



The Planning Inspectorate
Yr Arolygiaeth Gynllunio

The Planning Act 2008

Sizewell C New Nuclear Power Station

Examining Authority's Report
of Findings and Conclusions

and

Recommendation to the Secretary of State for Business, Energy and
Industrial Strategy

VOLUME 4 OF 4

Examining Authority

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LIST OF REPORT VOLUMES

This Report contains four volumes.

This is Volume 4 of 4.

1. Volume 1: Chapters 1 to 4;
2. Volume 2: Chapter 5 Sections 5.1 to 5.13;
3. Volume 3: Chapter 5 Sections 5.14 to 5.23; and
4. Volume 4: **Chapters 6 to 10.**

This report is also supported by five Appendices. The Appendices each form a self-contained document.

- Appendix A: Events in Pre-Examination and the Examination;
- Appendix B: Examination Library;
- Appendix C: Abbreviations and Definitions;
- Appendix D: Recommended Development Consent Order; and
- Appendix E: Considerations for the Secretary of State.

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6. FINDINGS AND CONCLUSIONS IN RELATION TO HABITATS REGULATIONS ASSESSMENT

6.1. INTRODUCTION

- 6.1.1. This Chapter sets out the Examining Authority's (ExA) analysis and conclusions relevant to the Habitats Regulations Assessment (HRA). This will assist the Secretary of State (SoS) for Business, Energy and Industrial Strategy (BEIS), as the competent authority, in performing their duties under the Conservation of Habitats and Species Regulations 2017 and the Conservation of Offshore Marine Habitats and Species Regulations 2017 ('the Habitats Regulations').
- 6.1.2. Consent for the Proposed Development may only be granted if, having assessed the potential adverse effects the Proposed Development could have on European sites¹, the competent authority considers it acceptable in light of the requirements stipulated in the Habitats Regulations.
- 6.1.3. Policy considerations and the legal obligations under the Habitats Regulations are described in Chapter 3 of this Report.
- 6.1.4. The ExA has been mindful throughout the Examination of the need to ensure that the SoS has such information as may reasonably be required to carry out their duties as the competent authority. We have sought evidence from the Applicant and the relevant Interested Parties (IPs), including Natural England (NE) as the Appropriate Nature Conservation Body (ANCB), through written questions and Issue Specific Hearings (ISHs).

Relationship to other consents and licences/interdependencies

- 6.1.5. The Development Consent Order (DCO) is not the only consent, licence or permit required to construct, operate or maintain the Proposed Development. The Applicant has identified other consents, licences and agreements that would be required in its 'Schedule of other consents, licences and agreements' [REP10-023]. At the time of writing this recommendation report, decisions were awaited on other key consents and licences required. These include Environment Agency (EA) Environmental Permits (EP) that have been submitted by the Applicant to the EA and which are currently under consideration. These EPs comprise: a new Radioactive Substances Regulation (RSR) EP; a new Combustion Plant EP; and a new bespoke Water Discharge Activity (WDA) EP. The EA

¹ The term European sites in this context includes Special Areas of Conservation (SAC), Sites of Community Importance (SCI), candidate SACs (cSAC), possible SACs (pSAC), Special Protection Areas (SPA), potential SPAs (pSPA), Ramsar sites and proposed Ramsars.

is the competent authority under the Habitats Regulations for these consents.

- 6.1.6. During the Examination and in response to the ExA's Report on the Implications for European Sites (RIES) [PD-053], at Deadline (DL) 10 the EA [REP10-186] outlined a number of impacts that the EA will need to consider as part of the EA permitting process. The EA highlighted that it is still in the determination stage for these environmental permits and draft/final decisions are not yet available [REP10-186]. The EA stated *"We request that no conclusions are reached within the SoS HRA for the aspects that will be more properly considered by the Environment Agency as the appropriate competent authority"* [REP10-186]. The EA also set out the likely timescales for determining the aforementioned EPs, stating that:

"We are still in the determination stage for these environmental permits and we will not reach final decisions before the close of Examination, or before the SoS reaches his conclusions for the DCO. Our draft decisions are forecast for May 2022, at which time we shall consult on those decisions and the associated HRA conclusions. Final decisions are expected towards the end of 2022."

- 6.1.7. The ExA is aware that where a Nationally Significant Infrastructure Project (NSIP) has the potential to have a likely significant effect (LSE) on a European site(s) and a permit, consent or licence is also required, the EA (in addition to the competent authority under the PA2008) will also be required to consider LSE and if necessary, to carry out an appropriate assessment (and consult the ANCB) before making its decision. The ExA also notes that Regulation 67(2) of the Habitats Regulations states that *"Nothing in regulation 63(1) or 65(2) requires a competent authority to assess any implications of a plan or project which would be more appropriately assessed under that provision by another competent authority."* The NPS also includes recommendations on the matter of permitting and DCOs in EN-1 NPS at Section 4.10 and EN-6 at Section 2.7.
- 6.1.8. The ExA is of the view that any assessment which may be carried out by the EA in relation to EPs should not substitute the assessment which must be made by the SoS, in keeping with his statutory duty under the Habitats Regulations. It is acknowledged that a DCO would authorise the operation and use of the authorised development as per Article 7, subject to Article 7(2), which does not relieve the undertaker of any duty to obtain any permit, licence or other obligation under any other legislation that may be required. The focus of the ExA's HRA Chapter has therefore been on potential LSE and adverse effects on integrity (AEoI) relating to the land use that would be authorised by the DCO (where granted), including its construction and operation.
- 6.1.9. The views of the ExA provided in this chapter do not seek to fetter any later assessment(s) made by the EA in relation to EPs, consents or licences that are, or may be required for the Proposed Development.

RIES and consultation

- 6.1.10. The ExA produced a RIES [PD-053] which compiled, documented and signposted HRA-relevant information provided in the application and Examination submissions up to DL7 (3 September 2021). Due to the timing of issue, the RIES did not consider late submissions to DL7 or any additional submissions received after 3 September 2021, with the exception of NE's response to agenda items 5a and 5b of ISH 10 [REP7-287].
- 6.1.11. The RIES was issued to ensure that we had correctly understood HRA-relevant information and the position of the IPs in relation to the effects of the Proposed Development on European sites at that point in time. Consultation on the RIES took place between 15 September 2021 and 12 October 2021. Comments were received from the Applicant [REP10-155], NE [REP10-199], the EA [REP10-186], the Royal Society for the Protection of Birds (RSPB) and Suffolk Wildlife Trust (SWT) [REP10-204], Together Against Sizewell C (TASC) [REP10-425], and Regan Scott on behalf of Suffolk Alternative Green Environment (SAGE) Community Group [REP10-361] at DL10 (12 October 2021). These comments have been taken into account in the drafting of this Chapter.
- 6.1.12. The ExA considers that the RIES supports the Secretary of State's duty to consult for the purposes of their assessment with the ANCB under Regulation 63(3) of the Habitats Regulations and Regulation 28(4) of the Offshore Habitats Regulations.

Description of the Proposed Development and HRA implications

- 6.1.13. The Proposed Development is described in Chapter 2 of this Report. The Proposed Development comprises the construction and operation of the Sizewell C nuclear power station, to include two UK European Pressurised Reactor (EPR) units, with an expected net electrical output of approximately 1,670 megawatts (MW) per unit, giving a total site capacity of approximately 3,340MW. The description of the Proposed Development has been separated into the 'Main Development Site (MDS)' and offsite 'associated developments'.
- 6.1.14. The MDS comprises the site of the proposed Sizewell C nuclear power station and construction areas consisting of: the main platform, the temporary construction area, land east of Eastlands Industrial Estate (LEEIE), offshore works, Sizewell B relocated facilities and National Grid works and several offsite development areas including sports' facilities at Leiston, marsh harrier habitat and fen meadow compensation land [APP-005].
- 6.1.15. The off-site associated developments include:
- two temporary park and ride sites:
 - the proposed park and ride facility at Darsham. Associated development aiming to alleviate traffic going to and from the

- the proposed park and ride facility at Wickham Market. Associated development aiming to alleviate traffic going to and from the MDS by providing car parking for construction workers and a bus directly to the MDS (the 'Southern Park and Ride');
- the proposed road which would bypass the A12 through Farnham and Stratford St Andrew (the 'Two Village Bypass');
- the proposed road to bypass the B1122 through Middleton Moor and Theberton (the 'Sizewell Link Road');
- permanent highway improvements at the junction of the A12 and B1122 east of Yoxford (referred to as the 'Yoxford roundabout') and other road junctions;
- a proposed development along the A14 where HGVs can be held while they wait to enter the Sizewell C MDS, or in the event of an accident on the local road network which prevents access to the Sizewell C MDS (the 'Freight Management Facility'); and
- a proposed extension of the railway line of approximately 4.5km from the existing Saxmundham to Leiston branch line to a terminal within the MDS (the 'Green Rail Route') and other permanent rail improvements on the Saxmundham to Leiston branch line.

Change requests

- 6.1.16. As outlined in Chapter 2, 22 change requests were submitted by the Applicant during the Pre-examination and Examination stages. The Applicant's HRA documents associated with these changes (as relevant) are listed below.
- 6.1.17. During the Pre-examination period (on 11 January 2021), the Applicant submitted a formal change request [AS-105] for fifteen proposed changes to the application (Changes 1 to 15). The Applicant [AS-173] confirmed that the proposed changes considered relevant to the scope of the Applicant's HRA were:
- Change 1: Potential to increase the frequency of freight train movements to facilitate bulk material imports by rail;
 - Change 2: An enhancement of the permanent beach landing facility (BLF) and construction of a new, temporary BLF; and
 - Change 5: Change to the location of the water resource storage area and the addition of measures to mitigate flood risk.
- 6.1.18. During the Examination, the Applicant submitted at DL5 (23 July 2021) a formal change request [REP5-002] for three additional proposed changes to the application (Changes 16 to 18). The Applicant stated in [REP5-002] that Changes 16 to 18 did not necessitate any amendments to the Applicant's Shadow HRA.
- 6.1.19. The Applicant also provided at DL5 [REP5-001] notice of a further proposed change to the application (Change 19). This comprised construction and operation of a temporary desalination plant to provide a potable water supply for the construction of the Proposed Development, as identified in [AS-397]. The Applicant's formal change request for

Change 19 was submitted to the Planning Inspectorate by letter dated 3 September 2021 [REP7-286] received on 6 September 2021. The Applicant provided an assessment [REP7-279] of the implications of this change in respect of HRA.

- 6.1.20. At DL8 (24 September 2021) the Applicant [REP8-001] outlined finalised reductions to the Order limits at three fen meadow sites (Pakenham, Halesworth and Benhall), the Sizewell Link Road and the Green Rail Route. The Applicant [REP8-001] concluded that no amendments were required to its Shadow HRA assessment as a result of these changes.

The Applicant's HRA documents

- 6.1.21. The Applicant provided three volumes of HRA reports with the DCO application, which comprised the following:
- Shadow Habitats Regulations Assessment Volume 1: Screening and Appropriate Assessment Part 1 of 5 [APP-145];
 - Shadow Habitats Regulations Assessment Volume 1: Screening and Appropriate Assessment Part 2 of 5 [APP-146];
 - Shadow Habitats Regulations Assessment Volume 1: Screening and Appropriate Assessment Part 3 of 5 [APP-147];
 - Shadow Habitats Regulations Assessment Volume 1: Screening and Appropriate Assessment Part 4 of 5 [APP-148];
 - Shadow Habitats Regulations Assessment Volume 1: Screening and Appropriate Assessment Part 5 of 5 [APP-149];
 - Shadow Habitats Regulations Assessment Volume 2: Stage 3 Assessment of Alternative Solutions (AS) [APP-150];
 - Shadow Habitats Regulations Assessment Volume 3: Stage 4 Imperative Reasons of Public Interest [APP-151]; and
 - Shadow Habitats Regulations Assessment Volume 4: Compensatory Measures [APP-152].
- 6.1.22. For ease of reading, the Applicant's Shadow HRA Volume 1 [APP-145 to APP-149] will hereafter be referred to as the 'Shadow HRA Report'. Volume 2 [APP-150] will be referred to as the 'Applicant's Assessment of AS'; Volume 3 [APP-151] will be the 'Applicant's IROPI case'; and Volume 4 [APP-151] the 'Applicant's Compensatory Measures report'. HRA Screening and Integrity matrices were included in the Shadow Habitats Regulations Assessment Volume 1: Screening and Appropriate Assessment Part 4 of 5 [APP-148].
- 6.1.23. The Shadow HRA Report considered 30 European sites for LSE, of which 20 were European sites within the National Site Network (NSN). The remaining 10 were in European Economic Area (EEA) States [APP-145]. The European sites are described in more detail at Section 6.2 below.
- 6.1.24. During the pre-Examination stage, and as a result of the Applicant's formal change request for Changes 1 to 15, the Applicant submitted the following HRA addendum documents:
- Shadow Habitats Regulations Assessment Addendum (Revision 1) [AS-173];

- Shadow Habitats Regulations Assessment Addendum Appendices 1A-10A Part 1 of 5 [AS-174];
- Shadow Habitats Regulations Assessment Addendum Appendices 1A-10A Part 2 of 5 [AS-175];
- Shadow Habitats Regulations Assessment Addendum Appendices 1A-10A Part 3 of 5 [AS-176];
- Shadow Habitats Regulations Assessment Addendum Appendices 1A-10A Part 4 of 5 [AS-177]; and
- Shadow Habitats Regulations Assessment Addendum Appendices 1A-10A Part 5 of 5 [AS-178].

- 6.1.25. In addition to assessing the change requests, the Shadow HRA Addendum [AS-174] included further analysis of cumulative/inter-pathway effects and further screening of potential LSE on European sites designated for migratory fish, in response to the Relevant Representations (RR) of NE and the EA.
- 6.1.26. Revised HRA screening matrices were included in AS-174 and revised integrity matrices were included in AS-178. Both documents contained revised matrices for Special Area of Conservation (SAC) sites only. For ease of reading, the Applicant's Shadow HRA Addendum parts 1 to 5 (including revised matrices) will collectively be referred to as the 'Shadow HRA Addendum'.
- 6.1.27. The Shadow HRA Addendum considered one further European site within the NSN, the Plymouth Sound and Estuaries SAC, and 16 additional SACs/Sites of Community Importance (SCI) within EEA States. These are described in more detail at Section 6.2 below.
- 6.1.28. At DL2 of the Examination (2 June 2021), the Applicant submitted a Shadow HRA Second Addendum [REP2-032] (hereafter referred to as the 'Shadow HRA Second Addendum'). This was submitted to update the calculations of potential change in recreational use of European sites by displaced visitors and construction workers and to consider the implications of this change on the assessment of recreational displacement in the Shadow HRA Report [APP-145].
- 6.1.29. At DL4 (1 July 2021), Shadow HRA Addendum Appendices 1A-10A Part 5 of 5 (Version 2) [REP4-004] were submitted. This superseded the document of the same title [AS-178] and incorporated three missing figures from the original version.
- 6.1.30. At DL7 (3 September 2021) and accompanying the Applicant's formal change request for Change 19, the Applicant provided a Shadow HRA Third Addendum [REP7-279] (hereafter referred to as the 'Shadow HRA Third Addendum'). This included an assessment of LSE and consideration of AEoI associated with Change 19, the proposed desalination plant. This change did not consider any additional European sites to those already included in the Shadow HRA Report and Shadow HRA Addendum.
- 6.1.31. At DL8 the Applicant provided an HRA Report for Sizewell Route Map as Appendix H to [REP8-119] (epage 290), which summarised the Applicant's HRA documents and findings in relation to LSE and AEoI.

Relationship between the Proposed Development and European sites

- 6.1.32. The spatial relationship between the Order Limits of the Proposed Development and the European sites of the NSN considered in the Shadow HRA Report are shown on Figure 4.1 of that report [APP-145]. A number of European sites are located within or adjacent to the Proposed Development. The Shadow HRA Report [AS-173] and HRA screening matrices [AS-174] identify the distance between the Proposed Development and the MDS or associated development, at its closest point. This information is replicated in Table 2.1 of the RIES [PD-053].
- 6.1.33. No figure was provided to identify the Plymouth Sound and Estuaries SAC, although it was noted that this site is located at a distance of 615km from the Proposed Development [AS-173]. Additionally, no figures were provided to show the location of European sites within EEA States considered by the Applicant; the closest of which is located c.200km from the Proposed Development [APP-145] and [AS-173], with the majority located at distances greater than 400km.
- 6.1.34. The Proposed Development is not connected with or necessary to the management for nature conservation of any of the European sites considered within the Applicant's HRA assessments listed above.

Summary of HRA matters considered during the Examination

- 6.1.35. As identified in the RIES, the Examination focussed on a number of matters relating to European sites and their qualifying features, at the screening for LSE stage, the information to inform AA and consideration of AEoI stage, and also in relation to the derogations under the Habitats Regulations. Matters included the following:
- Water abstraction and supply;
 - Airborne pollution;
 - Physical interaction between species and infrastructure (fish entrapment at the cooling water intake and bird interactions with pylons and power lines);
 - Impediment to current management practices;
 - Disturbance to species due to light, noise and visual impacts from the MDS;
 - Recreational pressure and disturbance;
 - Changes to coastal processes and geomorphology arising from MDS;
 - Impacts from changes to water quality (thermal plume, chemical plume, chlorination, hydrazine);
 - Impacts from combined drainage outfall (CDO);
 - Impacts from drilling muds and bentonite;
 - Indirect effects on bird and marine mammal from impacts to prey species;
 - Cumulative and in-combination assessment;
 - Mitigation and monitoring plans; and

- Compensatory measures for the marsh harrier qualifying features of the Minsmere-Walberswick SPA and Ramsar.

6.1.36. Additionally, the Examination included consideration of the Applicant's formal change requests (in particular Change 19) and whether these could result in LSE and/or AEOI on European sites. These matters are discussed below.

6.2. FINDINGS IN RELATION TO LIKELY SIGNIFICANT EFFECTS (LSE)

6.2.1. Under the Habitats Regulations, the competent authority must consider whether a development will have LSE on a European site(s), either alone or in- combination with other plans or projects. Where LSE are likely and a project is not directly connected with or necessary to the management of that site(s), an appropriate assessment (AA) is required of the implications of the plan or project for that site(s) in view of its conservation objectives.

6.2.2. The purpose of this section is to identify any LSEs on European sites and to provide a view to the competent authority on the likely need for an AA, including the likely activities, sites or plans and projects that may need to be included for further consideration.

6.2.3. The Shadow HRA Report [APP-145] to [APP-149] sets out the Applicant's methodology for determining LSE. The Applicant carried out a pre-screening site selection exercise to identify the European sites and the qualifying interest features to be taken forward into the screening stage; this was referred to as a 'scoping' stage and is summarised in Section 4 of Shadow HRA Report.

6.2.4. The Applicant has described how it has determined what would constitute a 'significant effect' within Section 5 of the Shadow HRA Report [APP-145]. This follows guidance documents on HRA, with reference to relevant case law. Additionally, Section 2.10 of the Shadow HRA Report sets out the project parameters, with reference to the Environmental Statement (ES) and Section 2.11 identifies the scenarios assessed in the Shadow HRA Report, with further detail on worst-case scenarios in Sections 7 to 10 (the 'appropriate assessment' stage).

6.2.5. Section 5 of the Shadow HRA Report describes the Applicant's information to inform the screening of LSE and the outcome of the assessment. This is also summarised in the HRA screening matrices provided as Appendix B1 (for SACs), Appendix B2 (for SPAs), and Appendix B3 (for Ramsars) [APP-148]. The European sites and qualifying features that were considered in the Applicant's assessment of LSE are presented in Tables 4.1 and 4.2 of the Shadow HRA Report [APP-145]. European sites within the NSN were also listed at Table 2.1 of the RIES [PD-053]. Annex 1 to the RIES also listed the qualifying features considered for LSE for each of these sites.

6.2.6. The European sites considered in the Applicant's assessment of LSE at the point of DCO application [APP-145] included:

- Alde-Ore and Butley Estuaries SAC
- Alde-Ore Estuary SPA
- Alde-Ore Estuary Ramsar
- Benacre to Easton Bavents Lagoons SAC
- Benacre to Easton Bavents SPA
- Deben Estuary SPA
- Deben Estuary Ramsar
- Dew's Ponds SAC
- Humber Estuary SAC
- Minsmere to Walberswick Heaths and Marshes SAC
- Minsmere-Walberswick SPA
- Minsmere-Walberswick Ramsar
- Orfordness-Shingle Street SAC
- Outer Thames Estuary SPA
- Sandlings SPA
- Staverton Park and the Thicks, Wantisden SAC
- Southern North Sea SAC
- Stour and Orwell Estuaries SPA
- Stour and Orwell Estuaries Ramsar
- The Wash and North Norfolk Coast SAC
- Schelde- en Durmeëstuarium van de Nederlandse grens tot Gent SCI
- Unterweser SCI
- Weser bei Bremerhaven SCI
- Nebenarme der Weser mit Strohauser Plate und Juliusplate SCI
- Schleswig Holsteinisches Elbästuar und angrenzende Flächen SCI
- Unterelbe SCI
- Mühlenberger Loch/Neßsand SCI
- Rapfenschutzgebiet Hamburger Stromelbe SCI
- Hamburger Unterelbe SCI
- Elbe zwischen Geesthacht und Hamburg SCI

6.2.7. In response to representations made by the EA [RR-0373] on matters of fish entrapment and concerning additional European sites with allis shad (*Alosa alosa*), twaite shad (*Alosa fallax*) and river lamprey (*Lampetra fluviatilis*) qualifying features, the Applicant provided further 'scoping' and screening of European sites and features in Section 4 of its Shadow HRA Addendum [AS-173]. This screened in one additional European site within the NSN, the Plymouth Sound and Estuaries SAC, together with seven SACs in EEA States for their allis shad qualifying feature, two SACs in EEA States for twaite shad, and 17 SACs/SCIs in EEA States for river lamprey. These sites are listed below (Table 6.1) and also in Section 4.5 of the Shadow HRA Addendum [AS-173]. HRA screening matrices were provided for these sites in Appendix B.1 to the Shadow HRA Addendum [AS-174].

Table 6.1 Additional European sites and features 'scoped in' to the Shadow HRA Addendum [AS-174]

European Site	Allis shad (<i>Alosa alosa</i>)	Twaite shad (<i>Alosa fallax</i>)	River lamprey (<i>Lampetra fluviatilis</i>)
Bremische Ochtum SAC			X
Ems SCI			X
Estuaire de la Rance SAC	X		
Havre de Saint-Germain-sur-Ay et Landes de Lessay SAC			X
Lesum SAC			X
Marais du Cotentin et du Bessin - Baie des Veys SAC		X	
Marais Vernier, Risle Maritime SAC	X		X
Mühlenberger Loch/Neßsand SAC			X
Nebenarme der Weser mit Strohauser Plate und Juliusplate SCI			X
Plymouth Sound and Estuaries SAC	X		
Rapfenschutzgebiet Hamburger Stromelbe SCI			X
Rivière Elle SAC	X		
Rivière Elorn SAC	X		
Rivière Laïta, Pointe du Talud, étangs du Loc'h et de Lannened SAC	X		
Rivière Leguer, forêts de Beffou, Coat an Noz et Coat an Hay SAC	X		
Schelde- en Durmeëstuarium van de Nederlandse grens tot Gent SAC			X
Schleswig-Holsteinisches Elbästuar und angrenzende Flächen SAC			X
Treene Winderatter See bis Friedrichstadt und Bollingstedter Au SAC			X
Tregor Goëlo SAC	X	X	
Untereider SAC			X
Untereibe SCI			X
Unterems und Außenems SCI			X
Unterweser SCI			X

European Site	Allis shad (<i>Alosa alosa</i>)	Twaiite shad (<i>Alosa fallax</i>)	River lamprey (<i>Lampetra fluviatilis</i>)
Weser bei Bremerhaven SAC			X
Weser zwischen Ochtummündung und Rekum SAC			X

6.2.8. The Shadow HRA Third Addendum [REP7-279] stated that Change 19 did not result in any new pathways of effect on European sites not already assessed and therefore, did not alter the conclusion of the scoping and screening stage reported in the Shadow HRA Report [APP-145] and Shadow HRA Addendum [AS-178].

6.2.9. The Shadow HRA Third Addendum considered the following European sites for their habitats, bird and marine mammal qualifying features at the screening stage.

- Minsmere to Walberswick Heaths and Marshes SAC;
- Minsmere-Walberswick Ramsar;
- Alde-Ore Estuary SPA;
- Alde-Ore Estuary Ramsar;
- Minsmere–Walberswick SPA;
- Outer Thames Estuary SPA;
- Humber Estuary SAC;
- Southern North Sea SAC; and
- The Wash and North Norfolk Coast SAC.

6.2.10. European sites with migratory fish qualifying features were scoped out of the Shadow HRA Third Addendum. However, in response to ExA questioning at ISH15 and the ExA’s Rule 17 request ([PD-054] Question 20(f)) and with reference to the Sweetman judgment², the Applicant provided information to inform HRA from Change 19 on European sites with migratory fish qualifying features. This was provided as Appendix A of [REP10-168] (epage 22 to 31). The Applicant stated this was provided without prejudice to its position that it was not necessary, but to provide additional comfort. The Applicant reiterated that Change 19 did not result in any new pathways of effect on European sites not already assessed and therefore, did not alter the conclusion of the scoping stage reported in the Shadow HRA Report [APP-145] and Shadow HRA Addendum [AS-173].

6.2.11. Following the submission of the Shadow HRA Report and Shadow HRA Addendum, NE confirmed in response to the ExA’s First Written Question (ExQ1) HRA1.3 that it was satisfied that the proposals in their current form have scoped in all relevant European sites [REP2-152]. NE [REP2-153][REP7-139] [REP8-298c][REP10-097][REP10-199] did however,

² The 2018 ruling by the Court of Justice of the European Union (the CJEU) on the interpretation of the Habitats Directive in the case of People Over Wind and Sweetman vs Coillte Teoranta (2018) (‘the Sweetman judgment’), confirmed that mitigation should not be taken into account at screening stage.

raise concerns throughout the Examination that the water supply strategy/scheme could result in LSE to a wider suite of European sites than those currently considered by the Applicant. This matter is discussed further at Section 6.3 below.

- 6.2.12. The Marine Management Organisation (MMO) also confirmed in its RR that it agreed with the list of European sites that had been screened in on a conservative basis [RR-0744]. The MMO [RR-0744] also stated that it broadly agreed with the sites and qualifying features 'screened in' for further assessment in the Shadow HRA Report. However, it considered this was less clear for mobile species and noted that consideration of effects on some primary habitats and supporting habitats was lacking. This is discussed further at Section 6.4 below.
- 6.2.13. No IPs raised concerns about the scope of the European sites considered in the Applicant's Shadow HRA Third Addendum, although comments were provided on the Applicant's assessment for Change 19.
- 6.2.14. By the end of the Examination, submissions had been made by a number of IPs, including the EA [REP7-131] [REP10-188] and MMO [REP10-107], stating that they defer to NE to advise on the conclusions of the Applicant's HRA and potential effects on European sites. Suffolk County Council (SCC) and East Suffolk Council (ESC) also deferred to NE, affected landowners, and other organisations with specialist knowledge of HRA issues in their joint Local Impact Report (LIR) [REP1-044], except in relation to impacts arising from increased recreational pressure.

LSE from the Proposed Development alone on sites in the NSN

- 6.2.15. The Applicant identified the potential for LSE as a result of the Proposed Development alone on 19 European sites in the NSN considered in the Shadow HRA Report, Shadow HRA Addendum, and Shadow HRA Third Addendum. The Applicant concluded no LSE on two European sites within the NSN, either alone or in combination with other plans and projects: Staverton Park and the Thicks, Wantisden SAC [APP-145 to APP-149]; and the Plymouth Estuaries and Sound SAC [AS-173 to AS-178] [REP4-004].
- 6.2.16. The impacts considered by the Applicant to have the potential to result in LSE are:
- Alteration of coastal processes / sediment transport;
 - Water quality effects – marine environment;
 - Water quality effects – terrestrial environment;
 - Alteration of local hydrology and hydrogeology;
 - Changes in air quality;
 - Direct habitat loss and fragmentation;
 - Disturbance effects on species populations;
 - Disturbance due to increased recreational pressure; and
 - Physical interaction between species and project infrastructure.

- 6.2.17. None of the IPs, including NE, disputed the Applicant's conclusions of LSE on the 19 European sites in the NSN. These 19 European sites and the qualifying features identified for LSE by the Applicant have been included in Table 6.2 below.
- 6.2.18. The ExA agrees with the Applicant's conclusion of LSE on these 19 European sites and has carried these forward to the consideration of AEoI (see Section 6.4 below).
- 6.2.19. The Applicant concluded no LSE on a number of European sites and their qualifying features in its HRA documents (as listed in paragraph 1.2.5 above). These were also identified in Annex 1 to the RIES [PD-053]. During the Examination, as described in Section 3 of the RIES [PD-053], IPs disputed a number of the Applicant's conclusions regarding LSE and there were also instances where potential effects had been raised as a concern by NE that had not been included in the Applicant's Shadow HRA Report. Furthermore, it was not always clear to the ExA which specific sites and features, and/or which effects, were under dispute between the parties.
- 6.2.20. The ExA therefore sought to clarify the screening conclusions and positions of the Applicant and IPs during the Examination. Where there were differences of position related to the screening stage, these are discussed below.
- 6.2.21. For all other European sites and qualifying features that the Applicant concluded no LSE, as listed in Annex 1 of the RIES, no IPs disputed the Applicant's conclusion.
- 6.2.22. The ExA agrees, on the basis of the information provided, with the Applicant's conclusion of no LSE for any European sites from the Proposed Development, alone or in combination, where these were not disputed by NE or other IPs.

LSE - Radiological effects

- 6.2.23. The Applicant considered the potential for LSE arising from radiological effects from the Proposed Development. LSE due to radiological effects were excluded for all qualifying features of all European sites on the basis of the information at Section 5.4 of the Shadow HRA Report [APP-145], as supported by the Sizewell C Human and Non-Human Biota Radiological Impact Assessment provided as Appendix C to ES Chapter 25 Radiological Effects [APP-341] (epage 162 onwards).
- 6.2.24. NE raised no concerns with regards to radiological effects on European sites [RR-0878] and [REP10-097] but was unable to provide final comments on the potential impacts arising from matters that would be managed by a RSR EP, as these have not yet been reviewed [REP2-153]. The EA [RR-0373] identified that it had received a separate EP application for RSR discharges, which requires assessment under the Habitats Regulations. The EA [REP2-068], [REP2-135] and [REP7-090] stated that the permit decision was unlikely to be available within the Examination timetable, although the SoCG [REP7-090] confirmed that

there were no areas of disagreement between the EA and Applicant in terms of the RSR permit as a mechanism for controlling impacts to groundwater, surface water and land quality.

- 6.2.25. Noting that the RSR EP remains to be determined, and considering the advice of the EA, the ExA is of the view that there would be no LSE for any European site alone or in combination from radiological effects on the basis of the information provided to Examination.

LSE - Change 19 – desalination plant

- 6.2.26. Change 19 for the temporary desalination plant was not described in the RIES [PD-053] as the change request and supporting Shadow HRA Third Addendum [REP7-279] were received just prior to the issuing of the RIES. The Applicant's Shadow HRA Third Addendum [REP7-279] did not identify any new European sites and features, nor did it identify any new category of potential effect. The Applicant concluded there was the potential for LSE on the following European sites and their qualifying features (paragraph references are from [REP7-279]):

- Minsmere to Walberswick Heaths and Marshes SAC (paragraph 5.3.88);
- Minsmere-Walberswick Ramsar (paragraphs 5.3.88 and 5.3.89);
- Alde-Ore Estuary SPA (paragraph 5.3.89);
- Alde-Ore Estuary Ramsar (paragraph 5.3.89);
- Minsmere–Walberswick SPA (paragraph 5.3.89);
- Outer Thames Estuary SPA (paragraph 5.3.89);
- Humber Estuary SAC (paragraph 5.3.90);
- Southern North Sea SAC (paragraph 5.3.91); and
- The Wash and North Norfolk Coast SAC (paragraph 5.3.92).

- 6.2.27. The ExA agrees with the Applicant's conclusions of LSE on the above sites, features and potential effects and has carried these forward to consideration of AEoI (see Section 6.4 below).

- 6.2.28. Responses to the Shadow HRA Third Addendum were received from the RSPB/SWT [REP8-171] and MMO [REP10-195], [EV-223] and [REP8-164]. TASC [REP8-282] and [REP8-283] raised a series of comments and questions about Change 19 but did not make any specific comments about the Shadow HRA Third Addendum. ESC [REP10-177] did not make any comments and deferred to the EA, NE and the MMO as the responsible statutory bodies.

- 6.2.29. NE's comments on the Applicant's consultation on the desalination plant were provided in the Applicant's Consultation Report Fifth Addendum at DL8 [REP8-045]. In its response, NE identified potential effects that they considered required further assessment and supporting documentation (epage 12). NE did not attend ISH15 concerning the desalination plant but provided a written submission [REP8-298i]. NE's primary concern related to the level of detailed assessment provided for air quality impacts on Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick SPA and Ramsar arising from the desalination plant.

- 6.2.30. NE [REP10-201] stated they had no comments to make on the impacts that the proposed desalination plant may have on the marine environment. Due to the late stage that Change 19 was submitted to the Examination, NE [REP10-201] stated it was unable to sufficiently review the supporting material provided by the Applicant but commented that *"...any discharges from the plant are proposed to be managed as part of the Environment Agency's Water Discharge Activity permit. Natural England has yet to be formally consulted on the permit and associated HRA. We would require further details to be available through this WDA permitting process before we could provide robust advice on potential impacts to designated sites and species from the discharge of the desalination plant."*
- 6.2.31. As noted above, in response to ExA questioning at ISH15 and the ExA's Rule 17 [PD-054], the Applicant provided further assessment of the potential for 'physical interaction between species and infrastructure' to the migratory fish qualifying features of European sites due to Change 19. This was provided in Appendix A of [REP10-168] (epage 22 to 31). The Applicant stated this was provided without prejudice to its position that it was not necessary, but to provide additional comfort. This additional assessment considered the potential for effects in the absence of the Passive Wedge-Wire Cylinder screen with a mesh size of approximately 2mm to the seawater intake for the desalination plant. The Applicant concluded *"on a highly precautionary basis"* that there was a potential for LSE to the migratory fish qualifying features considered in the Shadow HRA Report [APP-145] and Shadow HRA Addendum [AS-173], either alone or in combination with other plans or projects [REP10-168].
- 6.2.32. Where potential effects related to the Applicant's screening for LSE associated with Change 19 were disputed, these have been discussed under the relevant effects below.

LSE - Various European sites – Invasive non-native species (INNS)

- 6.2.33. The Shadow HRA Report [APP-145] does not explicitly address the spread of INNS as a potential effect pathway. NE raised concerns that the proposals created a risk of unintentionally spreading INNS (via terrestrial and marine sources) and could lead to a detrimental effect on qualifying features of the following European sites [RR-0878] and [REP2-071] (Issue 6), although specific qualifying features were not referenced:
- Alde-Ore and Butley Estuaries SAC;
 - Alde-Ore Estuary SPA;
 - Alde-Ore Estuary Ramsar;
 - Minsmere to Walberswick Heath and Marshes SAC;
 - Minsmere-Walberswick SPA; and
 - Minsmere-Walberswick Ramsar.
- 6.2.34. Discussions about INNS were reported in the RIES [PD-053] (paragraphs 3.2.33 to 3.2.35). The disputed sites and features are also included in Table 6.2 below. On a precautionary basis the ExA has included all

qualifying features within these European sites, as the risk of spread of INNS has the potential to be a site-wide effect.

- 6.2.35. The Applicant [REP10-097] confirmed that the Code of Construction Practice (CoCP) requires a biosecurity risk assessment to be undertaken to avoid potentially facilitating the spread of INNS during construction. With the inclusion of these measures in the CoCP [REP10-072], the Applicant's position is that no further assessment is required [REP10-097].
- 6.2.36. This matter was stated to be 'agreed' between the Applicant and NE in the draft SoCG at DL2 [REP2-071]. The final signed SoCG between the Applicant and NE confirmed that there were no outstanding designated sites of concern in relation to the potential spread of INNS, with the position recorded as agreed [REP10-097] (epage 15).
- 6.2.37. The Applicant appears to have placed reliance on measures in the CoCP in reaching the assessment conclusions. In light of the Sweetman Judgment and in keeping with the precautionary principle, the ExA considers it necessary to consider whether the spread of INNS would result in AEOI of the European sites listed above. This is reported in Section 6.4 below.

LSE - Various European sites – Physical interaction between birds and project infrastructure (pylons and overhead power lines)

- 6.2.38. NE raised concerns (including [RR-0878] (Issue 7), [REP2-153] and [REP2-071]) that physical interaction of birds and new pylons and overhead power lines had not been considered as part of the Applicant's HRA. It highlighted the potential for impacts due to electrocution, displacement, and collision, and considered LSE could not be ruled out for the following European sites, although specific features were not referenced):
- Alde-Ore Estuary SPA;
 - Minsmere-Walberswick SPA; and
 - Outer Thames Estuary SPA.
- 6.2.39. NE stated they expected to see some assessment of this in the HRA and mitigation such as line markers to be included, if necessary. The RSPB/SWT [REP3-074] supported NE's concerns.
- 6.2.40. The Applicant submitted an assessment of the collision risk between birds and power lines, including plans of the proposals (Appendix D, epage 74 of [REP6-024]) to support its position in [REP2-071] and [REP3-042] that there was no likely pathway for a material effect. Although the Applicant maintained there would be no LSE, it also stated at DL6 [REP6-024] that as a precautionary measure, line markers would be installed on the power lines to minimise the risk of bird collision with power lines (subject to operational and technical requirements and views of stakeholders including National Grid).

- 6.2.41. Following receipt of [REP6-024], NE [REP7-287] confirmed that it considered there to be LSE to Alde-Ore Estuary SPA and Minsmere-Walberswick SPA only (NE did not confirm specific features), but not to the qualifying features of the Outer Thames Estuary SPA.
- 6.2.42. At DL7, the Applicant maintained that there would be no LSE to all three European sites [REP7-073]. The Applicant also confirmed [REP7-279] that Change 19 did not alter the outcome of the screening assessment reported in the Shadow HRA Report with regards to the potential for physical interaction/collision risk with birds [APP-145].
- 6.2.43. Evidence of further discussion between the two parties around monitoring and mitigation was submitted at DL10 [REP10-199] and [REP10-155], but in the absence of definitive agreement from NE, the ExA assumes the Alde-Ore Estuary SPA and Minsmere-Walberswick SPA sites and features remain under dispute and has carried these forward to consideration of AEOI at Section 6.4 below and also included them in Table 6.2.
- 6.2.44. The ExA has considered the information provided by the Applicant (particularly in [REP6-024]) regarding likely movements of bird qualifying features of the Outer Thames Estuary SPA and their foraging habitat requirements, together with the nature and characteristics of the Proposed Development. The ExA agrees with the Applicant and NE that LSE on the Outer Thames Estuary SPA as a result of physical interaction with new pylons and overhead power lines can be excluded.
- 6.2.45. The ExA considers that there is a risk of LSE to bird qualifying features of the Alde-Ore Estuary SPA and Minsmere-Walberswick SPA as a result of physical interaction with new pylons and overhead power lines. The ExA has therefore carried forward the potential effect of collision risk to the qualifying features of these two SPAs to its consideration of AEOI.

LSE - Various (and unknown) European sites - Water abstraction and supply

- 6.2.46. Section 5.11 of this Report describes in detail the water supply strategy for the Proposed Development and the discussions held on this matter during the Examination. The revised version of the Applicant's Water Supply Strategy (Revision 2) was submitted at DL7 [REP7-036].
- 6.2.47. The revised water supply strategy for the Proposed Development is to use water tankers to provide a tankered water supply for construction until the local temporary desalination plant is operational. The desalination plant would provide the water supply until a mains water supply by transfer main is connected. At this point the desalination plant would be removed and the landscape restored (as secured by Requirement 29 of the dDCO [REP10-009]).

6.2.48. The tankered water supply would be purchased from the water supply company, Northumbrian Water Limited (NWL)³, as would the subsequent supply by transfer main. Water abstraction and the transfer main do not form part of the DCO application. With regards to the tankered supply, the SoCG between the Applicant and NWL [REP10-092] states that this supply would not come from the Blyth Water Resource Zone (WRZ). NWL are currently undertaking an abstraction sustainability study as part of the EA led Water Industry National Environment Programme (WINEP) scheme to inform the approach to the operational water supply for the Proposed Development. [REP10-092] explained that the findings of the WINEP could not be examined as they were not expected until mid-October 2021, after the close of Examination. It also indicates it would not be met from its Suffolk network irrespective of the WINEP study. NWL have identified potential options in its Essex supply area, although this is to be confirmed.

