3(5) of those regulations"	The Applicant maintains its position (as set out in ISH4 and REP3-022) that the drafting is clear in referring to the "the construction of the authorised development" and does not accept ECC's unusual interpretation of that is correct. Paragraph 15 simply provides confirmation that no speed limit applies to vehicles being used by special forces in national security emergency. This mirrors the standard exemptions which commonly apply for 'blue lights' vehicles operating under their exemptions. The Applicant concedes this may be a 'for the avoidance of doubt' inclusion but it was made to align with the draft North Falls DCO and the Applicant is unclear why it would be objectionable.
	Requirement 2 (Schedule 2, requirements) Various changes have been made to the parameters set out in R2. Some of these have led to a decrease in size (eg "Maximum height of wind turbine generators when measured from LAT to the tip of the vertical blade" from 399m to 370m"). Others have led to an increase in size (eg "Maximum total seabed footprint for wind turbine generators (excluding scour protection) (metres squared)" from 298,400m to 992,274m). The Schedule of Changes [REP1-002] explains the changes as follows – "To secure the reduction in the maximum tip height agreed with the Ministry of Defence as necessary to prevent an adverse radar impact; and to secure the removal of gravity base foundation types as an option with resultant reduction in seabed footprints". Based on the underlined explanation in the Schedule of Changes, is the figure of 992,274m correct? The same point applies in respect of the "Maximum total seabed footprint for offshore substation platforms (excluding scour protection) (metres squared)" which has increased from 14,000m to 33,700m. We note the applicant's comments at the ISH that these increased figures were the result of a typographical error which they will correct by the next deadline.	The Applicant noted the typographical error in ISH4 and corrected it at the dDCO version submitted Deadline 3 [REP3-005].
ECC08	Schedule 2, Part 2 (approval of matters specified in requirements)	The repayment of fees has been deleted from the dDCO at Deadline 3 [REP3-005].

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	Paragraph 5(1) concerns the fees to be paid to a local authority for dealing with an application for discharging a requirement. The proposed fee is the fee payable under regulation 16(1)(b) of the Town and Country Planning (Fees for Applications, Deemed Applications, Requests and Site Visits) (England) Regulations 2012 i.e. £145 per application. While such a fee might be appropriate to discharge a condition attached to a planning permission, it is insufficient for the discharge of a requirement related to a nationally significant infrastructure project which is a fundamentally different task. The discharging authority should be able to recover all its costs for dealing with requirements and the best way to secure this is by the parties entering into a legally binding Agreement with the Applicants, and this is further commented upon below. Moreover, paragraph 5(2) seeks to recover fees which have been paid under paragraph 5(1) eg para 5(2)(i) provides for the repayment of fees within 4 weeks of rejecting an application as invalidly made. This is considered wholly unreasonable. The authority will still have done the work necessary to reject the application. It should not be punished financially if an applicant is incapable of getting its applications in order. It is our considered view that Paragraph 5(2) should be struck out of the DCO, and the justification for this is as set out below. At Hearing the ExA asked for examples of where the provision set out in Schedule 2, Part 2, Paragraph 5 has been in place in other DCOs. ECC are not of the view that it is, indeed reference is here made to the recent DCO for the Bramford to Twinstead Project. In the same at Schedule 4 "Discharge of Requirements" it states: Fees 3.—(1) Where an application is made to a relevant authority for any consent, agreement or approval required by a Requirement (including consent, agreement or approval in respect of part of a Requirement), a fee must be paid to the relevant authority as follows—(a) such fee as may be prescribed (under sections 303 and 333(2A) of the 1990 Act for the discharge of conditions attached to a planning permission); or (b) a fee of £145 per request unless a bespoke arrangement has been agreed between the Applicant and discharging authority and legally secured. Using this as a current example, Consent having recently been gained for Bramford to Twinstead, and which came into force on the 04 October 2024, this illustrates that the repayment of fees was NOT included in this DCO. In addition this also allows for a separate fee schedule to be set up between the applicants and the affected Authorities for the re-imbursement of cost to allow the Authorities to work at cost neutral, which is a requirement of Essex County Council's NSIP Policy document. ECC's requested amendments are therefore precedented in a recent DCO. Discharging requirements in respect of a DCO are costly (both in terms of time and resource) to the relevant authorities. The timescales to discharge the requirements in the DCO are short, therefore these need to be prioritised, and a DCO is complex in its nature, therefore the fees should be commensurate with the work required to be undertaken. It is essential that the relevant authorities are able to recoup fees incurred (even when the application is rejected), and that the relevant authorities are able to agree different fees pursuant to any agreement between the applicant and the relevant authority. These amendments will go some way to mitigate the costs of discharging the requirements.	As set out in the Applicant's summary of oral submissions for ISH4 (REP3-022 at 3.2.8) the Applicant notes that the TCPA fees regulations are only ever a proxy and more work can be involved in discharge than this would necessarily cover. The Applicant notes that this is true for all planning applications not just this DCO, and that Parliament has not put in place any fee regulations at all for the discharging of requirements under a DCO. Indeed, in the recent review of the fees for the application stage and in bringing in a statutory ability for some bodies to charge for participation in an Examination the Government had a clear opportunity to revisit the position on fees for discharge and did not make any change. The Applicant accordingly considers that in this area, where the law does not provide for the payment of any fee at all, the application of the TCPA fees regime is the most suitable available proxy. This also reflects the position in other very recently made DCOs including Sheringham Shoal and Dudgeon Extensions Offshore Wind Farm Order 2024 (schedule 2 part 2, paragraph 4), Gate Burton Energy Park Order 2024 (Schedule 15 paragraph 5) and HyNet Carbon Dioxide Pipeline Order 2024 (Schedule 2 part 2, paragraph 27). The ECC position appears to be based on the continuing misunderstanding that the current drafting somehow prevents a bespoke agreement being entered into. It does not. The Applicant will not agree to amend the drafting which would affect all LPAs to whom an application is made (and it is noted that Tendring District Council is the LPA not ECC), the Applicant requires the certainty of a clear, set fee as a baseline.
ECC09	Inclusion of Paragraphs 8.7.10 and 8.7.18. Table 8.19. With regards to the speed limit change on the B1035 Thorpe Road (sheet no.3 of 7 on [AS-030], the Council are of the opinion that a 40mph speed limit is preferable over a 30mph speed limit at this location due to the local context, and that the speed limit should be	The Applicant is seeking to liaise further on this request with Essex County Council. If updates to documents or plans are required these will be submitted at a future deadline. The Applicant notes that the 30 mph speed limit along Thorpe Road was agreed at a meeting with Essex County Council Highways on 11th August 2023, subject to a Road

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	extended to the south to include AC-4 (location shown on sheet no. 9 of 20 on [AS-023]. This would need to be reflected in an updated design of the access junction to include sufficient visibility for a 40mph speed limit.	Safety Audit being undertaken. This was done and confirmed no issues. The 30 mph speed was proposed to reduce the need to cut back hedgerows around AC-5, which link with ancient semi-natural woodland, and have potential bat trees, dormice presence, lapwing and reptiles. The Applicant would seek to retain the proposed 30 mph speed limit on this section of road. No temporary speed limit change is considered necessary in the vicinity of AC-4, given the 85th percentile speeds recorded (39mph) and the 120m visibility splays shown.
ECC09A	In addition to the comments above, it is considered that the speed limit change on Golden Lane (sheet no. 2 of 7 [AS-030]) be extended approximately a further 60m to the east to cover all the residential properties.	The Applicant is seeking to liaise further on this request with Essex County Council.to understand the benefit of the extension. If updates to documents or plans are required these will be submitted at a future deadline.
ECC10	Table 8.8 Inclusion of AC-13 Ardleigh Road: In principle, the Council do not have specific issues with the access; however, we would want to see a drawing with visibility splays, swept path assessment and it is required to be subject to a Stage 1 Road Safety Audit, as per the other site accesses.	The Applicant is seeking to liaise further on this request with Essex County Council. If further work, or updates to documents or plans are required these will be submitted at a future deadline. The proposal at AC-13 is to make use of the existing field access (which is currently used by large agriculture vehicles), for a very limited number of construction vehicles. It is not proposed to significantly upgrade the access. In terms of visibility splays, given the limited vehicle movements in and out of AC-13 forecast and given the Outline Construction Traffic Management Plan (CTMP) [AS-055] has been updated to state that banksmen would be used to manage construction vehicle movements on Ardleigh Road, a drawing showing visibility splays is not considered necessary by the Applicant. The Applicant considers the above elements can be controlled through the CTMP post consent and do not need to be detailed at this stage. As no physical changes to the access are proposed and the use of the AC-13 would most likely be for less than six months, based on paragraph 2.1 (and NOTE) in the Design manual for Roads and Bridges (DMRB) GG 119., no Stage 1 Road Safety Audit (RSA) should be required. Should it be deemed necessary, post consent, to use AC-13 for greater than six months, the Applicant would discuss the requirement for a Stage 1 RSA with Essex County Council.
ECC11	Technical Note – Abnormal Indivisible Loads [REP2-029] Due to the weights of the vehicles involved, it is recommended that there are early discussions with the ECC structures team for the affected routes. There may be structures that are being monitored by the Structures team, which may not have reached the threshold to have a formal weight limit implemented on a particular structure, affecting potential designated routes. With regards to the AIL figures at Table 1, it is queried whether when departing from the site the Cable Drums the vehicle would remain an AIL based on its length or whether the length of the vehicle can be reduced? As per our response to [REP2-026], can the total movements figure be confirmed due to the potential inconsistency between the figures being quoted. Although from discussions we understand the figures in [REP2-029] are correct. The Council welcomes the commitment to undertake Road Condition Surveys, as per [REP1-043]. The Council are having internal discussions around the requirements for the level of survey works due to the road status. The Council would request that the list of roads to be	The Applicant notes the comment regarding making contact with the Essex County Council Structures team when finalising the detail of Abnormal Indivisible Loads deliveries on the local highway network. As each cable drum would need to be taken off-site once the cable has been installed, the vehicle would remain the same size when departing the site. If the trailer of the articulated vehicle is less than 18.65 m in length and the AIL is based on weight only, the vehicle departing the site would not be an AIL. This would be considered in line with the approach for AILs set out in the 9.24 Outline Construction Traffic Management Plan (oCTMP) [AS-055] The Applicant has updated the 9.24 OCTMP [AS-055] in response to comments and has provided a draft to Essex County Council for discussion prior to submission at Deadline 5. This includes the suggested roads that could be subject to road condition surveys.