6.2.49. Despite the precise source of the water supply (other than the desalination plant) not being confirmed, the agreed Protective Provisions between the Applicant and NWL at the end of the Examination (Appendix B to [REP10-092]) confirmed that NWL

"will use its reasonable endeavours to supply the authorised development with:

(a) an annual average of 2.2 MI/d of potable water; and

(b) a peak demand of 2.8 MI/d of potable water

as soon as reasonably practicable"

6.2.50. The RIES [PD-053] paragraphs 3.2.49 to 3.2.55 and 4.2.94 to 4.2.107, highlighted that NE (NE Issue 3) [RR-0878] and [REP2-153] raised concerns regarding the source of water required for various elements of the Proposed Development and the potential for consequent ecological effects on European sites and their qualifying features. NE stated that Suffolk and the wider East Anglia area is under serious water stress and asked the Applicant to demonstrate that the level of abstraction required can be sourced sustainably, without adverse impacts on European sites. NE highlighted the potential for water use/ abstraction (and/or associated works, such as any pipelines for the transfer) to damage the notified habitats and bird supporting habitats of the following European sites:

- Alde-Ore and Butley Estuaries SAC;
- Alde-Ore Estuary SPA;
- Alde-Ore Estuary Ramsar;
- Minsmere to Walberswick Heaths and Marshes SAC;
- Minsmere-Walberswick SPA;
- Minsmere-Walberswick Ramsar; and
- Potentially a wider suite of European sites, depending on the chosen source of water supply.

³ NWL trade locally as Essex and Suffolk Water (ESW). ESW is defined in the dDCO [REP10-009]

- 6.2.51. The RSPB/SWT [REP3-074] supported NE's concerns and considered that in the absence of a strategy for water supply there remains a potential threat to the qualifying features associated with the current hydrological management in the Minsmere to Walberswick SPA and Ramsar.
- 6.2.52. The RIES reports the various positions of the Applicant and IPs with regards to water supply and abstraction up to DL7 but did not include reference to Change 19 (the desalination plant), which had been submitted to provide a temporary local solution for water supply during construction. The desalination plant could be in operation until the point just prior to cold functional testing of the nuclear plant, which is the latest date it is anticipated the permanent water supply solution would be in place. Potential LSE (and consideration of AEOI, as appropriate) associated with Change 19 have been considered for relevant European sites and qualifying features below and in Section 6.4.
- 6.2.53. At the end of the Examination, NE [REP8-298i] and [REP10-097] continued to express concern regarding the source of abstraction/supply for multiple elements of the water supply strategy, specifically the tankered water supply and the pipeline/transfer main, and the potential effects this may have on European sites. This matter is stated to be 'disagreed' in the DL10 SoCG [REP10-097] between NE and the Applicant. In the SoCG (Issue 3 and 9) [REP10-097] and in its response to the RIES [REP10-199], NE advised that:
- "...pushing any Habitats Regulations Assessment (HRA) conclusions for integral and inextricably linked elements of the project down the line into other consenting regimes beyond the Development Consent Order (DCO) raises the likelihood that cumulative and 'in combination' impacts in these regards may get missed/downplayed, and we wish to draw the Examining Authority's attention to this point."*
- 6.2.54. NE (NE Issue 3) [REP10-097] stated that the pipeline/mains transfer is a fundamental component of the eventual operation of the Proposed Development; therefore, the potential impacts of its construction should be clearly assessed in accordance with the NPS and the SoS' Scoping Opinion. NE stated that in the absence of such assessments it is unable to advise on whether this key element of the Proposed Development may have an impact on European sites already considered by the Applicant, or others further afield that may be affected by an abstraction of this scale. It is therefore unable to advise whether adverse effects on European sites from these elements can be ruled out. NE also referenced the water supply in its concerns regarding cumulative/in-combination effects [REP10-097](Issue 9), stating that *"In terms of cumulative and in combination assessment, it is Natural England's advice that this approach [ie integral and inextricably linked elements of the project where impact assessments (and therefore potential mitigation/compensation measures) are proposed to be pushed down the line into other consenting regimes beyond the DCO] raises the likelihood that impacts in these regards may get missed/downplayed."*
- 6.2.55. The ExA's views on certainty of source are discussed in Section 5.11 to this Report.

- 6.2.56. In specific response to NE's concerns regarding the tankered water supply, the Applicant [REP10-161] stated:
- "In respect of the environmental impact of the shorter-term supply, this is a point raised by Natural England in their Deadline 9 representation [REP8-298i] regarding the sources for tankering. There is however no need for EIA or HRA of those sources as part of this process, because they are all existing and licensed sources and nothing new is proposed at those sources. Further, even if something new is in due course proposed at those sources, it would be subject to its own assessment."*
- 6.2.57. With regards to the pipeline/transfer main, the Applicant [REP10-161] reiterated that the pipeline in question is not part of the Proposed Development applied for in the DCO application. The Applicant stated *"...in the event that the transfer main was pursued it would be promoted by the water company and would undergo its own planning process, which would include assessment under the Habitats Regulations as necessary."* The Applicant [REP10-161] stated it had provided a cumulative assessment with regards to the preferred pipeline/transfer main in [AS-189]. The high-level cumulative effects assessment [AS-189] (epage 50 to 58) of the preferred pipeline/transfer main as a direct link from Barsham to Sizewell (as shown on Plate 1.2 of [AS-202] (epage 142)), concluded no new or different significant effects from those in ES Volume 10 Chapter 4 [APP-578]. Chapter 4 of Volume 10 of the ES also concluded no AEOI arising from the Proposed Development in combination. However, this report was produced prior to the further discussions on water supply strategy during the Examination [APP-578].
- 6.2.58. In response to the RIES [REP10-186], the EA reiterated that it is the competent authority for a number of permits and licences sought by the Applicant and that water abstraction and supply is *"partially regulated through an EA licence"*.
- 6.2.59. At ISH15 RSPB/SWT supported NE's views stating that although they *"appreciate any new proposals will be assessed – it is the consideration of those potential effects within the HRA and ES for this project"* [REP10-205]. They also referenced NE's views with regards to potential cumulative and in-combination effects of the proposal as it currently stands.
- 6.2.60. The ExA has considered the information and views put to the Examination on the matter of water abstraction/supply. The ExA's views on the water supply are set out in Section 5.11 of this Report. The following conclusions only relate to matters of HRA. Indirect effects arising from the desalination plant (such as, but not limited to, any air quality implications associated with HGV movements or effects on the marine environment) are considered elsewhere in this chapter.
- 6.2.61. At the close of the Examination there was still no certainty as to where the permanent water supply would be sourced from and how the necessary water would be transferred to the Proposed Development.

- 6.2.62. The ExA has no reason to believe NWL (or other water companies), in providing the tankered water supply, would cause LSE/AEoI to European sites. NWL has also stated that the supply will not come from the Blyth WRZ, or indeed from the Suffolk area. However, the ExA acknowledges that the precise source of the tankered supply is not yet known.
- 6.2.63. With regards to the pipeline/transfer main or other solution, the information available on the potential cumulative and in-combination effects of the transfer main is currently limited, as the chosen source and location of the transfer main is not yet known and the findings of the WINEP study are required to determine the preferred, sustainable option for a supply. The latter will be subject to its own assessments, including HRA. The Applicant's cumulative assessment of the preferred pipeline/transfer main [AS-189] was high-level and contained no conclusions specific to matters of HRA.
- 6.2.64. The ExA is of the view that it is unable to undertake a meaningful assessment of potential LSE arising from the chosen solution for operational supply in combination with the Proposed Development from the evidence presented to the Examination. This is due to the absence of a chosen solution and as a consequence, the lack of clarity regarding the European sites and qualifying features (if any) that would be affected by such a solution. The ExA notes that the chosen solution would require its own HRA and that such a solution is likely to need to consider in-combination effects with the Proposed Development.
- 6.2.65. The ExA accepts the position reached by NE that the water supply strategy is a fundamental component of the operational Proposed Development and that LSE associated with it should be assessed. Given the proximity of European sites such as Minsmere to Walberswick Heaths and Marshes SAC, Minsmere-Walberswick SPA and Ramsar (and potentially other European sites), the ExA is of the view that there could be potential LSE during construction and operation, either alone or in combination with solutions, such as the preferred pipeline/transfer main. For the reasons set out in Section 5.11 of this Report, the ExA has not been provided with sufficient information or certainty and advises that information necessary to inform the HRA is incomplete in this regard. The SoS may therefore wish to satisfy themselves further in this regard.

LSE - Various European sites - water quality effects (marine environment)

- 6.2.66. NE [RR-0878] (NE Issues 31-36) highlighted concerns regarding direct exposure of foraging birds to changes in marine water quality, including direct toxicity from the thermal and chemical discharges including total residual oxidant (TRO), bromoform from chlorination and hydrazine, as well as discharges from the CDO, and drilling discharges in the form of bentonite. NE stated this to be relevant to the following sites and features (which were additional to those considered by the Applicant for 'water quality effects – marine environment' [APP-145] and [APP-148]):
- Alde-Ore Estuary SPA

- sandwich tern (breeding)
- little tern (breeding)
- lesser black-backed gull (breeding)
- Alde-Ore Estuary Ramsar
 - Ramsar Criterion 3 - little tern (breeding)⁴
- Humber Estuary SAC
 - sea lamprey
 - river lamprey
- Minsmere–Walberswick SPA
 - little tern (breeding)
- Minsmere–Walberswick Ramsar
 - Ramsar Criterion 2 - little tern (breeding)⁴
- Outer Thames Estuary SPA
 - little tern (breeding)
 - common tern (breeding)
 - red-throated diver (wintering)

Direct toxicity to seabirds

- 6.2.67. The Shadow HRA Report did not assess the potential effect of direct toxicity on seabirds. NE [RR-0878] particularly noted that the chemical plume associated with the outfall exceeds Environmental Quality Standards (EQS) or Predicted No-Effect Concentration (PNEC) for bromoform. It sought additional evidence, detailing the direct impacts of any chemical plume on marine foraging bird species, with consideration given to risks from direct or repeated exposure to the chemical plume.
- 6.2.68. The RSPB/SWT [REP2-506] and [REP7-153] made extensive comments about the potential for impacts on birds from changes in marine water quality and specifically the potential for direct toxicity effects, as summarised in paragraph 3.2.38 of the RIES [PD-053]. They also raised concerns [REP8-171] about the effects of Change 19 (desalination plant) in this regard, as discussed further below.
- 6.2.69. The Applicant [REP2-071], [REP3-042], [Appendix P of REP5-120], [REP7-073] and [REP10-155] confirmed that the potential for direct effects of toxicity on seabirds was not identified as a potential effect pathway and noted that this was not raised by NE or the RSPB/SWT in the comments they provided during the pre-application stage. It considered the potential for direct effects from the chemical plume not to be a plausible pathway and noted that it is not aware of any evidence of

⁴ Little tern was specifically identified as a feature of concern for these Ramsar sites by NE [RR-0878], although the ExA understands Ramsars are designated by Criterion and little tern are referenced in both Ramsar citations as noteworthy fauna. The ExA has identified these matters by Criterion in Table 6.2 of this chapter.

effects from chemical plumes connected with other existing discharges from nuclear power stations [REP7-073]. The Applicant added that in any event, impacts from the chemical plume would be assessed and controlled through the EP process [REP10-097, epages 54-56].

6.2.70. Impacts from the thermal and chemical plume, chlorination and hydrazine were marked in red as 'disagreed' in the final signed SoCG between the Applicant and NE [REP10-097] (epages 52 to 58). NE's final position in the SoCG in relation to impacts from the chemical plume (epages 54-56) and hydrazine (epages 57-58) stated that:

"It is noted that terns have been observed to show no apparent avoidance of the thermal and chemical plumes associated with discharges from Sizewell B, although there is limited data and no comparison is drawn with a pre-construction baseline. Furthermore, a lack of avoidance of these areas does not imply a lack of impact arising from their use but does confirm that the impact pathway through direct contact and ingestion of contaminated prey should be considered.

Information is required on the potential risks to the relevant breeding and wintering seabird populations arising from:

- *Direct physical contact with the chemical outfall plume waters;*
- *Ingestion of prey contamination by chemical discharges;*
- *Ingestion of stunned or moribund prey (fish) and levels of chemical contamination of these items;*
- *Risks arising from repeated long-term exposure to discharged chemicals; and*
- *Potential for bioaccumulation of discharged chemicals".*

6.2.71. At DL8, the RSPB/SWT [REP8-173] stated that they welcomed the additional clarification provided by the Applicant regarding the potential for direct toxicity to birds arising from the bromoform and hydrazine plumes. However, they raised concerns in [REP8-171] that the plumes from the desalination plant would add to the total marine impacts from the Proposed Development affecting Greater Sizewell Bay (GSB) and the birds (such as little terns of the Outer Thames Estuary SPA and Minsmere-Walberswick SPA) that forage within this area.

6.2.72. The final signed SoCG between the Applicant and the RSPB/SWT [REP10-111] (epages 33 to 34) stated that RSPB/SWT had significant residual concerns regarding impacts from thermal and chemical plumes on terns, including potential discharges from the desalination plant and project-wide effects.

6.2.73. NE [RR-0878], [REP2-153] and [REP10-097] (Issue 36) noted there had been a number of recent occurrences of bentonite break outs or frack outs on other horizontal directional drilling (HDD) projects around the coast. It therefore considered that this potential impact pathway should be considered as a LSE.

6.2.74. The Applicant has maintained that there would be no LSE from drilling mud and bentonite breakout [REP7-073] and [REP10-155]. In the

Shadow HRA Third Addendum [REP7-279], the Applicant considered impacts to the European sites and bird qualifying features listed in paragraph 6.2.66 above from increased suspended sediment concentrations (SSC) due to possible bentonite frack out (from HDD works forming part of Change 19) and concluded no LSE, noting that bentonite is on The Convention for the Protection of the Marine Environment of the North-East Atlantic commission Pose Little or No Risk to the Environment list.

- 6.2.75. Notwithstanding its position that LSE from drilling mud and bentonite breakout would not occur, the Applicant updated the CoCP at DL10 [REP10-072, Table 12.1] in order to address NE's request (as set out in the SoCG [REP10-097]) for additional information on the methodology, procedures and safeguards that would be put in place to reduce the possibility of frack outs.
- 6.2.76. Due to the timing, NE had not submitted comments on the updates to the CoCP [REP10-072] by close of the Examination, therefore it is unclear whether the updates resolved NE's concerns regarding possible frack outs. This matter was marked in red as 'disagreed' in the final signed SoCG between the Applicant and NE [REP10-097, epage 58].
- 6.2.77. At DL10, NE [REP10-201] stated they had no comments to make on the impacts that the proposed desalination plant (Change 19) may have on the marine environment. Due to the date of Change 19 to the Examination, NE were unable to sufficiently review the supporting material provided by the Applicant but commented that *"...any discharges from the plant are proposed to be managed as part of the Environment Agency's Water Discharge Activity permit. Natural England has yet to be formally consulted on the permit and associated HRA. We would require further details to be available through this WDA permitting process before we could provide robust advice on potential impacts to designated sites and species from the discharge of the desalination plant."*
- 6.2.78. The EA's response to the RIES [REP10-186] outlined marine water quality impacts that would be addressed through the EA permitting process and the EA as the competent authority (either in whole, or in part) for the purposes of the Habitats Regulations. The EA is still in the determination stage for these environmental permits and draft/final decisions are not yet available [REP10-186].
- 6.2.79. In terms of direct impacts on marine foraging birds from the thermal and chemical plume, chlorination and hydrazine, the ExA is aware that the EA will also be undertaking an HRA as part of the EP process for these matters. The ExA considers it necessary to consider LSE relating to the land use, including construction and operation, that could be authorised by the DCO. The ExA is therefore of the view that consideration of potential LSE from the Proposed Development arising from water quality effects on the marine environment is required for the DCO application. This is considered further in Section 6.4 below.

- 6.2.80. In terms of impacts from possible bentonite frack out, the ExA considers there is uncertainty whether LSE on bird qualifying features of the European sites listed above can be excluded, and in light of mitigation measures proposed by the Applicant and in accordance with the Sweetman Judgment, the ExA is of the view that this falls to be considered for AEOI (see Section 6.4 below).

Direct toxicity to fish – Humber Estuary SAC

- 6.2.81. Table 5.5 of the Applicant’s Shadow HRA Report [APP-145] and [APP-148] stated that no discernible impact pathway is evident in respect of marine water quality effects, due to the distance between the Humber Estuary SAC and the Proposed Development. It is noted that the Applicant did however, identify LSE for these qualifying features arising from physical interaction of these species with project infrastructure.
- 6.2.82. This was disputed by NE [RR-0878] (epage 283) who considered that the pathway should be screened in due to the substantial amount of work that had been done on thermal and chemical plume modelling and the potential to disrupt migratory paths. NE [RR-0878] and [REP2-071] highlighted that the thermal plume could form a barrier to migration of some fish species, stating that the plume may be above the 2/3°C threshold uplift criteria for SACs (Issue 31). It also identified the potential for impacts from chemical discharges and advised that there could be LSE [REP7-287].
- 6.2.83. The Applicant [REP2-071] explained that the extent of the Sizewell C thermal plume alone does not intersect with the SAC and is located over 12km to the north of the Alde-Ore Estuary SAC. The thermal plume is only predicted to intersect the mouth of the Alde-Ore Estuary SAC and only at increased temperatures in the 0°C to 1°C range as 98th percentiles (Sizewell B and Sizewell C combined). The Applicant [REP7-073] maintained that there would be no LSE given the distance of the Humber Estuary SAC from the Proposed Development.
- 6.2.84. At DL10, the Applicant [REP10-155] reiterated its position regarding screening out of potential water quality effects (including matters of the thermal and chemical plume) on the sea and river lamprey qualifying features of the Humber Estuary SAC. The Applicant stated that it screened out LSE on the basis of distance and the absence of discernible impact pathway, as this SAC is located approximately 163km from the Proposed Development.
- 6.2.85. The ExA has considered the comments from the Applicant and NE on this matter and has decided on a precautionary basis to consider potential water quality effects in the marine environment on these qualifying features of the Humber Estuary SAC (see Section 6.4 below).

LSE - Various European sites – Cumulative/inter-project effects

- 6.2.86. NE [RR-0878] and [REP2-071] (NE Issue 9) and the RSPB/SWT [RR-1059] raised concerns with the Applicant’s assessment of cumulative impacts between different elements of the Proposed Development and

the total impacts of the project as whole. NE included a list of European sites for which it considered this applied, including:

- Alde-Ore and Butley Estuaries SAC;
- Alde-Ore Estuary SPA;
- Alde-Ore Estuary Ramsar;
- Benacre to Easton Bavents SPA;
- The Humber Estuary SAC;
- Minsmere to Walberswick Heath and Marshes SAC;
- Minsmere-Walberswick SPA;
- Minsmere-Walberswick Ramsar;
- Outer Thames Estuary SPA;
- Sandlings SPA;
- Southern North Sea SAC;
- Staverton Park and the Thicks, Wantisden SAC; and
- The Wash and North Norfolk Coast SAC.

6.2.87. In response to the comments of IPs on this matter, the Applicant provided a Shadow HRA Addendum [AS-174], which included additional analysis of the potential for various potential effect pathways on European sites to combine or interact and discussed its conclusion with regards to AEOI. The Shadow HRA Third Addendum [REP7-279] also included consideration of Change 19 cumulatively with other elements of the Proposed Development.

6.2.88. The final SoCG between the Applicant and NE [REP10-097] records this matter as "*disagreement from NE's perspective, resolution of this issue requires all single site issues to be resolved and so it is dependent on other rows within this SoCG.*" NE expanded on its concerns in the SoCG [REP10-097], highlighting the risk of pushing assessment down the line into other consenting regimes beyond the DCO. NE referenced elements that would be subject to EPs, such as a Water Discharge Activity EP for the hydrazine and thermal plumes, and to the water transfer main/supply (as discussed above). NE advised that such an approach raises the likelihood that cumulative/in-combination impacts may be missed/downplayed.

6.2.89. The ExA is of the view that cumulative impacts between different elements of the Proposed Development as defined in the dDCO have been considered by the Applicant.

6.2.90. With regards to other consents required for the Proposed Development, the ExA has sought to consider these within the Examination and this HRA Chapter, to the extent possible at this stage.

6.2.91. The ExA's conclusions with regards to the water supply are reported above in this Chapter. This matter is also discussed at Section 5.11 of this Report.

6.2.92. Notwithstanding the outstanding concerns relating to other consents (eg EPs) and the water supply, cumulative/inter-project related effects are discussed for each relevant European site, qualifying feature and

potential effect pathway in Section 6.2 and/or Section 6.4 below (as appropriate).

LSE - Alde-Ore and Butley Estuaries SAC – Recreational pressure

- 6.2.93. The Shadow HRA Report [APP-145 to APP-149] screened out LSE due to recreational pressure on the Alde-Ore and Butley Estuaries SAC qualifying features 'Mudflats and sandflats not covered by seawater at low tide' and 'Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)'. This was on the basis that it was:

"...considered that the majority of additional visits undertaken by people displaced from Sizewell, or potentially the RSPB Minsmere Reserve, to Aldeburgh would involve activities on the immediate beach frontage around the town, rather than the estuarine habitats and landscape of the Alde-Ore Estuary."

- 6.2.94. NE [RR-0878] (Issue 29) and [REP7-287] disputed the Applicant's conclusion of no LSE on the qualifying features of the Alde-Ore and Butley Estuaries SAC, as it considered that there was potential for damage to notified habitats associated with increased recreational disturbance e.g. trampling. [REP7-287] confirmed this view.
- 6.2.95. The Applicant subsequently confirmed [REP5-119] that these habitats are inaccessible given their estuarine nature and their location relative to possible locations to which displaced visitors and construction workers may be displaced. It maintained that there would be no LSE [REP7-073] and [REP10-155].
- 6.2.96. Although mitigation is not being considered at this stage of the HRA process, the ExA notes that these two qualifying features were not identified or included in the proposed package of measures to mitigate for recreational pressure effects on this European site, as included in the 'Monitoring and Mitigation Plan for Sandlings (Central) and Alde-Ore Estuary European sites' (epage 66 onwards of [REP10-084]). NE did not comment further on these two qualifying features and did not specify they be included in the Monitoring and Mitigation Plan (MMP). The Site Improvement Plan (SIP)⁵ (see epage 799 of [APP-145]) for the Alde-Ore Estuaries also does not identify these qualifying features as features under pressure/threat from public pressure access/disturbance.
- 6.2.97. Taking into account the characteristics, nature and location of these features, the ExA does not consider that recreational pressure such as trampling would pose a risk to these qualifying features and therefore, agrees with the Applicant that LSE can be excluded for these features.

LSE - Alde-Ore Estuary SPA and Ramsar - Noise, light and visual disturbance

⁵ Natural England (2014) Site Improvement Plan Alde-Ore Estuaries, Improvement Programme for England's Natura 2000 Sites (IPENS)

- 6.2.98. NE [RR-0878] (Issue 27) stated that it could not rule out AEOI from noise, light and visual disturbance for all features of the Alde-Ore Estuary SPA and the avocet, lesser black-backed gull, redshank, waterbird assemblage, wetland bird assemblage, and invertebrate assemblage of the Alde-Ore Estuary Ramsar, using the MDS as functionally linked land (FLL). NE's RR expanded on its concerns, which predominantly related to the survey information used to inform the HRA assessment.
- 6.2.99. In response to the RIES, the Applicant [REP10-155] confirmed that this potential impact pathway was not screened in for LSE for the Alde-Ore Estuary SPA and Ramsar in the Shadow HRA Report. The Applicant explained that the Alde-Ore Estuary SPA and Ramsar is 6.5km from the MDS at the nearest point and that the assessments for noise, light and visual disturbance have demonstrated that there is no potential for these effects (or their 'threshold levels') to extend more than a few hundred metres beyond the MDS boundary. The Applicant stated that there is no potential for such disturbance effects to arise on the Alde-Ore Estuary SPA and Ramsar as a result of the associated developments.
- 6.2.100. With regards to FLL habitat potentially used by SPA qualifying features, NE confirmed at DL10 in its final SoCG with the Applicant [REP10-097] that it was satisfied that the Applicant has considered FLL for all SPA species. The matter is stated to be 'agreed' by NE and the Applicant. NE did not return to its initial concerns regarding Alde-Ore SPA and Ramsar and FLL in its representations during the Examination.
- 6.2.101. The ExA is of the view that potential LSE on all qualifying features/ Criterion of the Alde-Ore Estuary SPA and Ramsar arising from noise, light and visual disturbance can be excluded on the basis of distance and the Applicant's assessments for noise, light and visual disturbance.

LSE - Benacre to Easton Bavents SPA and Minsmere-Walberswick SPA - Physical interaction between species and project infrastructure: indirect impacts from entrapment of prey species - bittern

- 6.2.102. The Shadow HRA Report (HRA Screening Matrix B2.2) [APP-148] stated that European eel is an important prey item of breeding bittern; however, no negative effect on the numbers of glass eels or elvers migrating through Sizewell Bay is predicted. Therefore, the Applicant concluded that no discernible impact pathway is apparent.
- 6.2.103. However, the EA [REP2-135] noted that eel, which are prey for bitterns are predicted to be entrapped at Sizewell C; it therefore considered that effects on breeding bittern of Benacre to Easton Bavents SPA should be considered in the HRA. The RSPB/SWT [REP2-506] made the same point specifically for Minsmere-Walberswick SPA, stating effects should be considered on local eel stocks as prey species of bitterns of the SPA. Dr Henderson on behalf of TASC raised concerns during the Examination [REP2-481h][REP8-284] that there had been a "serious underestimation" of the number of eel (amongst numerous other species) that would be entrained and killed. Dr Henderson also stated that the glass eel sampling was insufficient [REP7-247]. The MMO [REP2-140] provided

support for the Applicant's ES findings in respect of fish, including eels, and considered there was a good level of confidence that actual impacts to all fish species (including eels, for which they considered an Equivalent Adult Value (EAV) of 1 to be "unrealistically high") will not be significant.

- 6.2.104. The Applicant (in Appendix P of [REP5-120]) acknowledged that glass eels are of relevance to bittern but stated that only three glass eels have been recorded in the sampling of Sizewell B. It confirmed a worst-case assessment of entrainment had been presented in [AS-238] and that the effects were predicted to be between 0.007 and 0.024% of the River District Basin biomass.
- 6.2.105. To comply with the requirements of the Eel Regulations 2009 and the Water Framework Directive, and in recognition of the importance of these species, the Applicant has proposed the funding of two eel passes at Snape Maltings and Blythford Bridge, as recorded in the Draft Fish Impingement and Entrainment Monitoring Plan (FIEMP)⁶ [REP10-138]. Schedule 11 of the Draft Deed of Obligation (DoO) [REP10-082] secures the funding of these passes to be constructed by the EA. The EA [REP10-193] confirmed at the end of the Examination that it has agreed a Deed of Covenant (provided as [REP10-088]) directly between the Applicant and the EA relating to the funding of the two eel passes, which has been executed concurrently with the DoO, and that the completion of these two agreements has resolved the EA's concerns on these matters during the Examination.
- 6.2.106. However, the ExA notes these passes are proposed for the purposes of compliance with the Eel Regulations rather than relied upon by the Applicant for its HRA. The Applicant [REP10-155] maintained during the Examination that no negative effect on the numbers of glass eels or elvers migrating through Sizewell Bay is predicted and, on this basis, no discernible impact pathway to bittern of the SPA is apparent.
- 6.2.107. In their final representation, the RSPB/SWT [REP10-204] considered that this mitigation would not benefit eels using the Minsmere area, which could be affected by impingement and barrier effects and thus, in its view, the potential for indirect effects on bitterns of the Minsmere-Walberswick SPA which forage in the Minsmere reedbeds remains.
- 6.2.108. During the Examination, the ExA [EV-188] sought NE's view on potential effects to eels as a prey species for bitterns of the Benacre to Easton Bavents SPA and Minsmere-Walberswick SPA. NE [REP7-294] and [REP8-298h] responded that it had "*...no further concern regarding breeding bittern and can conclude no AEoI to breeding bittern at Minsmere-Walberswick SPA and Benacre to Easton Bavents SPA due to eel*

⁶ Provision of a fish impingement and entrainment monitoring plan in general accordance with the Draft FIEMP is required under Condition 44 of the DML in Schedule 21 of the dDCO [REP10-009] prior to commencement of water abstraction. The Draft FIEMP is a certified document in Schedule 24 of the dDCO [REP10-009].

impingement." NE did not expand on what basis it had reached this conclusion.

- 6.2.109. Although the ExA notes the potential numbers of eels that could be entrained are predicted by the Applicant to be low, on a precautionary basis and considering the disputes raised during the Examination, the ExA has considered whether indirect impacts on breeding bittern would result in AEOI. This is reported in Section 6.4 below.

LSE - Benacre to Easton Bavents SPA - All features - Noise, light and visual disturbance

- 6.2.110. The Applicant's Shadow HRA Report [APP-145 and APP-148] concluded that there is no discernible impact pathway from noise, light and visual disturbance to the qualifying features of Benacre to Easton Bavents SPA; therefore, there would be no LSE. However, NE's RR [RR-0878] (Issue 27) highlighted a number of concerns regarding impacts from noise, light and visual disturbance that related to bittern, little tern and marsh harrier of Benacre to Easton Bavents SPA that use the MDS as FLL. At DL7, NE considered that neither LSE nor AEOI could be ruled out for these features [REP7-287].
- 6.2.111. The Applicant maintained that there would be no LSE [REP7-073] and [REP10-155] and explained that the MDS is located approximately 14.2km from the SPA and considerably beyond the likely foraging range of all qualifying features from this SPA; therefore, the MDS could not constitute FLL for this SPA. It also stated that the assessments for noise, light, and visual disturbance demonstrate there is no potential for these effects (or their 'threshold levels') to extend more than a few hundred metres beyond the MDS boundary.
- 6.2.112. The final SoCG between the Applicant and NE [REP10-097] confirms that NE is satisfied the Applicant has considered FLL for all SPA species and shows the matter as 'agreed'.
- 6.2.113. The ExA is of the view that LSE from noise, light and visual disturbance to these qualifying features can be excluded on the basis of distance between the MDS and the SPA (14.2km) and the likely absence of FLL for the qualifying features of this SPA that would be affected by the Proposed Development.

LSE – Minsmere-Walberswick SPA – Changes to coastal processes/ sediment transport

- 6.2.114. During the Examination, NE raised concerns regarding the potential for LSE due to changes to coastal processes/sediment transport in the operational phase on 'all qualifying features' of the Minsmere-Walberswick SPA (NE Issue 28) [RR-0878], [REP2-153] and [REP2-071], including qualifying features not screened in by the Applicant in the Shadow HRA Report, which had been excluded on the basis of no impact pathway. These additional qualifying features include:
- avocet (breeding)

- bittern (breeding)
- marsh harrier (breeding)
- nightjar (breeding)
- shoveler (breeding and wintering)
- teal (breeding)
- gadwall (breeding and wintering)
- hen harrier (wintering)
- white fronted goose (wintering)

6.2.115. In its RR, NE [RR-0878] stated it had concerns about potential indirect effects extending beyond the immediate foreshore into the wetland habitats of the Minsmere Valley.

6.2.116. As the qualifying features had been disputed by NE, the ExA included these in Section 4 (AEoI) of the RIES [PD-053]. In its comments on the RIES [REP10-155], the Applicant reiterated that it had concluded that there was no discernible impact pathway to the additional qualifying features identified by NE and that a justification for this conclusion was presented in a footnote to the Screening Matrix at B2.4 of the Shadow HRA Report [APP-148]. The justification stated that the "*qualifying feature is not dependent on the potentially affected habitats.*" The Applicant [REP10-155] stated that NE does not provide a justification for considering that LSE cannot be excluded for all qualifying features, beyond the view that there is potential for AEoI at the site level as a whole.

6.2.117. NE's position at DL10, as set out in the SoCG [REP10-097], is that LSE arising from changes to coastal processes and sediment transport cannot be excluded for all qualifying features at the Minsmere to Walberswick Heath and Marshes SAC, Minsmere-Walberswick SPA and Minsmere-Walberswick Ramsar.

6.2.118. The ExA has taken the view, on a precautionary basis, that it is necessary to consider the potential risk of effects to these qualifying features under Section 6.4, consideration of AEoI below.

LSE - Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick SPA and Ramsar – impediment to management practices

6.2.119. NE raised concern in its RR [RR-0878] (Issue 8) regarding the potential for works in and around the MDS, which is directly adjacent to Minsmere, to have the potential to impede the management practices required for its conservation (eg access for grazing animals). NE identified this as a concern for the Minsmere-Walberswick SPA and Ramsar and Minsmere to Walberswick Heaths and Marshes SAC. At DL3, RSPB/SWT [REP3-074] confirmed that it would welcome an appropriate agreement to ensure no impediment to future management practices arises from the Proposed Development.

6.2.120. During the Examination, the Applicant [REP6-002] agreed to not impede the RSPB's existing access route to the southern edge of the Minsmere reserve via Lower Abbey Farm. The ExA has determined, on a

precautionary basis, that there is a risk of LSE to these three European sites through an absence of management and in light of the mitigation proposed by the Applicant to avoid such risk occurring, the ExA considers it necessary to consider AEOI for this potential effect. See Section 6.4 below.

LSE - Outer Thames Estuary SPA – Alteration of coastal processes/sediment transport: habitat loss and fragmentation

- 6.2.121. NE [RR-0878] (Comment 357) disputed the Applicant’s conclusion that there would be no LSE from direct habitat loss and fragmentation on the basis that the combined area covered by the outfall, intake, Fish Recovery and Return (FRR) system, BLF and CDO structures equates to 0.000128% of the Outer Thames Estuary SPA [APP-145]. NE noted that the Proposed Development has the potential to alter the morphology and ecological function of the nearshore area, which could be used by qualifying species of the SPA. NE expanded that

"In light of recent case law (Sweetman vs Coillte Teoranta, ref: c-323/17), Natural England advises that any risk of a reduction in, or loss of, a terrestrial or marine European site should be judged to be a LSE, and the full significance of its impact on a site’s integrity should be further tested through an appropriate assessment."

- 6.2.122. With specific reference to red-throated diver, it stated that physical loss by removal or smothering of any of the habitats on which red-throated divers depend may result in the loss of foraging sites and therefore, the reduction of the food resource for the overwintering population. Furthermore, during the construction, operation and decommissioning phases the construction of the jetty, dredge areas and thermal and chemical plumes could potentially lead to a loss or fragmentation of feeding habitat for features of interest. This could lead to a loss of total available habitat within the site. NE advised that prey species could be displaced during construction and decommissioning due to works to the project infrastructure and therefore red-throated diver could be displaced.
- 6.2.123. The ExA [EV-178] sought clarification on the position of the Applicant and NE (and other IPs) in relation to habitat loss and fragmentation effects to this site and feature. The Applicant [REP7-073] responded that there would be no LSE to any qualifying features of the Outer Thames Estuary SPA from habitat loss and fragmentation. At DL7, both NE [REP7-287] and the Applicant [REP7-073] confirmed their views that there would be no LSE to any qualifying features of the Outer Thames Estuary SPA from habitat loss and fragmentation. NE did not confirm the basis upon which its position changed.
- 6.2.124. The ExA is of the view that there was no persuasive evidence presented to the Examination identifying a risk of habitat loss or fragmentation to the habitats upon which the Outer Thames Estuary SPA qualifying features rely and that NE agreed with this position. On this basis the ExA does not consider it necessary to consider AEOI for this potential effect.

LSE - Outer Thames Estuary SPA - Recreational disturbance to little tern

- 6.2.125. The Applicant's Shadow HRA Report [APP-145 and APP-148] concluded that there is no discernible impact pathway to qualifying features of the Outer Thames Estuary SPA as a result of recreational pressure. This was disputed by NE (NE Issue 29) [RR-0878] who considered that there was a potential for impacts on the little tern qualifying feature of this SPA (and that it could not agree to no AEOI), including their supporting habitats due to increased recreational pressure from Sizewell C workers and displaced locals during construction. At DL7, NE [REP7-287] reconfirmed its view that there would be LSE.
- 6.2.126. The Applicant [REP10-155] explained that the Outer Thames Estuary SPA protects the foraging areas of little tern at sea and, with one exception, the breeding colonies that contribute to this SPA population are located outside the SPA boundaries. The one exception is the colony on the Scroby Sands sandbank which is beyond the Zone of Influence (ZoI) for the Proposed Development. Given that recreational disturbance, as a result of to the Proposed Development, is not predicted to have effects on birds when foraging, commuting, or roosting in the marine environment, and also given the relative insensitivity of little tern to anthropogenic disturbance when foraging or commuting in the marine environment, it considered that there is no potential for LSE due to recreational disturbance of little tern from the Outer Thames Estuary SPA.
- 6.2.127. The final SoCG between the Applicant and NE [REP10-097] includes the Outer Thames Estuary SPA in its list of sites for which NE Issue 29 recreational pressure is deemed relevant and indicates that this matter is now 'agreed'. The SoCG records agreement on the matter of the mitigation for recreational pressure, with reference to the two Monitoring and Mitigation Plans (MMPs) for the Minsmere-Walberswick SPA and Ramsar, Sandlings SPA, and Alde-Ore Estuary SPA and Ramsar (see Section 6.4 for discussion of these sites below). These MMPs include mitigation for recreational disturbance of the little tern qualifying feature of the aforementioned sites (where relevant) but are not required for the Outer Thames Estuary SPA.
- 6.2.128. The ExA has considered the Applicant's comments on the RIES [REP10-155] and agree that NE has not provided an explanation as to why they consider such recreational activities on terrestrial (or inter-tidal) habitats should be considered relevant in determining LSE.
- 6.2.129. However, in the final SoCG [REP10-097], NE do appear to agree with the Applicant's conclusion in respect of recreational pressure.
- 6.2.130. The ExA is content to conclude there would be no LSE as a result of recreational pressure to the little tern qualifying feature of the Outer Thames Estuary SPA on the basis of there being no pathway of effect to foraging, commuting and roosting little tern at sea, or to the colony at Scroby Sands.

LSE - Plymouth Sound and Estuaries SAC

- 6.2.131. The Applicant's Shadow HRA Report did not refer to any European sites with allis shad as a qualifying feature. This was queried by the EA [RR-0373], although the EA did acknowledge that the Applicant's impingement predictions for allis shad (in Report SPP103 'Consideration of potential effects on selected features at Sizewell' [AS-238]) are low.
- 6.2.132. In response, the Applicant identified an additional European site in the NSN with allis shad as a qualifying feature in its Shadow HRA Addendum [AS-173], the Plymouth Sound and Estuaries SAC, located approximately 615km distant from the Proposed Development. Based on the very low predicted impingement at Sizewell C (three individuals, based on a single individual being recorded in the monitoring data from Sizewell B in 2009), the Applicant excluded LSE because this scale of effect would not make any material difference to the population of any European site, regardless of location.
- 6.2.133. The EA [REP2-136] acknowledged the information but deferred to NE as the ANCB with regards to the conclusions of no LSE [REP7-131]. NE subsequently confirmed it was content that there would be no LSE on allis shad of the Plymouth Sound and Estuaries SAC [REP7-287].
- 6.2.134. The Applicant's assessment of entrainment impacts was disputed by Dr Henderson on behalf of TASC, who considered that the impact on allis shad (amongst numerous other species) had been underestimated [REP2-481h]. Dr Henderson considered that allis shad could not support any additional mortality without impacts on the population [REP8-284].
- 6.2.135. As noted above, in response to ExA questioning at ISH15 and the ExA's Rule 17 [PD-054], the Applicant provided further assessment of the potential for 'physical interaction between species and infrastructure' to the migratory fish qualifying features of European sites due to Change 19. This was provided in Appendix A of [REP10-168] (epage 22 to 31). The Applicant concluded without prejudice to its position that it was not necessary and "*on a highly precautionary basis*" that there was potential for LSE to the allis shad qualifying feature of the Plymouth Sound SAC, along with a number of other European sites with migratory fish features [REP10-168].
- 6.2.136. The ExA acknowledges the concerns raised by Dr Henderson on behalf of TASC, but on the basis of the separation distances between the Proposed Development and Plymouth Sound SAC (approximately 615km), agrees with the Applicant and NE that there would be no LSE on the allis shad qualifying feature of the Plymouth Sound and Estuaries SAC from all phases of the Proposed Development, alone or in combination with other plans or projects.

LSE - Staverton Park and the Thicks, Wantisden SAC - air quality effects

- 6.2.137. The Applicant concluded that there would be no LSE on the 'Old acidophilous oak woods with *Quercus robur* on sandy plains' qualifying

feature of Staverton Park and the Thicks, Wantisden SAC as a result of the Proposed Development, either alone or in combination with other plans or projects.