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	surveyed is agreed within the OCTMP, as the wording of some roads is ambiguous. The list could be indicative and subject to further refinement following appointment of a contractor.	
ECC12	Annex 2: Wynn's Report Under paragraph 9.1.4 of Annex 2, the structural status of the culvert shown at photograph 54 located immediately prior to the proposed site access point would need to be confirmed. The report indicates that a short-term solution would be that a temporary plate could be installed to enable AIL access, due to the size and weight of the AILs that may not be acceptable to the ECC Structures Team. It is recommended that discussions are held on this issue. Section 10 of Annex 2 indicates a potential need to route some AILs through Colchester; the routes include the A134 (photograph 87) and Station Approach near North Station, Colchester (photographs 81 and 82) where you have some overhead bridge structures, however, no swept path drawings have been provided for these areas within Colchester. The Applicant should be aware that there is a compact roundabout on the B1035 south of the Horsley Cross roundabout that forms part of planning application:19/01706/OUT - Land south-west of Horsley Cross Roundabout Clacton Road Horsley Cross CO11 2NZ for the warehouse and distribution centre at Centurion Park, Horsley Cross, which is under construction now. Consideration should be given towards undertaking a review of this junction for AIL movements.	The Applicant notes the comment regarding making contact with the Essex County Council Structures team when finalising the detail of Abnormal Indivisible Loads deliveries on the local highway network. The Applicant notes that Annex 2 is a North Falls commissioned report, North Falls have advised the Applicant that swept path analysis is only provided in the report where Wynns as an abnormal load specialist, applying their professional judgement and experience as industry experts consider that it is needed to confirm the suitability of a route. In this instance swept path analysis has not been recommended by Wynns to be required. It is not envisaged there would be any issues at the new roundabout on the B1035 south of the A120, given the alignment of the B1035 entry and exit arms and the 6m wide over run area. Therefore, the Applicant does not consider it necessary to undertake a swept path analysis of a cable drum delivery vehicle manoeuvring at the roundabout.
ECC13	Appendix 5: Swept Path Assessment The majority of the drawings indicate no anticipated issues, there are a few of the drawings that indicate that the AIL will have to cross the opposing lane to make the turning or potential partially encroach the opposing lane. However, it is understood that in this situation an 'escort/pilot vehicle may be used, which would be discussed and agreed with the relevant highway authorities'. This is considered to be acceptable. There does remain some concern around the capability for the vehicles to undertake these movements within the highway network without overrunning of the kerb and potential damage (particularly B1033 / B1035 junction at Thorpe Green, and generally at the site accesses). As a result, the ability to rectify damage to the highway quickly through the project as a result of damage caused by large vehicles is considered to be important. It is worth considering whether there is an opportunity for a trial run on the highway network (without the cable drum) to understand the impact. IT is worth noting that, the large number of AILs providing access to the cable corridor would result in increased delay to users of the local road network that should be considered alongside all other impacts.	Should it be identified that the vehicle used in the swept path analyses (which is the largest possible vehicle type to deliver two cable drums), cannot make the manoeuvre following further investigations or a trial run, a smaller vehicle would be used with one cable drum. Potential delays to other road users would only when the vehicle is turning at a sharp bend or moving slowly with an escort/pilot vehicle, and therefore infrequent, and for a short period of time, which would not be considered a significant effect
ECC14	Socio-Economic Matters At Hearing 04 the ExA asked ECC if we were content to add Suffolk County Council (SCC) to support ECC in seeking to be a consultee on Requirement 16 (Skills and employment strategy). ECC would like to confirm that it agrees with, and is wholly supportive in principle, of SCC's request to be a named consultee in Requirement 16 (Skills and employment strategy). Onshore elements of the Five Estuaries project are located close to the Essex/Suffolk border, and it is likely that the local workforce and supply chains would be drawn from both counties.	As the Applicant noted in ISH4 and as set out in REP3-022 the Applicant maintains its position that this addition to the requirement is unnecessary, there is no impact on SCC which would justify this inclusion, and it continues to object to any insertion. Suffolk County Council is not a host authority, and given that a very small proportion of the local workforce is anticipated to be drawn from Suffolk (given the relative proximity of urban centres in Tendring and Colchester which together have a construction labour pool of 16,000 workers), there is no requirement for mitigation of an impact and the Applicant does not consider it necessary for Suffolk County Council to be a named statutory consultee of the discharging authority of Requirement 18. The Applicant within

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	Given the concentration of major energy projects located in Essex and Suffolk, a coordinated approach across administrative boundaries is desirable to maximise local benefits.	9.27 Outline Skills and Employment Plan [APP-260] has committed to continued engagement on the development of the Skills and Employment Plan with a number of key stakeholders (including SCC) (see section 5.1 and 5.2). .
ECC15	Construction Access Management Plan ECC is also minded in respect of Requirement 7, not least with regard to the Construction Transport Management Plan, and with SCC's comment at Hearing, that they requested the applicant submits a Port Management Plan. ECC is of the view that this will also require consideration and future input from SCC who should be a specified consultee if the ExA consider it necessary to enter into the same. The ExA will be aware of the close proximity of port facilities in both Essex and Suffolk to the DCO under consideration, and the potential impacts on the same once a destination port is finalised. Again, a coordinated approach across administrative boundaries is desirable to maximise local benefits.	The Applicant refers to the detailed response on this point submitted at Deadline 3 (REP3-025, response to LIRs at SCC.15). The Applicant also refers to its response to SCC on the same request – SCC-02 below. The Applicant again notes that such a requirement can not be necessary or justifiable as there is no likely significant effect to control or manage. It is entirely unclear how such a plan would act to maximise local benefits – as noted there are existing operational ports in both Essex and Suffolk which already generate traffic of which any use by the Applicant would simply form part of that normal traffic flow. The traffic generation at any port caused by this project could not make a material difference to the traffic at that port as there are only a set number of berths available in any location, the project does not create new port traffic but simply buys some existing capacity. Requiring an unnecessary plan creates an administrative burden and delay in awaiting approval which disincentivises using those ports, it does not encourage it or thereby act to maximise local benefits.

8. BROOKS LENEY ON BEHALF OF VARIOUS CLIENTS [REP3-040]

Ref	Summary of Deadline 3 submission OR Excerpt of Deadline 3 submission	Applicant's comments
BL01	**Adam Brown & Joanne Marie Brown** The submission includes a request that "*that the cables should be micro sited to the east of the corridor to avoid any unnecessary sterilisation of future farmyard expansion.*"	The Applicant notes the request by Mr Church of Brooks Leney to micro-site, at this stage, the cables on his clients' land. The Applicant requires reasonable flexibility to balance all of the applicable factors in reaching detailed design including (but not limited to) the outcomes of detailed ground investigation, updated ecology surveys, engineering constraints and contractor methodology input as well engagement with landowners and the obligation to act reasonably in seeking accommodations with them. The final impact on landowners can materially impact the compensation payable and it is therefore in the Applicant's interests to work constructively with them. The Applicant has recently revised the proposed Heads of Terms for the land interest to include a commitment to use reasonable endeavours to position the final easement as far to the eastern side of the option area as practicable, subject to constraints arising from consenting, technical, or engineering requirements which we believe greatly mitigates the affected parties concerns.
BL02	**Nicholas David Lawrence & Sam William Lawrence** The submission refers to a request to locate the cable corridor away from a potential new reservoir.	The Applicant notes comments from Mr Church of Brooks Leney in relation to the possibility of "*the construction of a new reservoir in due course, should* [the client] *need to do so*." The Applicant had discussions in respect of a potential new reservoir with the land interest and their agent, including at a meeting of 30 November 2023, where the Applicant requested indicative designs or plans of the reservoir to further evaluate, since, according to the agent, "consultants had been instructed". Follow up requests for early plans or indicative designs were made, but regrettably, no such plans were received by the Applicant. Mr Church of Brooks Leney asserts that "*…with the proposed location of the easement being as per plot 04-007, it would prohibit my client constructing a reservoir to the west of the existing reservoir*." The Applicant notes that when travelling from east to west from the existing reservoir, there is a field of over 100m in width before the field with the proposed onshore infrastructure is reached. The submission from Brooks Leney further asserts that "*the location of the proposed easement would provide insufficient room to construct a reservoir to the west of the proposed cable corridor, rendering the whole area sterilised*". The Applicant notes that again, when travelling from east to west from the existing reservoir, the distance from the western edge of the Order Limits to the field boundary is in excess of 100m.
BL03	**James Fairley & Sons (Farms) Ltd** The submission notes the potential impact on the clients' landholding and acknowledges existing underground services.	The Applicant outlined the engineering constraints imposed by the existing Affinity Water main in the Site Selection and Alternatives chapter of the Environmental Statement [APP-066]. The Applicant is mindful of the potential impact to farming operations as a result of the installation of onshore infrastructure but is confident that through appropriate accommodation works the temporary impacts are mitigatable. The Applicant met with the land interest and their agent on 28th November 2024 to discuss outstanding concerns.
BL04	**Mary Cooper** The submission queries the construction, and use of, the proposed haul route to serve the onshore substation.	The Applicant has provided clarification in the form of a Technical Note for the proposed haul road between Bentley Road and the onshore substation zone, resulting from an action point from Issue Specific Hearing 3 (ISH3) at Deadline 4 along with this submission.