- 6.2.138. The Applicant's view is that as the SAC is located 17km from the MDS and 6.5km from the closest associated development site, it does not have the potential to be affected by emissions from operational combustion (from diesel generators) [APP-145] [REP2-071] [REP3-042] [REP10-155]. The Applicant has noted that the screening distance detailed in the EA's risk assessment guidance is 10km for European sites [REP3-042] [REP10-155]. Additional diesel generators for the desalination plant, located within the MDS, were proposed as part of Change 19 but the Shadow HRA Third Addendum [REP7-279] concluded that Change 19 would not alter the conclusions of the Shadow HRA Report [APP-145].
- 6.2.139. NE expressed concerns [RR-0878, Issue 5] [REP2-153] [REP2-071] that there was potential for LSE to Staverton Park and the Thicks, Wantisden SAC from increased airborne pollution (oxides of nitrogen, NO_x) from all elements of the Proposed Development. In response to ExQ2 [REP7-144, HRA.2.0], NE confirmed it was satisfied that LSE on Staverton Park and the Thicks, Wantisden SAC can be excluded due to distance. However, this was contradicted by its response in [REP7-287] which stated that "*LSE had been predicted and brought forward to appropriate assessment where the applicant has provided sufficient evidence that of No Adverse Effect on Integrity.*"
- 6.2.140. NE confirmed in its comments on the RIES [REP10-199] and in its final signed SoCG with the Applicant [REP10-097] (epage 13) that it only remained concerned about the increased deposition of NO_x arising from diesel generators on the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick SPA and Ramsar. This is discussed below.
- 6.2.141. Having considered the distance involved and the information provided by the Applicant together with the responses from NE, the ExA is of the view that there would be no LSE on the qualifying feature of Staverton Park and the Thicks, Wantisden SAC as a result of impacts from NO_x from the Proposed Development.

LSE - Proposed Development in combination

- 6.2.142. Paragraphs 3.4.11 to 3.4.22 of the Shadow HRA Report [APP-145] provided a high-level summary of the Applicant's approach to in-combination assessment. Section 5.6 [APP-145] sets out the approach taken to the in-combination assessment, including the selection of plans and projects for consideration. The Applicant's in-combination screening exercise, including a list of in-combination plans and projects is provided in Table C.1 of Appendix C to the Shadow HRA Report [APP-148]. The Applicant's conclusions are also presented in Table C.1 [APP-148] and in the screening matrices [APP-148, with revised versions for the SACs presented in AS-174].

- 6.2.143. The Applicant's Shadow HRA Addendum [AS-173] and Shadow HRA Third Addendum [REP7-279] also considered potential in-combination effects associated with the change requests they supported, to determine if the changes altered the conclusions of its previous assessments (as relevant).
- 6.2.144. For all potential effects that the Applicant concluded that LSE could occur, the conclusion was reached on the basis of the Proposed Development alone. The ExA therefore considers that effects in-combination do not require further consideration at this screening stage. In-combination effects will be considered in terms of AEOI in Section 6.3 below.
- 6.2.145. Where potential effects were screened out by the Applicant from the Proposed Development alone, the Applicant considered in-combination effects, but in all cases reached a conclusion of no LSE alone or in combination [APP-145] and [APP-148]. The justification for this was either that there was no impact pathway from the Proposed Development alone or that the LSE in-combination screening exercise identified no plan or project that could act in combination with Proposed Development to potentially result in LSE.
- 6.2.146. The RIES [PD-053] noted that concerns were raised during the Examination on matters of in-combination effects and additional projects were highlighted by IPs, including the MMO [RR-0744], NE [RR-0878] (NE Issue 9) and Heveningham Hall Estate [RR-0908 and REP2-287].
- 6.2.147. The following additional projects were identified by IPs:
- Galloper wind farm (MMO [RR-0744]);
 - Sizewell B relocation Town and Country Planning Act (TCPA) application (NE [RR-0878]);
 - Other plans or projects that may affect migratory fish at the North Sea Spawning Stock Biomass (SSB) area level (NE [RR-0878]);
 - Suffolk Coastal Path in respect of the screening of Minsmere to Walberswick Heaths and Marshes SAC (NE [RR-0878]);
 - AONB Management Plan in respect of the screening of Minsmere to Walberswick Heaths and Marshes SAC (NE [RR-0878]);
 - Onshore cable routes of the Scottish Power Renewables offshore wind projects (RSPB/SWT [REP5-166]);
 - Unexploded Ordnances (UXO) detonation activities related to other projects (NE [RR-0878]); and
 - Traffic emissions from projects in relevant local plans (Heveningham Hall Estate [RR-0908 and REP2-287]).
- 6.2.148. The Applicant responded to the points raised in the RIES on in-combination plans and projects at DL10 [REP10-155].
- 6.2.149. With regards to the Galloper wind farm (MMO [RR-0744]), the Applicant confirmed the position as reported in the RIES and that this is resolved [REP10-155]. The Applicant [REP2-082] clarified that the project referred to by the MMO is the Galloper Operation and Maintenance base at Harwich (not the Galloper Offshore Wind Farm), which is constructed and

operational, and therefore part of the baseline and appropriately screened out of in-combination assessment. The Applicant [REP2-082] clarified that the proposed expansion of Galloper Offshore Wind Farm has been referred to in the Shadow HRA Report [APP-145]), although no further information was available to inform in-combination assessment.

- 6.2.150. With regards to the Sizewell B relocation TCPA application highlighted by NE [RR-0878], the Applicant [REP10-155] confirmed the position as reported in the RIES. The TCPA application was submitted in February 2021 and Annex B to the Joint LIR of ESC and SCC [REP1-047] confirms that the competent authority reached a conclusion of no LSE to European sites as a result of the Sizewell B relocated facilities. No further comment on this matter was received from NE and it was not highlighted as a matter of concern in the final SoCG between the Applicant and NE [REP10-097].
- 6.2.151. Concerning other plans and projects that may affect migratory fish, as per NE's comments [RR-0878], the Applicant [REP10-155] confirmed that it did not include this element within its Shadow HRA screening process on the basis that it would be a disproportionate scale for the assessment and any effects would, in any case, be additive. The Applicant stated that the LSE screening approach adopted for migratory fish was highly precautionary, with a number of mainland European sites screened into its assessment.
- 6.2.152. NE's RR [RR-0878] stated that it would expect the Coast Path and AONB Management Plan to be screened into the assessment of recreational disturbance on the Minsmere to Walberswick Heaths and Marshes SAC. The RSPB/SWT [REP5-166] also considered that the onshore cable routes of the Scottish Power Renewables offshore wind projects should be included in respect of recreational pressure in-combination effects. As noted above, effects of recreational pressure are identified as a result of the Proposed Development alone; therefore, the ExA has considered recreational pressure and AEoI below in Section 6.4 of this chapter. At which point, any remaining effects are considered in combination.
- 6.2.153. NE also raised concerns [RR-0878] that UXO detonation activities related to other projects were not included in the Applicant's in-combination assessment. NE stated that there is the potential for other projects to undertake UXO activities at the same time as piling operations for the Proposed Development and this should be considered within the HRA. NE [REP7-144] acknowledged that the requirement for UXO clearance works is not yet confirmed but highlighted that other projects in the area of the proposed works have identified and had to clear UXO. NE therefore identified a realistic chance that this will be the case for piling works at the Proposed Development. Consideration of AEoI arising from underwater noise (including consideration of UXO) on marine mammal qualifying features of identified SACs is included below in relation to Humber Estuary SAC, Southern North Sea SAC and the Wash and North Norfolk Coast SAC, which is followed by consideration of in-combination effects.

- 6.2.154. More generally, NE welcomed the Applicant's continued engagement on the issues in its WR [REP2-153], including the cumulative and in-combination assessment, stating that *"...we would require all issues relating to European protected sites be resolved before we can agree to an absence of in combination effects."*
- 6.2.155. In response to the matter of in-combination traffic emissions from projects in relevant local plans raised by Heveningham Hall Estate [RR-0908 and REP2-287], the Applicant confirmed that the reported air pollutant concentration values at each receptor (including each ecological receptor) represented the combined impact of emissions from all road and rail links, without screening out links. The in-combination impacts from transport emissions from foreseeable future developments are also included in the reported air quality values at all sensitive receptors (including ecological receptors). The ExA therefore considers that these local plans are already represented within the air quality assessment.
- 6.2.156. The final SoCG between the Applicant and RSPB/SWT [REP10-111] highlights remaining concerns with regards to the Applicant's conclusions of AEoI with regard to in-combination effects. These are therefore discussed at Section 6.4 below, as relevant.

LSE - European sites in EEA States

- 6.2.157. The Applicant identified LSE on the twaite shad qualifying feature as a result of physical interaction with the Proposed Development during operation (ie impingement and entrainment of fish in the cooling water system) for the following European sites in EEA States [APP-148]:
- Schelde- en Durmeëstuarium van de Nederlandse grens tot Gent SCI;
 - Unterweser SCI;
 - Weser bei Bremerhaven SCI;
 - Nebenarme der Weser mit Strohauser Plate und Juliusplate SCI;
 - Schleswig-Holsteinisches Elbästuar und angrenzende Flächen SCI;
 - Unterelbe SCI;
 - Mühlenberger Loch/Neßsand SCI;
 - Rapfenschutzgebiet Hamburger Stromelbe SCI;
 - Hamburger Unterelbe SCI; and
 - Elbe zwischen Geesthacht und Hamburg SCI.
- 6.2.158. In response to the EA RR [RR-0373], the Applicant provided further scoping and screening assessment of European sites with twaite shad in the Shadow HRA Addendum [AS-174] and identified LSE for:
- Marais du Cotentin et du Bessin - Baie des Veys SAC; and
 - Tregor Goëlo SAC.
- 6.2.159. Also in response to the EA RR [RR-0373], the Applicant provided scoping and screening assessment of European sites with river lamprey and allis shad qualifying features in the Shadow HRA Addendum [AS-173].

- 6.2.160. The Applicant concluded the potential for LSE on the river lamprey qualifying feature as a result of physical interaction during operation on the following European sites in EEA States [AS-174]:
- Schelde- en Durmeëstuarium van de Nederlandse grens tot Gent SCI;
 - Unterweser SCI;
 - Nebenarme der Weser mit Strohauser Plate und Juliusplate SCI;
 - Weser bei Bremerhaven SCI;
 - Schleswig-Holsteinisches Elbästuar und angrenzende Flächen SCI;
 - Untereibe SCI;
 - Mühlenberger Loch/Neßsand SCI;
 - Rapfenschutzgebiet Hamburger Stromelbe SCI;
 - Havre de Saint-Germain-sur-Ay et Landes de Lessay SAC;
 - Marais Vernier, Risle Maritime SAC;
 - Treene Winderatter See bis Friedrichstadt und Bollingstedter Au SAC;
 - Untereider SAC;
 - Lesum SAC;
 - Bremische Ochtum SAC;
 - Weser zwischen Ochtummündung und Rekum SAC;
 - Unterems und Außenems SCI; and
 - Ems SCI.
- 6.2.161. Although the Applicant also considered further European sites in EEA States with allis shad qualifying features, it concluded no LSE to these sites on the basis of the very low predicted impingement (based on a single individual being recorded in the monitoring data from Sizewell B in 2009) [AS-174 and AS-178].
- 6.2.162. As noted above, the Applicant's assessment of entrainment impacts was disputed by Dr Henderson on behalf of TASC, who considered that the impact on allis shad, river lamprey and twaite shad (amongst numerous other species) had been underestimated [REP2-481h]. Dr Henderson considered that these species could not support any additional mortality without impacts on their populations [REP8-284]. However, these concerns were not raised specifically in relation to individual species populations of any of the sites in EEA States listed above.
- 6.2.163. No IPs or EEA States provided representations to the Examination or to the SoS' transboundary screening consultations to date that raised concerns or disputed the Applicant's screening conclusions on European sites in EEA States.
- 6.2.164. In relation to operational impacts, the ExA has taken into account the separation distances between the Proposed Development and the European sites in EEA States (the closest of which is located c.200km from the Proposed Development, with the majority located at distances greater than 400km) and the predicted levels of entrapment of these qualifying features compared to the reference populations, as set out in section 3 of [REP10-135]. The ExA agrees with the Applicant's screening conclusion with regards to these European sites (ie those for which LSE can be excluded and those for which potential AEOI must be considered).

- 6.2.165. Table 6.3 below lists the European sites in EEA States for which the Applicant identified an LSE during operation on the river lamprey/twaite shad qualifying features.
- 6.2.166. In relation to construction impacts, as reported above European sites with migratory fish qualifying features were scoped out of the Shadow HRA Third Addendum [REP7-279], which assessed Change 19 – the proposed desalination plant.
- 6.2.167. At the very end of the Examination (DL10), in response to ExA questioning at ISH15 and the ExA's Rule 17 request ([PD-054] Question 20(f)) and with reference to the Sweetman judgement, the Applicant also provided an assessment of LSE in relation to physical interaction between species and project infrastructure during operation of the desalination plant in the construction phase (Appendix A of [REP10-168]). The Applicant concluded that LSE on all European sites and their migratory fish qualifying features (twaite shad, river lamprey and allis shad) considered in the Shadow HRA Report [APP-145] and Shadow HRA Addendum [AS-173] cannot be excluded, either alone or in combination with other plans or projects [REP10-168]. This conclusion was on the "*highly precautionary*" basis that there would be an absence of a mesh screen, which the Applicant stated "*...forms an integral part of the design of the physical structure...is not an 'additional' mitigation measure...and it is not a measure 'intended to avoid or reduce the project's harmful effects on that site'...*" [REP10-168]. The Applicant provided information to inform an appropriate assessment in [REP10-168].
- 6.2.168. The ExA agrees with the Applicant's position that the mesh screen is not an additional mitigation measure intended to avoid or reduce the impacts on European sites with migratory fish features and is an integral and standard component of the design of such structures. The ExA is of the view that there is no realistic prospect that the desalination plant intake structures would be built without the mesh screen and therefore, the mesh screen is not required to be considered as a mitigation measure.
- 6.2.169. However, even if considering effects without the presence of a screen, the ExA is satisfied that LSE can be excluded during construction on the basis of the separation distances between the Proposed Development and the European sites in EEA States (the closest of which is located c.200km from the Proposed Development, with the majority located at distances greater than 400km), the temporary duration of the desalination plant and abstraction rates during construction being 0.0009% of those necessary during the operation of the Proposed Development.

LSE - Conclusions

- 6.2.170. The ExA has concluded that LSE could occur for the qualifying features of 19 European sites in the NSN, from both the project alone or in combination with other projects and plans. These sites, qualifying features and the potential effects are presented in Table 6.2 below.

- 6.2.171. This list includes effects on sites and qualifying features that the Applicant concluded LSE in their assessments, together with a number of further effects on additional qualifying features which were disputed by IPs during the Examination and that the ExA believes could also result in LSE. The latter are identified in red font.
- 6.2.172. The ExA has also included Table 6.3 below, to identify European sites outside the NSN for which the Applicant also concluded LSE. The ExA concurs with the Applicant's conclusion in this regard.
- 6.2.173. These conclusions and Tables 6.2 and 6.3 below take account of the ExA's agreement with the Applicant's position that the mesh screen for the desalination plant intake structures is not an additional mitigation measure intended to avoid or reduce impacts on European sites with migratory fish features.
- 6.2.174. In view of the uncertainty around the permanent water supply solution, the ExA cannot preclude the potential identification of LSE on European sites and qualifying features during construction and operation of the Proposed Development, either alone (if considering the solution such as the preferred pipeline/transfer main as part of the project) or in combination with solutions such as the preferred pipeline/transfer main. For the reasons set out in Section 5.11 of this Report, the ExA has not been provided with sufficient information or certainty and advises that information necessary to inform the HRA is incomplete in this regard.

Table 6.2 European sites within the NSN and their qualifying features for which LSE has been identified.

Text in red font identifies potential effect pathways screened out by the Applicant but carried forward to consideration of AEoI by the ExA

Site name	Qualifying Feature(s)	Potential Impacts
UK0030076 Alde-Ore and Butley Estuaries SAC	1130 Estuaries	Changes to coastal processes/ sediment transport
		Water quality effects (marine environment)
		Water quality effects (terrestrial environment)
		Alteration of local hydrology and hydrogeology
		Changes in air quality
		Unintentional introduction or spread of INNS
		Cumulative/ inter-project effects
	1140 Mudflats and sandflats not covered by seawater at low tide	Changes to coastal processes/ sediment transport
		Water quality effects (marine environment)
		Water quality effects (terrestrial environment)
		Alteration of local hydrology and hydrogeology
		Changes in air quality
		Unintentional introduction or spread of INNS
		Cumulative/ inter-project effects
	1330 Atlantic salt meadows	Changes to coastal processes/ sediment transport
		Water quality effects (marine environment)
		Water quality effects (terrestrial environment)
		Alteration of local hydrology and hydrogeology
Unintentional introduction or spread of INNS		

Site name	Qualifying Feature(s)	Potential Impacts
		Changes in air quality
		Cumulative/ inter-project effects
UK9009112 Alde-Ore Estuary SPA	Breeding Avocet <i>Recurvirostra avosetta</i> Breeding Marsh Harrier <i>Circus aeruginosus</i>	Changes in air quality
		Disturbance due to increase in recreational pressure
		Physical interaction between species and project infrastructure
		Unintentional introduction or spread of INNS
		Cumulative/ inter-project effects
	Breeding Little Tern <i>Sterna albifrons</i> Breeding Sandwich Tern <i>S. sandvicensis</i> Breeding Lesser black-backed gull <i>Larus fuscus</i>	Changes to coastal processes/ sediment transport
		Water quality effects (marine environment) – including direct toxicity and bentonite break out
		Water quality effects (terrestrial environment)
		Alteration of local hydrology and hydrogeology
		Changes in air quality
		Physical interaction between species and project infrastructure - impacts from entrapment on fish as a prey species
		Disturbance due to increase in recreational pressure
		Unintentional introduction or spread of INNS
	Cumulative/ inter-project effects	
	Over winter Avocet Over winter Redshank <i>Tringa tetanus</i>	Changes to coastal processes/ sediment transport
Water quality effects (terrestrial environment)		
Alteration of local hydrology and hydrogeology		

Site name	Qualifying Feature(s)	Potential Impacts
	Over winter Ruff <i>Philomachus pugnax</i>	Changes in air quality
		Disturbance due to increase in recreational pressure
		Physical interaction between species and project infrastructure
		Unintentional introduction or spread of INNS
		Cumulative/ inter-project effects
UK11002 Alde-Ore Estuary Ramsar	Ramsar criterion 2 Nationally scarce plant species and British Red Data Book invertebrates	Changes to coastal processes/ sediment transport
		Water quality effects (marine environment)
		Water quality effects (terrestrial environment)
		Alteration of local hydrology and hydrogeology
		Changes in air quality
		Disturbance due to increase in recreational pressure
		Unintentional introduction or spread of INNS
		Cumulative/ inter-project effects
	Ramsar criterion 3 The site supports a notable assemblage of breeding and wintering wetland birds Ramsar criterion 6 Species/ populations occurring at levels of international importance	Changes to coastal processes/ sediment transport
		Water quality effects (marine environment) – including direct toxicity and bentonite break out (little tern)
		Water quality effects (terrestrial environment)
		Alteration of local hydrology and hydrogeology
		Changes in air quality
Disturbance due to increase in recreational pressure		

Site name	Qualifying Feature(s)	Potential Impacts
		Physical interaction between species and project infrastructure including impingement and entrainment of prey
		Unintentional introduction or spread of INNS
		Cumulative/ inter-project effects
UK0013104 Benacre to Easton Bavents Lagoons SAC	1150 Coastal lagoons (Priority feature)	Changes to coastal processes/ sediment transport
		Water quality effects (marine environment)
		Cumulative/ inter-project effects
UK9009291A Benacre to Easton Bavents SPA	Breeding Bittern	Physical interaction with project infrastructure (entrapment of prey species)
		Disturbance due to increase in recreational pressure
		Cumulative/ inter-project effects
	Breeding Little Tern	Changes to coastal processes/ sediment transport
		Water quality effects (marine environment)
		Physical interaction with project infrastructure (entrapment of prey species)
		Disturbance due to increase in recreational pressure
		Cumulative/ inter-project effects
	Breeding Marsh Harrier	Disturbance due to increase in recreational pressure
		Cumulative/ inter-project effects
UK9009261 Deben Estuary SPA	Wintering Avocet	Disturbance effects on species' population (noise, light and visual)
	Wintering Dark-bellied Brent goose	Cumulative/ inter-project effects

Site name	Qualifying Feature(s)	Potential Impacts
UK11017 Deben Estuary Ramsar	Ramsar criterion 6 species/ populations occurring at levels of international importance: dark-bellied Brent goose	Disturbance effects on species' population (noise, light and visual)
		Cumulative/ inter-project effects
UK0030133 Dew's Pond SAC	1166 Great crested newt <i>Triturus cristatus</i>	Alteration of local hydrology and hydrogeology
UK0030170 Humber Estuary SAC	1095 Sea lamprey <i>Petromyzon marinus</i>	Water quality effects (marine environment)
		Physical interaction between species and project infrastructure
	1099 River lamprey <i>Lampetra fluviatilis</i>	Cumulative/ inter-project effects
		1364 Grey seal <i>Halichoerus grypus</i>
	Water quality effects (marine environment)	
	Disturbance effects on species' population (underwater noise)	
	Physical interaction between species and project infrastructure - effects on prey species	
	Physical interaction between species and project infrastructure - collision risk	
Cumulative/ inter-project effects		
UK0012809 Minsmere to Walberswick Heaths and Marshes SAC	1210 Annual vegetation of drift lines	Changes to coastal processes/sediment transport
		Water quality effects (marine environment)
	1220 Perennial vegetation of stony banks	Changes in air quality
		Disturbance due to increase in recreational pressure
		Unintentional introduction or spread of INNS

Site name	Qualifying Feature(s)	Potential Impacts
	4030 European dry heaths	Cumulative/ inter-project effects
		Changes in air quality
		Disturbance due to increase in recreational pressure
		Unintentional introduction or spread of INNS
		Damage to notified habitats due to impediment to management practices
		Cumulative/ inter-project effects
UK9009101 Minsmere-Walberswick SPA	Breeding Avocet Breeding Bittern	Water quality effects (terrestrial environment)
		Alteration of local hydrology and hydrogeology
		Changes in air quality
		Disturbance due to increase in recreational pressure
		Disturbance effects on species' population (noise, light and visual)
		Physical interaction between species and project infrastructure
		Changes to coastal processes/ sediment transport
		Unintentional introduction or spread of INNS
		Damage to notified habitats due to impediment to management practices
	Cumulative/ inter-project effects	
	Breeding Bittern	Physical interaction between species and project infrastructure – including indirect impacts from entrapment on fish as a prey species
Breeding Little Tern	Changes to coastal processes/ sediment transport	

Site name	Qualifying Feature(s)	Potential Impacts
		<p>Water quality effects (marine environment) – including direct toxicity and bentonite break out</p> <p>Water quality effects (terrestrial environment)</p> <p>Alteration of local hydrology and hydrogeology</p> <p>Changes in air quality</p> <p>Disturbance due to increase in recreational pressure</p> <p>Physical interaction between species and project infrastructure – including impacts from entrapment on fish as a prey species</p> <p>Disturbance effects on species’ population – indirect impacts on fish as a prey species from noise and vibration</p> <p>Disturbance effects on species’ population (noise, light and visual)</p> <p>Unintentional introduction or spread of INNS</p> <p>Damage to notified habitats due to impediment to management practices</p> <p>Cumulative/ inter-project effects</p>
	Breeding Marsh Harrier	<p>Water quality effects (terrestrial environment)</p> <p>Alteration of local hydrology and hydrogeology</p> <p>Changes in air quality</p> <p>Direct habitat loss and fragmentation</p> <p>Disturbance due to increase in recreational pressure</p> <p>Disturbance effects on species’ population (noise, light and visual)</p> <p>Physical interaction between species and project infrastructure</p>

Site name	Qualifying Feature(s)	Potential Impacts
		Changes to coastal processes/ sediment transport
		Unintentional introduction or spread of INNS
		Damage to notified habitats due to impediment to management practices
		Cumulative/ inter-project effects
	Breeding Nightjar <i>Caprimulgus europaeus</i>	Changes in air quality
		Direct habitat loss and fragmentation
		Disturbance due to increase in recreational pressure
		Disturbance effects on species' population (noise, light and visual)
		Physical interaction between species and project infrastructure
		Changes to coastal processes/ sediment transport
		Unintentional introduction or spread of INNS
		Damage to notified habitats due to impediment to management practices
	Cumulative/ inter-project effects	
	Breeding Shoveler <i>Anas clypeata</i> Breeding Teal <i>A. crecca</i> Breeding Gadwall <i>A. strepera</i> Wintering Gadwall Wintering Hen Harrier <i>Circus cyaneus</i>	Water quality effects (terrestrial environment)
		Alteration of local hydrology and hydrogeology
		Changes in air quality
		Disturbance due to increase in recreational pressure
		Disturbance effects on species' population (noise, light and visual)
		Physical interaction between species and project infrastructure

Site name	Qualifying Feature(s)	Potential Impacts
	Wintering Shoveler	Changes to coastal processes/ sediment transport
	Wintering White Fronted Goose <i>Anser albifrons albifrons</i>	Unintentional introduction or spread of INNS
		Damage to notified habitats due to impediment to management practices
		Cumulative/ inter-project effects
	Wintering Gadwall Wintering Hen Harrier Wintering Shoveler	Direct habitat loss and fragmentation
UK11044 Minsmere-Walberswick Ramsar	Ramsar criterion 1 Mosaic of marine, freshwater, marshland and associated habitats Ramsar criterion 2 Supports nine nationally scarce plants and at least 26 red data book invertebrates	Changes to coastal processes/ sediment transport
		Water quality effects (marine environment)
		Water quality effects (terrestrial environment)
		Alteration of local hydrology and hydrogeology
		Changes in air quality
		Disturbance due to increase in recreational pressure
		Unintentional introduction or spread of INNS
		Damage to notified habitats due to impediment to management practices
	Cumulative/ inter-project effects	
	Ramsar criterion 2 An important assemblage of rare breeding birds associated with marshland and reedbeds	Changes to coastal processes/ sediment transport
		Disturbance effects on species' population (noise, and visual)
Water quality effects (terrestrial environment)		

Site name	Qualifying Feature(s)	Potential Impacts
		<p>Alteration of local hydrology and hydrogeology</p> <p>Changes in air quality</p> <p>Direct habitat loss and fragmentation</p> <p>Disturbance due to increase in recreational pressure</p> <p>Physical interaction between species and project infrastructure – including impacts from entrapment on fish as a prey species (little tern)</p> <p>Water quality effects (marine environment) – including direct toxicity and bentonite break out (little tern)</p> <p>Unintentional introduction or spread of INNS</p> <p>Damage to notified habitats due to impediment to management practices</p> <p>Cumulative/ inter-project effects</p>
UK0014780 Orfordness to Shingle Street SAC	1150 Coastal lagoons	<p>Changes to coastal processes/ sediment transport</p> <p>Water quality effects (marine environment)</p> <p>Changes in air quality</p> <p>Cumulative/ inter-project effects</p>
	1210 Annual vegetation of drift lines 1220 Perennial vegetation of stony banks	<p>Changes to coastal processes/ sediment transport</p> <p>Water quality effects (marine environment)</p> <p>Changes in air quality</p> <p>Disturbance due to increase in recreational pressure</p> <p>Cumulative/ inter-project effects</p>

Site name	Qualifying Feature(s)	Potential Impacts	
UK9020309 Outer Thames Estuary SPA	Wintering / passage Red-throated diver <i>Gavia stellate</i>	Disturbance effects on species' population (direct disturbance from vessels)	
		Disturbance effects on species' population (noise and visual stimuli)	
		Disturbance effects on species' population – including indirect impacts on fish as a prey species from noise and vibration	
		Physical interaction between species and project infrastructure – impacts from entrapment on fish as a prey species	
		Water quality effects (marine environment) – including direct toxicity and bentonite break out	
		Cumulative/ inter-project effects	
	Breeding Little Tern Breeding Common Tern	Disturbance effects on species' population (direct noise, light and visual stimuli, also indirect impacts on fish as a prey species from noise and vibration)	Water quality effects (marine environment) – including direct toxicity and bentonite break out
			Physical interaction between species and project infrastructure – including impacts from entrapment on fish as a prey species
			Cumulative/ inter-project effects
	UK9020286 Sandlings SPA	Breeding nightjar Breeding Woodlark <i>Lullula arborea</i>	Changes in air quality
			Direct habitat loss and fragmentation
Disturbance due to increase in recreational pressure			
Disturbance effects on species' population (noise, light and visual)			
Cumulative/ inter-project effects			

Site name	Qualifying Feature(s)	Potential Impacts
UK0030395 Southern North Sea SAC	1351 Harbour porpoise <i>Phocoena phocoena</i>	Water quality effects (marine environment)
		Direct habitat loss and direct/ indirect habitat fragmentation
		Disturbance effects on species' population (underwater noise)
		Physical interaction between species and project infrastructure
		Cumulative/ inter-project effects
UK9009121 Stour and Orwell Estuaries SPA	Breeding avocet Pintail (wintering) Dark-bellied Brent goose (wintering) Dunlin (wintering) Knot (wintering) Black-tailed Godwit (wintering) Grey plover (wintering) Redshank (wintering) Assemblage qualification: a wetland of international importance Assemblage qualification: waterbird assemblage	Disturbance effects on species' population (noise and visual stimuli)
		Alteration of local hydrology and hydrogeology
UK11067 Stour and Orwell Estuaries Ramsar	Ramsar criterion 5 assemblages of international importance: waterfowl	Disturbance effects on species' population (noise and visual stimuli)

Site name	Qualifying Feature(s)	Potential Impacts
	Ramsar criterion 6 species/ populations occurring at levels of international importance	Alteration of local hydrology and hydrogeology
UK0017075 The Wash and North Norfolk Coast SAC	1365 Harbour seal <i>Phoca vitulina</i>	Water quality effects (marine environment)
		Disturbance effects on species' population (effects on prey species)
		Disturbance effects on species' population (underwater noise)
		Physical interaction between species and project infrastructure
		Cumulative/ inter-project effects

Table 6.3 European sites outside the NSN and the qualifying features for which LSE has been identified

Site name	Qualifying Feature(s)	Potential Impacts
Schelde- en Durmeëstuarium van de Nederlandse grens tot Gent SCI Unterweser SCI Weser bei Bremerhaven SCI Nebenarme der Weser mit Strohauser Plate und Juliusplate SCI Schleswig-Holsteinisches Elbästuar und angrenzende Flächen SCI Untereibe SCI Mühlenberger Loch/Neßsand SCI Rapfenschutzgebiet Hamburger Stromelbe SCI	Twaite shad	Physical interaction with the Proposed Development during operation

Site name	Qualifying Feature(s)	Potential Impacts
Hamburger Untereibe SCI Elbe zwischen Geesthacht und Hamburg SCI Marais du Cotentin et du Bessin - Baie des Veys SAC Tregor Goëlo SAC		
Schelde- en Durmeëstuarium van de Nederlandse grens tot Gent SCI Unterweser SCI Weser bei Bremerhaven SCI Schleswig-Holsteinisches Elbästuar und angrenzende Flächen SCI Untereibe SCI Mühlenberger Loch/Neßsand SCI Rapfenschutzgebiet Hamburger Stromelbe SCI Havre de Saint-Germain-sur-Ay et Landes de Lessay SAC Marais Vernier, Risle Maritime SAC Treene Winderatter See bis Friedrichstadt und Bollingstedter Au SAC Untereider SAC Lesum SAC Bremische Ochtum SAC Weser zwischen Ochtummündung und Rekum SAC Unterems und Außenems SCI	River lamprey	Physical interaction with the Proposed Development during operation

6.3. CONSERVATION OBJECTIVES

- 6.3.1. The Conservation Objectives for the 19 European sites within the NSN taken forward to appropriate assessment and consideration of AEOI at the point of submission of the application were included in the Applicant's Shadow HRA Report [APP-145]. The Conservation Objectives provided by the Applicant were stated to be generic for all the SACs and Ramsar considered for AEOI of their habitats in Section 7.2 of the Shadow HRA Report, and similarly for the SPAs and Ramsar assessed for AEOI in respect of their bird qualifying features in Section 8.2.
- 6.3.2. NE also provided hyperlinks to the Conservation Objectives for the 13 European sites they commented upon in [RR-0878] (epages 5 to 11).
- 6.3.3. As Staverton Park and the Thicks, Wantisden SAC was screened out, no Conservation Objectives were provided for the site by the Applicant in its original Shadow HRA Report [APP-145]. However, these were provided by NE in its RR [RR-0878].

6.4. FINDINGS IN RELATION TO ADVERSE EFFECTS ON THE INTEGRITY (AEOI)

Introduction

- 6.4.1. The ExA's consideration of AEOI is described below. This section is presented as a thematic discussion of potential effects as they apply to groups/individual European sites (as applicable), followed by the conclusions reached for each European site.
- 6.4.2. The European sites and qualifying features identified in black font in Table 6.2 above were further assessed by the Applicant to determine if they could be subject to AEOI from the Proposed Development, either alone or in combination. The ExA also considered the potential for AEOI for additional qualifying features not identified by the Applicant. These are identified in red font in Table 6.2. The ExA's assessment of AEOI has been made in light of the conservation objectives for the European sites.
- 6.4.3. The Applicant's Shadow HRA Report and addenda [APP-145], [AS-173] and [REP7-279] relied upon a number of mitigation measures to reach its conclusions. These are summarised in Section 4 of the Applicant's HRA Signposting document [REP7-079]. Where there have been discussions relating to mitigation during the Examination, these are detailed in the relevant paragraphs below.
- 6.4.4. The Applicant concluded that an AEOI could be excluded for all qualifying features of all European sites assessed with the exception of the marsh harrier qualifying feature of the Minsmere-Walberswick SPA and Ramsar. The Applicant provided a derogations case in this regard (See Sections 6.6 to 6.8 below).
- 6.4.5. The ExA noted that during the Examination, NE did not dispute the Applicant's conclusion of no AEOI on the following European sites:

- Dew's Ponds SAC;
- Deben Estuary SPA;
- Deben Estuary Ramsar; and
- Orfordness to Shingle Street SAC.

Cumulative/inter-project and in-combination effects

6.4.6. As reported above, the Applicant considered cumulative/inter-project and in-combination effects in the Shadow HRA Report. It did not identify any AEOI in combination with other plans or projects. NE [RR-0878][REP2-071](Issue 9) and the RSPB/SWT [RR-1059] raised concerns with the Applicant's cumulative/inter-project assessment stating that

"...we do not consider that a suitably robust assessment has been undertaken within the HRA of cumulative impacts from different aspects of the project, or of in combination impacts between other projects which may impact on the same internationally designated sites and features. This is a crucial element of the HRA process and therefore needs to be agreed before the project is consented."

6.4.7. The Applicant provided additional analysis of the potential for various potential effect pathways on European sites to combine or interact in the Shadow HRA Addendum [AS-174] and of cumulative/inter-project effects with the proposed desalination plant and any further in-combination effects with other plans or projects in [REP7-279]. The Applicant [REP10-097] stated that the further analyses of the potential for the various pathways for effect on European sites to interact or combine, did not change the conclusions as reported in the Shadow HRA Report for one or more of the following reasons:

- *"The predicted effects are sufficiently localised in nature that different pathways do not combine to cause a larger effect on the qualifying interest feature in question.*
- *Where effect pathways interact / combine and may influence the same qualifying interest feature, the scale of the predicted effect is sufficiently low that there is no realistic potential for an intra-Project effect to arise that could undermine the conservation objectives of the European site.*
- *There is only one identified potential effect pathway for the qualifying interest feature in question (i.e. there is no potential for a within-Project in-combination effect on a particular feature)."*

6.4.8. The matter of cumulative / inter-project and in-combination assessment remained unresolved between the Applicant and NE at the close of Examination. However, the ExA notes that NE's Issue 9 had progressed from its initial concern (i.e. that cumulative / inter-project effects between the various elements of the Proposed Development had not been adequately addressed, as stated in its RR [RR-0878]), to concerns regarding other elements of the project that it considers to be integral and inextricably linked (such as the water supply) and matters relating to the EPs [REP10-097].

6.4.9. NE's final SoCG with the Applicant stated on the matter of cumulative/in-combination effects (NE Issue 9) that

"Natural England advise that all outstanding issues need to be resolved 'alone' before further progress can be made under this issue.

As outlined previously, we advise that there are some integral and inextricably linked elements of the project where impact assessments (and therefore potential mitigation/compensation measures) are proposed to be pushed down the line into other consenting regimes beyond the DCO.

For example, with regards to potential impacts from chlorination and hydrazine on internationally and nationally designated sites (issues 34, 35, 45 and 46 of this SoCG), the Applicant has referenced that Natural England would be further consulted on the water discharge activity permit and lists "Permitting as relevant" as the mechanism for securing mitigation/ compensation measures in the DCO. We previously provided advice on this in our Relevant Representations (pg. 4, paragraph 2.3)

We have also outlined this issue in the context of impacts from water use to internationally and nationally designated sites (see issues 3 and 13 above) in relation to the requirements of NPS EN-1 and NPS EN-6, the principles of which also apply more generally.

In terms of cumulative and in combination assessment, it is Natural England's advice that this approach raises the likelihood that impacts in these regards may get missed/downplayed."

6.4.10. The final SoCG between the Applicant and NE [REP10-097] (epages 17 and 18) recorded this as *"disagreement from NE's perspective, resolution of this issue requires all single site issues to be resolved and so it is dependent on other rows within this SoCG."*

6.4.11. NE's outstanding concern regarding the Applicant's cumulative, inter-project and in-combination assessment (NE Issue 9) at close of Examination was stated to apply to the following European sites (although specific qualifying features of these sites or impact pathways were not identified):

- Alde-Ore and Butley Estuaries SAC;
- Alde-Ore Estuary SPA;
- Alde-Ore Estuary Ramsar;
- Benacre to Easton Bavents SPA;
- Humber Estuary SAC;
- Minsmere to Walberswick Heaths and Marshes SAC;
- Minsmere-Walberswick SPA;
- Minsmere-Walberswick Ramsar;
- Outer Thames Estuary SPA;
- Sandlings SPA;
- Southern North Sea SAC; and
- The Wash and North Norfolk Coast SAC.

- 6.4.12. Staverton Park and the Thicks, Wantisden SAC was included in NE's list of sites of concern for cumulative, inter-project and in-combination effects in [RR-0878] and [REP2-071] but had been removed from the list of sites by the end of Examination [REP10-097] (epages 17 and 18). As reported above, NE initially raised concerns regarding impacts on this SAC as a result of changes in air quality but confirmed at DL10 that it only remained concerned about the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick SPA and Ramsar in this regard [REP10-199] and [REP10-097] (epage 13).
- 6.4.13. Matters relating to the pipeline/mains transfer, which does not form part of the DCO application, are reported in earlier paragraphs to this Chapter. At the end of the Examination, NE [REP8-298i] and [REP10-097] continued to express concerns with regards to the source of abstraction/supply for multiple elements of the water supply strategy, specifically the tankered water supply and the pipeline/transfer main, and the potential effects this may have on European sites. This matter is stated to be 'disagreed' in the DL10 SoCG [REP10-097] between NE and the Applicant.
- 6.4.14. The RSPB/SWT also had outstanding concerns regarding the Applicant's assessment of cumulative, inter-project and in-combination effects at close of the Examination, particularly in relation to the Minsmere-Walberswick SPA, Alde-Ore Estuary SPA and Outer Thames Estuary SPA [REP10-204] and did not agree that AEoI could be excluded for these sites. This position was also reflected in the final SoCG between the Applicant and RSPB [REP10-111] (epage 34).
- 6.4.15. The Applicant [REP10-155] in response to the RIES [PD-053], stated that
- "Natural England's comment in the SoCG states that: 'Natural England advise that all outstanding issues need to be resolved 'alone' before further progress can be made under this issue.' As such, it appears that Natural England's concerns in relation to cumulative and in-combination assessments are entirely parasitic on other issues which they see as outstanding. As such, this is not, in reality, an additional item in dispute but stands or falls with the other issues."*

Cumulative/inter-project and in-combination effects - ExA's conclusion

- 6.4.16. The Applicant presented further assessment of cumulative/inter-project and in-combination effects to the Examination [AS-174] and [REP7-279] and the ExA is not aware of any other relevant plans or projects that have not been considered by the Applicant in terms of potential in-combination effects. As noted in Section 6.2 above and in the RIES [PD-053], other projects and plans that could act in combination with the Proposed Development were identified by IPs during the Examination and the Applicant provided a response to IPs on these additional plans or projects (as reported above). The ExA does however, also note NE's outstanding concern regarding the Applicant's assessment of cumulative/inter-project and in-combination effects and agree with NE

that unresolved matters arising from the assessment of effects alone require resolution first.

- 6.4.17. To address this, the ExA has considered the potential effects of the Proposed Development alone in the following site-specific sections, before considering the potential for in-combination effects, for each effect pathway and European site (as appropriate). Where the ExA has identified matters that are outstanding from potential effects alone, the ExA has identified these below and recommends that the SoS may wish to satisfy themselves with regards to effects alone or in-combination.
- 6.4.18. As noted previously, there are also outstanding matters relating to the water supply for the Proposed Development. The ExA's conclusion with regards to the matter of in-combination/ cumulative effects associated with the water supply is addressed separately.