Ref	Summary of Deadline 3 submission OR Excerpt of Deadline 3 submission	Applicant's comments
BL05	**T Fairley & Sons Ltd** The submission makes the same point as for Mary Cooper, for the proposed haul route to serve the onshore substation. The submission also makes a request for micro-siting cables. The submission notes differences between the Applicant's landscaping proposals and those for North Falls Offshore Wind Farm, and queries whether the land required accords with the conditions stated in section 122 of the Planning Act 2008.	The Applicant has provided clarification in the form of a Technical Note for the proposed haul road between Bentley Road and the onshore substation zone, resulting from an action point from Issue Specific Hearing 3 (ISH3) at Deadline 4. The Applicant notes the request to micro-site, at this stage, the location of the cables. The Applicant requires reasonable flexibility to balance all of the applicable factors in reaching detailed design including (but not limited to) the outcomes of detailed ground investigation, updated ecology surveys, engineering constraints and contractor methodology input as well engagement with landowners and the obligation to act reasonably in seeking accommodations with them. The final impact on landowners can materially impact the compensation payable and it is therefore in the Applicant's interests to work constructively with them. The Applicant met with the land interest and their agent on 22 November 2024 to discuss landscaping proposals. The Applicant is satisfied that the application accords with the requirements of s.122 of the Planning Act 2008. That case is set out in the Statement of Reasons [REP1-014], and the summaries of oral submissions at CAH1 [REP1-059] and CAH2 [REP3-022]. The Applicant has provided further detail on the differences between VE and North Falls landscaping proposals in response to ExA's Question SLV2.04 in 10.28 Applicant's Response to EXQ2 submitted at this deadline.
BL06	**The Executors of the Estate of the late Charles James Tabor** The submission makes the same point in relation to the landscaping proposals and the Planning Act 2008, as for T Fairley & Sons Ltd.	The Applicant's observations in respect of landscaping made above for T Fairley & Sons Ltd apply to The Executors of the Estate of the late Charles James Tabor. The Applicant met with representatives of the land interest on 28th November 2024 to discuss outstanding matters.

9. ARDLEIGH PARISH COUNCIL [REP3-039]

Ref	Summary of Deadline 3 submission OR Excerpt of Deadline 3 submission	Applicant's comments
APC01	We urge the Inspectors to examine very carefully the CUMULATIVE impact of the projects proposed in this part of East Anglia and the ALTERNATIVES which would reduce the harm while still meeting the need for the project. CUMULATIVE IMPACT The Inspectors will be aware that 'functional interdependence' is key (Burridge v Breckland DC 2013 and Wingfield, R v Canterbury City Council 2019). It means where one part of a development could not function without another it may indicate that they constitute a single project. In this case, functionally interdependent projects include Five Estuaries Wind Farm, North Falls Wind Farm, Tarchon Interconnector and National Grid's Norwich to Tilbury (NGET) project. They cannot function without each other. HARM The Inspectors must consider alternatives that meet the need to connect offshore wind farms to the transmission infrastructure while minimising harm. Document: 'Grid Connection Optionality - Worst Case Assessment' (1) from North Falls found that for every Environmental Impact Assessment topic listed the worst case arose from the onshore connection option. Due to similarities in cable routing and substation location, it is reasonable to assume that very similar conclusions would be drawn for Five Estuaries. Furthermore, the co-location of the Five Estuaries substation with NGET's EACN substation, North Falls' substation, Tarchon's substation and likely Tarchon's converter station leads to severe cumulative harm that outweighs project benefits. Offshore coordination with a landing point at a brownfield site near to where the power is needed is essential, reduces harm to the environment and communities and saves money.	The Applicant has assessed the cumulative impacts as required by the NPS and the EIA regulations in its Application. Please see 6.1.3.1 Cumulative Effects Assessment Methodology [APP-064] North Falls, Five Estuaries and Tarchon Interconnector are not functionally dependent on each other and so the submission is misconceived. The Applicant has a grid connection location which will be delivered via the Norwich to Tilbury project. The assessment of alternatives is set out in 6.1.4 Site Selection and Alternatives [APP-066]. In order to form an alternative for the purposes of planning decision making, a proposal must not be 'vague or inchoate'. There is no deliverable or concrete alternative for an offshore connection proposed. The proposal that there should be 'Offshore coordination with a landing point at a brownfield site near to where the power is needed is essential' is clearly vague and inchoate, and is not therefore an 'alternative' within the legal meaning. This position (which is a long standing legal principle that was clearly expressed in 1987 in Trusthouse Forte v SSE (1987) 53 P & CR 293), was reaffirmed in the decision in the Stonehenge challenge,(R (Save Stonehenge World Heritage Site Ltd) v Secretary of State for Transport [2021] EWHC 2161 (Admin)) where the court decided: *"the relative advantages of alternative uses on the application site or of the same use on alternative sites are normally irrelevant. In those "exceptional circumstances" where alternatives might be relevant, vague or inchoate schemes, or which have no real possibility of coming about, are either irrelevant, or where relevant, should be given little or no weight."* There is no offshore connection proposed which would therefore form an 'alternative' when applying the relevant test. The new Overarching National Policy Statement for Energy (EN-1) also provides some helpful context regarding consideration of alternatives in the following sections: *"4.3.22 Given the level and urgency of need for new energy infrastructure, the Secretary of State should, subject to any relevant legal requirements (e.g. under the Habitats Regulations) which indicate otherwise, be guided by the following principles when deciding what weight should be given to alternatives:* *• the consideration of alternatives in order to comply with policy requirements should be carried out in a proportionate manner; and* *• only alternatives that can meet the objectives of the proposed development need to be considered* *4.3.23 The Secretary of State should be guided in considering alternative proposals by whether there is a realistic prospect of the alternative delivering the same infrastructure capacity (including energy security, climate change, and other environmental benefits) in the same timescale as the proposed development.*