Unintentional spread of INNS

Proposed Development alone and in combination

- 6.4.19. As detailed in earlier paragraphs to this Chapter, the Applicant's Shadow HRA Report [APP-145] does not explicitly address the spread of INNS as a potential effect pathway. NE initially raised concerns that the proposals presented a risk of unintentionally spreading INNS during the construction phase (via terrestrial and marine sources) and could lead to a detrimental effect on qualifying features of the following European sites [RR-0878] and [REP2-071] (Issue 6):
- Alde-Ore and Butley Estuaries SAC;
 - Alde-Ore Estuary SPA;
 - Alde-Ore Estuary Ramsar;
 - Minsmere to Walberswick Heath and Marshes SAC;
 - Minsmere-Walberswick SPA; and
 - Minsmere-Walberswick Ramsar.
- 6.4.20. As NE did not reference specific qualifying features with regards to INNS, the ExA has included all qualifying features within these European sites, on a precautionary basis as the risk of spread of INNS has the potential to be a site-wide effect.
- 6.4.21. The CoCP [REP10-072] requires a biosecurity risk assessment to be undertaken and a management plan to be implemented to avoid potentially facilitating the spread of INNS during construction [REP10-097] (epages 75 and 172). Additionally, for the marine environment, the CoCP specifies that the potential for INNS to be introduced during ballast water activities must be managed through compliance with measures set out in the International Maritime Organisation Ballast Water Management Convention (epage 113). Given the inclusion of these measures in the CoCP, the Applicant's position is that no further assessment is required [REP10-097]. In light of these mitigation measures, NE agrees with the Applicant's conclusion that mitigation measures are sufficient to ensure no AEOI on the above sites via this pathway [REP10-097].

6.4.22. No specific projects or plans were identified to consider in combination.

ExA conclusion

6.4.23. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI on the above listed European sites from the unintentional introduction or spread of INNS as a result of Proposed Development, either alone or in combination.

Impediment to management practices

Proposed Development alone and in combination

6.4.24. As identified in Section 6.2 above, NE raised concern during the Examination regarding the potential for works in and around the MDS, which is directly adjacent to Minsmere, to have the potential to impede the management practices required for its conservation (eg access for grazing animals). NE identified this as a concern for the Minsmere-Walberswick SPA and Ramsar and Minsmere to Walberswick Heaths and Marshes SAC. At DL3, RSPB/SWT [REP3-074] confirmed that it would welcome an appropriate agreement to ensure no impediment to future management practices arises from the Proposed Development.

6.4.25. This matter was queried by the ExA during the Examination in [PD-018] (HRA.1.5) and [PD-033] (HRA.2.2). At DL6, the Applicant [REP6-002] provided a plan showing the access route for the RSPB to access the southern side of the RSPB reserve, which is located entirely outside of the DCO boundary. The Applicant stated it would commit in writing, initially via the SoCG and then by an exchange of letters, to not carrying out works which impede the RSPB's existing access route to the southern edge of the Minsmere reserve via Lower Abbey Farm.

6.4.26. NE confirmed in its late response to DL7 [REP7-287] that "*The applicant has now provided sufficient evidence to ensure any impact can be adequately mitigated to avoid an AEOI.*" The RSPB [REP8-173] also noted the proposed commitment in writing not to impede the RSPB's access to Minsmere reserve and looked forward to receiving this in due course.

6.4.27. At DL8, the Applicant submitted as Appendix J of [REP8-119] (epage 338) a plan showing 'Access Routes to Minsmere and Sizewell Marshes SSSI'. However, a firm commitment from the Applicant that it would not impede the RSPB's existing access route to the Minsmere reserve via Lower Abbey Farm was not submitted to the Examination.

6.4.28. The ExA is not aware of any projects or plans that could act in combination with this effect and considers the mitigation would adequately ensure no AEOI from the Proposed Development alone.

ExA's conclusion

6.4.29. The ExA has considered how impeding management could impact these European sites and is of the view that the SoS could conclude there would be no AEOI to the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick SPA, and Minsmere-Walberswick Ramsar

with the mitigation proposed in the form of access for management, either alone or in combination with other plans or projects. However, a firm commitment from the Applicant that it would not impede the RSPB's existing access route to the Minsmere reserve via Lower Abbey Farm was not submitted to the Examination and the ExA recommends that the SoS may wish to satisfy themselves in this regard before reaching a conclusion on this matter.

Changes to coastal processes/sediment transport

Proposed Development alone

- 6.4.30. The Applicant's Shadow HRA Report [APP-145] provided information for an appropriate assessment in relation to changes to coastal processes/sediment transport during construction, operation and decommissioning of Proposed Development components to those habitat qualifying features of Alde, Ore and Butley Estuaries SAC, Alde-Ore Ramsar, Minsmere to Walberswick Heaths and Marshes SAC, Minsmere-Walberswick Ramsar and Orfordness and Shingle Street SAC identified in Table 6.2. It also assessed the potential for impacts to supporting habitats arising from changes in coastal processes/ sediment transport to result in an AEOI on some bird qualifying features of Alde-Ore Estuaries Ramsar, Alde-Ore Estuary SPA, Benacre to Easton Bavents SPA, Minsmere-Walberswick Ramsar and Minsmere-Walberswick SPA, as identified in Table 6.2. This information is included in Sections 7 to 8 of [APP-145].
- 6.4.31. The Shadow HRA Report [APP-145] identified four elements of the Proposed Development that could cause potential LSE to arise, including:
- coastal defences;
 - BLF;
 - cooling water intakes and outfalls; and
 - FRR system and CDO.
- 6.4.32. The Applicant concluded that changes to coastal processes/sediment transport as a result of the Proposed Development would have no AEOI on the qualifying features of the above European sites, either alone or in combination with other plans or projects [APP-145].
- 6.4.33. The Shadow HRA Addendum [AS-173] provided an updated assessment to consider the implications of the enhanced permanent BLF and a new, temporary BLF (Change 2) on the conclusions reached in respect of the above European sites. The Applicant's conclusion of no AEOI remained unchanged.
- 6.4.34. The Shadow HRA Third Addendum [REP7-279], in respect of Change 19, identified LSE for Minsmere to Walberswick Heaths and Marshes SAC, Minsmere-Walberswick SPA, Minsmere-Walberswick Ramsar, and Alde-Ore Estuary SPA and Alde-Ore Estuary Ramsar, as a result of alterations to coastal processes/sediment transportation. The Shadow HRA Third Addendum identified that the installation and presence/usage and removal of intake and outfall heads for the desalination plant in the

nearshore zone, seaward of the outer longshore bar crest, is of relevance to the assessment of coastal geomorphology and hydrodynamics. These elements comprise dredging and dredge spoil disposal, drilling for connection to headworks, construction platform operations, and the physical presence of the intake and outfall heads. They were assessed in the Fourth ES Addendum [REP7-030], which considered potential changes to tidal flows, wave propagation, SSC, sedimentation rate, and sediment bed change.

- 6.4.35. The Shadow HRA Third Addendum [REP7-279] stated that effects arising from changes to coastal processes and sediment transport would extend over small areas and would be highly localised around activities associated with Change 19. The Applicant concluded no AEOI to any of the European sites considered and stated that there is no change to the conclusions of the Shadow HRA Report [APP-145].
- 6.4.36. During the Pre-examination and Examination period, the Applicant provided additional technical reports and representations relevant to the assessment, mitigation and monitoring of potential coastal processes effects, including:
- Technical report TR543 'Modelling of the Temporary and Permanent Beach Landing Facilities at Sizewell C' [PDB-010];
 - TR544 Preliminary design and maintenance requirements for the Sizewell C Soft Coastal Defence Feature (latest version [REP10-124]);
 - TR545 Storm Erosion Modelling of the Sizewell C Coastal Defence Feature (latest version [REP9-020]); and
 - Coastal Processes Monitoring and Mitigation Plan (CPMMP) (latest draft [REP10-041]).
- 6.4.37. During the Examination, NE [RR-0878], [REP2-153] and [REP2-071](Issue 28) raised concerns regarding potential damage to/loss of habitats resulting from changes to coastal processes/geomorphology that could arise from the MDS element of the Proposed Development. NE confirmed it was not yet satisfied that AEOI could be excluded for the following sites and qualifying features:
- Minsmere to Walberswick Heaths and Marshes SAC (annual vegetation of drift lines and perennial vegetation of stony banks qualifying features);
 - Minsmere-Walberswick SPA (all features); and
 - Minsmere-Walberswick Ramsar (all features).
- 6.4.38. Similar concerns were raised by the RSPB/SWT [REP2-506], [REP3-074], [REP5-163], [REP6-046] and [REP7-154]. At DL7, the RSPB/SWT [REP7-152] confirmed it did not agree that AEOI could be excluded for the European sites identified by NE (amongst other sites).
- 6.4.39. As noted above, NE [RR-0878][REP2-153][REP2-071] (Issue 28) also raised concerns regarding potential LSE due to changes to coastal processes/sediment transport in the operational phase on "all qualifying features" of Minsmere-Walberswick SPA, including qualifying features not

screened in by the Applicant in the Shadow HRA Report [APP-145], which had been excluded on the basis of no impact pathway.

- 6.4.40. The ExA identified this matter in the RIES [PD-053] and has carried these qualifying features forward to consideration for AEOI on a precautionary basis.
- 6.4.41. NE [RR-0878] and [REP10-097] did not dispute the Applicant's conclusion of no AEOI from changes to coastal processes/sediment transport in respect of the screened in qualifying features of the following European sites:
- Alde, Ore and Butley Estuaries SAC;
 - Alde-Ore Estuary SPA;
 - Alde-Ore Estuaries Ramsar;
 - Benacre to Easton Bavents Lagoon SAC;
 - Benacre to Easton Bavents SPA; and
 - Orfordness to Shingle Street SAC.
- 6.4.42. NE's position at DL3 [REP3-071a], in response to Technical report TR543 'Modelling of the Temporary and Permanent Beach Landing Facilities at Sizewell C' [PDB-010], was that it was satisfied that the presence of the BLFs will not cause an AEOI of Minsmere to Walberswick Heath and Marshes SAC, Minsmere-Walberswick SPA or Minsmere-Walberswick Ramsar. However, this position related only to the BLFs element of the Proposed Development and did not constitute a conclusion on the project alone or in combination.
- 6.4.43. At DL5, NE [REP5-158] raised concerns about the large quantities of sediment required to recharge the Soft Coastal Defence Feature (SCDF) (which would be located in front of the Hard Coastal Defence Feature (HCDF)) and whether this had been secured. NE also highlighted the need for "...clear and precautionary triggers for the whole frontage..." to avoid impacts to Minsmere to the north [REP5-158].
- 6.4.44. NE stated [REP5-158] that "*While monitoring alone is not sufficient mitigation with a HRA, it will inform the frequency and timing of beach recharge. Natural England's confidence in this assessment is underpinned on a clear and well written 'Coastal Processes Monitoring and Mitigation Plan'.*"
- 6.4.45. The RSPB/SWT [REP7-152] and [REP7-154] also expressed concern that addressing impacts from the approach to the HCDF and SCDF on the habitat qualifying features of Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar via the CPMMP is not sufficient. The RSPB/SWT considered that the role of the Terrestrial Ecology Monitoring and Mitigation Plan (TEMMP) needed to be clarified in this regard.
- 6.4.46. In response, the Applicant [REP8-124] stated that it would speak to the RSPB outside of the Examination on this matter, as it believed that an explanation of how the TEMMP operates would provide reassurance on the matter. Notwithstanding, this point SoCG with RSPB/SWT at DL9

[REP9-019] (Item Ref G5.4) notes that RSPB/SWT retained concerns about impacts on the designated strand line vegetation along the Minsmere frontage and how this would be mitigated through implementation of the CPMMP. The Applicant [REP9-019] maintains the position as set out in [REP6-025] that the SCDF will supply sediment to the north and south but there would no impact to the cycle of erosion and reconstruction of the beach face and hence to the frontal supra-tidal zone where drift lines form. The Applicant [REP9-019] states that would be no adverse effect from SCDF on local drift lines or drift line vegetation.

- 6.4.47. The RIES [PD-053] at paragraphs 4.2.29 to 4.2.49 sets out the ExA's understanding of the position of the Applicant and IPs (including NE) by DL7.
- 6.4.48. By DL10 of the Examination, NE's concerns were limited to the coastal defence structures, including SCDF, and potential effects on Minsmere to Walberswick Heath and Marshes SAC, Minsmere-Walberswick SPA, and Minsmere-Walberswick Ramsar.
- 6.4.49. NE's comments at DL10 related to the potential for the coastal defence features, including the SCDF, which will be located in front of the HCDF, to change coastal processes/ transport sediment and result in an AEoI for the Minsmere sites. As identified by NE [REP5-158] previously, its concerns related to uncertainty and risk associated with the modelling and design of the SCDF, including potential for exposure of the HCDF, quantities and type of sediment to be used in the recharge, trigger points required for recharge of the SCDF. NE stated [REP7-144] that additional modelling work, as described in version 2 of TR544 [REP3-032] would be required to address the uncertainty with the SCDF, including:
- "Further work required to refine the SCDF's coastal processes design and finalise the buffer and sacrificial layer volumes includes:*
- Setting the Vrecharge (the threshold volume for SCDF recharge) for the CPMMP.*
 - Extending the modelling period from the end of the operational phase (2099) to the end of decommissioning for SLR cases.*
 - Modelling a range of particle sizes between 10 and 80 mm to optimise SCDF particle-size selection and SCDF performance.*
 - Consideration of whether gravel model calibration work should be undertaken to reduce model uncertainty, specifically measurements of the groundwater properties (hydraulic conductivity) for Sizewell's supra-tidal sediments, which are the closest analogy to the SCDF available. Full-scale physical modelling may also be required to finalise the design prior to SCDF construction."*
- 6.4.50. Comments were awaited from NE on the Applicant's technical reports and revised CPMMP on the matter of coastal processes and sediment transportation towards the end of the Examination. These were provided by NE at DL10 [REP10-200]. NE commented on the Applicant's DL7

Submission - 9.12 Preliminary Design and Maintenance Requirements for the Sizewell C Coastal Defence Feature - Revision 3.0 [REP7-101] and the Applicant's DL9 Submission - 9.31 Storm Erosion Modelling of the Sizewell C Soft Coastal Defence Feature using XBeach-2D and XBeach-G - Revision 3.0 [REP9-020].

6.4.51. In [REP10-200], NE stated that:

"We consider that it is quite possible that our outstanding concerns about particle size and habitats can ultimately be addressed, but some recommended actions remain about further assessment needing to be done upfront in order to come to a view on whether or not adverse effects on the integrity (AEoI) of Minsmere to Walberswick Heaths & Marshes (SAC, SPA, Ramsar) and adverse effects on Minsmere to Walberswick Heaths & Marshes SSSI can be ruled out. The Applicant has stated their intention not to do some of that assessment work until after the close of the Examination and our position therefore remains that, on this basis, we are not yet able to agree with the Applicant's conclusion of no adverse effects to Minsmere to Walberswick Heaths & Marshes SAC, SPA, Ramsar and SSSI arising from changes to coastal processes for the development as a whole."

6.4.52. The Examination closed two days after DL10 and thus the Applicant was unable to respond to NE's final representation [REP10-200] on this matter.

6.4.53. At DL10, the RSPB/SWT [REP10-204] also provided comments on the Applicant's Document '9.13 Sizewell C Coastal Defences Design Report' [REP8-096]. RSPB/SWT welcomed the Applicant's commitment to a default position of matching native particle size for the SCDF but noted that the TR544 report (revision 3) [REP7-101] still advocated use of coarser grain size. The RSPB/SWT stated that its preference would be for more specific wording to avoid any possibility of the wording being interpreted to justify selection of a coarser particle size and not fully reflecting the range of particle size on existing and adjacent beach frontages.

6.4.54. The RSPB/SWT [REP10-204] was still also concerned about the potential for more frequent recharge around the BLF, which is proposed close to Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar. The RSPB/SWT stated that the information provided by the Applicant has not enabled it to exclude AEoI to vegetated shingle (qualifying feature) and that it has not been provided with convincing evidence of the feasibility of mitigation works should impacts arise following monitoring of vegetated shingle. The Applicant's final SoCG with the RSPB/SWT records that the RSPB/SWT cannot conclude no AEoI of the annual drift line vegetation feature (Item Ref. G5.4, REP10-111]).

6.4.55. As with NE above, the Applicant was unable to respond to the final representations of the RSPB/SWT [REP10-204] on these matters.

- 6.4.56. The MMO [REP9-030] also provided comments on the Applicant's revised modelling at DL9. The MMO [REP9-030] stated that it had only one major concern with the TR544 (revision 3) [REP7-101], which was that the report still aimed to optimise/ maximise the sediment size. The MMO [REP9-030] provided comments on an earlier iteration of TR545 (revision 2) [REP7-045] and stated that recommendations about particle size for the SCDF construction were contradictory with discussions in technical meetings held between the Applicant and the MMO in September 2021. The MMO had thought that the Applicant agreed that the design of the SCDF with close to natural sediments is a sufficiently conservative approach in terms of erosive response.
- 6.4.57. At DL10, the EA [REP10-191] also provided comments on the Applicant's DL8 and DL9 submissions relating to coastal processes ([REP8-096] and [REP9-020]). The EA welcomed the additional modelling completed by the Applicant and stated that it was in agreement with a number of the conclusions reached. However, the EA noted that in respect of the Coastal Defences Design Report [REP8-096], further modelling outputs were still awaited and not expected until after the close of the Examination. The EA stated that in its view there were still gaps in the Storm Erosion Modelling [REP9-020], including modelling of a more severe storm scenario than the 'Beast from the East'⁷ sequence and further analysis of risk posed by two or more severe events occurring sequentially and without a safe operating window for delivery of mitigation measures such as beach renourishment. The EA [REP10-094] stated that the CPMMP presents an important mechanism to identify and address residual effects beyond those predicted by the modelling. The EA [REP10-094] stated that this approach is in line with best practice for addressing uncertainty.
- 6.4.58. The Applicant's final iteration of the Storm Erosion Modelling of the Sizewell C SCDF [REP9-020] states that the "*...default position for SCDF particle size is to match the native size distribution, which has a model pebble size of approximately 10mm diameter.*" NE commented [REP10-200] that a firm commitment to that effect on SCDF particle size would go some way to enabling a conclusion of no AEoI, but NE could not confirm this, as it considers that there are inconsistencies in the Applicant's information that could undermine this commitment, for example reference to the benefits of larger erosion resistant cobble size.
- 6.4.59. The Applicant's Storm Erosion Modelling of the Sizewell C SCDF [REP9-020] has also been updated to include a note stating the "*...benefit of retaining the native sizes is the retention of natural processes as much as possible, and it is understood that this is the preferred option of many interested parties as it reduces uncertainty.*" NE stated [REP10-200] that if this can be part of the default position for any beach recharge design, it would help NE to move towards a conclusion of no AEoI but this would be dependent on how the practical design plays out on an intervention-by-intervention basis.

⁷ Defined in the Applicant's Storm Erosion Modelling [REP9-020]

- 6.4.60. At DL10, the Applicant submitted an updated report TR544 'Preliminary Design and Maintenance Requirements for the Sizewell C Soft Coastal Defence Feature' [REP10-124]. This included a large number of changes compared with the DL7 version, such as matters of particle size and inclusion of the model outputs of the Storm Erosion Modelling of the Sizewell C SCDF [REP9-020]. In response to the MMO comment 2.4 [REP9-030], TR544 [REP10-124] no longer recommends coarsening the SCDF relative to the native distribution. As [REP10-124] was submitted at DL10, NE and other IPs did not have the opportunity to comment on this report and the changes made by the end of the Examination.
- 6.4.61. The Applicant's final position at DL10 [REP10-097] is that there is a firm commitment to the default position of retaining native grain size/native particle size distribution for the SCDF without any intentional coarsening, as set out in the draft CPMMP [REP10-041], the Preliminary Design and Maintenance Requirements for the Sizewell C Coastal Defence Feature [REP10-124], and the Storm Erosion Modelling of the Sizewell C SCDF [REP9-020]. The Applicant is of the view that this should allay many of the concerns raised by NE. NE and other IPs were unable to provide comment on the Applicant's updated TR544 report and CPMPP [REP10-041] or any final submissions on this matter received at DL10.
- 6.4.62. With regards to the additional qualifying features identified by NE (namely breeding avocet, bittern, marsh harrier, nightjar, shoveler, teal and gadwall, and wintering gadwall, hen harrier, shoveler and white fronted goose of the Minsmere-Walberswick SPA (as noted in Section 6.2 and Table 6.2 above), the Applicant [REP10-155] (epage 27) responded to the RIES text on this matter at DL10, stating that

"Natural England's current position does not focus on potential for LSE on each qualifying feature, but instead Natural England provides its view on the potential for adverse effect on integrity at the site level as a whole, including all qualifying features (this addressed in Appendix B to this document). In taking that position, it is implicit that Natural England maintains that LSE should not be excluded for all qualifying features of the SPA. NE do not go beyond stating disagreement with the Applicant's position on this issue.

No justification or details are provided for considering that LSE cannot be excluded for certain qualifying features of the Minsmere-Walberswick SPA."

- 6.4.63. The Applicant [REP10-155] (epage 32 to 33) further stated on the matter of coastal processes for all European sites considered for AEOI that:

"Natural England has still not explained why it considers further work is necessary in order to reach a no AEOI conclusion, nor has it recognised that the CPMMP provides for any required monitoring and mitigation. Natural England's position is unsupported by relevant evidence or justification and has failed to take proper account of the CPMMP.

SZC Co. is concerned that Natural England has not explained why it feels there is a risk to site integrity and will only provide that there will be an

adverse impact upon integrity and that there will be no opportunity to submit a response to Natural England's comments on TR544 and TR545 to the Examination given they are to be provided at Deadline 10. Ultimately, the detailed and robust evidence provided by SZC Co. demonstrates beyond reasonable scientific doubt that there will be no adverse effect on the integrity of any European Site as a result of changes to coastal processes/sediment transport and there is no reason to refuse the DCO on this basis."

6.4.64. The position of the MMO [REP10-107] at DL10 was that all matters relating to coastal processes and sediment transport, aside from one outstanding point arising from Change 19 (see below) were agreed and that impacts could be managed through the CPMMP.

6.4.65. Information pertaining to impacts and effects from changes to coastal processes and sediment transportation on other relevant qualifying features was received at a late stage in Examination. At close of Examination NE had not provided a response to this information. It is therefore unclear whether NE accepts or disputes the reasoning reached in this regard. The ExA considers that on this point and in relation to other relevant matters associated, the SoS may wish to undertake consultation with NE in order to address the uncertainty that remains.

Change 19

6.4.66. With regards to Change 19, the desalination plant, the Applicant's Shadow HRA Third Addendum [REP7-279] identified LSE as a result of alterations to coastal processes/ sediment transportation on those sites, and ultimately concluded there would be no AEOI to these European sites.

6.4.67. Change 19 was discussed at ISH15; however, NE was unable to attend. The ExA sought views from NE in its Rule 17 [PD-054], including on matters of *"...(e) Coastal Geomorphology, including any effects arising from the introduction of new infrastructure and construction activities within the marine environment, with particular regard to the effect of intake and outfall headworks on coastal processes and any additional impacts upon relevant internationally and nationally designated sites..."*

6.4.68. NE provided a briefing note on the detailed agenda for ISH15 in lieu of attendance [REP8-298i]. However, the briefing note did not directly respond to the ExA's specific query on coastal geomorphology. It is therefore unclear to the ExA whether NE had any outstanding concerns with regards to the Applicant's assessment of coastal processes/sediment transport on European sites associated with Change 19.

6.4.69. The MMO [REP10-195] response to the ExA's Rule 17 [PD-054] is that it has provided a view on impacts on coastal processes. The MMO deferred to NE in respect of the HRA assessment and impacts on nationally designated sites.

6.4.70. The EA [REP8-158] provided comments on Change 19 at DL8 but did not specifically raise any matters concerning coastal processes.

- 6.4.71. ESC [REP10-179] stated that it was satisfied that, with the use of HDD (rather than trenching), the proposed desalination plant will not introduce any significant impacts on coastal processes. ESC considered that the CPMMP should be amended to require removal of pipelines associated with the desalination plant once they are no longer required.
- 6.4.72. SCC [REP10-207] stated that it had no comment on the coastal processes impacts arising from Change 19 in the context of HRA.

Mitigation

- 6.4.73. The final draft CPMMP [REP10-041] includes a commitment that native particle size distribution will be the default position for recharge of the SCDF (for example see Section 7.5.3 of the CPMMP).
- 6.4.74. The CPMMP is secured pursuant to DML Condition 14 (marine CPMMP) and Requirement 12 of the DCO (terrestrial CPMMP).
- 6.4.75. DML Condition 14 secures the CPMMP (marine) to be submitted to and approved by, the MMO in writing in consultation with the EA. It states:
- "14.—(1) No licenced activity may commence until a CPMMP (marine) has been submitted to and approved by the MMO in writing in consultation with the Environment Agency. The CPMMP (marine) must be in general accordance with the Draft Coastal Processes Monitoring and Mitigation Plan and must include but is not limited to—*
- (a) details of the area to be monitored;*
 - (b) the methods for monitoring;*
 - (c) the duration of monitoring;*
 - (d) the trigger points for mitigation;*
 - (e) a description of proposed mitigation;*
 - (f) examples of mitigation measures which could be implemented and which would be effective to mitigate particular results of the monitoring and how the appropriateness of each measure will be considered;*
 - (g) details concerning its proposed review; and*
 - (h) details concerning the appropriate timing for a monitoring and mitigation cessation report to be prepared*
- (2) The CPMMP (marine) must be implemented as approved by the MMO*
- (3) Monitoring reports, as defined within the CPMMP (marine), must be submitted to the MMO for approval in writing..."*
- 6.4.76. Requirement 12 of the DCO secures the CPMMP (terrestrial) and states:
- "Construction of Work No. 1A(m) (soft coastal defence feature) and Work No. 1A(n) (hard coastal defence feature) must not commence until a coastal processes monitoring and mitigation (terrestrial) plan has been submitted to and approved by East Suffolk Council, following consultation*

with Natural England, the Environment Agency and the Marine Management Organisation. The plan must be in general accordance with the Draft Coastal Processes Monitoring and Mitigation Plan and must include:

- (i) the area to be monitored;*
- (ii) methods for monitoring;*
- (iii) duration of monitoring;*
- (iv) trigger points for mitigation;*
- (v) a description of proposed mitigation;*
- (vi) details concerning its proposed review;*
- (vii) examples of mitigation measures which could be implemented and which would be effective to mitigate particular results of the monitoring and how the appropriateness of each measure will be considered; and*
- (viii) details concerning the appropriate timing for a monitoring and mitigation cessation report to be prepared.*

(2) The coastal processes monitoring and mitigation (terrestrial) plan referred to in paragraph (1), incorporating any variations approved by East Suffolk Council, must be implemented as approved."

6.4.77. DML Condition 37 of the DCO relates to the SCDF and states that the "The construction of Work No. 1A(m) must not commence until the following activity details have been submitted to and approved by the MMO in writing in consultation with the Environment Agency." The details must include the "source, type and grain size of the material to be deposited" and must include links to the CPMMP (marine).

6.4.78. The MMO [REP10-195] provided comments at DL10 on an earlier version of the dDCO/DML and advised with regards to Condition 17 [now 14] that the (a) – (h) inclusions should match the information that is required to be contained within the CPMMP via Requirement 7A [now 12] of the DCO (see DCO Chapter 9 of this Report). The ExA are satisfied that these are now consistent.

Proposed Development in combination

6.4.79. The Applicant's Shadow HRA Report [APP-145] provided information for an appropriate assessment of in-combination effects from the Proposed Development with the Suffolk Shoreline Management Plan (SMP)⁸ arising from changes to coastal processes/sediment transport during construction, operation and decommissioning to the habitat qualifying features/ supporting habitats of bird qualifying features of the European sites as listed below:

⁸ Suffolk Coastal District Council (2018) SMP7 policy review study at Slaughden (Phase 2). Preliminary assessment of SMP approaches against the Habitat Regulations. Policy Unit 15.1 Sudbourne Beach.

- Alde, Ore and Butley Estuaries SAC
 - estuaries
 - mudflats and sandflats not covered by seawater at low tides
 - Atlantic salt meadows
- Alde-Ore Estuary SPA
 - little tern (breeding)
 - sandwich tern (breeding)
 - lesser black-backed gull (breeding)
 - marsh harrier (breeding)⁹
 - avocet (wintering)
 - redshank (wintering)
 - ruff (wintering)
- Alde-Ore Estuaries Ramsar
 - Criterion 3 (the site supports a notable assemblage of breeding and wintering wetland birds and Criterion 6 species/ populations occurring at levels of international importance)
- Benacre to Easton Bavents Lagoons SAC
 - coastal lagoons
- Benacre to Easton Bavents SPA
 - little tern (breeding)
- Minsmere to Walberswick Heaths and Marshes SAC
 - annual vegetation of drift lines
 - perennial vegetation of stony banks
- Minsmere-Walberswick SPA
 - little tern (breeding)
- Minsmere-Walberswick Ramsar
 - Criterion 1 (mosaic of marine, freshwater, marshland and associated habitats)
 - Criterion 2 (nine nationally scarce plants and at least 26 red data book invertebrates)
 - Criterion 2 (an important assemblage of rare breeding birds associated marshland and reedbeds)
- Orfordness to Shingle Street SAC
 - coastal lagoons
 - annual vegetation of drift lines
 - perennial vegetation of stony banks

6.4.80. The Applicant's Shadow HRA Report [APP-145] also provided information for an appropriate assessment of in-combination effects from the Proposed Development with the Shingle Recycling from Sudbourne Beach to Slaughden Sea defences scheme arising from changes to coastal processes/sediment transport during construction to the annual vegetation of drift lines qualifying feature of the Orfordness to Shingle Street SAC.

6.4.81. The Applicant [APP-145] concluded that changes to coastal processes/sediment transport as a result of the Proposed Development

⁹ This qualifying feature was not taken forward for the Proposed Development alone, but it is shown in the Applicant's Table C1, Appendix C to Shadow HRA Report [APP-148]

would have no AEoI of the qualifying features of the above European sites in combination with the identified other plans or projects.

- 6.4.82. NE (NE Issue 9) [RR-0878], [REP2-153] and [REP10-097] maintained its general position that for all European sites it could not agree to a conclusion of no AEoI in respect of cumulative and in-combination effects until all outstanding issues identified by NE have been resolved.

ExA conclusion

- 6.4.83. On the basis of the information before the Examination, the ExA is of the view that there would be no AEoI from alteration of coastal processes/sediment transportation on the following European sites either alone or in combination:
- Alde, Ore and Butley Estuaries SAC;
 - Benacre to Easton Bavents Lagoon SAC;
 - Orfordness to Shingle Street SAC;
 - Benacre to Easton Bavents SPA;
 - Alde-Ore Estuary SPA; and
 - Alde-Ore Estuaries Ramsar.
- 6.4.84. The ExA notes that NE concur with the conclusion of no AEoI from alteration of coastal processes/sediment transportation for these European sites.
- 6.4.85. The ExA was not able to obtain the views of NE and other IPs on the Applicant's updated and final documents, including TR544 [REP10-124] and the draft CPMMP [REP10-041]. It is therefore not confirmed whether NE and other IPs are now in agreement with the Applicant's conclusion of no AEoI to the Minsmere to Walberswick Heaths and Marshes SAC (annual vegetation of drift lines and perennial vegetation of stony banks qualifying features), Minsmere-Walberswick SPA (all features) and Minsmere-Walberswick Ramsar (all features). The ExA notes NE's response in the final SoCG [REP10-097], which although confirms this is a matter 'disagreed', also states that NE's concerns on this matter are "*not insurmountable*". The final SoCG with the RSPB/SWT records that the RSPB/SWT cannot conclude no AEoI of the annual drift line vegetation feature (Item Ref. G5.4 [REP10-111]).
- 6.4.86. The ExA notes the Applicant's adaptive monitoring and management approach to the potential effects of alteration of coastal processes/sediment transportation, and the commitment that native particle size distribution will be the default position for recharge of the SCDF. The ExA also notes that this approach is secured through the DCO and DML Conditions, together with the draft CPMMP as a certified document.
- 6.4.87. The ExA considers that with such measures secured and in place, an AEoI to the Minsmere to Walberswick Heaths and Marshes SAC, Minsmere-Walberswick SPA, and Minsmere-Walberswick Ramsar would be unlikely to occur and has not been provided with compelling evidence to the contrary. However, as noted above, the Applicant and IPs, including NE, were unable to comment on the final representations and updated

reports at DL10. The SoS may therefore wish to consult with relevant IPs including NE with regards to the information submitted at DL10, including updated modelling and reports and updated CPMMP, to confirm whether this satisfies their concerns such that they could agree an AEoI would not occur.

Water quality effects – marine environment

Proposed Development alone

6.4.88. The Applicant [APP-145 to APP-149] identified LSE from potential water quality effects (marine environment) on the European sites and qualifying features listed below.

- Alde-Ore and Butley Estuaries SAC
 - estuaries
 - mudflats and sandflats not covered by seawater at low tide
 - Atlantic salt meadows
- Alde-Ore Estuary Ramsar
 - Criterion 2 (nationally scarce plant species and British Red Data Book invertebrates)
 - Criterion 3 (breeding and wintering wetland assemblage)
 - Criterion 6 (species/populations occurring at levels of international importance)
- Alde-Ore Estuary SPA
 - little tern (breeding)
 - sandwich tern (breeding)
 - lesser black backed gull (breeding)
- Benacre to Easton Bavents Lagoons SAC
 - coastal lagoons
- Benacre to Easton Bavents SPA
 - little tern (breeding)
- Humber Estuary SAC
 - grey seal¹⁰
- Minsmere to Walberswick Heaths and Marshes SAC
 - annual vegetation of drift lines
 - perennial vegetation of stony banks
- Minsmere-Walberswick Ramsar
 - Criterion 1 (mosaic of marine, freshwater, marshland and associated habitats)
 - Criterion 2 (supports nine nationally scarce plants and at least 26 red data book invertebrates)
 - Ramsar criterion 2 (breeding bird assemblage)
- Minsmere-Walberswick SPA
 - little tern (breeding)
- Orfordness to Shingle Street SAC
 - coastal lagoons

¹⁰ Additionally, as noted in Table 6.2 above, NE [RR-0878] disputed the Applicant's conclusion of no LSE on the river and sea lamprey of this SAC, consequently the ExA has carried forward these features to consideration of AEoI (see paragraphs 6.2.81 to 6.2.84 above)

- annual vegetation of drift lines
- perennial vegetation of stony banks
- Outer Thames Estuary SPA
 - red-throated diver (wintering)
 - little tern (breeding)
 - common tern (breeding)
- Southern North Sea SAC
 - harbour porpoise
- The Wash and North Norfolk Coast SAC
 - harbour seal

6.4.89. The Shadow HRA Report [APP-145] identified the following potential impact pathways:

- Construction and decommissioning:
 - Contamination resulting from installation and removal of marine infrastructure and accidental discharge from vessel traffic;
 - Discharges from the CDO
 - Dredging and disposal
- Operation:
 - Discharge activities from the cooling water system, including thermal and chemical (including hydrazine and chlorination) plume, and moribund biota

6.4.90. Information to inform appropriate assessment was provided in Sections 7 to 9 of the Shadow HRA Report [APP-145]. The Applicant concluded that effects on marine water quality as a result of the Proposed Development would have no AEoI on the qualifying features of these European sites.

6.4.91. The Shadow HRA Addendum [AS-173] provided an update to the Applicant's assessment of marine water quality effects on the bird qualifying features of the Minsmere-Walberswick SPA and Ramsar and the Outer Thames Estuary SPA, in respect of Change 2. The Applicant concluded that the changes did not alter the conclusions of the Shadow HRA Report [APP-145] for these sites and the identified qualifying features.

6.4.92. NE [RR-0878] and [REP10-097] was satisfied with the Applicant's conclusions of no AEoI for the habitat qualifying features of the SACs and Ramsar listed above. NE [RR-0878] and [REP10-097] was also satisfied with the Applicant's conclusion of no AEoI to the little tern qualifying feature of the Benacre to Easton Bavents SPA, and the marine mammal qualifying features of the Humber Estuary SAC, Southern North Sea SAC, and The Wash and North Norfolk Coast SAC.

6.4.93. NE (NE Issues 30-36) [RR-0878], [REP2-153] [REP10-097] did not agree with the Applicant's conclusion of no AEoI in respect of the bird qualifying features of the Alde-Ore Estuary SPA and Ramsar, Minsmere-Walberswick SPA and Ramsar and Outer Thames Estuary SPA. Nor did NE agree with the conclusion of no AEoI to the river and sea lamprey qualifying features of the Humber Estuary SAC. NE raised concerns about

impacts to marine water quality from thermal plume, the CDO, chemical plume (including hydrazine discharges and chlorination) and, as described in this Chapter above, identified potential AEOI in terms of direct toxicity to birds and from drilling mud and bentonite that had not been considered by the Applicant in its Shadow HRA Report [APP-145] and Shadow HRA Addendum [AS-173]. NE also identified [RR-0878](NE Issue 9) a potential cumulative effect from the interaction of the various elements of the Proposed Development alone on the marine water environment.

- 6.4.94. NE's [RR-0878][REP2-153] position was that, as these matters would be managed as part of the WDA operating permit to be issued by the EA and as NE had yet to be consulted on the permit and associated HRA, it was not possible to provide advice on the potential for AEOI to designated sites. This position had not changed by DL10 [REP10-097]. NE stated that it would expect to see further information about monitoring and mitigation as part of the WDA permit.
- 6.4.95. The EA [RR-0373] noted that the WDA permit application addresses the potential for pollution as result of heated water, process chemicals and dead fish and biota from the Proposed Development. Due to the timing of the WDA permit applications submitted to the EA (ie concurrently with the DCO application), the EA [RR-0373] stated that it might not be possible to advise the ExA of its position prior to a recommendation being made on the DCO application by the ExA to SoS.
- 6.4.96. The RSPB/SWT [REP2-506] also noted concerns about effects on all bird qualifying features of the Outer Thames Estuary SPA, as well as the breeding Sandwich terns of the Alde-Ore Estuary SPA and breeding little terns of the Minsmere Walberswick SPA, from indirect impacts to prey species from changes to marine water quality as a result of the operation of the cooling water system, the CDO and BLF. This included impacts arising from discharge of dead and moribund biota (fish and other organisms) via the FRR system during operation (which will contribute to biochemical oxygen demand and increase nutrients and levels of un-ionised ammonia in the water column), thermal, chemical (chlorination and hydrazine) and sediment plume. The RSPB/SWT [REP2-506] were also concerned about the combined effects of impacts on the marine water environment and argued that these effects had not been fully considered.
- 6.4.97. The MMO [RR-0744] initially commented that it broadly supported the Applicant's Shadow HRA Report [APP-145] assessment in relation to birds but had some uncertainties concerning the significance of effects of thermal plumes. The MMO [RR-0744] stated that in respect of the breeding Sandwich tern qualifying feature of the Alde-Ore Estuary SPA, the percentage of its key foraging area affected by thermal plumes may be greater than estimated in the Shadow HRA Report [APP-145]. The MMO [RR-0744] stated that it could not be completely confident that there would not be an AEOI on the breeding little tern qualifying feature of the Alde-Ore Estuary SPA, Minsmere-Walberswick SPA, and Outer

Thames Estuary SPA due to complexities of plumes and uncertainties about effects on foraging.

- 6.4.98. The Applicant [REP10-155] stated that in response to the concerns raised by NE (and RSPB/SWT) about direct and indirect effects to birds, further information was presented in its DL3 Submission Comments on Written Representations [REP3-042] in respect of thermal plume, the CDO, chemical plumes and drilling mud and bentonite.
- 6.4.99. The Applicant [REP5-120] stated that the chemical plumes have very small overlaps with the predicted foraging ranges of the various SPA seabirds of relevance (less than a fraction of 1% in most cases). The Applicant [REP7-073] explained that the concentrations of both bromoform and hydrazine are low and of a level which is considered unlikely to result in direct toxicity. It noted that bromoform rapidly degrades in the marine environment and that the likelihood of birds being exposed to the chemicals at concentrations above their PNEC for any prolonged period would be small. It also confirmed that bromoform and hydrazine have low bioconcentration factors so there is a low likelihood that these chemicals would accumulate through the food chain.
- 6.4.100. The Applicant [REP2-071][REP3-042][Appendix P of REP5-120] considered that the potential for indirect effects on foraging seabirds from the thermal and chemical plumes had been assessed in the Shadow HRA Report [APP-145], which assumed that foraging birds will show strong avoidance of, or be displaced from, the areas encompassed by the different plumes.
- 6.4.101. In relation to chemical plumes, the Applicant stated that chlorination by-products are rapidly degraded in the marine environment; the low bioconcentration factor of bromoform indicates that indirect effects due to bioaccumulation in the food web are limited; and the rapid degradation rates and low bioconcentration factor of hydrazine indicates that the bioaccumulation potential is low. Furthermore, the Applicant [REP7-073] explained that the concentrations of both bromoform and hydrazine are below levels which are documented to result in lethal or chronic sub-lethal effects to fish species.
- 6.4.102. In relation to the thermal plume, the Applicant provided a detailed response in [REP5-120], stating that there is little evidence to indicate that a 2°C or 3°C increase above ambient would cause avoidance by fish. It considered its assessment to be highly precautionary by assuming foraging opportunities are substantially reduced within the areas encompassed by the plumes. Furthermore, it considered that thermal plume areas at temperatures likely to have foraging consequences on designated seabirds and marine mammals are small relative to their foraging range.
- 6.4.103. The Applicant explained that sediment plumes from dredging activities during construction are predicted to extend over relatively small areas only and be of a few days' duration. It considered that any losses of egg/larvae mortality of pelagic fish species would be minimal compared

to natural mortality and that adult pelagic fish have low sensitivity to increases in suspended sediment. It stated that fish within the GSB would be acclimated to a highly variable natural background and given the limited magnitude and transient nature of the plume, the scope for fish to be displaced entirely from the plume area and not return is very limited. Therefore, no significant changes in the availability of fish as prey items for designated features and as fisheries resources are predicted.