Ref	Summary of Deadline 3 submission OR Excerpt of Deadline 3 submission	Applicant's comments
		4.3.25 Alternatives not among the main alternatives studied by the applicant (as reflected in the ES) should only be considered to the extent that the Secretary of State thinks they are both important and relevant to the decision. *4.3.27 Alternative proposals which mean the necessary development could not proceed, for example because the alternative proposals are not commercially viable or alternative proposals for sites would not be physically suitable, can be excluded on the grounds that they are not important and relevant to the Secretary of State's decision.* *4.3.28 Alternative proposals which are vague or immature can be excluded on the grounds that they are not important and relevant to the Secretary of State's decision.* *4.3.29 It is intended that potential alternatives to a proposed development should, wherever possible, be identified before an application is made to the Secretary of State (so as to allow appropriate consultation and the development of a suitable evidence base in relation to any alternatives which are particularly relevant). Therefore, where an alternative is first put forward by a third party after an application has been made, the Secretary of State may place the onus on the person proposing the alternative to provide the evidence for its suitability as such and the Secretary of State should not necessarily expect the applicant to have assessed it."* Given that the 'alternative solution' put forward by the Parish Council is not a proposal which has a realistic prospect of being delivered (because it is not being proposed or developed by a transmission operator such as National Grid), and could not be delivered in the same timescale as the development, it could not meet the test of not being immature, therefore the Application as submitted fully complies with NPS-EN1 and does not have to treat this suggestion as an alternative under that policy. With regard to the 'Grid Connection Optionality - Worst Case Assessment' document (1) from North Falls, the Applicant is not in a position to comment on the content of North Falls documents or the purpose of them. Following the decision of the Secretary of State for Energy Security and Net Zero in September 2024 the consortium members, which included Five Estuaries, involved in the Offshore Coordination and Support Scheme study prepared a joint statement as follows: *"National Grid Electricity Transmission (Sea Link), North Falls (Offshore Wind Farm) and Five Estuaries (Offshore Wind Farm) have been working together to explore the potential for offshore coordination as part of the Offshore Transmission Network Review (OTNR) "Early Opportunities" workstream. The projects, acting together in a consortium led by North Falls, were awarded funding by the Department of Energy Security and Net Zero (DESNZ) through the Offshore Coordination Support Scheme (OCSS) in December 2022. 2On 28 March 2024, the consortium submitted a high-level feasibility study that formed the first step of the grant funding agreement. The study assessed the feasibility of a coordinated offshore connection specifically: the capital costs; building blocks; construction and commissioning methodologies and overall programme associated with a coordinated solution. 2The Secretary of State for Energy Security and Net Zero has reviewed this study, amongst other information and has decided not to grant further funding to the consortium. The feasibility study identified that*

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		coordination is technically feasible however, it also identified:2an increase in capital costs of up to £890m • *constraint costs associated with an outage on Sea Link of over £500m** • *a programme delay for North Falls and Five Estuaries of up to five years* *Given the significant extra costs and the negative impact on the delivery timeline of connecting more renewables to the UK energy system, especially considering the government's commitment to quadruple offshore wind and fully decarbonise the UK's electricity system by 2030, the consortium supports the Secretary of State's decision and will not be further pursuing a coordinated offshore connection. We would like to thank DESNZ for its continued engagement throughout the grant term.* **This figure is attributed to the constraint costs associated with an outage on Sea Link in 2032/33 only."* *The Applicant has provided a response as to why the OCSS/ OTNR offshore option is no longer being considered in the Application in Table 2 of 10.4 Applicant's response to Relevant Representations [REP1-050].*
	Ardleigh Parish Council included a power point report "OCSS Review" with their submission.	With regard to the power point report submitted by Ardleigh Parish Council at Deadline 3, 'OCSS Review', (prepared jointly with Essex, Suffolk, Norfolk Pylons Campaign group), the Applicant would like to highlight the following: • The "OCSS alternative solution" proposed in the report does not provide any analysis of the deliverability, operability, environmental acceptability or commercial and regulatory factors. • Whilst the Wind Turbine Generator array area on the "OCSS alternative solution" would be the same as the proposed area for the Five Estuaries project, both the offshore and onshore cable routes would be completely new and also considerably longer. The "OCSS alternative solution" would effectively be a new project and would require the Applicant to start the development process again adding at least five years on the programme. • The "OCSS alternative solution" route with a landfall at Bradwell would incorporate crossing a complex marine environment which includes many overlapping significant environmental constraints such as MCZs, SACs, SPAs, RAMSARs and SSSIs. The impacts on these protected sites would not be able to be mitigated by avoidance. The Applicant notes that the 'OCSS alternative solution' does not form an 'alternative' to the proposed grid connection for this Application as it has no realistic prospect of being delivered at this time and cannot be relied upon or assessed.

10. NATIONAL HIGHWAYS [REP3-030]

Ref	Summary of Deadline 3 submission OR Excerpt of Deadline 3 submission	Applicant's comments
NH-01	We have reviewed the latest versions of the AADT tables and it would appear that: ▪ Table 8.28 of Document 6.3.8 (Revision C) still shows the same values as Revision B (and therefore Revision A), which appear to still include the incorrect values. ▪ Table 3-5 of Document 6.6.6.1 (Revision B) does appear to show the correct values and we believe this should be used in any analysis going forward where use of the AADT data is required. The Institute of Environmental Management and Assessment (IEMA) Guidelines: (2023), Environmental Assessment of Traffic and Movement (GEATM) indicates that DfT has historically set out that traffic flows would have to increase by more than 30% in order for a 'slight' change in severance to occur, 60% for a 'moderate' change to occur and 90% for a 'substantial' change to occur. At this point, the Applicant's analysis (using either set of figures) suggests that there is an increase of less than 30% and therefore the change in severance is slight in either case. However, National Highways is more concerned about the specific traffic impact at each junction rather than AADT (particularly during the peak hours), which we raised as one of the outstanding concerns in our response to ExQ1 on 22 October 2024. In view of this, National Highways is content to treat the AADT issue as 'resolved' since it is essentially superseded by the other matters raised in our ExQ1 response regarding the traffic impact calculations.	The Applicant notes that Table 8.28 in 6.3.8 Traffic and Transport Chapter – Revision C was not updated correctly ; however, as National Highways point out, the results of the assessment would not change. Also, the lower number of baseline vehicles (total and HGVs) has been used for the screening exercise, which results in a robust analysis of percentage impacts. The Applicant provided National Highways (NH) with a response to its response to ExQ1 on 22 October 2024, on the 13th November followed by a meeting on the 14th November 2024, including its consultants, AECOM. The Applicant provided some further supporting information relating to the following the meeting and is awaiting further feedback from NH on these points which will inform the junction capacity assessments that are now proposed. The Applicant notes for completeness it will correct Table 8.28 in the next revision of 6.3.8 Traffic and Transport Chapter (Revision D) when it is submitted at a later deadline.
NH-02	One of National Highways' other outstanding concerns relates to the proposed use of AILs and the risk that the A120 will not be able to accommodate the particularly heavy loads. We note the Applicant's submission of Technical Note 10.20.3 (REP2- 029) at Deadline 2 on 22 October 2024. There are number of matters contained within this Technical Note with which National Highways does not agree and our concerns about heavy loads on the A120 remain. We consider the risk to be significant. We welcome the Applicant's proposal to undertake a study to investigate potential mitigation solutions and are keen to work collaboratively with them in support of achieving a feasible outcome. We look forward to receiving the draft Proposal from them in due course.	The Applicant is seeking to engage with National Highways to progress this work collaboratively. On 21 November 2024 the Applicant requested from National Highways: a) Details on what elements of the AIL Technical note National Highways do not agree with; b) The exact nature of the concerns and confirm the stretch of the A120 (length) that is of concern (It has not currently been made clear to the Applicant whether this is a pavement issue, or a structural issue); c) Provision of any existing structural/condition reports (or extracts) that are available for this section to help inform the proposals for mitigation. The Applicant has engaged specifically with a specialist AIL contractor to advise on this issue, but requires this information to help inform its proposal.

11. SUFFOLK COUNTY COUNCIL [REP3-028]

Ref	Summary of Deadline 3 submission OR Excerpt of Deadline 3 submission	Applicant's comments
SCC-01	SCC understands the Applicant's point that offshore wind farm developments typically consent a range of options 'up to' a worst-case scenario. What is unusual about this project is that the Applicant has put forward upper limit parameters in Table 1 of Part 1 of Schedule 2 but has not assessed the worst cases all of its parameters, in that for the tallest wind turbine generators (WTGs) (now 370m) the Applicant has only assessed a maximum of 41 WTGs but the Applicant also wants the flexibility to provide up to 79 WTGs if they are smaller in height (up to 324 m). These two different limits for the number of WTGs (the 41 WTGs not currently being adequately secured) means that there are two cases are similar but not identical in terms of harm caused to a designated landscape which is subject to the enhanced duty to seek to further the purposes of conserving and enhancing the natural beauty of the area of outstanding natural beauty. There are two issues here. The first is that if 41 taller WTGs is the worst case that has been assessed, then it is necessary to ensure there can be no more than 41 taller WTGs provided and yet the parameters in Table 1 do not yet (explicitly) secure that outcome. The second is that if the objectives of the project can be effectively delivered by 79 smaller WTGs, there is, as matters stand, no persuasive case for causing greater harm to the national landscape by consenting 41 taller WTGs.	The approach taken by the Applicant in both defining WTG parameters in the DCO and the assessment of landscape impacts is not unusual. This approach has been tried and tested through numerous offshore wind NSIP applications as the Applicant has set out both in its responses to the SLVIA methodology, and in the Technical Note on number of WTGs submitted at Deadline 3.The Applicant entirely rejects the assertion that it has not assessed the worst case parameters, that submission fundamentally misunderstands the proposal and assessment approach. The Applicant has provided explanation of the Rochdale Envelope methodology and the reasoning behind its use in 10.20.5 Technical Note: Number of Wind Turbine Generators [REP3-020]. It is entirely normal for offshore wind DCOs to consent a range of turbine configurations with swept area being the controlling parameter. The Applicant rejects that there is any harm caused to the national landscape by any configuration of turbines which would be consented and notes again that the nearest turbine is 37km offshore and that theoretical visibility in ideal conditions cannot reasonably be equated with harm.
SCC-02	Port construction traffic management plan SCC considers that the Applicant is misconceived in its approach regarding a port construction traffic management plan. The starting point is in the 2017 environmental impact assessment regulations. In schedule four, paragraph five, there is a requirement on the Applicant to include in the environmental impact assessment an assessment of the effects of the project, which should include the direct effects, the indirect effects, the secondary effects, and so on. The Applicant is not able to say is that the traffic, which is associated both with its construction activities and with its operational activities, is not an effect of the proposal. Therefore, in principle, those effects both should be assessed and then to the extent that they give rise to any material impacts, they should be mitigated. What the Applicant is suggesting is effectively a substitution argument, in which it agrees that it is having an effect but is substituting for something that would otherwise happen. That needs to be demonstrated if the Applicant is to assert that there is no net effect on a highway network, which has not been done. The purpose of a port construction traffic management plan is not simply to regulate activities within the port; rather, it is concerned with the interface between the port and the wider highway network. It is not clearly unprecedented, as identified in SCC's local impact report. The offshore wind farms that East Anglia ONE North and East Anglia TWO, which in overall terms are not dissimilar projects in that they are offshore in the North Sea, providing a series of wind turbines which then have to be constructed and then must be operated and maintained. In these cases, there was neither not any issue raised by the promoters of those projects, nor by the examining authority, nor by the Secretary of State in approving those requirements with the principle of a port construction management plan. It is not a relevant consideration in determining as to whether this traffic is an effect of the development or not to ask whether that traffic requires any separate development to be carried out within or around the port. That is not the test of whether something is a direct or indirect effect of the proposal. The extent of the traffic	The Applicant refers to the detailed response on this point submitted at Deadline 3 (REP3-025, response to LIRs at SCC.15). The Applicant also refers to line ECC15 above and its response to ECC on the same request. The EIA Regulations 2017 require assessment of the *likely significant* effects. UK Government guidance on the 2017 regulations notes that 'Whilst every Environmental Statement should provide a full factual description of the development, the emphasis should be on the "main" or "significant" environmental effects to which a development is likely to give rise. The Environmental Statement should be proportionate and not be any longer than is necessary to assess properly those effects.'. It is in this context that the Applicant restates that the use of an operational facility designed and consented to handle traffic via the local road network from customers, of which the project would form part, is not a likely significant effect and it is not proportionate to assess the impact of vehicles using existing facilities that are operating within their usual day-to-day business. As the Applicant has stated previously, a port is but one operational facility that would be used by traffic associated with the project. It is not being suggested that a traffic management plan is required for every ancillary facility used and the Applicant is not clear why ports are any different. The Applicant's reference to traffic associated with development was reflecting the fact that this is the only likely circumstance in which traffic may be generated that would not ordinarily be expected to be handled by an existing operational port facility (e.g. if a new berth or office was to be constructed).