- 6.4.104. The Applicant [REP5-120] acknowledged that synergistic effects are feasible over limited spatial areas. However, it considered it unlikely that the inter-relationship between thermal and chlorinated or hydrazine discharges would increase the significance of the effects of localised displacement, beyond the effects predicted for the pressures individually.
- 6.4.105. In response to the RSPB/SWT's concerns regarding hydrazine entering the Minsmere South Levels via the sluice [REP2-506], the Applicant [REP5-120] acknowledged the potential for this to occur. It stated that the best approach to achieve the required discharge level during commissioning is currently under investigation, this discharge would be regulated via the WDA permit. The final SoCG between the Applicant and the RSPB/SWT [REP10-111] does not specifically refer to the concerns regarding hydrazine entering the Minsmere South Levels via the sluice, although it records at point ME1.3 'Other discharges and abstractions and effects on prey species' (epage 33) that concerns remain around the impact of chemical plumes on terns and their prey. The Applicant reaffirms its position in the SoCG that there is no evidence the Proposed Development's cooling water system will have any significant effects on terns and their prey.
- 6.4.106. The Applicant [REP3-042] suggested that water quality impacts from drilling mud and bentonite breakout should be addressed through the CoCP and set out a commitment to use of a bentonite recovery system in the final iteration of the CoCP [REP10-072]. The commitment incorporates some items identified by NE [REP10-097] as being required to reduce the possibility of frackout. NE had stated [REP10-097] that it would welcome inclusion of the types of potential drilling muds that might be used, but these were not stated in the CoCP. As the final CoCP [REP10-072] was submitted at DL10, NE did not have the opportunity to comment on the changes.
- 6.4.107. NE [REP5-159] stated that the use of temporary rock construction or jack barge was not assessed in the marine ecology chapter of the ES and identified this as something that needed to be considered in the HRA. The Applicant provided a response in CG.3.3 [REP8-116], explaining that the impacts of the jack-up activities at the terminus of the BLF are anticipated to occur within the footprint of dredge activities. Dredging activities associated with the BLF are outlined in Table 2.42 of [AS-181]. The use of jack-up barges to construct the BLF was assessed in the Coastal Geomorphology and Hydrodynamics Chapter of the ES [APP-311] in relation to scour at section 20.8.9 (with no significant effects predicted) and the Applicant provided a justification of why significant

effects on marine ecology receptors would be negligible in [REP8-116]. The Applicant stated that no dredging on the seabed is required for the Marine Bulk Import Facility (MBIF) [REP8-116].

Change 19

- 6.4.108. The Shadow HRA Third Addendum [REP7-279] provided an update to the Applicant's assessment of marine water quality effects in respect of Change 19 to the habitat features of the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar, and the bird qualifying features of the Alde-Ore Estuary SPA and Ramsar, Minsmere-Walberswick SPA and the Outer Thames Estuary SPA. The Applicant [REP7-279] identified potential adverse effects arising from increases in SSC during construction as a result of dredging activity but concluded no AEOI on the identified qualifying features of these sites.
- 6.4.109. As noted above, NE [REP10-201] stated it had "*...no comment to provide on the impacts the proposed desalination plant may have on the marine environment. Due to the late submission of this change to the Examination, we have been unable to sufficiently review the supporting material provided by the Applicant.*" But it noted that any discharges from the plant are proposed to be managed as part of the EA's WDA permit. NE stated it "*...would require further details to be available through this WDA permitting process before we could provide robust advice on potential impacts to designated sites and species from the discharge of the desalination plant.*"
- 6.4.110. The RSPB/SWT [REP10-111] identified concerns about potential discharges from the temporary desalination plant (Change 19) leading to effects on fish prey if its use extended into the commissioning and/or operation phase of the Proposed Development. The Applicant [REP10-162] confirmed that use of the temporary desalination plant is only required for the construction phase and introduced new controls (epage 21 to 22), which it stated would ensure the removal of the desalination plant and associated onshore and offshore infrastructure. These include:
- the Construction Method Statement (CMS) (secured by dDCO Requirement 13 [REP10-009]) includes a Grampian trigger that ensures that Phase 5 Cold flush testing commissioning works must not commence until operation of the temporary desalination plant has ceased;
 - Requirement 29 of the dDCO [REP10-009] secures that this component must be removed following completion of the construction works; and
 - Condition 46(e) of the DML requires removal to be completed prior to commencement of hot functional commissioning testing.
- 6.4.111. The MMO [REP10-195] confirmed in the context of Change 19 that it had no concerns about chlorination on the basis that, whilst there will be chlorination of the intake, the intake volume is small relative to the cooling water intake and outfall and therefore, it will not give rise to significant effects on marine ecology receptors. The Applicant's Mitigation Route Map [REP10-073] contains a commitment to use of a diffuser

head, which would be employed on the brine concentrate discharge to increase mixing and minimise increases in local salinity and influence on the seabed. The diffuser head forms part of the temporary desalination plant outfall (MDS (DCO) Works No 2P in [REP10-009]) and is specifically identified in the DML licensed works Part 2, 4(2)(n)(iv) [REP10-009]. The Mitigation Route Map [REP10-073] also identifies that this is secured through the WDA permit (construction).

- 6.4.112. The EA [REP10-188] deferred to NE as the lead body for HRA advice in respect of Change 19. The EA [REP10-188] noted that there might be potential impacts to marine water quality (eg from discharges and hypersaline water) and that many of the environmental impacts would be considered and controlled/ monitored by WDA permits. The EA [REP8-158] confirmed at DL8 that applications for the Change 19 WDA permits had not yet been submitted to the EA.
- 6.4.113. The Applicant [REP10-162] provided further information on impacts arising from Change 19 and stated that discharges from the desalination plant would be small and that the discharge point is at sufficient distance offshore and at a depth that would facilitate rapid mixing. The Applicant [REP10-162] stated that modelling presented in BEEMS Technical Report TR522 [REP7-033][REP10-052] confirmed that the potential zones in which effects are possible (including from metals and other substances concentrated in the desalination process) would be limited to a maximum area of 1 hectare around the point of discharge.
- 6.4.114. The Applicant [REP10-162] stated that the potential for combined effects from the desalination plant discharge and the CDO have been assessed. The Applicant stated that chemical discharges from each component do not overlap at ecologically relevant concentrations and each are at low concentrations over small areas, as detailed in ES Chapter 21 [AS-034] and the Fourth ES Addendum [REP7-032]. The Applicant acknowledged that the combined construction discharges do have an additive effect on the total area exposed to effects but concludes that the effects are small and not significant. The MMO [REP10-195] in response to the ExA's query on cumulative operational effects of the desalination plant [PD-054] stated agreement that *"...the extent of the desalination plume is very small and there would not be any significant interaction with the CDO plume. On this basis the MMO are satisfied that the potential for significant cumulative effect is negligible."*
- 6.4.115. The Applicant [REP10-162] described that further modelling of the desalination discharge detailing evolution of the plume through a full spring-neap cycle has been completed and presented in an updated version of BEEMS Technical Report TR552 [REP10-052]. The Applicant [REP10-162] stated that the modelling resulted in updated plume extents to those described at ISH15 (from 0.7m to 4.22m) but that this does not change the conclusion of the assessment. The MMO had not had the opportunity to comment on this updated report due to the timing of its submission at the end of the Examination. As noted in Section 5.16 of this Recommendation Report, the ExA suggests that the SoS may wish to

satisfy themselves that the MMO is content with the conclusions of the updated version of the BEEMS Technical Report TR552 [REP10-052].

Final positions

- 6.4.116. NE's [REP10-097] final position at DL10 was that the HRA addendum did not consider direct risks to the bird qualifying features of the Alde-Ore Estuary SPA and Ramsar and Minsmere-Walberswick SPA and Ramsar arising from chemical discharges (including hydrazine) and further information was stated to be required.
- 6.4.117. At DL10, the RSPB/SWT [REP10-111] remained concerned about the potential for impacts on terns (and their prey) at each of the SPAs, from thermal and chemical plumes and about combined effects of the Proposed Development on the marine water environment. Combined effects during construction were identified as the impacts of noise, lighting, vibration and sediment plumes from marine construction and dredging. During operation they highlighted combined impacts on prey species from thermal and chemical plumes and fish mortality and water quality effects from the cooling water system.
- 6.4.118. The final SoCG with the MMO [REP10-107] noted that there was agreement on all items relating to marine water quality assessment in the ES, referencing that the DML (Schedule 21 of the DCO [REP10-009]) now contained conditions providing control over use of chemicals in the marine environment (eg DML Conditions 15 and 18) and that discharges into the marine environment would be regulated through a WDA permit sought from the EA. MMO [REP10-107] also stated that it would ultimately defer to NE on HRA matters.
- 6.4.119. The EA [REP10-186] reiterated its position that impacts from changes to water quality (thermal and chemical plume, chlorination, hydrazine), the CDO, drilling and bentonite impacts would be regulated through a WDA environmental permit. The EA is still in the determination stage of the WDA permit and will not reach its final decision before the SoS is due to reach a conclusion on the DCO. The EA [REP10-186] requested that no conclusions are reached within the SoS HRA for these aspects, where the EA is the competent authority.

Mitigation

- 6.4.120. The CoCP [REP10-072] includes a commitment in *Table 12.1: Control measures to mitigate potential impacts* to the use of a bentonite recovery system to be used during drilling to minimise emissions. It is stated that NE would be consulted within 24 hours in the event of a drilling mud breakout and that an Ecological Clerk of Works must oversee the works to ensure early detection. The CoCP is secured by Requirement 2 of the DCO and is also listed as a certified document in Schedule 24 of the DCO [REP10-009].
- 6.4.121. The Mitigation Route Map [REP10-073] includes commitments to mitigation that is designed to minimise impacts to marine ecology receptors due to changes in marine water quality (epages 142 to 149).

This includes matters of scheme design, such as location of outfalls, and intake and outfall design and position. There is a commitment to use of a Chlorination Strategy during operation of the Proposed Development, including use of seasonal and spot-chlorination of critical plant to minimise total residual oxidants in the cooling water discharge. The Mitigation Route Map [REP10-073] identifies that this commitment would be secured through the WDA permit. Scheme design is secured through Article 3 of the DCO.

- 6.4.122. The Mitigation Route Map [REP10-073] also references commitments to management and monitoring of discharges from the cooling water outfall, CDO and desalination plant outfall, which would be secured by the WDA permit.
- 6.4.123. As noted above, controls over chemicals used within the marine environment are included in DML Conditions 15 and 18 (DCO Schedule 21 [REP10-009]).
- 6.4.124. NE's SoCG [REP10-097] highlighted that it would expect further information about monitoring and mitigation to be provided in relation to the WDA permit. This has been identified above as a matter that the SoS may wish to satisfy themselves on.

Proposed Development in combination

- 6.4.125. The Applicant [APP-145] identified LSE from potential water quality effects (marine environment) from the Proposed Development in combination with other plans and projects on the European sites and qualifying features listed above. The plans and projects considered, as well as information for the appropriate assessment, are presented in Sections 7 to 9 of the Shadow HRA Report [APP-145].
- 6.4.126. The Applicant [APP-145] concluded that there would be no AEOI in combination on water quality in the marine environment from the Proposed Development and Suffolk SMP to the Alde-Ore and Butley Estuaries SAC, Alde-Ore Estuary Ramsar, Benacre to Easton Bavents Lagoons SAC, Minsmere to Walberswick Heaths and Marshes SAC, Minsmere-Walberswick Ramsar and Orfordness to Shingle Street SAC, or to the bird qualifying features of the Alde-Ore Estuary SPA, Alde-Ore Estuary Ramsar and Benacre to Easton Bavents SPA, based on implementation of management approaches outlined in the preliminary assessment of the Suffolk SMP undertaken in June 2018.
- 6.4.127. The Applicant [APP-145] concluded that there was no potential for in-combination effects on water quality in the marine environment from the Proposed Development and the Operations and Maintenance Marine Licence applications for generation and transmission assets (relating to East Anglia ONE offshore wind farm) to the bird qualifying features of the Alde-Ore Estuary SPA.
- 6.4.128. The Applicant [APP-145] concluded that there would be no adverse effects in combination on water quality in the marine environment from the Proposed Development and Sizewell B nuclear power station

decommissioning and Suffolk SMP to the bird qualifying features of the Minsmere-Walberswick SPA. For the Sizewell B decommissioning project, the Applicant stated [APP-145] that an in-combination assessment is not possible as no information is available. For the Suffolk SMP, the Applicant provides the same evidence as identified for other European sites and as described above.

- 6.4.129. The Applicant [APP-145] assessed the potential for in-combination effects on water quality in the marine environment from the Proposed Development and other plans and projects listed in Table 8.29 of the Shadow HRA Report [APP-145] to affect the bird qualifying features of the Outer Thames Estuary SPA. For the Sizewell B decommissioning project, the Applicant stated [APP-145] that an in-combination assessment is not possible as no information is available. For Harwich Haven Approach Channel Deepening, the Applicant [APP-145] references have modelling for this project, which it stated shows that the short-term increase in suspended sediment experienced in the SPA would be within the range of natural variation within the system. For the extension of Inner Gabbard East Disposal Site, the Applicant [APP-145] stated that due to the distance (more than 10km) of this project from the SPA, sediment plumes from disposal of dredge material would not affect the SPA. For the Great Yarmouth Third River Crossing, the Applicant [APP-145] stated that there is potential for sediment deposition to affect water quality within the River Yare, which could affect foraging efficiency of the bird qualifying features but that any impacts would be localised and control measures would be in place for this project to reduce risks of increased sediment loads. For Lake Lothing Third Crossing, the Applicant [APP-145] identified that standard pollution control measures would be incorporated for this project via a CoCP, meaning the risk of pollution affecting red-throated divers in the SPA is negligible. The Applicant [APP-145] stated that the breeding little tern and common tern are too distant from the project to be affected by pollution. The Applicant [APP-145] concluded that there is no potential for adverse in-combination effects.
- 6.4.130. The Applicant [REP7-279] undertook a further in-combination assessment in respect of Change 19 and concluded that the effects associated with the desalination plant did not alter the previous conclusion that there is no potential for adverse in-combination effects.
- 6.4.131. NE [RR-0878] (Issue 9)[REP2-153][REP10-097] maintained its general position that for all European sites it could not agree to a conclusion of no AEOI in respect of cumulative and in-combination effects until all outstanding issues identified by NE as potentially having AEOI alone have been resolved. NE [REP10-097] noted concern about impact assessment and potential mitigation measures being delayed for consideration under other consenting regimes beyond the DCO (eg the WDA permit, which applies to potential impacts from discharges to the marine water environment). NE [REP10-097] did not make reference to any other plans and projects with regards to marine water quality and NE's comments appear primarily to relate to combined impacts of the Proposed Development and the need for further consents in the form of the EPs, together with the resolution of any outstanding matters from the

Proposed Development alone, rather than in-combination effects with other plans and projects.

- 6.4.132. The Applicant's [REP10-097] [REP10-155] position at DL10 is that the matter is comprehensively addressed in the Shadow HRA Report [APP-145] and Shadow HRA Third Addendum [REP7-279] and that no further assessment is required.

ExA conclusion

- 6.4.133. Based on the assessments and information provided by the Applicant and having considered the potential effects on marine water quality in light of the conservation objectives, together with the advice of NE as ANCB, the ExA is of the view that an AEoI can be excluded on the following sites and qualifying features:

- Alde-Ore and Butley Estuaries SAC
 - estuaries
 - mudflats and sandflats not covered by seawater at low tide
 - Atlantic salt meadows
- Alde-Ore Estuary Ramsar
 - Criterion 2 (nationally scarce plant species and British Red Data Book invertebrates)
- Benacre to Easton Barents Lagoons SAC
 - coastal lagoons
- Benacre to Easton Barents SPA
 - little tern (breeding)
- Humber Estuary SAC
 - grey seal
- Minsmere to Walberswick Heaths and Marshes SAC
 - annual vegetation of drift lines
 - perennial vegetation of stony banks
- Minsmere-Walberswick Ramsar
 - Criterion 1 (mosaic of marine, freshwater, marshland and associated habitats)
 - Criterion 2 (supports nine nationally scarce plants and at least 26 red data book invertebrates)
- Orfordness to Shingle Street SAC
 - coastal lagoons
 - annual vegetation of drift lines
 - perennial vegetation of stony banks
- Southern North Sea SAC
 - harbour porpoise
- The Wash and North Norfolk Coast SAC
 - harbour seal

- 6.4.134. During the Examination, NE [REP10-097] also confirmed its agreement with the conclusion of no AEoI on the above sites and features, either alone or in combination with other plans and projects.

- 6.4.135. NE [REP10-097] maintained at DL10 that it 'disagreed' with the Applicant on the potential effects of the CDO, thermal and chemical plume

(including hydrazine and chlorination), and bentonite break out on the following sites and qualifying features.

- Alde-Ore Estuary Ramsar
 - Criterion 3 (breeding and wintering wetland assemblage)
 - Criterion 6 (species/populations occurring at levels of international importance)
- Alde-Ore Estuary SPA
 - little tern (breeding)
 - sandwich tern (breeding)
 - lesser black backed gull (breeding)
- Humber Estuary SAC
 - River lamprey
 - Sea lamprey
- Minsmere-Walberswick Ramsar
 - Criterion 2 (breeding bird assemblage)
- Minsmere-Walberswick SPA
 - little tern (breeding)
- Outer Thames Estuary SPA
 - red-throated diver (wintering)
 - little tern (breeding)
 - common tern (breeding)

6.4.136. In the majority of these cases, NE expects further information on the effects and mitigation to be included with the WDA permit, which they have not yet been consulted on and therefore cannot provide final advice on, until the permitting process is finalised.

6.4.137. Within the final SoCG [REP10-097] NE states that direct risks to seabirds from the chemical discharges have not been considered. However, the Applicant [REP10-155] contests this statement; stating that NE has failed to engage with the information it has provided to the Examination on this matter (eg in [REP3-042], [REP5-120] and [REP7-073]). The ExA is of the view that these submissions have considered this issue.

6.4.138. The ExA recognises that a further level of detailed information will be provided in respect of the WDA permit and that this will be subject to a separate and detailed HRA. The ExA has considered the submissions from the Applicant and has taken into account information including the proposed approach to construction in the marine environment. The ExA has also had regard to information from IPs currently available to the ExA as submitted to the Examination, together with the implications for the aforementioned European sites in light of their conservation objectives.

6.4.139. The ExA notes the concerns raised about the increase risk of chemical exposure for predatory seabirds. However, it is not persuaded that chemicals consumed by SPA species would be at such a concentration that would affect the population of the qualifying features. The ExA does however note that controls on marine water quality will be addressed by the WDA Permit and the SoS may therefore wish to satisfy themselves further in this regard.

- 6.4.140. With regards to bentonite from potential frack-out events, the ExA is of the view that the measures secured through the CoCP [REP10-072], including the commitment to use of a bentonite recovery system, could ensure no AEoI to the aforementioned European sites, alone or in combination. However, as noted above, due to the timing of the Examination, NE did not have the opportunity to comment on the updated CoCP and therefore, the SoS may wish to satisfy themselves in this regard.
- 6.4.141. Additionally, as noted in Section 5.16 of this Recommendation Report, the ExA suggests that the SoS may wish to satisfy themselves that the MMO is content with the conclusions of the updated version of the BEEMS Technical Report TR552 [REP10-052]. The ExA can see no reason not to agree with the findings. However, because of the timing at the end of the Examination, the MMO has not had the opportunity to comment.
- 6.4.142. With regards to operational discharge activities associated with the cooling water system, including thermal and chemical (including hydrazine and chlorination) plume, and moribund biota, the ExA is of the view that AEoI could be excluded on the basis of the mitigation and monitoring measures secured. These include measures in the scheme design (such as location of outfalls, and intake and outfall design and position) (secured through DCO), the Chlorination Strategy (secured through WDA), controls over chemicals used within the marine environment (secured through the DML), measures in the CoCP in relation to bentonite (secured through the DCO), and commitments to management and monitoring of discharges from the cooling water outfall, CDO and desalination plant outfall (secured through WDA).
- 6.4.143. Without prejudice to the subsequent EP process, the ExA considers that on the basis of the material currently available to the ExA and with the mitigation measures secured and controls through the WDA permit, it is possible to conclude no AEoI from the Proposed Development alone or in combination with other plans or projects. However, the SoS may wish to satisfy themselves in this regard.

Water quality effects – terrestrial environment

Proposed Development alone

- 6.4.144. The Applicant identified LSE from potential water quality effects (terrestrial environment) on the European sites and qualifying features listed below.
- Alde-Ore and Butley Estuaries SAC
 - estuaries
 - mudflats and sandflats not covered by seawater at low tide
 - Atlantic salt meadows
 - Alde-Ore Estuary Ramsar
 - Criterion 2 (nationally scarce plant species and British Red Data Book invertebrates)
 - Criterion 3 (the site supports a notable assemblage of breeding and wintering wetland birds)

- Criterion 6 (species/ populations occurring at levels of international importance)
- Alde-Ore Estuary SPA
 - Breeding little tern
 - Breeding Sandwich tern
 - Breeding lesser black-backed gull
 - Over winter avocet
 - Over winter redshank
 - Over winter ruff
- Minsmere-Walberswick Ramsar
 - Criterion 1 (mosaic of marine, freshwater, marshland and associated habitats)
 - Criterion 2 (supports nine nationally scarce plants and at least 26 red data book invertebrates)
 - Criterion 2 (an important assemblage of rare breeding birds associated with marshland and reedbeds)
- Minsmere-Walberswick SPA
 - avocet (breeding)
 - bittern (breeding)
 - little tern (breeding)
 - marsh harrier (breeding)
 - shoveler (breeding and wintering)
 - teal (breeding)
 - gadwall (breeding and wintering)
 - hen harrier (wintering)
 - white fronted goose (wintering)

6.4.145. The Shadow HRA Report [APP-145] (at Sections 7 and 8) concluded that effects on terrestrial water quality as a result of the Proposed Development would have no AEOI on the qualifying features of the European sites.

6.4.146. The Applicant [APP-145] identified potential impacts to the qualifying features of the Alde-Ore and Butley Estuaries SAC and Alde-Ore Estuary Ramsar (criterion 2) during construction and decommissioning of the bridge associated with the Two Village Bypass, for example from potential sediment loss from excavated materials to the River Alde in the event of flooding. The Applicant stated that the construction impacts could be mitigated through measures including storage of materials away from area of high flood risk, which are set out in the CoCP (as described below) and there would be no AEOI. No effects would arise during decommissioning as the Two Village Bypass would be permanent. The Applicant [APP-145] described that the qualifying habitats in the SAC underpin the bird qualifying features in the Alde-Ore SPA, and that there is considerable overlap between the qualifying criteria in the SPA and the Alde-Ore Estuary Ramsar (Criterion 3 and 6), and on that basis reaches the same conclusion of AEOI for the SPA and Ramsar (Criterion 3 and 6) as for the SAC.

6.4.147. The Applicant [APP-145] identified potential impacts on the qualifying features of the Minsmere-Walberswick Ramsar (Criterion 1) during construction, operation and decommissioning from changes to the

hydrological regime/untreated surface water run-off, which could affect the range of plant species, plant composition and distribution. The Applicant stated that mitigation in the form of a Construction Drainage Strategy incorporating the measures described in ES Chapter 19 [APP-297] would be used to manage surface water discharges, with the principles of the strategy also being applied to the operational phase. The Applicant [APP-145] stated that as there is no AEOI to the Ramsar habitat (Criterion 1), which underpin the presence of the bird qualifying features of the Minsmere-Walberswick SPA, there would also be no AEOI to the SPA birds or Ramsar Criterion 2 an important assemblage of rare breeding birds associated with marshland and reedbeds. The Applicant [APP-145] described that the qualifying habitats of the Minsmere to Walberswick Heaths and Marshes SAC was not screened in for LSE and as such there could be no indirect effects on the qualifying bird features of the Minsmere-Walberswick SPA that use these habitats.

- 6.4.148. NE [RR-0878](Issues 2 and 4) initially raised concerns regarding the detail of the pollution prevention measures presented in the Outline Drainage Strategy (Appendix 2A to ES Chapter 2) [APP-181] and CoCP [APP-615] and whether this was sufficient to demonstrate that risks could be adequately mitigated in respect of the Minsmere-Walberswick Ramsar.
- 6.4.149. The Applicant submitted an updated Outline Drainage Strategy [REP2-033] and CoCP [REP2-056] at DL2. NE [REP2-153] and [REP10-097] confirmed agreement with the Applicant's conclusions of no AEOI in respect of the qualifying features of the Minsmere-Walberswick SPA and Ramsar and stated that the Drainage Strategy and CoCP must be rigorously implemented and recommended that the mitigation measures are secured in the requirements of the DCO.
- 6.4.150. NE [RR-0878],[REP2-153] and [REP10-097] did not dispute the Applicant's conclusions of no AEOI in respect of the other European sites and qualifying features listed above.
- 6.4.151. The CoCP [REP10-072] includes commitments at *Table 11.1 Control measures to mitigate groundwater and surface water impacts* in respect of the management of untreated surface water run-off. The CoCP states that a construction phase drainage system will be implemented incorporating Sustainable Drainage System (SuDS) measures in accordance with the Drainage Strategy [REP10-030 to REP10-032] that sets the principles for drainage of the Proposed Development. The Drainage Strategy is a certified document listed in Schedule 24 of the DCO [REP10-009]. A final iteration of the Drainage Strategy is secured through DCO [REP10-009] Requirements 5 and 23(1). The CoCP also includes commitments at *Table 10.1 Control measures to mitigate impacts on geology, soils and land contamination* to a range of measures in respect of the management of excavated material, including stockpile management and ensuring a minimum distance between stockpiles and the nearest watercourse of 10m. The CoCP is a certified document listed in Schedule 24 of the DCO [REP10-009].

Proposed Development in combination

- 6.4.152. The Applicant [APP-145] screened out terrestrial water quality effects from the in-combination assessment of the Proposed Development and other projects and plans on the European sites listed above.
- 6.4.153. NE [RR-0878] (Issue 9)[REP2-153][REP10-097] maintained its general position that for all European sites it could not agree to a conclusion of no AEOI in respect of cumulative and in-combination effects until all outstanding issues identified by NE have been resolved. However, NE does not raise terrestrial water quality effects as a particular concern and as described above, agrees that there would be no AEOI from terrestrial water quality effects with rigorous implementation of the proposed mitigation measures. Additionally, the ExA is not aware of any plans or projects that could act in combination with the Proposed Development to act in combination on the European sites considered for this potential effect pathway.

ExA conclusion

- 6.4.154. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI on the above listed European sites from the terrestrial water quality effects as a result of Proposed Development, either alone or in combination.

Alteration of local hydrology and hydrogeology

Proposed Development alone

- 6.4.155. The Applicant [APP-145] (Sections 7 and 8),[AS-173] identified LSE from potential alteration of local hydrology and hydrogeology on the following European sites:
- Alde-Ore and Butley Estuaries SAC
 - estuaries
 - mudflats and sandflats not covered by seawater at low tide
 - Atlantic salt meadows
 - Alde-Ore Estuary Ramsar
 - Criterion 2 (nationally scarce plant species and British Red Data Book invertebrates)
 - Criterion 3 (the site supports a notable assemblage of breeding and wintering wetland birds)
 - Criterion 6 (species/ populations occurring at levels of international importance)
 - Alde-Ore Estuary SPA
 - little tern (breeding)
 - sandwich tern (breeding)
 - lesser black-backed gull (breeding)
 - avocet (wintering)
 - redshank (wintering)
 - ruff (wintering)
 - Dew's Pond SAC
 - great crested newt

- Minsmere-Walberswick Ramsar
 - Criterion 1 (mosaic of marine, freshwater, marshland and associated habitats)
 - Criterion 2 (supports nine nationally scarce plants and at least 26 red data book invertebrates)
 - Criterion 2 (an important assemblage of rare breeding birds associated with marshland and reedbeds)
- Minsmere-Walberswick SPA
 - avocet (breeding)
 - bittern (breeding)
 - little tern (breeding)
 - marsh harrier (breeding)
 - shoveler (breeding and wintering)
 - teal (breeding)
 - gadwall (breeding and wintering)
 - hen harrier (wintering)
 - white fronted goose (wintering)

6.4.156. The Shadow HRA Report [APP-145] and Shadow HRA Addendum [AS-173] concluded that alteration of local hydrology and hydrogeology as a result of the Proposed Development would have no AEOI on the qualifying features of the European sites.

6.4.157. The Applicant [APP-145] identified potential impacts during construction and operation of the bridge associated with the Two Village Bypass from alterations to the River Alde, which could have secondary impacts downstream on the qualifying features of the Alde-Ore and Butley Estuaries SAC and Alde-Ore Estuary Ramsar (Criterion 2). The Applicant [APP-145] stated that, based on the design of the crossing and implementation of a buffer distance of at least 10m from the toe of the bank of the River Alde and where feasible adjoining ditches, there would be no AEOI. The Applicant [APP-145] described that the qualifying habitats in the Alde-Ore and Butley Estuaries SAC underpin the bird qualifying features in the Alde-Ore Estuary SPA and, as there are no AEOI to the SAC, it reached the same conclusion for the SPA birds.

6.4.158. The Applicant [APP-145] identified potential impacts from an alteration of local hydrology and hydrogeology arising from the construction, operation and decommissioning of the Northern Park and Ride to the great crested newt qualifying features of the Dew's Pond SAC. The Applicant concluded that there would no AEOI as the Dew's Pond SAC is in a different hydrological catchment to the Northern and Park Ride and there is no hydrological connectivity between the surface waters. NE [RR-0878] raised no concerns during the Examination regarding the Applicant's conclusion of no AEOI to Dew's Pond SAC.

6.4.159. The Applicant [APP-145] identified potential impacts to the Minsmere-Walberswick Ramsar (Criterion 1 and 2) during construction and decommissioning from changes to hydrological conditions. The Applicant submitted a Plants and Habitats Synthesis Report [APP-250], which described the predicted effects from surface water and groundwater regimes. The Applicant [APP-145] stated that there is a possibility of

excessive back flooding of the Scott's Hall Drain arising from increased flows to Leiston Drain, which could in turn result in the inundation of habitats within the Minsmere to Walberswick Heaths and Marshes SSSI (part of which is included in the Ramsar) and prevent control of water levels. The Applicant [APP-145] stated that primary mitigation measures are embedded into the design to manage surface water discharges, alongside the proposed realignment of the Sizewell Drain and proposed water management structures, which would isolate the Proposed Development from surrounding areas and discharge water at greenfield rates. The Applicant [APP-145] stated with respect to groundwater, that modelling predicts drawdown of less than 10cm of groundwater for a very localised part of the Ramsar (equating to 0.03% of the total Ramsar area) and that effects would be short term and reversible. The Applicant [APP-145] stated that the part of the Ramsar that would be affected is not wetland habitat and not considered to be sensitive to changes in groundwater level.

- 6.4.160. The Applicant [APP-145] (Section 8) identified that the potential for changes in hydrological conditions during construction and decommissioning (as described above) could affect the bird qualifying features of the Minsmere-Walberswick SPA and Ramsar (Criterion 2 an important assemblage of rare breeding birds associated with marshland and reedbeds) that use the wetland habitats. The Applicant [APP-145] concluded that there would be no AEoI on the SPA and Ramsar on the same basis as described above for the SAC.
- 6.4.161. NE [RR-0878] (Issues 1 and 4) agreed that "*...subject to the rigorous implementation of the mitigation measures specified within the Drainage Strategy and Code of Construction Practice*" the Proposed Development is unlikely to result in hydrological impacts, including waterborne pollution, on the following European sites:
- Minsmere to Walberswick Heaths and Marshes SAC
 - Minsmere-Walberswick SPA and Ramsar
 - Alde-Ore and Butley Estuaries SAC
 - Alde-Ore Estuary SPA and Ramsar
 - Stour and Orwell Estuaries SPA and Ramsar
- 6.4.162. NE (NE Issue 2) [RR-0878] further agreed that the Proposed Development is unlikely to result in foul water impacts on Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick SPA and Ramsar), "*...subject to the rigorous implementation of the mitigation measures specified within the Drainage Strategy and Code of Construction Practice.*"
- 6.4.163. At DL10, NE [REP10-097] confirmed that the mitigation measures in place through the CoCP [REP10-072] are sufficient to ensure no AEoI to the European sites and no adverse effect to the Minsmere-Walberswick Heaths and Marshes SSSI via groundwater and surface water impacts (which could in turn result in impacts to part of the Minsmere-Walberswick Ramsar).

- 6.4.164. The Applicant's HRA Signposting document at Deadline 7 [REP7-079] provides at Section 4 a mitigation overview, including 'drainage management measures' at epage and 'water levels management measures' at epage 18.
- 6.4.165. Requirement 5 of the DCO secures project wide measures for the surface and foul water drainage, including the final/updated Drainage Strategy, which must be in general accordance with the Drainage Strategy [REP10-030 to REP10-032]. The latter is a certified document of the DCO.
- 6.4.166. The CoCP [REP10-072] includes commitments at *Table 11.1 Control measures to mitigate groundwater and surface water impacts* and *Table 11.2 Secondary mitigation measures* in respect of the management of potential impacts from alterations to local hydrology and hydrogeology, including the development of specific parameters for the realignment of the Sizewell drain and documents contributing towards the water management structures (TEMMP [REP10-090], MDS Water Monitoring and Response Strategy [REP10-048] and Draft Water Monitoring Plan [REP8-107]). The CoCP is a certified document listed in Schedule 24 of the DCO [REP10-009]. The TEMMP is secured through Requirement 4 of the DCO [REP10-009] and the water monitoring plans through Requirement 11 of the DCO [REP10-009].
- 6.4.167. Requirement 13 of the DCO secures for the MDS "Construction works carried out as part of the authorised development must be carried out in accordance with the Construction Method Statement...". Requirement 21 includes for a CMS in relation to Sizewell Marshes SSSI. The CMS [REP10-025] is a certified document in the DCO.

Proposed Development in combination

- 6.4.168. The Applicant [APP-145] screened out alterations to local hydrology and hydrogeology effects from the in-combination assessment of the Proposed Development and other projects and plans on the European sites listed above.
- 6.4.169. NE [RR-0878] (Issue 9), [REP2-153] and [REP10-097] maintained its general position that for all European sites it could not agree to a conclusion of no AEoI in respect of cumulative and in-combination effects until all outstanding issues identified by NE have been resolved. However, NE did not raise a particular concern with regards to in-combination effects relating to alteration of local hydrology and hydrogeology and also not dispute the Applicant's conclusion of no AEoI. Additionally, no IPs raised plans or projects that could act in combination with the Proposed Development to affect the European sites considered for this potential effect pathway.

ExA's conclusion

- 6.4.170. The ExA is satisfied that the measures identified are appropriate and likely to be effective and that, subject to their implementation as secured through the dDCO, Drainage Strategy, CoCP and TEMMP, there would be no AEoI on the above listed European sites from the alteration of local

hydrology and hydrogeology as a result of Proposed Development, either alone or in combination.

Changes in air quality

Introduction

- 6.4.171. The Shadow HRA Report [APP-145] assessed the potential for changes in air quality during construction, operation and decommissioning of the Proposed Development to result in an AEoI on the qualifying features of the following European sites:
- Alde, Ore and Butley Estuaries SAC;
 - Alde-Ore Estuaries Ramsar;
 - Alde-Ore Estuary SPA;
 - Minsmere to Walberswick Heaths and Marshes SAC;
 - Minsmere-Walberswick Ramsar;
 - Minsmere–Walberswick SPA;
 - Orfordness to Shingle Street SAC; and
 - Sandlings SPA.
- 6.4.172. As reported in paragraphs 4.2.4 to 4.2.7 of the RIES [PD-053], the Shadow HRA Report [APP-145] and Shadow HRA Addendum [AS-173] and [AS-174] concluded that changes in air quality as a result of the Proposed Development would have no AEoI on the qualifying features of the above European sites, either alone or in combination with other plans or projects.
- 6.4.173. NE expressed concerns in its RR [RR-0878] (NE Issue 5) and WR [REP2-153](NE Issues 5 and 15) regarding potential damage to the following European sites and qualifying features, resulting from increased airborne pollution (dust and NO_x) during construction and operation (from all elements of the Proposed Development). It was not satisfied that AEoI could be excluded for:
- Alde, Ore and Butley Estuaries SAC (all qualifying features);
 - Alde-Ore Estuaries Ramsar (all qualifying features);
 - Minsmere to Walberswick Heaths and Marshes SAC (European dry heaths qualifying feature);
 - Minsmere-Walberswick Ramsar (all qualifying features); and
 - Staverton Park and the Thicks, Wantisden SAC (old acidophilous oak woods with *Quercus robur* on sandy plains qualifying feature).
- 6.4.174. Concerns from NE regarding air quality impacts to Staverton Park and the Thicks, Wantisden SAC were later resolved (as reported above).
- 6.4.175. ESC [REP5-145] stated at DL5 that it supported NE’s comments in relation to potential air quality impacts on designated sites.
- 6.4.176. TASC [REP2-481h] stated that nitrogen deposition (and acid deposition) is predicted to exceed the critical loads (CLd) at several ecological receptors without the Proposed Development, but that the NO_x emissions add a potentially significant amount to this deposition at ecological receptors including Minsmere (acid and nitrogen deposition). TASC

considered there is an argument that where CLd are already exceeded, the aim should be to reduce further deposition, particularly where a site is very sensitive to deposition [REP2-481h].

- 6.4.177. Heveningham Hall Estate [RR-0908][REP2-287] also raised concerns regarding changes in air quality. These related to how the modelling locations were identified, a lack of assessment of ammonia deposition, how the geographical extent of impacts from nitrogen and acid deposition had been considered, and a lack of assessment of in-combination effects from traffic emissions. TASC [REP2-481h] also stated that impacts from ammonia emissions from road transport and the reactor start-up on ecological receptors had not been assessed.
- 6.4.178. The Applicant responded to most of Heveningham Hall Estate's concerns in [REP1-013 and REP5-119] (see paragraphs 4.2.27 and 4.2.28 of the RIES [PD-053]). In relation to ammonia, the Applicant cited guidance from Highways England on assessing impacts from road traffic emissions (LA 105)¹¹, noting that the guidance does not identify ammonia emissions as pollutants requiring assessment [REP5-119]. The Applicant considered that ammonia emissions from road traffic from the Proposed Development are not expected to result in significant contributions at the habitat sites or any other receptor, based on the level of emissions from vehicles and the dispersion of road traffic emissions down to background levels within 200m of the highway [REP5-119].
- 6.4.179. In response to Heveningham Hall's concerns in relation to traffic emissions in combination with other plans or projects, the Applicant confirmed at DL10 [REP10-154, question 4][REP10-155] that the reported air pollutant concentration values at each receptor (including each ecological receptor) represent the combined impact of emissions from all road and rail links, without screening out links. The Applicant confirmed that in-combination impacts from transport emissions from foreseeable future developments are also included in the reported air quality values at all sensitive receptors (including ecological receptors).

Dust

Orfordness to Shingle Street SAC, Sandlings SPA

- 6.4.180. The Shadow HRA Report [APP-145] identified that the Orfordness to Shingle Street SAC (located 5.9km at its closest point from associated development at the A1094/B1069 south of Knodishall) and Sandlings SPA (located 1.6km from the MDS) fall beyond the study area for the assessment of dust emissions based on the IAQM 2016¹² guidance and no further consideration of construction or decommissioning dust in the context of these sites was deemed necessary.

¹¹ Highways England (2019) – LA 105 Air Quality

¹² Institute of Air Quality Management (IAQM). Guidance on the assessment of dust from demolition and construction, Version 1.1. London: Institute of Air Quality Management, 2016.