Ref	Summary of Deadline 3 submission OR Excerpt of Deadline 3 submission	Applicant's comments
	generated needs to be assessed, and to the extent that it has material impacts, it needs to be mitigated. So, SCC considers that there is a need for such a plan. The position is compounded in this case because the Applicant has not settled on a port that it would use, leaving aside the reference to Harwich. So, the Applicant is not able to say, as it has done in its written submissions [REP2-026] that whatever the traffic effects are, they necessarily sit within the umbrella of the original consent for that board port because they may or may not do. This is the case because one simply does not know which port one's talking about. Some of these ports clearly have a great deal of back history. SCC suspects that many of them don't have an up-to-date planning permission which regulates them because of that back history. So, SCC continues to consider that there is a need for a port construction traffic management plan due to its view that the Applicant's approach is misconceived. SCC hopes that with sensible dialogue, an agreed position can be reached.	Finally the matter of whether a port has an up-to-date planning permission is the responsibility of the relevant planning authority, and it is not for the Applicant to have to apply additional measures to compensate for this. The Applicant met with Suffolk Highways on 25 November 2024 and is seeking to continue dialogue on this matter.

12. ANDREW RALPH [REP3-038]

Ref	Summary of Deadline 3 submission OR Excerpt of Deadline 3 submission	Applicant's comments
AR01	I fundamentally object to the entire project. The proposed project will cause massive disruption of local communities destroy thousands of acres of valuable arable land and ruin centres old farming families. As I understand the project it is to bring power cables from the off shore wind turbines and connect them with power cables coming up from Tilbury. I can surely make no sense on economic, environmental or morel grounds to run these cables overland when an alternative route from the offshore wind farm directly to Tilbury under the sea would make far more 'common' sense. I doubt my comments will be listened to when weighed up against bi business interests, but I feel I must make my thoughts know for future generations. I hope you will listen to the people this project will effect.	This is noted by the Applicant. The Applicant has assessed the impacts of the proposed infrastructure on agricultural land along with all other relevant factors when developing the Project, see Document 6.3.5 Ground Conditions and Land Use [APP-087]. The Applicant has provided response as to why the OCSS/ OTNR offshore option is no longer being considered in the Application in Table 2 of 10.4 Applicant's response to Relevant Representations [REP1-050].

13. APPENDIX 1 – FINAL SAMPLING NOTIFICATION TO THE MMO AND NE

FIVE ESTUARIES
OFFSHORE WIND FARM

Marine Licensing
Lancaster House
Hampshire Court
Newcastle Upon Tyne
NE4 7YH

Your Ref: DCO/2019/00008
Our Ref: 004225586-01
Name: Leanne Tan
Telephone: [redacted]
Email: [redacted]@marinemanagement.org.uk

16 December 2021

Project: Five Estuaries Offshore Wind Farm

CC: Yolanda Foote (Natural England) by email
Alan Gibson (Natural England) by email

Dear Leanne,

Five Estuaries Offshore Wind Farm: Benthic Subtidal and Intertidal Ecology Baseline Survey Final Sampling Station Notification

This letter is provided to confirm the benthic sampling locations, in line with the agreed benthic subtidal and intertidal ecology survey Scope of Works (SoW) (Document Reference: 003428631-02) and associated correspondence with the MMO (along with CEFAS) and Natural England. The MMO noted within the scoping response provided to the Planning Inspectorate that the proposed approach to characterising the baseline as applied is appropriate for the purposes of EIA.

Five Estuaries Offshore Wind Farm Ltd (VE) consulted the Marine Management Organisation (MMO), and their technical advisors (CEFAS and Natural England), on the benthic subtidal and intertidal ecology survey Scope of Works (SoW) (Document Reference: 003428631-02) in January 2021. Natural England provided comments on 29 March 2021 (Reference: Case: 14393 Consultation: 346118). Subsequently, the MMO made a formal request to CEFAS for pre-application advice on the benthic SoW on the 31st of March 2021. VE OWFL received feedback from CEFAS (via the MMO) on the 15th April 2021 (Reference: DCO/2019/00008).

FIVE ESTUARIES
OFFSHORE WIND FARM

VE OWFL issued responses to the comments received confirming how these were incorporated into the final benthic survey SoW on the 15th June 2021. A survey update was presented to Natural England on the 8th November 2021 to discuss and present the benthic sample locations, based on the site specific geophysical data acquired.

The SoW document set out the approach by which benthic sample stations would be selected. Due to weather delays, initial gridded sidescan sonar surveys were undertaken to collect data across the full survey area. Whilst this dataset did not provide 100% coverage, the surveys were sufficient to capture the full range of habitat types within the survey area and therefore inform the selection of benthic sampling stations to provide representative characterising data for the purposes of EIA, as set out below. The on-going geophysical survey will infill the grid pattern to ensure 100% coverage of sidescan sonar and multi beam echosounder data across the entirety of the survey area.