- 6.4.181. IAQM 2016 guidance, notes that significant dust impacts are typically limited to being within 500m of a source for large construction sites. Orfordness to Shingle Street SAC and Sandlings SPA approximately 5.9km and 1.6km respectively from the Proposed Development.
- 6.4.182. The Applicant [REP10-097] confirmed that the potential effects of dust on sites located within 500m of the construction sites would be managed in line with the Outline Dust Management Plan [APP-213] (from page 25). Section 4 (in both Part B and C) of the CoCP [REP10-072] sets out the construction practices that must be complied with to manage dust in relation to specific activities. A Dust Monitoring and Management Plan will be submitted to ESC for approval. The CoCP is secured through Requirement 2 of the dDCO [REP10-009].
- 6.4.183. NE agreed that impacts from dust on European sites within the impacted areas during construction can be adequately mitigated through the provisions of the Outline Dust Management Plan and CoCP, provided these are rigorously implemented and maintained [REP2-071] and [REP10-097].

ExA conclusion

Ammonia Emissions

- 6.4.184. The ExA is content that ammonia emissions from road traffic attributable to the Proposed Development are not expected to result in significant contributions at the European sites or any other receptor. The Applicant has cited relevant evidence in support of this position. The ExA is satisfied on this basis that AEOI of European sites as a result of ammonia from road traffic emissions are not likely to occur and notes this has not been disputed by NE.

Dust, NOx, Nitrogen and Acid Deposition

Orfordness to Shingle Street SAC

- 6.4.185. The ExA has reviewed the Applicant's assessment and the proposed dust mitigation measures presented in the Outline Dust Management Plan and CoCP. Taken together along with the comments of NE the ExA considers that these are standard measures capable of mitigating the predicted effects. On this basis the ExA considers that dust from constructing the Proposed Development would not have an AEOI on the Orfordness to Shingle Street SAC, either alone or in combination.
- 6.4.186. Having considered the characteristics of the Proposed Development, notably the distance from the relevant qualifying features and the extent of the likely impacts, the ExA is content that the Applicant's assessment of changes in air quality is sufficient to conclude no AEOI during construction, operation and decommissioning for the qualifying features of the Orfordness to Shingle Street SAC, either alone or in combination with other plans or projects. The ExA notes that this conclusion has not been disputed by NE alone or in combination. Cumulative/inter project and in-combination effects for the Orfordness to Shingle Street SAC in

relation to other impact pathways are considered further in later paragraphs of this Report.

Alde, Ore and Butley Estuaries SAC, Alde-Ore Estuaries Ramsar and Alde-Ore Estuary SPA

- 6.4.187. Taking into account the comments expressed by NE and other IPs, the ExA is content that there would be no AEOI on the qualifying features of Alde, Ore and Butley Estuaries SAC, Alde-Ore Estuaries Ramsar and Alde-Ore Estuary SPA as a result of changes in air quality during construction, alone or in combination with other plans or projects. The PEC is well below the critical level (CL) for NO_x and nitrogen deposition is substantially less than 1% of the CLd during commissioning and routine operation and the PEC remains well below the CLd [APP-214]. The Applicant has argued that acid deposition is not relevant to these three European sites because none of the qualifying habitats are sensitive to acidification. At the close of Examination this conclusion was not disputed by NE. In-combination effects for the Alde, Ore and Butley Estuaries SAC, Alde-Ore Estuaries Ramsar and Alde-Ore Estuary SPA in relation to other impact pathways are considered further in later paragraphs of this Report.

Sandlings SPA

- 6.4.188. The ExA notes that conclusions reached in relation to dust emissions during construction at Orfordness to Shingle Street SAC apply equally to Sandlings SPA.
- 6.4.189. The ExA notes that changes in air quality at Sandlings SPA during construction, operation and decommissioning of the Proposed Development would not result in direct impacts to the qualifying features of the Sandlings SPA either alone or in combination. The ExA also acknowledges that the indirect impacts have been identified using a worst-case basis for the assessment. It is not immediately obvious to the ExA that these indirect impacts will result in a significant change to relevant species abundance and composition sufficient to noticeably damage supporting habitats and therefore undermine conservation objectives of the SPA. However, the ExA cannot overlook the fact that there are existing site exceedances for some pollutants which will be further exacerbated by the Proposed Development. The ExA has not been provided with compelling information to support the Applicant's position that the localised condition of the relevant habitat will be sustained because of an otherwise unquantified level of resilience. However, the ExA is aware that the majority of the underlying Leiston-Aldeburgh SSSI units are in favourable condition. Notwithstanding this point the inherent uncertainty in the approach being advocated combined with the lack of informed comment from NE, although they did not dispute the finding, results in the ExA being unable to conclude that this would not result in an AEOI.

Minsmere to Walberswick Heaths and Marshes SAC, Minsmere-Walberswick SPA and Ramsar

- 6.4.190. The direct and indirect impacts from increased deposition of NO_x arising from diesel generators on the Minsmere to Walberswick Heaths and Marshes SAC, Minsmere-Walberswick SPA and Ramsar. Additional assessment of diesel generator impacts during construction was submitted by the Applicant at DL10 in effort to resolve these concerns [REP10-153] but due to the timing, NE were unable to submit comments on this information. Having regard to the relevance of this information to the findings in the assessment the ExA considers the lack of opportunity for NE to comment as a notable omission in normal process.
- 6.4.191. The ExA notes that the PCs from combined construction works are small, but that the current exposures (PEC) at the relevant qualifying habitat receptors are already above the CLd for a number of the pollutant types.
- 6.4.192. For nitrogen deposition, the European dry heaths qualifying feature of the Minsmere to Walberswick Heaths and Marshes SAC is not present within the 0.1 kg N/ha/yr (1% of the CLd) contour line where the CLd would be exceeded. Concentrations of NO_x are well below the CLs. For the perennial vegetation of stony banks qualifying feature of the Minsmere to Walberswick Heaths and Marshes SAC (modelled as coastal dunes), the overall construction phase assessment concludes that the PC is 1.1% of the CLd, and the PEC remains within the CLd range.
- 6.4.193. The Applicant has confirmed that the area where the overall construction phase impacts are greater than 1% of the CLd of 10kg N/ha/yr represents 0.2% of the total area of the Minsmere-Walberswick SPA and Ramsar [REP10-153]. The ExA accepts that this increase affects a sufficiently small area in the context of the total site area and that the conservation objectives of the SPA would not be undermined and an AEOI of the sites can be excluded. The Applicant has not given a similar calculation for the area of the SAC, but the ExA notes it would be in the same order of magnitude as for the SPA/Ramsar given the relative size of the SAC.
- 6.4.194. The PEC remains below the upper end of the CLd range for nutrient nitrogen deposition for all qualifying features of the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick SPA and Ramsar. The ExA notes that the Applicant's position is that small increases predicted would not lead to significant changes in species composition or to noticeable damage to the constituent plants that would undermine the conservation objectives. The ExA acknowledges that there appears to be some resilience to changes in nitrogen deposition having regard to background levels. The ExA also notes that the majority of the impact is attributable to the temporary and short-term impact of diesel generators to power the desalination plant. The Applicant states that the area of the Minsmere-Walberswick Heaths and Marshes SSSI underlying the Minsmere-Walberswick Ramsar receptor which would be subject to the exceedance lies within SSSI unit 112 [REP10-153]. The ExA notes from the citation data that this SSSI unit is currently in favourable condition, which further supports the apparent resilience of this habitat type. Notwithstanding this finding the ExA is concerned by accepting an argument that suggests the localised condition of the site feature will be

sustained because of an otherwise unquantified level of resilience. The inherent uncertainty in this approach combined with the lack of informed comment from NE results in the ExA being unable to conclude that this would not result in an AEOI.

- 6.4.195. In relation to ammonia, the CL is low ($1\mu\text{g}/\text{m}^3$) and the PC is above the 1% threshold of insignificance ($0.014\mu\text{g}/\text{m}^3$, equivalent to 1.4%). The background concentration already exceeds the CL by 39% and the PEC is therefore 140% of the CLd. The ExA does not agree with the Applicant that this impact would be insignificant and is therefore unable to conclude that there would be no AEOI on the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick SPA and Ramsar [REP10-153]. The ExA notes that the conclusion reached is influenced by the absence of comment from NE regarding the impacts attributable to the temporary desalination plant generators which would be in situ for only two years.
- 6.4.196. For acid deposition (from NO_2 , NH_3 and SO_2), the ExA notes that only a small area would be affected and there is an absence of the European dry heaths qualifying feature in the affected area. For the coastal stable dunes and European dry heath features, the PEC remains below 100% of the CLd. The ExA is more persuaded by the position and agrees that a conclusion of no AEOI can be reached
- 6.4.197. The worst-case impact on the fen marsh and swamp qualifying feature (receptor E2d/e) is a PC increase of 1.8% where the background is already 194% of the CLd) [REP10-153]. Therefore, the PEC is 195%. The Applicant is of the view that the CLd is already "so far exceeded", further acid deposition from the operation of the desalination generators, only just over the threshold of imperceptibility, is not considered significant. As above, the ExA acknowledges that the desalination plant would only be in situ for two years. The assessment is based on two units operating continuously throughout the year for a maximum period of two years, however the Applicant anticipates that the actual duration of operation would be much less. Nonetheless the ExA notes that the CLd is exceeded, the PC and increase to the PEC is over the threshold of imperceptibility and NE have been unable to comment. On that basis the ExA is unable to conclude that there would be no AEOI of the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick SPA and Ramsar. The ExA's conclusion is made having regard to Applicant's position that there is no evidence of acid deposition effects on vascular plants in this habitat [REP10-153]. The ExA considers that NE's comments on this position may be sought.
- 6.4.198. As noted above, the assessment in [REP10-153] was based on the desalination plant generators being operational for a two-year period during construction. Whilst the CMS [REP10-025] states that the generators wouldn't be operational for more than two years at the main platform, the ExA notes that there is currently no obligation for the Applicant to notify ESC and the EA of the start date of operation of the desalination generators. The ExA recommends that the SoS secures this matter through appropriate provisions in the DCO.

- 6.4.199. The ExA is of the view that the SoS cannot conclude no AEoI of the Minsmere to Walberswick Heaths and Marshes SAC, Minsmere-Walberswick SPA and Ramsar as a result of air quality changes during construction from the Proposed Development alone. Not least because a final view from NE on the Applicant's revised Desalination Plant Air Quality Impact Assessment [REP10-153] is unavailable, therefore it is unclear whether the updated assessment and the conclusions reached, particularly those relating to the resilience and responsiveness of relevant site features, addresses NE's concerns. The ExA recommends that the SoS may wish to undertake consultation with NE on the Applicant's revised Desalination Plant Air Quality Impact Assessment [REP10-153] to further inform findings on this matter.
- 6.4.200. Acid deposition during operation occurs as a result of generator use for routine operations and the commissioning scenario. During commissioning the acid deposition at receptor E2d (the worst-case modelled receptor point for the Minsmere European sites) would experience an increase of 21% of the CLd (Table 5-16 of [APP-214]). During the routine operation scenario, the PC at the same receptor is 7% of the CLd. In both instances, the background concentration as a percentage of the CLd is 193.7%. As set out above, the frequency of the commissioning scenario is extremely low and therefore that modelled increase is expected to be a very rare occurrence. In terms of the routine operating scenario, and the 7% increase at receptor E2d (grazing marsh), this is already subject to background acid deposition above the upper CLd values but is stated by the Applicant as not "considered to be a particularly sensitive habitat to acid deposition, as the soils are likely to be well buffered".
- 6.4.201. The ExA notes that the assessment of operational impacts has been undertaken using a precautionary worst-case and conservative assumptions. Particularly those that relate to the frequency of commissioning and routine operation. The ExA also accepts that the PC represents a very small proportion of the CLd when considered against the high levels of nitrogen deposition in the wider area. The assessment also considers the impacts at the maximum emission limit values allowed under the Industrial Emissions Directive whereas they will most likely operate below these values in a real-world scenario.
- 6.4.202. Notwithstanding the precautionary nature of the assessment, the ExA is not satisfied by the evidence provided to demonstrate that the predicted increases would avoid significant change in species composition or noticeable damage to constituent plants sufficient to undermine the conservation objectives. The ExA notes the Applicant's broad position that prevailing conditions including the current abundance and composition of relevant features suggests a resilience to increases above the standard CLd value, but this position is unquantified and lacks evidence or support from NE. The ExA considers that NE's comments on this position may be sought.
- 6.4.203. Table 7.8 and Table 7.10 [APP-145] identify the plans and projects with the potential to give rise to in-combination effects on habitats within the

Minsmere to Walberswick Heaths and Marshes SAC, Minsmere-Walberswick SPA and Ramsar. None of the plans or projects identified by the Applicant are assessed as having potential to contribute to air quality effects on these sites. As reported above, the ExA considers that local plans are already represented within the air quality assessment and the ExA is not aware of any other relevant plans or projects that have not been considered by the Applicant in terms of potential in-combination effects.

- 6.4.204. However, as reported above, NE (NE Issue 9) [RR-0878], [REP2-153] and [REP10-097] maintained its general position that for all European sites it could not agree to a conclusion of no AEOI in respect of cumulative and in-combination effects until all outstanding issues identified by NE have been resolved. Therefore, in consulting NE regarding the additional information in [REP10-153] (which does not introduce any additional plans or projects that require consideration in terms of air quality effects), the ExA recommends that the SoS also satisfies themselves with regards to in-combination air quality effects.
- 6.4.205. The ExA notes that decommissioning activities associated with the post operational phase of the Proposed development will take place at a future date to be specified. Any such activities will be authorised through separate consent and will require necessary assessments in accordance with the prevailing legislation at that time. The ExA anticipates that the impacts of decommissioning will be broadly similar and no worse than those experienced during construction.

Recreational pressure

Introduction

- 6.4.206. Section 7 of the Shadow HRA Report [APP-145] and [APP-148]¹³ provided information for an appropriate assessment in relation to increased recreational pressure/disturbance to the following qualifying features/criterion of European sites:
- Alde-Ore Estuary SPA
 - avocet (breeding)
 - marsh harrier (breeding)
 - little tern (breeding)
 - sandwich tern (breeding)
 - lesser black-backed gull (breeding)
 - Alde-Ore Estuary Ramsar
 - Criterion 2 (nationally scarce plant species and British Red Data Book invertebrates)
 - Criterion 3 (breeding wintering wetland bird assemblages)
 - Criterion 6 (species/ populations occurring at levels of international importance)
 - Benacre to Easton Bavents SPA

¹³ Supported by Appendix E; Recreational Disturbance Assessment [APP-148]; this identified the potential effects on bird species and habitats.

- Bittern (breeding)
- little tern (breeding)
- marsh harrier (breeding)
- Minsmere to Walberswick Heaths and Marshes SAC
 - annual vegetation of drift lines
 - European dry heaths
 - perennial vegetation of stony banks
- Minsmere–Walberswick SPA
 - Avocet (breeding)
 - Bittern (breeding)
 - little tern (breeding)
 - marsh harrier (breeding)
 - nightjar (breeding)
 - shoveler (breeding and wintering)
 - teal (breeding)
 - gadwall (breeding)
 - hen harrier (wintering)
 - white fronted goose (wintering)
- Minsmere–Walberswick Ramsar
 - Criterion 1 (mosaic of marine, freshwater, marshland and associated habitats)
 - Criterion 2 (nationally scarce plant species and British Red Data Book invertebrates)
 - Criterion 2 (an important assemblage of rare breeding birds associated with marshland and reedbeds)
- Orfordness to Shingle Street SAC
 - annual vegetation of drift lines
 - perennial vegetation of stony banks
- Sandlings SPA
 - nightjar (breeding)
 - woodlark (breeding)

6.4.207. The Shadow HRA Report [APP-145] acknowledged the potential for an increase in visitor numbers or changes in patterns of use of recreational areas. It confirmed that a Rights of Way Access Strategy¹⁴ would be developed to reduce displacement of people and to minimise trampling of vegetation and that the strategy outlines a monitoring programme for recreational displacement to identify local mitigation measures if necessary. It concluded there would be no AEOI to these sites from this pathway because (depending on the European site being considered) of the likely duration of effect, the location of access points relative to sensitive habitats, the small potential change in visitor numbers relative

¹⁴ Submitted in Appendix I of [APP-270] and revised at Deadline 2 (Revision 2 [REP2-035]), Deadline 3 (Revision 3 [REP3-013]), Deadline 7 (Revision 4 [REP7-024]), Deadline 5 (Revision 5 [REP8-055]) and Deadline 10 (Revision 6 [REP10-037]). The PRow Strategy was listed as a certified document in Schedule 24 of the dDCO and is to be certified under article 80 [REP10-009] and its implementation secured through Requirement 10.

to the baseline situation, the diffuse nature of this pressure and existing management measures in place in certain locations.

6.4.208. The Recreational Disturbance Assessment [APP-149] stated that a number of mixed residential developments have been identified with the potential for in-combination effects with the Proposed Development. However, these developments would be covered by the Suffolk Recreational Disturbance Avoidance and Mitigation Strategy (RAMS), or project-specific mitigation commitments. Therefore, it concluded that there is no potential for in-combination effects due to potential increases in recreational pressure with the activities of the Proposed Development.

6.4.209. NE [RR-0878] (NE Issue 29), [REP2-153] and [REP5-160] considered that the new population of construction workers would likely use designated sites for recreation and that local people who currently use the development site and surrounding area could be displaced to nearby designated sites. It highlighted the potential for recreational activities to negatively impact on European site qualifying features (species and habitats) through noise disturbance to species, trampling of nests and vegetation, increased fire risk, enrichment of habitats etc. NE had concerns with the Applicant's assessment methodology and proposed mitigation (as discussed below) and could not exclude an AEOI from damage to notified habitats resulting from increased recreational pressure to all qualifying features of the:

- Alde-Ore Estuary Ramsar;
- Minsmere to Walberswick Heaths and Marshes SAC; and
- Minsmere-Walberswick Ramsar¹⁵.

6.4.210. The RSPB/SWT and National Trust (NT) shared similar concerns, as discussed below. However, NE [RR-0878] did confirm that

"Orfordness is predominantly accessible by National Trust boat or accessible on foot from Aldeburgh along the shingle ridge, which is a considerable distance. On this basis we understand that this site is unlikely to be significantly impacted by recreational disturbance."

6.4.211. The ExA is content that considering the restricted access to the sensitive shingle vegetation habitats in this SAC, which are predominantly accessible by boat, and that access to these habitats is also restricted by signage and fencing, the Proposed Development would not prevent the extent, distribution, structure, function and supporting processes of the qualifying habitats of Orfordness to Shingle Street SAC from being maintained. The ExA therefore agrees that AEOI can be excluded and has not considered this site further.

¹⁵ As detailed in paragraphs 6.2.93 to 6.2.95 of this chapter, NE also considered there to be a LSE to Alde-Ore and Butley Estuaries SAC; however, the ExA is content there would be no LSE to this site.

- 6.4.212. NE [RR-0878] (Issue 29), [REP2-153] also stated that it could not exclude an AEoI from recreational disturbance for the following European sites:
- Alde-Ore Estuary SPA – all qualifying features
 - Alde-Ore Estuary Ramsar – all qualifying features
 - Minsmere-Walberswick SPA – all qualifying features
 - Minsmere- Walberswick Ramsar – all qualifying features
 - Outer Thames Estuary SPA – little tern
 - Sandlings SPA – nightjar and woodlark
- 6.4.213. As noted in paragraphs above, the ExA is content that LSE to little tern of the Outer Thames Estuary SPA can be excluded.
- 6.4.214. The RSPB/SWT [RR-1059] and [REP2-506] stated it did not agree an AEoI could be excluded from the project alone or in combination with other projects for:
- Minsmere-Walberswick SPA – little tern, nightjar, hen harrier, wintering waterbirds (including white-fronted goose) and breeding waterbirds
 - Sandlings SPA – nightjar and woodlark
- 6.4.215. The NT [REP2-150] also had concerns over recreational disturbance to breeding nightjar of Minsmere to Walberswick SPA. As noted in the RIES [PD-053], the NT commissioned a report on recreational disturbance in conjunction with RSPB/SWT; therefore, it shared the same concerns.

Assessment methodology

- 6.4.216. NE [RR-0878], [REP2-153] and [REP5-160] acknowledged that the Applicant had collected some evidence and data to inform the recreational disturbance impact assessment. However, it considered that the evidence base used by the Applicant to underpin its recreational disturbance strategy lacked robustness and relied heavily on the extrapolation of data from secondary sources and numerous logically flawed assumptions. It considered the Applicant’s predicted use of nature conservation sites by construction workers to be potentially vastly underestimated and informed by limited and unreliable evidence. Detailed comments were provided in Appendix C of [REP7-087].
- 6.4.217. The RSPB/SWT [RR-1059], [REP2-506] and [REP10-204] did not agree that an AEoI could be excluded from the project alone or in combination with other projects for Minsmere to Walberswick Heaths and Marshes SAC (Perennial vegetation of stony banks and European Dry Heaths qualifying features). It had concerns with the adequacy of baseline data and considered the estimates of potential increases in recreational use of designated sites by both displaced visitors and construction workers to be low and confusingly presented. It specifically did not agree with the method used by the Applicant regarding the treatment of those people who named more than one site to which they may be displaced.
- 6.4.218. These comments were echoed by the NT [RR-0877], [REP2-150] and [REP5-155], who were also concerned that visitors would be displaced to

Dunwich Heath and Beach and that this had not been adequately assessed. The NT had specific concerns about impacts on vegetated shingle habitat and heathland habitat. The RSPB/SWT and NT jointly commissioned a report by Footprint Ecology [REP2-506] (Appendix 2, epage 214 onwards) to examine impacts of recreation on European sites and based their representations on that report.

- 6.4.219. The Applicant [REP2-108] (Appendix 6A, epage 543 onwards) considered its own assessment to be highly precautionary, as it assumed that all visitors would be displaced to European sites. The Applicant considered that the number of people that would visit European sites during the construction of the Proposed Development would likely be lower than assessed. However, it acknowledged some errors in the assessment of potential displaced visitor numbers in the Shadow HRA Report [APP-145] and therefore, provided updated estimated figures. It confirmed these errors did not change its conclusion of no AEOI.
- 6.4.220. Nevertheless, the Applicant explained in a 'Statement on Recreational Disturbance Numbers' [REP7-087] that it had continued to have discussions with NE, the RSPB/SWT, and NT regarding figures used in the assessment. It set out the higher estimated figures advocated by NE and the RSPB/SWT, and lower estimated figures advocated by the Applicant, alongside statements from each party (and NT) on which figures they agreed or disagreed with.
- 6.4.221. NT [REP10-112] maintained its position at DL10, stating that impacts arising from displacement of visitors had not been adequately assessed in the HRA and it was not in agreement with the Applicant's assumptions on visitor behaviours.
- 6.4.222. RSPB/SWT [REP10-111] also maintained its position at DL10 and stated that the design of the baseline surveys could have resulted in an underestimation of visitors likely to be displaced and that they were not in agreement with the updated estimates presented at DL7 as a result of this and the lack of precaution taken in the approach set out in [REP7-087].
- 6.4.223. NE confirmed at DL10 [REP10-200] that despite some shortfalls in the Applicant's evidence base, it was content that the proposed suite of mitigation measures (including the Informal Recreation Strategy and the two MMPs) are sufficient to avoid an AEOI of any European site from increased recreational disturbance associated with the Proposed Development, either alone or in combination with other plans or projects. NE highlighted some remaining concerns with the MMPs but confirmed that these do not affect their conclusion of no AEOI.

Mitigation

- 6.4.224. In addition to concerns about the Applicant's assessment, NE considered the Applicant's proposed mitigation and monitoring strategies to be inadequate to address the potential scale of impacts. NE [RR-0878], [REP2-153] and [REP5-160] therefore advised the Applicant to undertake

a two-pronged approach to mitigation and monitoring, akin to that which housing developers have undertaken, of:

- provision and promotion of an 'on-site' Suitable Alternative Natural Greenspace (SANG); and
- provision of 'off-site' measures which aim to make the coastal European sites more resilient to increased recreational pressures.

6.4.225. NE [RR-0878], [REP2-153], [REP5-160], [REP7-087] and [REP7-144] advised a SANG be provided within/in close proximity to the MDS to concentrate a proportion of recreation in that area and detailed the minimum requirements that it would expect from a SANG. A SANG was also advocated by RSPB/SWT [REP2-506], [REP3-074], [REP3-075], [REP5-164], [REP6-046] and [REP7-152], who also considered the proposed mitigation measures were limited in nature. The RSPB/SWT identified a number of locations where mitigation measures could resolve recreational impacts and advised that a monitoring programme be developed. The NT [REP3-070], [REP5-155] and [REP7-137] also advocated a SANG.

6.4.226. NE further advised [RR-0878], [REP2-153] and [REP5-160] that off-site measures (eg visitor engagement, education and information and access management) should be provided due to the unique draw of the coastal designated sites. It considered that these measures should be in line with the approach taken with ESC to develop the Suffolk Coast RAMS. ESC [RR-0342] agreed with this suggestion. Although the Shadow HRA Report [APP-148] did not consider a RAMS to be directly applicable to the Proposed Development, the Applicant subsequently agreed in [REP3-042] to contribute to the Suffolk Coast RAMS, which was secured through the DoO [REP10-075] to [REP10-087].

6.4.227. In response to comments regarding mitigation, the Applicant produced two MMPs during the Examination to capture mitigation for recreational impacts (for both habitats and bird qualifying features). These plans evolved during the Examination, as detailed below.

- The MMP for Minsmere-Walberswick European Sites and Sandlings (North) European Site [REP2-118] (the 'Minsmere Plan'). The plan set "*Initial Mitigation Measures*" to be deployed at the commencement of construction, and "*Additional Mitigation Measures*", which would be deployed where necessary, if monitoring shows potential for disturbance to qualifying habitats and/or species. The MMP was subsequently revised in [REP5-105] and as Annex U of both [REP8-087] and [REP10-084] to take into account feedback from engagement with stakeholders¹⁶ and entitled 'MMP for Minsmere – Walberswick and Sandlings (North)' (hereafter referred to as the 'Minsmere MMP').

¹⁶ Including comments from NE [REP6-042][REP8-298j], the RSPB/SWT in [REP3-074][REP5-164][REP6-046][REP7-154][REP8-170] and the National Trust in [REP3-070].

- The MMP for Sandlings (Central) and Alde, Ore and Butley Estuaries European sites [REP5-122] (and revised in Annex V of the draft DoO [REP8-087] and [REP10-084]), which covered Sandlings SPA (the area comprising Tunstall Forest and Snape Warren), Alde-Ore Estuary SPA and Alde-Ore Estuary Ramsar. The Applicant confirmed that the conclusion of no AEOI for these sites does not rely on the implementation of site-specific mitigation; however, a precautionary approach has been adopted to establish a monitoring regime to determine whether mitigation measures may be necessary.
- 6.4.228. The mitigation and monitoring requirements of the plans would be secured via the DoO [REP10-075 to REP10-087].
- 6.4.229. The Applicant [REP2-100 (in response to Question AR.1.12)] [REP3-042], [REP5-112] and [REP7-060] did not consider the provision of a SANG to be an appropriate response to the pressure of construction workers, who it considered would have a different profile to typical residents and would use European sites for recreation substantially less than the general public. The Applicant considered that a Suffolk Coast RAMS payment, and the proposed mitigation package would prevent an AEOI of European sites and that a SANG or further green space provision following the SANG principles, is not required.
- 6.4.230. Nevertheless, at DL8 the Applicant proposed additional and improved accessible green space and recreational routes within the Sizewell Estate in the report entitled 'Informal Recreation and Green Space Proposals' [REP8-135]. The proposals would provide and enhance a mix of recreational activities at Kenton Hills, Leiston Common, Reckham Pits Wood, Rookyard Wood, Halfway Field and Broom Covert.
- 6.4.231. Appendix C of [REP8-135] also summarised other mitigation measures that the Applicant had committed to, including:
- new recreational access provision at Aldhurst Farm;
 - improvements to Kenton Hills car park;
 - improvements in the MDS;
 - improvements to the wider PROW network;
 - Sizewell beach car park subsidies and interpretation signage; and
 - provision of a 3G pitch and multi-use games areas at Leiston Leisure centre.
- 6.4.232. The above proposals were stated to be secured through the DoO [REP10-075 to REP10-087] (including financial contributions to the PROW Fund and the European Site Access Contingency Funds and RAMS contribution), Requirement 2 (CoCP), and Requirement 10 (Public Rights of Way) [REP10-009].
- 6.4.233. The Applicant's HRA Signposting document [REP7-079] also identified the following mitigation measures relied upon in its assessment of recreational pressure. As this document was submitted at DL7, and in light of amendments made to the dDCO and documents by close of Examination, the ExA has indicated below how these are now secured and provided latest exam library references:

- **Rights of way implementation plans** (secured through DCO Requirement 10 [REP10-009])
- **Public Rights of Way and Access Strategy** [REP10-037]
- **CoCP** (see Part B, Chapter 7 for MDS and Part C, Chapter 7 for offsite associated development sites) of [REP10-072] (DCO Requirement 2 [REP10-009])
- **Access and Rights of Way Plans** [REP10-003]
- **Associated Development Design Principles** [REP10-063]
- **Construction Method Statement** [REP10-025] (DCO Requirement 13 (MDS construction) [REP10-009])
- **Estate Wide Management Plan** [REP10-136] (DCO Requirement 8 [REP10-009])
- **PROW Communications Plan and PROW Fund** (DoO, Schedule 16 – Transport and Public Rights of Way [REP10-075])
- **Aldhurst Farm enhancement works** (DoO, Schedule 11 – Natural Environment [REP10-075])
- **MMP for Minsmere-Walberswick European Sites and Sandlings (North) European Site** [REP10-084] (DoO, Schedule 11 – Natural Environment [REP10-075])
- **MMP for Sandlings (Central) and Alde, Ore and Butlies Estuaries European sites** [REP10-084] (DoO, Schedule 11 – Natural Environment [REP10-075])

ExA's conclusion

- 6.4.234. NE confirmed at DL10 [REP10-200] that the proposed suite of mitigation measures (including the Informal Recreation Strategy and the two MMPs) are sufficient to avoid an AEoI of any European site from increased recreational disturbance associated with the Proposed Development, either alone or in combination with other plans or projects.
- 6.4.235. The RSPB/SWT [REP10-204] confirmed that if refinements to the MMPs were made in the DL10 submissions, it would be content with the mitigation proposed. The RSPB/SWT did not have the opportunity to comment on the DL10 MMPs. The refinements the RSPB/SWT refers to in [REP10-204] which are relevant to qualifying features of European sites relate to little tern. However, the Minsmere MMP (Annex U of [REP10-084]) states there is limited potential for direct disturbance due to the relative inaccessibility of the wetland habitats used by these birds and the predicted minor changes in visitor numbers and existing management practices.
- 6.4.236. The NT [REP10-197] stated that the proposed visitor and ecological monitoring proposals in the DL8 version of the Minsmere MMP appear to be adequate to identify the likely potential effects of increased recreational pressure on the sites. The NT also made some comments on the content of the monitoring proposal but due to timing was unable to comment on the DL10 MMPs.
- 6.4.237. The ExA notes that disagreements over the figures used in the assessment were not resolved by close of Examination. However, the ExA also notes NE's confirmation that an AEoI as a result of recreational disturbance can be excluded for all European sites.

- 6.4.238. The ExA welcomes the provision of the MMPs by the Applicant and that revisions submitted during the Examination took on board comments of IPs. We acknowledge that a number of parties have outstanding comments on the content of the MMPs, eg NE [REP10-200], RSPB/SWT [REP10-204], and NT [REP10-197]; however, these appear to be minor in nature.
- 6.4.239. The ExA is content that the DoO [REP10-075 to REP10-087] secures the following measures which are considered suitable manage and reduce the effects from recreational pressure on qualifying features:
- monitoring to be carried out in accordance with the MMPs;
 - payment of the European Sites Access Contingency Fund to fund the Minsmere and Sandlings (North) Initial Mitigation Measures in accordance with the MMP for Minsmere – Walberswick and Sandlings (North) and any further mitigation measures required in accordance with the MMPs;
 - payment of the RAMS Contribution (towards mitigating the in-combination recreational disturbance impacts); and
 - provision for applying for any planning permission required to permit the Aldhurst Farm enhancement works, which are located beyond the Order limits.
- 6.4.240. The ExA considers that with the proposed mitigation measures in place, the Proposed Development would not result in an AEoI to all European sites identified above, either alone or in combination with other plans and projects, as a result of recreational pressure/ disturbance.

Physical interaction between birds and project infrastructure (pylons and power lines)

Introduction

- 6.4.241. As described above, the Applicant's Shadow HRA [APP-145] did not consider the physical interaction of birds and new pylons and overhead power lines. In response to comments from NE [including (NE Issue 7) [RR-0878][REP2-153][REP2-071]] and RSPB/ SWT [REP3-074], the Applicant submitted an assessment of collision risk between birds and power lines, including plans of the proposals, at DL6 (Appendix D, epage 74 of [REP6-024]) to support its position in [REP2-071] and [REP3-042] that there was no likely pathway for a material effect. As explained above, although the Applicant maintained there would be no LSE, it also stated at DL6 [REP6-024] that as a precautionary measure, line markers would be installed on the power lines to minimise the risk of bird collision with power lines (subject to operational and technical requirements and views of stakeholders including National Grid Electricity Transmission (NGET)).
- 6.4.242. At DL10, NE [REP10-199] stated that its concerns had been addressed through the Applicant's proposed use of line markers as mitigation and carcass searches to monitor for impacts. However, NE considered that the methodologies needed to be agreed, along with necessary triggers to retrofit markers if they cannot be employed at the time of construction.

NE [REP10-199] considered that this information must be provided before AEOI could be ruled out.

- 6.4.243. Due to the potential reliance on mitigation measures and in the absence of definitive agreement from NE, the ExA has considered the following European sites and qualifying features in its consideration of AEOI (and included them in Table 6.2):
- Alde-Ore Estuary SPA (all features); and
 - Minsmere-Walberswick SPA (all features).
- 6.4.244. The Applicant [REP10-155] at DL10 explained that following further discussions with NE, it was now proposing that monitoring for line strikes be carried out in the first instance to determine if further mitigation (such as line markers) is required. The Applicant provided an updated version of the TEMMP at DL10 [REP10-090], which included in Table 2.1 provision for monthly monitoring for bird carcasses under overhead lines between new pylons. Methodology is included in this at Table 2.1, stating *"The route of the lines must be walked by the surveyor and any bird remains under the lines identified to species. The data will be submitted to the EWG [Ecology Working Group]¹⁷ in a monthly note."* Installing markers on new overhead lines, between new pylons, is then identified in as a potential intervention, subject to the findings of the proposed monitoring. No specific trigger point in terms of bird numbers is stated in Table 2.1; however, it states that *"The EWG will determine, based on review of this data, whether line markers are required and SZC Co. will install the markers if these are judged to be required by the EWG."*
- 6.4.245. The ExA notes that the monitoring and potential intervention set out in Table 2.1 of the TEMMP [REP10-090] relates to *"all bird species"* of *"The Minsmere Habitat Sites"* and does not specifically refer to the Alde-Ore Estuary SPA. However, the ExA is of the view that the monitoring proposed is for all bird species and would equally apply to bird qualifying feature of the Alde-Ore Estuary SPA, which additionally include the same species as those of the Minsmere-Walberswick SPA and Ramsar.
- 6.4.246. NGET provided comment on the matter of potential line markers in its DL10 representation [REP10-196]. NGET stated it had considered the Applicant's information in [REP6-026] and was aware of NE's suggestion for monitoring in the first instance to determine whether further mitigation in the form of line markers is required. NGET stated on the basis of the information and having regard to its experience in relation to the existing powerlines, it considered it unlikely that line markers would be required. NGET stated if it was determined necessary its typical arrangement would be to install orange-coloured spaces dampers on the main conductor bundles in addition to either spiral or sphere markers on the earthwire. It concluded that *"However, NGET's SPOTTED log states*

¹⁷ The EWG is defined in the Deed of Obligation [REP10-075] and its membership is described in Section 17 (epage 108), including (amongst others) 'one ecologist to be nominated by Natural England'

there are no reported collisions in the vicinity of Sizewell and therefore, any mitigation measures are currently considered unnecessary in this vicinity."

- 6.4.247. Due to the timing, NE had not submitted comments on the updates to the TEMMP [REP10-090] by close of the Examination, so it is therefore unclear whether these updates resolve NE's outstanding concerns. The final signed SoCG between the Applicant and NE marked the position on this matter for the Alde-Ore Estuary SPA and Minsmere-Walberswick SPA as "agreed in principle but further information required" [REP10-097] (epages 15 and 16).

Proposed Development in combination

- 6.4.248. Although not explicitly stated in the collision risk assessment (Appendix D, epage 74 of [REP6-024]), as the Applicant maintained its position that alone there would be no LSE alone from a lack of pathway, it follows that it considered there to be no risk in combination with other plans or projects. NE did not identify specific concerns with regards to this potential effect in combination with other plans or projects and the ExA was not made aware of any plans or projects that could act in combination for such a potential effect pathway during the Examination.

ExA conclusion

- 6.4.249. The ExA is of the view that although there is a risk of collision associated with pylons, this risk is deemed to be low on the basis of the information provided to the Examination by the Applicant and NGET with regards to the limited extent and nature of the power lines, the likely movement of bird species across the Proposed Development, and the absence of existing records of bird collisions in the area of the existing power lines and power station at Sizewell.
- 6.4.250. The ExA believes that the wording in the TEMMP with respect to the proposed methodology, combined with the securing of the EWG membership are sufficient to secure that the monitoring and mitigation (if necessary) would be available and can be implemented in the event that effects are identified. The ExA is content that standard mitigation measures available are sufficient for this purpose.
- 6.4.251. The ExA is satisfied that the monitoring and (if necessary) mitigation proposed would mitigate for any AEoI qualifying bird features of the Alde-Ore Estuary SPA and Minsmere-Walberswick SPA resulting from collision risk between birds and project infrastructure can be excluded, either alone or in combination.

Physical interaction between species and project infrastructure – indirect impacts from entrapment of prey species on bird qualifying features

Introduction

6.4.252. The Applicant provided information for an appropriate assessment with regards to indirect effects on birds due to entrapment of prey species for the following European sites and qualifying features/criterion:

- Alde-Ore Estuary SPA
 - little tern
 - sandwich tern
 - lesser black backed gull
- Alde-Ore Estuary Ramsar
 - Criterion 3 (breeding and wintering wetland assemblage)
 - Criterion 6 (species/populations occurring at levels of international importance)
- Benacre to Easton Bavents SPA
 - little tern
- Minsmere-Walberswick SPA
 - little tern
- Minsmere to Walberswick Ramsar
 - Criterion 2 (breeding bird assemblage)
- Outer Thames Estuary SPA
 - red-throated diver
 - little tern (breeding)
 - common tern (breeding)

6.4.253. The Shadow HRA Report [APP-145] concluded there would be no AEOI of these sites because entrapment was predicted to have a negligible effect on the local Spawning Stock Biomass (SSB) populations of key prey species, and that effects are likely to be so small as to be undetectable in the context of year-to-year variation in populations due to other environmental factors. The Shadow HRA Third Addendum [REP7-279] provided an update to the Applicant's assessment of indirect effects on birds due to entrapment of prey species in respect of Change 19 for the Alde-Ore Estuary SPA and Ramsar, Minsmere-Walberswick SPA and Ramsar and the Outer Thames Estuary SPA. The Applicant [REP7-279] concluded no AEOI on the identified qualifying features of these sites. As noted above, NE [REP10-201] stated it had "*...no comment to provide on the impacts the proposed desalination plant may have on the marine environment. Due to the late submission of this change to the Examination, we have been unable to sufficiently review the supporting material provided by the Applicant.*"

6.4.254. As noted in Section 6.2 above, the EA [REP2-135] and RSPB/SWT [REP2-506] raised concerns with regards to the entrapment of eels as a prey species of bittern, which are a qualifying feature of the Benacre to Easton Bavents SPA and Minsmere-Walberswick SPA. The Applicant concluded no LSE to bittern as a result of potential 'physical interaction between species and project infrastructure – indirect impacts from entrapment of prey species on bird qualifying features' in its Shadow HRA Report [APP-145]. The ExA's consideration of potential effects on bittern qualifying features of these SPAs is described separately later in this chapter.

Significance of effects

- 6.4.255. NE [RR-0878](Issues 7 and 30)[REP5-160] raised concerns regarding indirect impacts on the food web as a result of entrapment losses, particularly for bird species with small foraging ranges. It specifically highlighted concerns relating to fish as prey species for lesser black-back gull, little tern, and sandwich tern of Alde-Ore Estuary SPA and little tern of Minsmere-Walberswick SPA and Ramsar.
- 6.4.256. NE [REP2-153] considered that the potential depletion of prey would be more akin to the impact of a continuous and unrestricted commercial fishery, which could lead to poor breeding success or over winter survival of seabirds in some years. In contrast, the Eastern Inshore Fisheries and Conservation Authority (EIFCA) [REP5-147] (who did not specifically respond in relation to HRA matters), stated that the impacts of the power station on fish stocks could not be compared to those from commercial fishing activity, as there are management measures available for commercial fishing which can be applied in a reactive manner, whereas a nuclear power station would continuously operate in the same place in the same manner for many decades.
- 6.4.257. The RSPB/SWT [REP2-506], [REP5-164] and [REP6-046] made extensive comments about the potential impacts on prey species and were concerned that limited mitigation was proposed for fish mortality and the potential prey depletion for bird species of designated sites. It [REP7-152] confirmed this issue related to:
- non-breeding red-throated diver and (during the breeding season) foraging common and little terns of the Outer Thames Estuary SPA;
 - breeding little terns of the Minsmere-Walberswick SPA; and
 - breeding sandwich terns of the Alde-Ore Estuary SPA.
- 6.4.258. It stated that low levels of fish availability (even within the bounds of natural variability) are known to affect the breeding success of tern populations. It considered the Applicant's assessment to be inadequate as it did not recognise the impacts of prey depletion on foraging efficiency and success rates.
- 6.4.259. The RSPB/SWT [REP2-506] highlighted concerns relating to impingement affecting sand gobies (a concern shared by the EA [REP2-135]) and nursery grounds. It also outlined concerns that climate change will result in more days per year in which entrainment temperatures are above 30°C, temperatures at which fish egg and larval stage mortality increases rapidly. It was concerned that this could potentially combine with other climate pressures to negatively affect SPA seabirds.
- 6.4.260. Dr Henderson on behalf of TASC raised concerns throughout the Examination [REP2-481h], [REP7-247] and [REP8-284] that entrainment impacts had been underestimated for numerous species, including sand gobies. TASC emphasised in its comments on the RIES [REP10-425] that small and long-thin fish had not been sampled using the pump sampler and therefore, considered that fish such as sand eel which are prey species for birds had been "*grossly underestimated in the entrainment study*".

- 6.4.261. NE [RR-0878],[REP2-153] and [REP5-160], the EA [RR-0373], [REP2-068], [REP2-135], [REP5-150] and [REP7-132] and the RSPB/SWT [REP3-074], [REP6-046] and [REP7-154] all raised concerns about the use of a percentage of the SSB of each fish species as an indicative threshold for significance; stating that this could underestimate impacts and would not identify local impacts on SPA birds, particularly during the breeding season when birds forage within a certain radius of their nest site.
- 6.4.262. In response to concerns raised, the Applicant submitted a localised effects assessment in ES Addendum 2.17A, 'SPP103 - Consideration of potential effects on selected fish stocks at Sizewell' Chapter 3 [AS-238] which considered changes in prey availability at the scale of the GSB and the tidal excursion. It explained in [REP3-042] that modelling¹⁸ indicates that depletion levels asymptote after a period of approximately 50 days and are therefore not comparable to an unrestricted fishery causing constant depletion of prey. The Applicant identified pelagic fish such as herring, sprat and anchovy as the most important prey groups for marine birds within the waters around Sizewell, for which the modelling (which relates to combined effects of Sizewell B and C) indicates that effects are small. It considered that the scale of between year variability in fish abundance is orders of magnitude greater than the level of depletion predicted to occur within the GSB and tidal excursion as a result of impingement.
- 6.4.263. The Applicant provided further commentary in [Appendix P of REP5-120], which concluded that
- "the scale of local depletion of prey resources is well within the bounds of natural variability, which predator/prey relationships are adapted to... As such, no significant reduction in the prey availability of designated HRA species is anticipated"*.
- 6.4.264. The Applicant submitted an update to the local effects assessment in Revision 5 of SPP103 at DL6 [Appendix F of REP6-016] to address stakeholder comments (including a sensitivity analysis addressing uncertainty in the FRR system efficiency) and additional data for each of the species stock area assessments. This concluded no significant reductions in the prey availability of bird qualifying features of European sites as follows:
- Overwintering red-throated diver – The species has foraging ranges beyond the GSB and tidal excursion, without the restriction of having to return to local breeding colonies near Sizewell.
 - Sandwich terns and lesser black-backed gulls – which have wide foraging ranges. Coupled with the low levels of depletion relative to natural variability, and the potential to exploit opportunistic foraging opportunities from the FRR suggests, no significant adverse food-web effects due to fish impingement are anticipated.

¹⁸ Table 2 of Appendix 7L [REP2-110]

- Little tern – The species has the most restricted foraging ranges and forage close to colonies up to a maximum distance of approximately 2.4km during the breeding season. Based upon the expected breeding season foraging ranges, foraging would primarily be within the Sizewell-Dunwich Bank and therefore, more likely be subject to the immediate effects of Sizewell B than Sizewell C as the intakes are located 3km offshore. The scale of local depletion of prey resources is well within the bounds of natural variability to which predator-prey relationships are adapted.

6.4.265. The Applicant further noted at DL7 [REP7-060] that mixing, and fish behaviour would dampen the depletion with distance from the intakes and, in the case of pelagic shoaling species and particularly juvenile stages (which are of importance in the diet of little tern), tidal replenishment would replace losses. It also noted that the intakes would be just beyond the likely foraging range of little terns. The Applicant reiterated its conclusion that impingement from Sizewell B and Sizewell C together would not have any adverse food-web effects on designated feature of European sites.

6.4.266. In relation to sand gobies, the Applicant [Appendix P of REP5-120] and [REP6-028] considered that sand gobies are resilient to the degree of depletion predicted by entrainment and that the combined (Sizewell B and C) entrainment losses for sand gobies are predicted to be approximately 1.42% of the population estimate. The Applicant suggested that due to their short lifespan and early age of maturity, sand gobies have a sustainable harvesting rate of far greater than the precautionary 10% of SSB threshold applied. The Applicant considered its assessment to be precautionary as the small impingement fraction is assigned an EAV of 1 and total mortality is assumed for the entrainment fraction; therefore, the predicted level of losses are regarded as negligible at the population level.

6.4.267. In relation to nursery grounds, the Applicant [Appendix P of REP5-120] explained that many of the species with juvenile life stages observed at Sizewell have spawning and nursery grounds distributed over wide geographic areas and that larval recruitment of fish into and out of the bay will be largely influenced by oceanographic and meteorological processes. It also explained breeding little tern from colonies at Minsmere, Dingle Marshes (both within the Minsmere-Walberswick SPA) and Slaughden (within the Alde-Ore Estuary SPA) would forage to a large extent within the GSB and tidal extent. However, based upon the expected breeding season foraging ranges of the birds from these colonies, foraging would primarily be within the Sizewell-Dunwich Bank and therefore, more likely be subject to the immediate effects of Sizewell B.

6.4.268. The Applicant [Appendix P of REP5-120] considered that whilst higher entrainment mortality rates may be observed under future climate change, its starting point for fish entrainment assessments is precautionary. Furthermore, it stated that thermal lethality is highly species specific and adaptation to future climate conditions and/or

potential species distribution shifts may influence the ability to tolerate thermal stress.

- 6.4.269. Although the MMO deferred to NE in relation to HRA matters and did not comment upon indirect impacts on predators, it agreed [REP8-164] that the Applicant's analysis in [REP6-016] confirms that the local impact from fish entrapment is not significant, even with zero benefit from the low-velocity side-entry (LVSE) and FRR.
- 6.4.270. In response to the Applicant's revised assessments, the RSPB/SWT [REP7-154] confirmed that it considered the predicted depletion levels of species of importance to birds of designated sites to be significant. It noted that depletion levels for cod, whiting, dab and juvenile fish are approaching or over 10%, the depletion level for sea bass is 6.6% and four other species with predicted depletion levels of just under 5% (sand goby, dover sole, flounder, plaice). It was particularly concerned about the effects of additional depletion where the local fish resources are at the lower end of the range of interannual variability for key species. It stated that the local effects assessment appears to be based on periods of maximum abundance for the key fish species, which for most species of importance to bird species of designated sites occurs outside the bird breeding season. It therefore advised that an assessment of local depletion during the period April to September may be more informative. The RSPB/SWTs remained concerned about the predicted levels of mortality and subsequent effects on bird species of European sites at the close of Examination and did not agree with the Applicant's conclusion of no AEOI [REP10-111] and [REP10-204].
- 6.4.271. The EA [REP7-133] provided comments on the Applicant's updated assessment [REP6-016]. It set out the issues it considered to be outstanding in relation to effects on fish stocks, as reported in Section 5.15 of this recommendation report.

Discharge of dead and moribund fish

- 6.4.272. The Applicant [SPP103, Chapter 3 of AS-238], [Appendix P of REP5-120] and [REP6-016] explained that biomass that is discharged by the FRR is retained within the system resulting in bottom-up effects stimulating secondary production and, in some cases, affording opportunistic feeding opportunities for seabirds (notably gulls). Whilst the majority of FRR discards sink and would therefore not be accessible to surface feeding seabirds, floating discards would represent a potential foraging opportunity to scavenging seabirds.
- 6.4.273. However, the RSPB/SWT [REP2-506] noted that that red-throated diver (Outer Thames Estuary SPA) and little tern (Outer Thames Estuary SPA and Minsmere-Walberswick SPA) do not forage on discards and would therefore not benefit from any discharged material. NE [REP2-153] also noted that terns will discard any deceased fish captured, so this recourse would not be available to those species.
- 6.4.274. NE [REP2-153] raised concerns that foraging on discards could increase the risk of exposure to chemical discharges from ingestion of the fish or

by increasing the time spent within the area of the chemical plume, whilst RSPB/SWT [REP2-506] considered that the discharge of dead and moribund biota from the FRR system would contribute to biochemical oxygen demand and increase nutrient inputs and levels of un-ionised ammonia in the water column. This, combined with other operational impacts, could affect the prey distribution for SPA bird populations.

- 6.4.275. TASC [REP2-481h] and [REP10-425] highlighted the high abundance of jellyfish, ctenophores and other gelatinous plankton that occur in the waters off Sizewell, raising concerns about impacts on the local ecology from discharge of this dead material. TASC noted that birds may be attracted to the discharged material [REP2-481h].
- 6.4.276. The Applicant [REP3-042] and [Appendix P of REP5-120] confirmed the FRR wash water would not be chlorinated, therefore impinged biota would not be subjected to chlorine TRO exposure; and that hydrazine enters the cooling water circuit at the discharge pit before being discharged via the outfall, therefore impinged fish are not exposed to hydrazine within the FRR. It stated that dead fish would not bioaccumulate chemicals and would only be in contact with the extremely low residual concentrations of TRO, bromoform and hydrazine present in surface plumes. For live fish either discharged from the FRR or present in the wider environment, exposure to chlorine TRO, bromoform or hydrazine in various discharge plumes is not expected to result in significant bioaccumulation of these substances. The Applicant stated that it is not aware of evidence for any such effects arising in relation to gulls (or other bird species) feeding upon moribund fish returned to the surface at other nuclear power stations.

Monitoring

- 6.4.277. As noted in Section 5.15 of this Report, the Applicant submitted a draft Fish Impingement and Entrainment Monitoring Plan (FIEMP) at DL7 (Revision 1) [REP7-077]. This was revised at DL8 (Revision 2) [REP8-112] and DL10 (Revision 3) [REP10-138]. The plan was listed as a certified document in Schedule 24 of the dDCO and is to be certified under Article 80 [REP10-009]. The condition was revised to confirm that monitoring must be in general accordance with the draft plan.
- 6.4.278. The Applicant [REP10-155] stated that the purpose of the FIEMP is to confirm the assessment of impacts provided in the ES and ES Addendum, and thereby its HRA assessments. The FIEMP is intended to confirm the impingement and entrainment predications presented in the ES and addendum, and by association the HRA assessments, with real data collected from the operation of the Proposed Development compared with data collected at Sizewell B simultaneously for comparison. The Applicant also confirmed that the plan provides potential schemes to offset any potential impacts should the ES and ES Addendum have under-predicted impingement or entrainment – funding for such is secured in the DoO [REP10-075] to [REP10-087] to be released for suitable schemes at the

discretion of the Marine Technical Forum (MTF)¹⁹. However, the Applicant also confirmed that these plans are not relied upon in reaching its conclusion of no AEOI of European sites.

- 6.4.279. By the close of Examination, the content of the FIEMP was not agreed with NE [REP8-298e] and [REP10-097] or the EA [REP10-190]. The RSPB/SWT [REP10-204] remained concerned that the mitigation aimed at fish populations directly might not benefit those bird species associated with designated sites. They considered that effects at the local level (which may not be detected and trigger mitigation under the current proposals, which relate to effects at population level) could affect these bird species, particularly during the nesting season when birds are geographically constrained by their nesting location. The RSPB/SWT [REP10-204] also noted that the proposed mitigation does not appear to cover all the fish species which are important prey to SPA bird species. The SoCG between the Applicant and MMO [REP10-107] confirmed it did not have any outstanding concerns with regards to the FIEMP.

Positions of IPs at Deadline 10

- 6.4.280. As previously noted, the MMO deferred to NE with regards to European sites; however, the final SoCG between the Applicant and MMO [REP10-107] records there are no outstanding matters or concerns in respect to the fish baseline data, assessment, mitigation measures and monitoring, and residual effects.
- 6.4.281. During the Examination, the EA also confirmed that it deferred to NE to advise on effects on European sites [REP7-131]. The final SoCG between the Applicant and EA [REP10-094] identifies a number of matters relating to the Applicant's assessment of fish that are not agreed between the two parties. These include baseline, assessment (including scale and impact) of impingement of fish, mitigation and residual effects. The EA did however welcome the Applicant's commitment to provide additional mitigation to help offset impacts to fish during operation. This is secured by the DCO, including DML, and the DoO.
- 6.4.282. The final SoCG between the Applicant and NE [REP10-097] identifies concern with the Applicant's proposed monitoring duration during operation but did not appear to indicate a risk of AEOI to European sites as a result of the entrapment of fish. However, this final position is unclear.
- 6.4.283. The final representation of the RSPB/SWT [REP10-204] identified outstanding "*concerns around effects of the cooling water system on distribution of fish prey for birds of the Minsmere-Walberswick, Outer*

¹⁹ The MTF is defined in the Deed of Obligation [REP10-075], with terms of reference, including membership specified in Annex I to the Deed of Obligation [REP10-082] (epage 54). Membership includes NE, EA, MMO and the Suffolk Coastal Authority.

Thames Estuary and Alde-Ore Estuary SPAs remain and the lack of an Acoustic Fish Deterrent to mitigate this impact."

- 6.4.284. TASC's concerns regarding the underestimation of entrainment impacts and impacts on the local ecology from discharge of dead material remained at DL10 [REP10-425].

ExA conclusion

- 6.4.285. The ExA notes that 'impacts from intakes and outfalls and subsequent ecological effects' (NE Issue 30) [REP10-097] is not agreed in the SoCG between NE and the Applicant [REP10-097]. However, the ExA notes that NE did not provide a substantive response to the Applicant's local-scale modelling of fish depletion in the context of effects on SPA and Ramsar features, and the outstanding concerns noted in the SoCG [REP10-097] relate to the monitoring measures in the FIEMP, which the Applicant stated it does not rely on in its conclusions of no AEOI. The Applicant [REP10-155] maintains that the modelling had demonstrated that a very small magnitude of the predicted depletion levels relative to existing levels spatial and temporal variation in the abundance of the relevant fish populations.
- 6.4.286. We acknowledge the RSPB/SWTs contributions to the Examination regarding this matter and note that their concerns regarding the levels of predicted prey species depletion remained at DL10 [REP10-204]. Similarly, we acknowledge TASC's contributions to the Examination regarding this matter and note that their concerns remained at DL10 [REP10-425].
- 6.4.287. The ExA notes that opportunistic scavenging has the potential to benefit some bird species. However, we note the Applicant's confirmation that its assessment makes no reliance on birds feeding on dead and moribund fish.
- 6.4.288. The ExA acknowledges that impacts to prey species from the Proposed Development will likely result in depletion of abundance but also notes that red-throated diver, sandwich terns and lesser-black backed gulls have an extensive foraging range. On that basis it is more likely these species will be resilient to a relatively small-scale change in prey abundance. However, the consequential impacts to the little tern population, having regard to their more restricted foraging range, are likely to result in a greater effect that is difficult to refute.
- 6.4.289. The Applicant's assessment argues that the anticipated impact to prey species abundance from the Proposed Development is at levels below that which is anticipated in natural variability [REP6-016]. This position is persuasive and the ExA does consider that by accepting this argument, in isolation, a finding of no AEOI on the qualifying features of the site could be reached. However, the Applicant's position is somewhat undermined by the concerns raised by the EA in relation to the assessment of impacts to fish [REP7-133] and [REP10-094] and the outstanding matters (reported in Section 5.15 of this Recommendation Report). NE has also raised concerns in this regard and the position remains unclear.

- 6.4.290. Despite the Applicant's persuasive argument, the ExA cannot disregard the concerns raised by the EA and NE and note that several matters remain outstanding. In the absence of a clear agreement to the Applicant's assessment from NE, together with the outstanding issues expressed by the EA (reported in Section 5.15 of this Recommendation Report), the ExA considers the SoS may wish to satisfy themselves on these matters before reaching a conclusion.

Alde-Ore and Butley Estuaries SAC and Alde-Ore Estuary Ramsar

Introduction

- 6.4.291. The Alde-Ore and Butley Estuaries SAC and Alde-Ore Estuary Ramsar is located 6.5km from the MDS and 1.3km to the closest associated development site (the A1094-B1069 south of Knodishall). The qualifying features for which the SAC is designated, and which have been carried forward to consideration of AEOI by the ExA are:
- Estuaries;
 - mudflats and sandflats not covered by seawater at low tide; and
 - Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*).
- 6.4.292. The habitats and Criterion²⁰ (excluding bird features) for which the Ramsar is designated and for which the Applicant/ExA has considered AEOI include:
- Criterion 2 (the site supports a number of nationally scarce plant species and British Red Data Book invertebrates).
- 6.4.293. The Shadow HRA Report [APP-145] and Shadow HRA Addendums [AS-173] and [REP7-279] provided information for an appropriate assessment for the following potential impact pathways:
- alteration of coastal processes/sediment transport (construction, operation and decommissioning);
 - changes in water quality – marine environment (operation);
 - changes in water quality – terrestrial environment (construction);
 - alteration of hydrology and hydrogeology (construction, operation and decommissioning);
 - changes in air quality (construction, operation and decommissioning); and
 - disturbance effects from recreational pressure (construction, operation and decommissioning).
- 6.4.294. Additionally, for the Alde-Ore Estuary Ramsar Criterion 2 (a number of nationally scarce plant species and British Red Data Book invertebrates), the Shadow HRA Report [APP-145] and Shadow HRA Addendums [AS-173] and [REP7-279] provided information for an appropriate

²⁰ Ramsar Criterion relating to bird features are discussed together with the Alde-Ore Estuary SPA from paragraph 6.4.310 below.

assessment for 'disturbance effects from recreational pressure (construction, operation and decommissioning).'

- 6.4.295. As discussed above, NE raised concern that the Applicant had not considered the potential for the unintentional introduction or spread of INNS to affect these features of the SAC and Ramsar. As discussed above the ExA decided to carry this forward to consideration of AEoI.

Unintentional spread of INNS

- 6.4.296. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEoI on the Alde-Ore and Butley Estuaries SAC and Alde-Ore Estuary Ramsar from the unintentional introduction or spread of INNS as a result of the Proposed Development, either alone or in combination.

Alteration of coastal processes/sediment transfer

- 6.4.297. See earlier paragraphs to this Chapter for more detailed reasoning. As noted above, NE raised no concerns with the Applicant's assessment of alteration to coastal processes/sediment transport to the Alde-Ore and Butley Estuaries SAC and Alde-Ore Estuary Ramsar (excluding bird features) arising from the Proposed Development alone. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEoI on the Alde-Ore and Butley Estuaries SAC from the alteration to coastal processes/sediment transport as a result of the Proposed Development, either alone or in combination.

Changes in water quality – marine environment

- 6.4.298. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEoI on the Alde-Ore and Butley Estuaries SAC and Alde-Ore Estuary Ramsar (excluding bird features) from the changes in marine water quality as a result of the Proposed Development, either alone or in combination.

Changes in water quality – terrestrial environment

- 6.4.299. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEoI on the Alde-Ore and Butley Estuaries SAC and Alde-Ore Estuary Ramsar (excluding bird features) from terrestrial water quality effects as a result of the Proposed Development, either alone or in combination.

Alteration of local hydrology and hydrogeology

- 6.4.300. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEoI on the Alde-Ore and Butley Estuaries SAC and Alde-Ore Estuary Ramsar (excluding bird features)

from the alteration of local hydrology and hydrogeology as a result of the Proposed Development, either alone or in combination.

Changes in air quality

- 6.4.301. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI on the Alde-Ore and Butley Estuaries SAC and Alde-Ore Estuary Ramsar (excluding bird features) from the changes in air quality as a result of the Proposed Development, either alone or in combination.

Recreational pressure

- 6.4.302. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI on the Alde-Ore Estuary Ramsar (excluding bird features) from disturbance arising from recreational pressure as a result of the Proposed Development, either alone or in combination.

Cumulative/in-combination effects

- 6.4.303. The Shadow HRA Report provided an in-combination assessment of the potential for AEOI on the qualifying features of the Alde-Ore and Butley Estuaries SAC and Alde-Ore Estuary Ramsar arising from changes to water quality (marine) and alteration of coastal processes/sediment transport from the Proposed Development together with Suffolk SMP (Section 7.4 e ii and iii and Table 7.3 of [APP-145]).
- 6.4.304. The assessment concluded that based on the location of the SAC/Ramsar (c.6.5km from the Proposed Development) and the location and nature of the proposed coastal management approaches outlined within the preliminary assessment carried out for the SMP (about 10km from the Proposed Development), none have potential to cause an in-combination effect due to changes in water quality or alteration of coastal processes/sediment transport on the SAC and Ramsar together with the Proposed Development [APP-145]. The Applicant stated that the changes to coastal processes / sediment transport due to the Proposed Development would be very small, localised and too far away to interact with the proposed coastal management approaches of the SMP. No AEOI in combination was predicted [APP-145].
- 6.4.305. The Applicant additionally considered cumulative/inter-project effects between different elements of the Proposed Development in [AS-174] and [REP7-279].
- 6.4.306. As described above, NE [RR-0878] (Issue 9) included the SAC and Ramsar in its list of sites for which it had outstanding concerns with regards to cumulative/inter-project and in-combination effects. However, the ExA also notes that by the end of the Examination, NE's [REP10-097] outstanding concern with regard to in-combination effects related to matters subject to further consents not yet determined, including those

of the EPs, and where any single site issues remained outstanding from the Proposed Development alone.

- 6.4.307. The ExA has considered whether any of the potential effect pathways identified above, for which a conclusion of no AEOI from the Proposed Development alone had been reached, could result in some effect on a European site and thus have the potential to act in combination with other plans or projects. Having considered the information provided by the Applicant and the views of IPs, the ExA is of the view that this would apply to the following potential effects: changes to water quality (marine) and alteration of coastal processes/sediment transport. The ExA is only aware of the Suffolk SMP as a plan or project that could act in combination with the Proposed Development in this regard. Having considered the information available the ExA agrees with the Applicant that there would be no AEOI in combination with the Suffolk SMP.
- 6.4.308. The ExA additionally notes that NE confirmed agreement with the Applicant's conclusion of no AEOI on the Alde-Ore and Butley Estuaries SAC and Alde-Ore Estuary Ramsar (excluding bird features) as a result of both potential effects of alteration of coastal processes and marine water quality from the Proposed Development. This is reported above. The ExA is not aware of any outstanding issues from the Proposed Development alone on the SAC and Ramsar (excluding bird features) that require resolving prior to consideration in combination. The ExA is therefore content to conclude on the basis of the information available that there would be no AEOI from the Proposed Development in combination.

ExA's conclusion

- 6.4.309. Having considered the evidence before the Examination and the implications of the Proposed Development on this European site in light of its conservation objectives, the ExA is of the view that there would be no AEOI to the Alde-Ore and Butley Estuaries SAC and Alde-Ore Estuary Ramsar (excluding bird features) with all mitigation measures identified above, either alone or in combination with other plans or projects.

Alde-Ore Estuary SPA and Ramsar

Introduction

- 6.4.310. The Alde-Ore Estuary SPA and Ramsar is located 6.5km from the MDS and 1.3km to the closest associated development site (the A1094-B1069 south of Knodishall).
- 6.4.311. The bird qualifying features/criterion for which the site is designated and which have been carried forward to consideration of AEOI by the ExA include:
- avocet (breeding and wintering);
 - marsh harrier (breeding);
 - little tern (breeding);
 - sandwich tern (breeding);
 - lesser black-backed gull (breeding);

- redshank (wintering);
- ruff (wintering);
- Criterion 3 (assemblage of breeding and wintering wetland birds); and
- Criterion 6 (species/populations occurring at levels of international importance).

6.4.312. The Shadow HRA Report [APP-145] and Shadow HRA Addendums [AS-173] and [REP7-279] provided information for an appropriate assessment for the following potential impact pathways for all qualifying features except where indicated:

- alteration of coastal processes/sediment transport (construction, operation and decommissioning);
- changes in water quality – marine environment (operation) (for breeding qualifying features only);
- changes in water quality – terrestrial environment (construction);
- alteration of hydrology and hydrogeology (construction, operation and decommissioning);
- changes in air quality (construction, operation and decommissioning);
- disturbance effects from recreational pressure (construction, operation and decommissioning); and
- physical interaction with project infrastructure (entrapment of prey species during operation - for breeding qualifying features only).

6.4.313. The Applicant concluded no AEoI to all qualifying features of the Alde-Ore Estuary SPA and Ramsar. Matters which were disputed during Examination are detailed below.

6.4.314. As discussed in earlier sections of this Report, NE raised concern that the Applicant had not considered the following impacts:

- Unintentional introduction or spread of INNS; and
- Physical interaction between birds and project infrastructure (pylons and power lines).

6.4.315. As discussed in in earlier sections of this Report, the ExA decided to carry this forward to consideration of AEoI.

Unintentional spread of INNS

6.4.316. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEoI on the Alde-Ore Estuary SPA and Ramsar from the unintentional introduction or spread of INNS as a result of the Proposed Development, either alone or in combination.

Physical interaction between birds and project infrastructure (pylons and power lines)

6.4.317. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the monitoring and mitigation measures as secured, there would be no AEoI on the Alde-Ore Estuary SPA from the physical interaction between birds and project infrastructure (pylons

and power lines) as a result of the Proposed Development, either alone or in combination.

Alteration of coastal process/sediment transportation

- 6.4.318. See earlier paragraphs to this Chapter for more detailed reasoning. NE raised no concerns with the Applicant's assessment of alteration to coastal processes/sediment transport to the Alde-Ore Estuary SPA and Ramsar arising from the Proposed Development alone. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI on the Alde-Ore Estuary SPA and Ramsar from the alteration to coastal processes/sediment transport as a result of the Proposed Development, either alone or in combination.

Changes in water quality – marine environment

- 6.4.319. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is of the view that, subject to the implementation of the mitigation measures as secured and through the EPs, it is possible to conclude no AEOI on the Alde-Ore Estuary SPA and Ramsar from the changes in marine water quality as a result of the Proposed Development, either alone or in combination. However, the ExA notes the concerns of NE with regard to the need for EPs, which would include for mitigation and monitoring of marine water quality, and which are to be determined by the EA at a later date. As noted above, the SoS may therefore wish to satisfy themselves further in this regard.

Changes in water quality – terrestrial environment

- 6.4.320. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI on the Alde-Ore Estuary SPA and Ramsar from terrestrial water quality effects as a result of the Proposed Development, either alone or in combination.

Alteration of hydrology and hydrogeology

- 6.4.321. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI on the Alde-Ore Estuary SPA and Ramsar from the alteration of local hydrology and hydrogeology as a result of the Proposed Development, either alone or in combination.

Changes in air quality

- 6.4.322. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI on the Alde-Ore Estuaries SPA from the changes in air quality as a result of the Proposed Development, either alone or in combination.

Physical interaction between species and project infrastructure: indirect impacts from entrapment of prey species on bird

qualifying features - little tern, sandwich tern, lesser black backed gull and Ramsar Criteria 3 and 6

- 6.4.323. See earlier paragraphs to this Chapter for more detailed reasoning. Overall, the ExA considers the SoS could conclude that there would be no AEOI on the Alde-Ore Estuary SPA and Ramsar as a result of impacts on prey species from entrapment. However, in the absence of clear agreement on this conclusion from NE as ANCB together with the outstanding issues expressed by the EA (reported in Section 5.15 of this Recommendation Report), the ExA considers the SoS may wish to satisfy himself on these matters before reaching a conclusion.

Recreational pressure – all features

- 6.4.324. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI on the Alde-Ore Estuaries SPA from the disturbance arising from recreational pressure as a result of the Proposed Development, either alone or in combination.

Cumulative/in-combination effects

- 6.4.325. The Shadow HRA Report provides an in-combination assessment of the potential for AEOI on the bird qualifying features of Alde-Ore Estuary SPA arising from changes to water quality (marine), alteration of coastal processes/sediment transport, and disturbance due to changes in recreational pressure from the Proposed Development together with the other plans and projects identified in Tables 8.4, 8.5 and 8.6 of [APP-145].
- 6.4.326. The Applicant stated that the effects on water quality (marine) from the SMP would not greatly change the current baseline and that changes to coastal processes/ sediment transport due to the Proposed Development would be very small, localised and too far away to interact with the proposed coastal management approaches of the SMP, which are located approximately 10km from the Proposed Development. The location of the European sites are also noted to be about 6.5km south of the Proposed Development at the closest point. Construction of the cable route for East Anglia ONE has been completed and the nearest seaward point of the Proposed Development is located approximately 48km from the wind farm array. The Applicant considered that mitigation measures proposed to mitigate recreation disturbance and via the Suffolk RAMS Strategy would avoid AEOI in combination with the identified plans/projects.
- 6.4.327. With the adoption of the proposed mitigation measures for recreational pressure, the Applicant concludes [APP-145] that there would be no AEOI on the Alde-Ore Estuary SPA in combination.
- 6.4.328. The Shadow HRA Report stated [APP-145] that although the Ramsar qualifying criteria are different from those of the SPA, the bird species cited as a qualifying feature under Ramsar Criterion 6 and waterbird assemblage under Criterion 3 are also qualifying features of the SPA. Thus, the Applicant considers that the assessment summarised above in

relation to the qualifying features of the Alde-Ore Estuary SPA, and the conclusion of no AEOI in combination, also applies to the Alde-Ore Estuary Ramsar.

- 6.4.329. The Applicant additionally considered cumulative/inter-project effects between different elements of the Proposed Development in [AS-174] and [REP7-279]. The 'Supplementary assessment of inter-pathway effects' (Appendix 1 of [AS-174]) considered that inter-pathway effects to the bird qualifying features of Alde-Ore Estuary and Ramsar could only occur via the pathways for the marine water quality effects, disturbance due to increased recreational pressure, and interaction with project infrastructure during the operational phase. It concluded that the effects from all pathways on each of the qualifying features are predicted to be small and consequently no AEOI is predicted when the respective effects are considered together.
- 6.4.330. The ExA has considered whether any of the potential effect pathways identified above, where a conclusion of no AEOI from the Proposed Development alone had been reached, could result in some effect on a European site and thus have the potential to act in combination with other plans or projects. Having considered the information provided by the Applicant and the views of IPs, the ExA is of the view that this would apply to the following potential effects: changes to water quality (marine), alteration of coastal processes/sediment transport, and disturbance due to changes in recreational pressure. The ExA is aware of the Suffolk SMP and the cable route for East Anglia ONE as plans or projects that could act in combination with the Proposed Development in this regard. Having considered the information available the ExA agrees with the Applicant that there would be no AEOI in combination with the Suffolk SMP and cable route for East Anglia ONE.
- 6.4.331. The ExA is aware that NE have outstanding concerns with regards to marine water quality effects for Alde-Ore Estuary SPA and Ramsar, as described above, and these include matters to be addressed through the WDA EP (NE Issue 9 and 30 to 36) [RR-0878] and [REP10-097]. There is also an absence of clear agreement from NE with the Applicant's conclusion that there would be no AEOI on bird qualifying features of the SPA and Ramsar as a result of impacts on prey species from entrapment. The ExA is not aware of any further in-combination plans or projects that could act in combination with the Proposed Development and considers, on the basis of the information provided to the Examination, that it could be possible to conclude no AEOI in combination. However, the ExA recommends that the SoS satisfy themselves on the aforementioned outstanding matters before a conclusion on in combination effects is determined.

ExA's conclusion

- 6.4.332. Having considered the evidence before the Examination and the implications of the Proposed Development on the Alde-Ore Estuary SPA and Ramsar in light of its conservation objectives, the ExA is of the view that, although the necessary information/assurance has not been provided at this time, it could be possible to conclude no AEOI on the

Alde-Ore Estuary SPA and Ramsar. This is subject to the securing of mitigation and monitoring measures including EPs, either alone or in combination with other plans or projects. However, the ExA recommends the SoS needs to satisfy themselves on the outstanding matters.

Benacre to Easton Bavents Lagoons SAC

Introduction

6.4.333. The Benacre to Easton Bavents Lagoons SAC is located 14.6km from the MDS and 12.1km to the closest associated development site (A12/A144 south of Bramfield). The qualifying feature for which the site is designated, and which has been carried forward to consideration of AEOI is:

- Coastal lagoons (Priority feature)

6.4.334. The Shadow HRA Report [APP-145] and Shadow HRA Addendums [AS-173] and [REP7-279] provided information for an appropriate assessment for the following potential impact pathways for the qualifying feature:

- Changes to coastal processes/ sediment transport; and
- Water quality effects (marine environment).

Changes to coastal processes/sediment transport

6.4.335. See earlier paragraphs to this Chapter for more detailed reasoning. The Applicant assessed these effects at Section 7.5 of the Shadow HRA Report [APP-145] and concluded no AEOI. NE [RR-0878] and [REP10-097] did not dispute the Applicant's conclusion of no AEOI from changes to coastal processes/sediment transport in respect of the screened in qualifying features of this SAC. The ExA is satisfied that there would be no AEOI on the Benacre to Easton Bavents Lagoons SAC from changes to coastal processes/sediment transport as a result of the Proposed Development, either alone or in combination.

Water quality effects - marine environment

6.4.336. See earlier paragraphs to this Chapter for more detailed reasoning. The Applicant assessed these effects at Section 7.5 of the Shadow HRA Report [APP-145] and concluded no AEOI. During the Examination, NE [REP10-097] confirmed its agreement with the conclusion of no AEOI on this SAC, either alone or in combination with other plans and projects. The ExA is satisfied that there would be no AEOI on the Benacre to Easton Bavents Lagoons SAC from changes to marine water quality as a result of the Proposed Development, either alone or in combination.

Cumulative/in-combination effects

6.4.337. The Shadow HRA Report provides an in-combination assessment of the potential for AEOI on the qualifying features of the Benacre to Easton Bavents Lagoons SAC arising from changes to water quality (marine) and alteration of coastal processes/sediment transport from the Proposed

Development together with Suffolk SMP (Section 7.5 d i and ii and Table 7.4 of [APP-145]).

- 6.4.338. The assessment concluded that based on the proposed coastal management approaches outlined within the preliminary assessment carried out for the SMP, none have potential to cause an in-combination effect due to changes in water quality or alteration of coastal processes/ sediment transport on the Benacre to Easton Bavents Lagoons SAC together with the Proposed Development [APP-145]. The Applicant stated that the changes to coastal processes/ sediment transport due to the Proposed Development would be very small, localised and too far away to interact with the proposed coastal management approaches of the SMP. No AEOI in combination was predicted [APP-145].
- 6.4.339. The Applicant additionally considered cumulative/inter-project effects between different elements of the Proposed Development in [AS-174] and [REP7-279]. The Applicant's conclusion of no AEOI of the Benacre to Easton Bavents Lagoons SAC in combination with other plans or projects was not disputed by NE during the Examination; this SAC was not raised by NE as a site of concern in relation to cumulative/inter-project and in-combination effects (NE Issue 9) [RR-0878] and [REP10-097] (epage 17).
- 6.4.340. Based on the distance to the SAC and predicted limited scale of impact, and considering the advice of NE as the ANCB, the ExA is satisfied that there would be no AEOI on the qualifying features of the Benacre to Easton Bavents Lagoons SAC from the Proposed Development in combination with other plans or projects.

ExA's conclusion

- 6.4.341. Having considered the evidence before the Examination and the implications of the Proposed Development on this SAC in light of its conservation objectives, the ExA is of the view that there would be no AEOI of the Benacre to Easton Bavents Lagoons SAC, either alone or in combination with other plans or projects.

Benacre to Easton Bavents SPA

Introduction

- 6.4.342. The Benacre to Easton Bavents SPA is located approximately 14.2km from the MDS, and 10.5km to the closest associated development site (A12/A144 south of Knodishall).
- 6.4.343. The qualifying features for which the site is designated, and which have been carried forward to consideration of AEOI are:
- bittern (breeding);
 - little tern (breeding); and
 - marsh harrier (breeding).
- 6.4.344. The Shadow HRA Report [APP-145] provided information for an appropriate assessment for:

- all three qualifying features - disturbance due to increase in recreational pressure (construction, operation and decommissioning) for all three qualifying features.
- little tern only:
 - alteration of coastal processes/sediment transport (construction, operation and decommissioning);
 - water quality effects (marine environment) (operation); and
 - physical interaction with project infrastructure (entrapment of prey species during operation).

6.4.345. The Applicant concluded no AEOI of all qualifying features of the Benacre to Easton Bavents SPA.

6.4.346. As noted at in earlier paragraphs of this Report, concerns were raised by the EA and the RPSB/SWT during the Examination with regards to potential LSE to breeding bittern of this SPA as a result of 'physical interaction with project infrastructure (entrapment of prey species during operation)'. The concern related to effects on eels as prey species for bittern. The ExA is of the view it is appropriate to also consider this effect for AEOI.

Disturbance due to recreational pressure – little tern, bittern and marsh harrier

6.4.347. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI on the Benacre to Easton Bavents SPA from the disturbance arising from recreational pressure as a result of the Proposed Development, either alone or in combination.

Alteration of coastal processes – little tern

6.4.348. See earlier paragraphs to this Chapter for more detailed reasoning. The Applicant assessed these effects at Section 8.5 of the Shadow HRA Report [APP-145] and concludes no AEOI. NE [RR-0878] and [REP10-097] did not dispute the Applicant's conclusion of no AEOI from changes to coastal processes/sediment transport in respect of the little tern qualifying feature of this SPA. The ExA is satisfied there would be no AEOI on the Benacre to Easton Bavents SPA from the alteration to coastal processes/sediment transport as a result of the Proposed Development, either alone or in combination.

Water quality effects – marine environment – little tern

6.4.349. See earlier paragraphs to this Chapter for more detailed reasoning. NE [RR-0878] and [REP10-097] was satisfied with the Applicant's conclusions of no AEOI to the little tern qualifying feature of the Benacre to Easton Bavents SPA. The ExA is also satisfied that there would be no AEOI on the Benacre to Easton Bavents SPA from changes to marine water quality as a result of the Proposed Development, either alone or in combination.

Physical interaction with project infrastructure (entrapment of prey species) – bittern

- 6.4.350. As discussed above, the ExA progressed the consideration of effects on breeding bittern as a result of entrapment of its prey species (eels) to the AEOI stage, on the basis of the disputed positions between IPs and the Applicant, and further representations made on this matter during the Examination.
- 6.4.351. As noted above, Dr Henderson on behalf of TASC raised concerns [REP2-481h] and [REP8-284] that there had been a "*serious underestimation*" of the number of eel (amongst numerous other species) that would be entrained and killed. Concerns were also raised by Dr Henderson on behalf of TASC that the glass eel sampling was insufficient [REP7-247].
- 6.4.352. The Applicant (in Appendix P of [REP5-120]) stated that only three glass eels have been recorded in the sampling of Sizewell B. The Applicant's worst-case assessment of eel entrainment was presented in [AS-238] and that the effects were predicted to be between 0.007% and 0.024% of the RBD biomass for eel. The Applicant confirmed in [REP7-279] that Change 19 would not alter its conclusions that indirect effects on birds due to entrapment of prey species would not result in an AEOI. The Applicant [REP10-155] maintained during the Examination that no negative effect on the numbers of glass eels or elvers migrating through Sizewell Bay is predicted and, on this basis, no discernible impact pathway to bittern of the SPA is apparent.
- 6.4.353. The MMO [REP2-140] provided support for the Applicant's findings in respect of fish, including eels, and considered there was a good level of confidence that actual impacts to all fish species (including eels, which they considered an EAV of 1 to be "unrealistically high") will not be significant.
- 6.4.354. Notwithstanding comments raised by the EA in relation to the assessment of impacts to fish, NE [REP8-298h] confirmed in response to the ExA's questions [EV-188] that it has no further concern regarding breeding bittern and agreed with the conclusion of no AEOI to breeding bittern at Minsmere-Walberswick SPA and Benacre to Easton Bavents SPA due to eel impingement.
- 6.4.355. As described above, the Applicant has proposed the funding of two eel passes at Snape Maltings and Blythford Bridge, as recorded in the Draft Fish Impingement and Entrainment Monitoring Plan (FIEMP) [REP10-138]. This is to ensure compliance with the Eel Regulations 2009 and the Water Framework Directive, and in recognition of the importance of these species. Schedule 11 of the Draft DoO [REP10-082] secures the funding of these passes to be constructed by the EA. A Deed of Covenant (provided as [REP10-088]) on this matter was also signed between the two parties. The EA [REP10-193] confirmed at the end of the Examination that the completion of these two agreements has resolved the EA's concerns on these matters during the Examination.
- 6.4.356. The ExA has not relied upon the provision of these passes as mitigation in reaching its conclusion on potential AEOI on bittern through entrapment of eel as a prey species. The ExA does however consider the

measures secured (the LVSE and FRR), to be applicable to eels. The ExA acknowledges concerns raised by TASC. However, the ExA considers the Applicant's approach to determining likely eel numbers to present the worst-case, and on the basis of the evidence provided to the Examination, a likely low number of eels would be entrapped by the Proposed Development. The ExA is of the view that this would result in no negative effect on the numbers of glass eels or elvers migrating through the GSB such that it would have no discernible adverse effect on the bittern qualifying feature of the SPA. The ExA also notes NE's confirmatory advice in this regard.