Following preliminary interpretation of the sidescan sonar data, benthic sample stations were identified for sampling based on areas of distinct acoustic reflectivity. In accordance with the benthic sampling methods, sample stations were allocated for Hamon grab, Day grab and drop down video sampling, as relevant, to ensure representative sampling across all potential habitat types. The accompanying table sets out the rationale for sample station selection and provides justification for the allocation of gear type. A figure presenting the distribution of benthic sampling stations is presented below. Co-ordinates for the sampling stations will be made available on request.
The initial sidescan sonar outputs can be downloaded at the following link[1]:

Benthic sampling was completed between the 8th of November and the 17th November 2021. All sampling stations were surveyed as planned and agreed. Samples will now be processed in accordance with the benthic SoW and reported in Quarter 1 2021.

If you have any queries on any of the information set out above, please do not hesitate to get in touch.

Yours sincerely,

[redacted]

Rachel McCall
Offshore Consents Manager
Five Estuaries Offshore Wind Farm Limited

[1] Note, this link will expire on the 20 December 2021

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EMAIL: fiveestuaries@rwe.com
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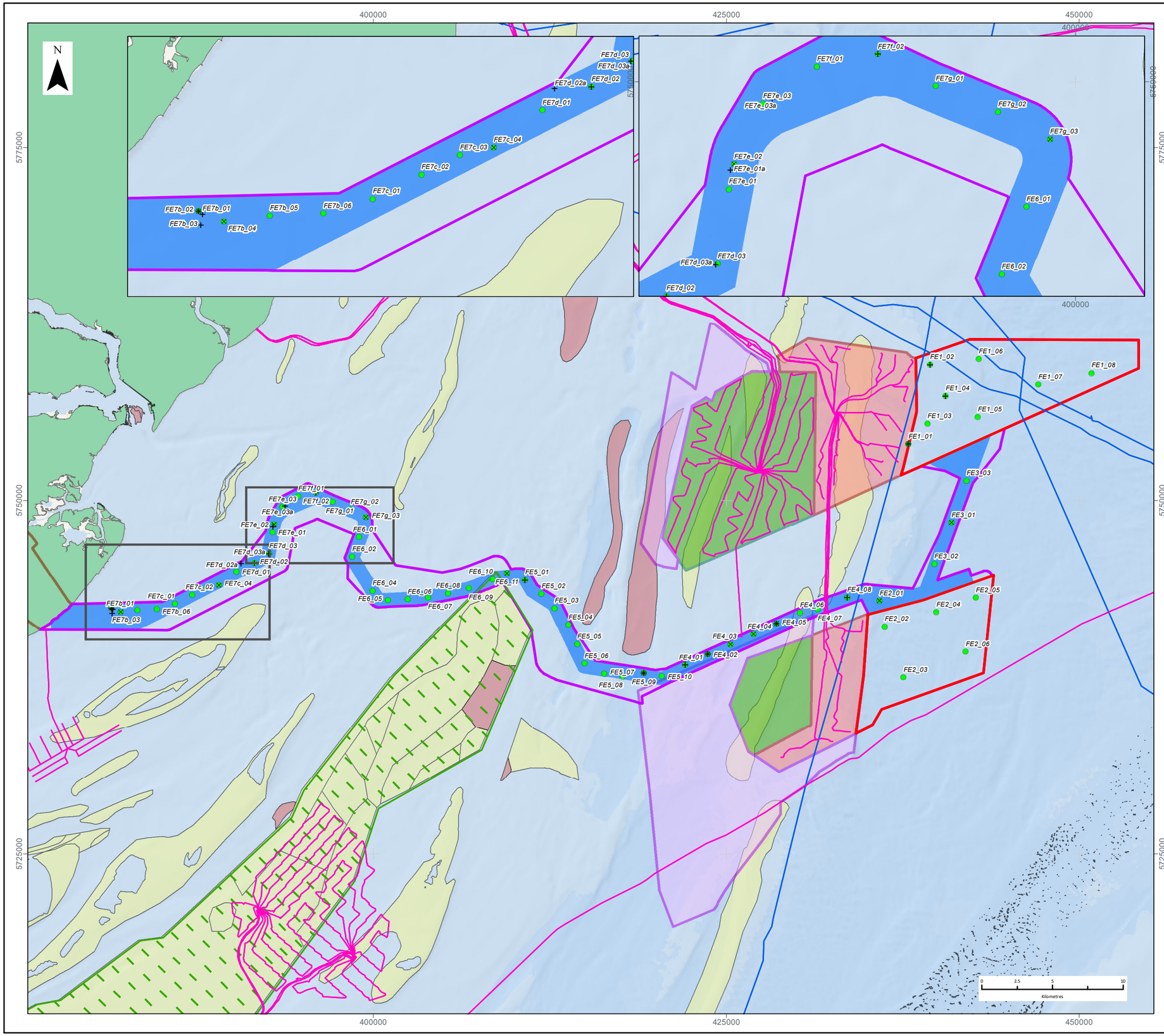
REGISTERED OFFICE: Five Estuaries Offshore Wind Farm Ltd
Windmill Hill Business Park
Whitehill Way, Swindon, Wiltshire, SN5 6PB
COMPANY NO: Registered in England and Wales
company number 12292474



LEGEND

- Offshore Area of Search
- Array Areas
- Preferred Offshore Export Cable Route
- Onshore Area of Search
- Annex I Reefs
- Annex I Sandbanks
- Margate and Longsands SAC
- Subsea Cables (Telecoms)
- Subsea Cables (Energy)

Selected Offshore Wind Farms:

- Galloper
- Greater Gabbard
- North Falls

VE Benthic Survey Sites / Gear Types:

- \+ Drop Down Video
- × Day Grab
- ● Hamon Grab

Data Source:
Basemap: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

Benthic Survey Sample Locations Review

VER	DATE	REMARKS	Drawn	Checked
1	16/12/2021	For Issue	SWM	FM

DRAWING NUMBER:

1

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:275,000	A3	WGS84	UTM31N

FIVE ESTUARIES OFFSHORE WIND FARM

Z:\GIS\GIS_Projects\0144 Five Estuaries\GIS\Figures\General\Benthic Surveys\VE_Benthic_Survey_Sample_Locations_no_NF_FM_V6.mxd

FIVE ESTUARIES
OFFSHORE WIND FARM

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company number 12292474