Physical interaction with project infrastructure (entrapment of prey species) – little tern

- 6.4.357. See earlier paragraphs to this Chapter for more detailed reasoning. Overall, the ExA considers the SoS could conclude that there would be no AEOI on little tern of the Benacre to Easton Bavents SPA as a result of impacts on prey species from entrapment. However, in the absence of clear agreement on this conclusion from NE as ANCB together with the outstanding issues expressed by the EA (reported in Section 5.15 of this Recommendation Report), the ExA considers the SoS may wish to satisfy himself on these matters before reaching a conclusion.

Cumulative/in-combination effects

- 6.4.358. The Shadow HRA Report provides an in-combination assessment of the potential for AEOI on the qualifying features of the Benacre to Easton Bavents SPA arising from changes to water quality (marine) and alteration of coastal processes/sediment transport from the Proposed Development together with Suffolk SMP (see Tables 8.7 and 8.8 of [APP-145]).
- 6.4.359. The assessment concluded that based on the proposed coastal management approaches outlined within the preliminary assessment carried out for the SMP, none have potential to cause an in-combination effect due to changes in water quality or alteration of coastal processes/sediment transport on the Benacre to Easton Bavents SPA together with the Proposed Development [APP-145]. The Applicant stated that the changes to coastal processes/sediment transport due to the Proposed Development would be very small, localised and too far away to interact with the proposed coastal management approaches of the SMP. No AEOI in combination was predicted [APP-145].
- 6.4.360. The Applicant additionally considered cumulative/inter-project effects between different elements of the Proposed Development in [AS-174] and [REP7-279].
- 6.4.361. As described in earlier paragraphs of this Report, NE [RR-0878] (NE Issue 9) included this SPA in its list of sites for which it had outstanding concerns with regards to cumulative/inter-project and in-combination effects. However, the ExA also notes that by the end of the Examination, NE's [REP10-097] outstanding concern with regard to in-combination effects related to matters subject to further consents not yet determined,

including those of the EPs, and where any single site issues remained outstanding from the Proposed Development alone.

- 6.4.362. The ExA has considered whether any of the potential effect pathways identified above, for which a conclusion of no AEOI from the Proposed Development alone had been reached, could result in some effect on a European site and thus have the potential to act in combination with other plans or projects. Having considered the information provided by the Applicant and the views of IPs, the ExA is of the view that this would apply to the following potential effects: changes to water quality (marine) and alteration of coastal processes/sediment transport. The ExA is only aware of the Suffolk SMP as plan or project that could act in combination with the Proposed Development in this regard. Having considered the information available the ExA agrees with the Applicant that there would be no AEOI in combination to the Benacre to Easton Bavents SPA with the Suffolk SMP.
- 6.4.363. The ExA additionally notes that NE confirmed agreement with the Applicant's conclusion of no AEOI on the SPA as a result of both potential effects of marine water quality and alteration of coastal processes/sediment transport from the Proposed Development. This is reported in earlier paragraphs of this Report. However, there is an absence of clear agreement from NE with the Applicant's conclusion that there would be no AEOI on little tern of the SPA as a result of impacts on prey species from entrapment.
- 6.4.364. The ExA is not aware of any further in-combination plans or projects that could act in combination with the Proposed Development and considers, on the basis of the information provided to the Examination, that it could be possible to conclude no AEOI in combination. However, the ExA recommends that the SoS satisfy themselves regarding effects on little tern as a result of impacts on prey species from entrapment before a conclusion on in-combination effects is determined.

ExA's conclusion

- 6.4.365. Having considered the evidence before the Examination and the implications of the Proposed Development on this SPA in light of its conservation objectives, the ExA is of the view that it could be possible to conclude no AEOI on the Benacre to Easton Bavents SPA, either alone or in combination with other plans or projects. However, the ExA recommends the SoS needs to satisfy themselves on the outstanding matters.

Deben Estuary SPA and Ramsar

Introduction

- 6.4.366. The Deben Estuary SPA and Ramsar is located 22.2km from the MDS and 5km from the closest associated development site (freight management facility). The qualifying features for which the site is designated and which have been carried forward to consideration of AEOI are:

- Deben Estuary SPA
 - Avocet (wintering)
 - Dark-bellied Brent goose (wintering)
- Deben Estuary Ramsar
 - Criterion 6 species/ populations occurring at levels of international importance: dark-bellied Brent goose (wintering)

6.4.367. The Shadow HRA Report [APP-145] and Shadow HRA Addendums [AS-173] and [REP7-279] provided information for an appropriate assessment for the following potential impact pathway for all the qualifying features listed above:

- Disturbance effects on species' population (noise, light and visual).

Disturbance effects on species' population (noise, light and visual)

6.4.368. The Applicant concluded no AEoI for all qualifying features of the Deben Estuary SPA alone (paragraphs 8.6.9 to 8.6.10 [APP-145]) or in combination (paragraphs 8.6.11 to 8.6.13 [APP-145]) from disturbance effects.

6.4.369. The Applicant considered that the distance of the Proposed Development from the Deben Estuary SPA means disturbance of the qualifying features is highly unlikely. In addition, when considering the context of the existing vehicle movements on the A14, increased vehicle movements during construction, operation and decommissioning are considered by the Applicant to be of little consequence in terms of disturbance to the qualifying features.

6.4.370. Artificial lighting sources would be introduced, but the Applicant stated [APP-145] that lighting designs would ensure minimal light spillage, with reference to the CoCP [REP10-072]. The CoCP [REP10-072] states that site lighting must be installed in accordance with section 1.3 of the Lighting Management Plan [REP10-033] and must be positioned and directed to minimise intrusion into ecologically sensitive areas. The Lighting Management Plan is secured by Requirement 14 of the dDCO [REP10-009], while the CoCP is secured by Requirement 2. Both would be certified documents under Schedule 24 of the dDCO [REP10-009].

6.4.371. The Shadow HRA Report states (paragraph 8.7.3 to 8.7.4 [APP-145]) that although the Ramsar qualifying criteria are different from those of the SPA, the bird species cited as a qualifying feature under Ramsar Criterion 6 are also qualifying features of the SPA. Thus, the assessment above in relation to the dark-bellied brent goose qualifying feature of the Deben Estuary SPA, and the conclusion of no AEoI is also considered to apply to the Ramsar. These conclusions were not disputed by IPs, including NE, during Examination.

Cumulative/in-combination effects

6.4.372. The Shadow HRA Report provides an in-combination assessment of the potential for AEoI on the qualifying features of the Deben Estuary SPA arising from disturbance from the Proposed Development together with

operations and maintenance marine licence applications for the East Anglia ONE offshore wind farm (Table 8.9 [APP-145]).

- 6.4.373. The assessment concluded that with the adoption of the proposed mitigation measures relating to lighting, there was no potential for an AEOI on the Deben Estuary SPA in combination with other plans or projects. The Applicant explains that construction of the cable route for East Anglia ONE has been completed and the potential for disturbance from operational and maintenance activities for East Anglia ONE "*...will be considerably lower*". Furthermore, the nearest seaward point of the Proposed Development is located approximately 48km from the wind farm array.
- 6.4.374. The Shadow HRA Report [APP-145] states at paragraph 8.7.4 that the in-combination assessment and conclusion of no AEOI in combination as presented for the Deben Estuary SPA is also considered to apply to the Ramsar, for the same reasons outlined above.
- 6.4.375. These conclusions were not disputed by NE during the Examination. Additionally, these sites were not raised by NE as a site of concern in relation to cumulative and in-combination effects (NE Issue 9) [RR-0878] and [REP10-097] (epage 17).
- 6.4.376. Having considered the extent of the likely impacts from the East Anglia ONE project, together with the mitigation measures secured to ensure no disturbance to the qualifying features from the Proposed Development, the ExA is satisfied that with the implementation of the mitigation measures as secured there would be no AEOI for the qualifying features of the Deben Estuary SPA and Ramsar from the disturbance of species' populations as a result of the Proposed Development in combination.

ExA's overall conclusion on Deben Estuary SPA and Ramsar

- 6.4.377. Having considered the evidence before the Examination and the implications of the Proposed Development on this SPA and Ramsar in light of its conservation objectives, the ExA is of the view that there would be no AEOI to the Deben Estuary SPA and Ramsar, either alone or in combination with other plans or projects.

Dew's Ponds SAC

Introduction

- 6.4.378. Dew's Ponds SAC is located 11.2km from the MDS and 1.7km from the closest associated development site (Northern Park and Ride). The qualifying feature for which the site is designated, and which has been carried forward to consideration of AEOI is:
- Great crested newt
- 6.4.379. The Shadow HRA Report [APP-145] and Shadow HRA Addendums [AS-173] [REP7-279] provided information for an appropriate assessment for the following potential impact pathway for the qualifying feature:

- alteration of local hydrology and hydrogeology

Alteration of local hydrology and hydrogeology

- 6.4.380. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI on the Dew's Pond SAC from the alteration of local hydrology and hydrogeology as a result of Proposed Development, either alone or in combination.

Cumulative/ in-combination effects

- 6.4.381. The Applicant's screening exercise did not identify any plans or projects that may have an in-combination effect with the Proposed Development on Dew's Ponds SAC [APP-145]. In-combination effects were therefore not taken forward to AEOI stage in the Applicant's assessment for Dew's Pond SAC.
- 6.4.382. This approach and conclusion was not disputed by NE during the Examination. Additionally, this SAC was not raised by NE as a site of concern in relation to cumulative and in-combination effects (NE Issue 9) [RR-0878] and [REP10-097] (epage 17).
- 6.4.383. The ExA is not aware of any plans or projects that could act in combination to result in alterations of local hydrology such that it could have an AEOI to the great crested newt qualifying feature of the Dew's Pond SAC.

ExA's conclusion

- 6.4.384. Having considered the evidence before the Examination and the implications of the Proposed Development on this SAC in light of its conservation objectives and subject to the implementation of the mitigation measures as secured, the ExA is of the view that there would be no AEOI to the Dews Pond SAC, either alone or in combination with other plans or projects.

Humber Estuary SAC

- 6.4.385. The Humber Estuary SAC is located approximately 162.9km from the Proposed Development. The only qualifying feature carried forward by the Applicant to the consideration of AEOI were grey seal. As noted above, NE also stated that 'water quality effects – marine environment' should be considered on the river and sea lamprey qualifying features of the SAC. The ExA has decided to consider AEOI to these three qualifying features.

Grey seal

Introduction

- 6.4.386. The following effects were screened in to consideration for AEOI on the grey seal qualifying feature of this SAC [APP-145] (Section 9.4).
- Water quality effects (marine environment);

- Disturbance effects on species' population (underwater noise);
- Physical interaction between species and project infrastructure - effects on prey species; and
- Physical interaction between species and project infrastructure - collision risk with vessels.

6.4.387. The Applicant's Shadow HRA Report [APP-145] and Shadow HRA Addendums [AS-173] and [REP7-279] acknowledged evidence of connectivity between the Proposed Development and the GSB; however, it concluded no AEoI for these effects, either from the project alone, or in combination with other plans or projects.

Baseline data – reference populations

6.4.388. During the Examination, the Applicant provided an update to the reference populations used in the marine mammal assessments since the Shadow HRA Report [APP-145] and first Shadow HRA Addendum [AS-178] were prepared by the Applicant. The updated reference populations were included in Table 6.2 of the Shadow HRA Third Addendum [REP7-279]. The Applicant's marine mammal assessments in Section 9 of the Shadow HRA Third Addendum were based on the updated reference populations, but the previous reference populations were also provided for a like-for-like comparison. In response to the ExA's Rule 17 request [PD-054], the Applicant provided a tabulated summary of the potential effects of the Proposed Development on grey seal of the Humber Estuary SAC alone and in combination with other plans and projects – a comparison of the previous and updated reference populations (see Table 2 of Appendix B [REP10-168]).

Water quality effects - marine environment

6.4.389. Discussions relating to marine water quality are detailed earlier in this chapter. The Applicant's information to inform an appropriate assessment of this effect is included in Section 9.4(a) of the Shadow HRA Report [APP-145], and also at Section 9.4(d) and Table 9.23 in respect to in-combination effects.

6.4.390. The Applicant excluded AEoI arising from marine water quality effects during construction and decommissioning, both directly to grey seal and indirectly through their prey species. This was on the basis of literature studies and evidence, predicted effect areas of suspended sediment dispersion and remobilisation of contaminants for the Proposed Development, and the number of grey seal likely to be impacted by marine water quality effects arising from the Proposed Development (ie 0.3 individuals; representing up to 0.003% of the reference population²¹, or up to 0.005% of the estimated Humber Estuary SAC population). The Applicant concluded the limited dispersion area, rapid dispersion and material being quickly deposited, along with the relatively low

²¹ Taking account of the updated reference populations [REP7-279], the Applicant confirmed this would still equate to 0.3 individuals; representing up to 0.0035% of the updated reference population, or up to 0.0057% of the updated Humber Estuary SAC count [REP10-168].

contaminant levels in sediments, potential effects on marine mammals as a result of increased suspended sediments and contaminant re-mobilisation are unlikely.

- 6.4.391. The Applicant also excluded AEOI during operation due to potential marine water quality effects arising from the chemical and thermal discharges, both directly to grey seal and indirectly through effects on their prey species. This conclusion was reached on the basis of literature studies and evidence, predicted effect areas for the thermal and chemical plume, together with effects on prey species of grey seal, and the number of grey seal likely to be impacted (ie for the assessment of the discharge of the thermal plume on grey seals showed that the number of foraging grey seal that could be present in the maximum predicted surface area for a 2°C maximum allowed concentration (MAC) rise in temperature (an area of 224.6 km²) has been estimated as 8.5 individuals, which represents up to 0.1% of the reference population (or 0.16% of the updated Humber Estuary SAC site population) [REP10-168]).

Change 19

- 6.4.392. Section 9.1 of the Shadow HRA Third Addendum [REP7-279] included an assessment of AEOI to the grey seal qualifying feature of the Humber Estuary SAC associated with Change 19, the desalination plant. The effects considered included changes in suspended sediments during dredging and increases in heavy metal concentrations.
- 6.4.393. As noted above, this assessment included updated reference populations for grey seal. The Applicant confirmed that the changes in suspended sediment and increases in heavy metal concentrations as a result of change 19 would not result in an increase to the maximum area over which changes in marine water quality could occur due to the Proposed Development. Thus, the assessment envelope in the Shadow HRA Report remained unchanged.
- 6.4.394. In respect of updated reference populations, the Applicant provided updated figures, which stated:

"The total number of foraging grey seal that could be present in the maximum area of 7.26km² is 0.3 individuals (based on worst-case density estimate used in Shadow HRA Report [APP-145] of 0.038 grey seal per km²), this represents:

up to 0.003% of the previous South-East England Management Unit reference population of 8,716 grey seal (or up to 0.005% of the previous estimated Humber Estuary SAC population of 6,526 grey seal based on the count at the Donna Nook haul-out site).

up to 0.004% of the updated South-East England Management Unit reference population of 8,667 grey seal (or up to 0.006% of the updated estimated Humber Estuary SAC population of 5,265 grey seal based on the latest count at the Donna Nook haul-out site).

Therefore, due to the very small number of grey seal and the very low percentage of the SAC population that could be affected, no adverse effects on the integrity of the Humber Estuary SAC are predicted due to changes in water quality from the Sizewell C project in relation to the conservation objectives for grey seal."

- 6.4.395. The Shadow HRA Third Addendum [REP7-279] included further assessment of the changes in suspended sediments during dredging and increases in heavy metal concentrations in the discharge from the desalination plant, concluding no AEOI alone or in combination. This was on the basis of literature reviews of effects, predicted effects from the Proposed Development (including discharges and suspended sediments) and the likely numbers of grey seal affected.
- 6.4.396. NE [RR-0878] and [REP10-097] confirmed during the Examination it was satisfied with the Applicant's conclusions of no AEOI for grey seal qualifying feature of the Humber Estuary SAC associated with marine water quality effects.
- 6.4.397. On the basis of the information before the Examination, including the nature and extent of predicted effects, together with predicted low numbers of grey seal (and percentage of reference populations) that would be affected by such impacts, the ExA having considered how these may affect the conservation objectives, is satisfied that an AEOI to grey seal of the Humber Estuary SAC from water quality effects can be excluded.

Disturbance effects on species' population (underwater noise)

- 6.4.398. The potential for physiological (eg lethal, physical injury and auditory injury) and behavioural (eg disturbance and masking of communication) effects on marine mammals and their prey species from underwater noise during construction and decommissioning was assessed in Sections 9.4b of the Shadow HRA Report [APP-145]. This was supported by the Underwater Noise Effects Assessment for Sizewell C: Edition 2 [APP-329]. The potential noise sources assessed were impact piling, wet drilling, dredging and unexploded ordnance (UXO) detonations²².
- 6.4.399. With regards to effects on prey species of grey seal, the Shadow HRA Report [APP-145] considered those fish species that are hearing

²² The application dDCO allowed for clearance activities including potential UXO detonations. However, the MMO [RR-0744] did not consider that any UXO campaign should be authorised through conditions on the DML as they are high risk activities which require detailed, complex impact assessments, conditions and enforcement. It also noted that only a hypothetical UXO clearance situation had been considered by the Applicant and that the maximum parameters of UXO detonation activities should be clearly defined in the DCO/DML. NE [RR-0878] similarly advised that the UXO assessment should represent the worst-case scenario in terms of potential impacts and that UXO detonations should be included in the in-combination assessment. In response, the Applicant removed UXO clearance activities from the authorised development in Revision 3 of the dDCO [AS-144]; they would be consented via a separate Marine Licence should they be required.

specialists and prey of grey seal. The Applicant concluded that any effects on prey species are likely to be intermittent, temporary and highly localised, with potential for recovery following cessation of the disturbance activity. The Applicant also considered that any permanent loss or changes of prey habitat would represent a small percentage of the potential habitat in the surrounding area and ultimately concluded no AEOI as a result of noise disturbance to prey species.

- 6.4.400. In respect of underwater noise, the Applicant relied upon a Marine Mammal Mitigation Protocol (MMMP) [APP-331] to conclude no AEOI. The Applicant submitted a draft MMMP [APP-331] with the application to outline the monitoring and mitigation requirements to
- "ensure, as far as practically possible, that marine mammals occurring around the proposed development site are not exposed to potentially damaging levels of underwater noise during piling operations, with its primary focus on avoiding, wherever possible, injurious impacts during piling".*
- 6.4.401. The draft MMMP outlined the approach to mitigation to reduce the risk of permanent auditory injury in marine mammals during piling. The final MMMP would be developed in the pre-construction period and based upon best available information, latest guidance and detailed project design.
- 6.4.402. The MMMP was revised numerous times during the Examination to reflect the revised marine freight options (Change 2), to respond to IPs comments and to capture minor updates²³. A condition requiring a MMMP to be submitted to and approved by the MMO in the event that impact piling is required was incorporated into the dDCO at DL2²⁴. The condition was revised at DL7 [REP7-006] to require the MMMP that would be submitted to and approved by the MMO to be in general accordance with the draft. The condition was included at Schedule 21 (DML), Part 3, Condition 36(3)(b) of Revision 11 of the dDCO [REP10-009] for any impact piling for the construction of Work no. 1A(l) (permanent BLF) and 1A(aa) (temporary marine bulk import facility). The MMMP was listed as a certified document in Schedule 24 of the dDCO and is to be certified under Article 80 [REP10-009].
- 6.4.403. In respect of the potential for auditory injury (permanent loss of hearing sensitivity - permanent threshold shift (PTS) and temporary loss in hearing sensitivity - temporary threshold shift (TTS), the Applicant introduced mitigation in the form of a hydrohammer in the Shadow HRA Addendum [AS-173]; this has two hydraulic plungers filled with water designed to dampen impact and reduce the source noise of impact piling. The use of a hydrohammer was subsequently incorporated in the draft MMMP Revision 2 [REP3-019]. NE [REP2-153] welcomed the use of a hydrohammer to minimise the amount of noise introduced into the marine environment and was satisfied that noise increases could be

²³ Revision 2 [REP3-019], Revision 3 [REP8-060] and Revision 4 [REP10-028]

²⁴ Schedule 20 (DML), Part 3, Paragraph 40(2)(b) [REP2-013]

successfully mitigated within the 500m mitigation zone outlined in the MMMP.

6.4.404. The final draft MMMP is that submitted at DL10 [REP10-028].

Change 19

6.4.405. The Shadow HRA Third Addendum [REP7-279] also included information to inform an appropriate assessment in respect of noise disturbance associated with dredging and also during removal of the desalination plant. The Applicant concluded that the potential distance from underwater noise for both activities would remain within the worst-case for underwater noise disturbance during the construction phase as previously assessed in the Shadow HRA Report [APP-145] and the Shadow HRA Addendum [AS-178].

6.4.406. As noted above, the Shadow HRA Third Addendum included updated reference populations for grey seal and therefore also included an update to the predicted numbers of grey seal affected for potential noise effects (including impact piling) and compared these with the original Shadow HRA Report assessment. These are presented in Section 9.1(a)(ii) of the Shadow HRA Third Addendum and in Table 2, Appendix B of [REP10-168]. The updated reference populations showed very little change compared to the original assessment and the Applicant concluded no AEOI to grey seal of the Humber Estuary SAC.

6.4.407. The ExA is satisfied that proposed mitigation measures included within the draft MMMP [REP10-028] are sufficient to mitigate injurious effects from underwater noise during piling operations and that their delivery is secured through Schedule 20 (DML), Condition 36(3)(b) of the dDCO [REP10-009]. We note NE's confirmation that they are satisfied with the draft MMMP [REP8-298h].

6.4.408. The ExA notes that underwater noise from piling would be temporary and intermittent and that grey seal numbers in and around the Proposed Development MDS are low.

6.4.409. We are satisfied that the Applicant has demonstrated that there is unlikely to be any significant disturbance or barrier effects, or temporary auditory injury effects for foraging grey seal associated with drilling, dredging (for both MDS and desalination plant), and the removal of the desalination plant. Additionally, there would be no significant effects to prey species of grey seal from noise effects. Together with the predicted low numbers of grey seal (and percentage of reference populations) that would be affected by such impacts, the ExA is content to conclude no AEOI to the Humber Estuary SAC grey seal qualifying feature from disturbance arising from underwater noise with the mitigation measures as secured.

6.4.410. The ExA notes NE [EV-160] provided agreement with the Applicant's assessment and conclusion of no AEOI of the Humber Estuary SAC due to noise, light and visual disturbance, and also confirmed its overall

agreement with the conclusion of no AEoI to the grey seal of the Humber Estuary SAC in [REP7-294] and [REP10-199].

Physical interaction between species and project infrastructure – entrapment of prey species

6.4.411. The Applicant's assessment of physical interaction between species and project infrastructure considered the entrapment of prey species. This was informed by the assessment of entrapment of fish, which, as detailed earlier in this Chapter, was subject to extensive discussions during the Examination in relation to entrapment of prey for bird species.

6.4.412. The Applicant's Shadow HRA Addendum [AS-173] superseded the assessment and conclusions in the Shadow HRA Report [APP-145] for impingement of prey species for grey seal from the Humber Estuary SAC, due to updated impingement calculations. The Shadow HRA Addendum [AS-173] concluded that

"local depletion due to impingement is orders of magnitude below natural variability in abundance to which predator-prey relationships are adapted to. Therefore, impingement from Sizewell B and Sizewell C would not have any adverse food-web effects on qualifying interest features of European sites".

6.4.413. It also stated that *"The revised predictions of fish impingement do not alter the conclusions of the Shadow HRA Report (Doc Ref. 5.10) with respect to European sites with grey seal, harbour porpoise or harbour seal qualifying interest features."*

6.4.414. This position was reiterated by the Applicant in [REP6-016] and [REP7-073]. The Shadow HRA Third Addendum [REP7-279] also considered at Section 9.1(a)(iv) the potential for entrainment of prey species of grey seal arising from the desalination plant abstraction, together with consideration of any cumulative effects with other elements of the Proposed Development, such as the operation cooling water. The Applicant concluded that:

"The low abstraction rate of the desalination plant, less than 0.09% of the main cooling water abstraction during peak freshwater demand during the construction phase, and no overlap with the main cooling water flows would mean losses of larvae would be indiscernible relative to high rates of natural mortality. Therefore, entrainment is predicted to have negligible effects on fish populations. Any effects are not significant relative to high levels of natural variability.

The very small abstraction rates relative to tidal exchange in the open coastal environment would result in negligible losses in the availability of prey resources and the effects of any localised depletion would not be significant.

Therefore, no adverse effects on the integrity of the Humber Estuary SAC are predicted due to entrainment of prey species as a result of the water abstraction, including the abstraction by the desalination plant, in relation to the conservation objectives for grey seal."

- 6.4.415. Notwithstanding the comments raised by TASC, the ExA is satisfied that based on the evidence presented regarding prey depletion and the consequential effect on grey seal of the Humber Estuary SAC, and considering measures secured (including the FRR and LVSE), the impacts would not be of a magnitude that would have an AEOI of grey seal of the Humber Estuary SAC.
- 6.4.416. The ExA also notes NE's agreement with the Applicant's conclusion in this regard [REP7-294].

Physical interaction between species and project infrastructure – collision risk with vessels

- 6.4.417. The Shadow HRA Report [APP-145] identified that construction, operation and decommissioning activities associated with the Proposed Development could result in a potential increase in collision risk between grey seals and vessels. The Applicant concluded there would be no AEOI during construction and decommissioning, on the basis of the number of grey seals that could be impacted (0.1 individuals, expressed as 0.0001% of the South-East England Management Unit reference population and 0.0002% of the Humber Estuary SAC population²⁵) and the relatively small increase in vessel movements compared to existing (180 deliveries between 31 March and 31 October). The Applicant [APP-145] reaches the same conclusion for the operational phase on the same basis, stating that the number of deliveries would be significantly reduced during this phase (a worse-case of 6 to 12 deliveries at the BLF over a 60 year period).
- 6.4.418. The Applicant [REP7-279] stated that the dredge area (0.0026km²) for offshore infrastructure associated with the desalination plant is within the area of 6.5km² used for the assessment of increased vessel collision risk in the Shadow HRA [APP-145] and concluded that there would be no additional risk associated with Change 19. The Shadow HRA Third Addendum states that the increased number of vessels would be small and also slow moving. It also referenced the speed restrictions of <10 knots within the CoCP (final version is [REP10-072]²⁶). The Applicant [REP7-279] maintained the conclusion that there would be no AEOI.
- 6.4.419. NE (NE Issue 7) [RR-0878] initially raised concerns about the potential for some built elements of the Proposed Development to present a physical interaction (ie collision) risk to mobile species, including marine mammals. The Applicant [REP8-094] reiterated that it has provided information about collision risk with vessels as part of the Shadow HRA Report and that no further assessment was planned in relation to marine mammals. NE [REP8-094] confirmed that it had no further concerns

²⁵ Taking account of the updated reference populations [REP7-279], the Applicant confirmed this would still equate to 0.1 individuals; representing up to 0.0001% of the updated reference population, or up to 0.0002% of the updated Humber Estuary SAC count [REP10-168].

²⁶ The speed restriction measure is included at epage 113 of the final CoCP [REP10-072]. The CoCP is secured by Requirement 2 of the DCO and is also listed as a certified document in Schedule 24 of the DCO [REP10-009].

about physical interaction between project infrastructure and marine mammals having reviewed the information submitted by the Applicant.

- 6.4.420. With regard to Change 19, NE [REP8-298i] stated that it had no comment to make on the potential for physical interaction between species and project infrastructure, including marine mammals.
- 6.4.421. NE [REP10-097] did not dispute the Applicant's conclusion of no AEOI arising from the potential for physical interaction between grey seal and vessels. The MMO [REP2-082], [REP10-107] and [REP10-195] also did not dispute the Applicant's conclusion of no AEOI in respect of physical interaction between species and project infrastructure.
- 6.4.422. Having considered the implications of the Proposed Development on this SAC in light of its conservation objectives, the ExA is of the view that the available information is sufficient to demonstrate that there would be no AEOI for grey seal of the Humber Estuary SAC. In reaching this conclusion the ExA has had regard to the small number of grey seal that are predicted to be impacted by collision risk and the relatively small increase in vessel movements compared to the existing situation. The ExA notes that this conclusion has not been disputed by NE [REP10-097] or the MMO [REP2-082], [REP10-107] and [REP10-195].

Cumulative/in-combination effects

- 6.4.423. The Shadow HRA Report provided an in-combination assessment of the potential for AEOI on the grey seal qualifying feature of the Humber Estuary SAC arising from changes to marine water quality, underwater noise disturbance, and increased vessel collision risk from the Proposed Development together with the plans/projects identified in Tables 9.23, 9.24 and 9.25 of [APP-145].
- 6.4.424. The Applicant also considered cumulative/inter-project effects between different elements of the Proposed Development in [AS-174] and [REP7-279]. The Applicant confirmed that the updated marine mammal reference populations and seal counts provided in [REP7-279], as well as impacts resulting from Change 19, did not alter the conclusions of no AEOI presented in the Shadow HRA Report and Shadow HRA Addendum for the grey seal qualifying feature of the Humber Estuary SAC.
- 6.4.425. With regards to marine water quality, none of the identified plans or projects were considered by the Applicant to have potential for in-combination effects on harbour seal from changes in marine water quality.
- 6.4.426. With regards to potential noise disturbance effects and collision risk, noting the commitments in the draft MMMP [REP10-028] and taking into account the short duration of piling for the Proposed Development and the estimated number of grey seal that could be at increased collision risk in combination with the other plans/projects (estimated as 0.4 individuals; representing 0.005% of the South-East England reference population or up to 0.006% of the Humber Estuary SAC count based on

the reference populations set out in [APP-145]²⁷), the Applicant concluded there was no potential for an AEOI on grey seal of the Humber Estuary SAC in combination with other plans or projects [APP-145].

- 6.4.427. As noted above, NE [RR-0878] (Issue 9) identified this European site in its list of sites for which it had outstanding concerns with regards to cumulative/inter-project and combination effects. However, the ExA understands that the outstanding concerns of NE [REP10-097] relate to cumulative/in-combination effect of the Proposed Development with other consents required, including the WDA permit from the EA which relates to marine water quality, and also where NE considers there to be outstanding concerns regarding effects from the Proposed Development alone. Although the Humber Estuary SAC is listed in NE's Issue 9, the ExA notes that NE [EV-160], [REP7-294] and [REP10-199] has also confirmed its agreement with the Applicant's conclusion of no AEOI to the grey seal qualifying feature of the Humber Estuary SAC for all potential effect pathways.
- 6.4.428. The ExA is of the view that the Applicant has assessed potential in-combination adverse effects on the grey seal qualifying feature from the Proposed Development. Based on the evidence submitted to the Examination, the ExA is of the view that any cumulative/in-combination effect with subsequent consents would not result in an AEOI to the Humber Estuary SAC.

ExA's conclusion on grey seal feature of the Humber Estuary SAC

- 6.4.429. The ExA notes that NE agree with the Applicant's assessment of no AEOI for the Humber Estuary SAC in [EV-160], [REP7-294], [REP8-298h] and [REP10-199]. The MMO [REP7-136] also confirmed that it considered the assessment for seals to be appropriate and that there would be no AEOI for the Humber Estuary SAC; however, it deferred to NE for further comments on matters of HRA.
- 6.4.430. The ExA considered the implications of the Proposed Development on the conservation objectives for this SAC and are satisfied that the Applicant's assessment, coupled with mitigation secured as described above, demonstrates that the Proposed Development would not affect the extent and distribution of the grey seal qualifying feature of this European site. The ExA is therefore of the view that there would be no AEOI to grey seal of the Humber Estuary SAC from the Proposed Development, either alone or in combination with other plans or projects.

Migratory fish – river and sea lamprey

Introduction

²⁷ Taking account of the updated reference populations [REP7-279], the Applicant confirmed this would still equate to 0.4 individuals; representing up to 0.005% of the updated reference population, or up to 0.0076% of the updated Humber Estuary SAC count [REP10-168].

- 6.4.431. The Shadow HRA Report [APP-145] provided information for an appropriate assessment in relation to 'physical interaction with project infrastructure' (entrapment²⁸) during operation for the river and sea lamprey qualifying features of this SAC. In light of Change 19, the Applicant also provided information for an appropriate assessment in relation to this impact pathway for operation of the desalination plant during the construction phase (Appendix A of [REP10-168]).
- 6.4.432. The Applicant did not consider there to be 'water quality effects (marine environment)' on the river and sea lamprey qualifying features; however, as noted above, NE (NE Issue 30) [RR-0878] (epage 283) raised this as a potential LSE. The ExA decided to also carry this effect forward to consideration of AEoI.

Physical interaction between species and project infrastructure

- 6.4.433. The potential impacts of entrapment²⁸ of sea lamprey and river lamprey of the Humber Estuary SAC were assessed by the Applicant in the Shadow HRA Report [APP-145] (supported by Report TR406 'Sizewell C Impingement Predictions Based Upon Specific Cooling Water System Design [APP-326]). This concluded that there would be no AEoI of the Humber Estuary SAC due to entrainment of river and sea lamprey during the operation of the Proposed Development.
- 6.4.434. The Applicant's Shadow HRA Addendum [AS-173] contained revised predictions of fish entrapment and consideration of potential effects on selected fish stocks at Sizewell. This was supported by supplementary information on fish assessments [AS-238]²⁹. The Applicant's Shadow HRA Report Addendum [AS-173] and Shadow HRA Third Addendum [REP7-279]³⁰ concluded the revised predictions of fish impingement and Changes 2 and 19 would not alter the conclusions of the Shadow HRA Report [APP-145] (ie there would be no AEoI).
- 6.4.435. In Appendix A of [REP10-168], the Applicant considered fish entrapment from the seawater intake for the proposed desalination plant and

²⁸ Combined impingement and entrainment. Defined in [REP5-112] as: "*Entrainment is the process by which organisms that are small enough to pass through the filtration screens transit the entire cooling water system, through the condensers and are discharged in the main cooling water discharge at the outfall 3km offshore. In contrast, impingement is the process by which organisms that are too large to pass through the filtration screens are removed from the cooling water flow and, instead, transit through the Fish Recovery and Return (FRR) system before being returned to sea via the FRR outfall (some 400 m from shore).*"

²⁹ [AS-238] comprised a number of reports, including of particular relevance to entrapment: Revision 7 of TR406 - Impingement predictions based upon specific cooling water system design, which was revised in response to RRs; and Revision 4 of TR SPP099 – Predicted performance of the SZC low velocity side entry intake heads compared with the Sizewell B intakes.

³⁰ The Shadow HRA Report Third Addendum [REP7-279] confirms: (i) that the 2mm mesh screen at the desalination plant would preclude even the smallest individuals being entrained; and (ii) that biota which are entrained for the desalination plant would not be drawn into the system as the mesh is at the headworks, therefore there would be no impingement.

concluded that with the mesh screen, there would be no AEOI on the Humber Estuary SAC due to entrainment of river and sea lamprey. The Applicant confirmed there was no potential for combined entrapment effects from the desalination plant and operational cooling water system, as the desalination plant will only operate for part of the construction phase (Appendix A of [REP10-168]).

6.4.436. The Shadow HRA Report [APP-145] reported that neither sea nor river lamprey were detected in the entrainment sampling and therefore, their respective populations are not considered to be at risk from entrainment.

6.4.437. This was disputed by Dr Henderson on behalf of TASC, who considered that sea and river lamprey do occur at Sizewell, would be entrained and that the impact on these species (amongst numerous other small, thin and juvenile fish species) had therefore been underestimated [REP2-481h], [REP7-247], [REP8-284] and [REP10-425]. Dr Henderson considered that lamprey could not support any additional mortality without impacts on their populations [REP8-284].

6.4.438. The main issues raised in relation to the assessment of entrapment of all fish species are detailed in Section 5.15 of this Recommendation Report; however, in brief relate to:

- disagreement over EAVs;
- the potential for Comprehensive Impingement Monitoring Programme (CIMP) data from Sizewell B to result in under-estimations of fish entrapment for Sizewell C;
- the scale of assessment;
- the effectiveness of LVSE at the cooling water intake heads;
- the deployment of an Acoustic Fish Deterrent (AFD) system; and
- monitoring to assess the efficacy of the intake head and the fish recovery and return system.

6.4.439. It should be noted that whilst the EA expressed concerns over fish entrapment calculations, it deferred to NE's opinion with regards to impacts on European sites [REP7-131]. Similarly, the MMO deferred to NE regarding the overall conclusions of the HRA [REP2-082]. As noted above, Dr Henderson on behalf of TASC raised concerns regarding the Applicant's assessment of impacts to fish and considered that the impacts been underestimated [REP2-481h][REP7-247][REP8-284][REP10-425].

6.4.440. The bearing of these issues on the HRA are discussed, where relevant, below.

EAVs

6.4.441. The majority of fish entrapped are expected to be juvenile stages. EAVs are used to convert an annual rate of loss of predominantly juvenile fish due to entrapment into an annual rate of loss of fish that would naturally survive to maturity and join the spawning population (Appendix F of [REP6-024]).

- 6.4.442. The EA [RR-0373], [REP2-135] and [REP7-132] raised significant concerns with the Applicant's EAV method, which were shared by NE (NE Issue 30) [RR-0878][REP5-160] and the RSPB/SWT [REP2-506], [REP3-074] and [REP6-046]. However, the EA confirmed that its concerns regarding the EAVs applied in assessment relate only to repeat spawners [REP2-135], [REP5-150] and [REP7-131].
- 6.4.443. The Applicant has confirmed [Appendix F of REP6-024], [REP6-028] and [REP8-119] that lamprey are semelparous species that spawn once then die and that an EAV of 1 has been applied for lamprey which assumes every fish entrapped would normally survive to maturity and join the spawning stock. EAV of 1 is the theoretical maximum, as confirmed by the EA (DL7 Submission - Post Hearing submissions including written submissions of oral case [REP7-131]).
- 6.4.444. The ExA is content that the EAV method applied by the Applicant for the assessment of impacts on sea and river lamprey of the Humber Estuary SAC is precautionary and assesses a theoretical maximum, on the basis that the Applicant has assumed that every Annex II species (including river and sea lamprey) impinged at Sizewell is equivalent to a spawning adult.

Scale of assessment

- 6.4.445. EAV losses, expressed as an annual rate, are compared to the relevant SSB or population ([REP6-028] and Appendix F of [REP6-024]).
- 6.4.446. Concerns with the scale of assessment used by the Applicant in its assessment of impacts on fish were raised by NE [RR-0878][REP2-153][REP5-160], the EA [RR-0373][REP2-068][REP2-135][REP5-150][REP7-132], the RSPB/SWT [REP3-074][REP6-046][REP7-154] and Dr Henderson on behalf of TASC [REP2-481h][REP7-247][REP8-284][REP10-425]. A summary of these concerns can be found in Section 5.15 of this recommendation report.
- 6.4.447. With regards to the scale of assessment for the HRA, the Applicant explained [APP-145] [APP-321] [REP6-016] that:
- For river lamprey, predicted impingement losses were compared against a spawning run size estimate for the Humber catchment made in 2018 by the Humber International Fisheries Institute.
 - For sea lamprey, there is no stock assessment available - therefore the impingement assessment was based on the impingement data collected for Sizewell B where a single sea lamprey was found to be impinged in 2015.
- 6.4.448. The EA has confirmed it agreed with the stock comparator used for the assessment of effects on river lamprey [REP2-135]; however, it did not refer to sea lamprey.
- 6.4.449. Although NE has made numerous representations regarding the scale of assessment for fish, it has not specifically identified its concerns in relation to river and sea lamprey of the Humber Estuary SAC. In addition,

the EA has not indicated that an alternative comparator is necessary for sea lamprey.

6.4.450. The ExA notes the Applicant's explanation [REP6-016] that SACs designated for sea lamprey are found all along the European coast and that geographically, those on the Dutch coast are nearer to the Proposed Development than the Humber Estuary. Furthermore, that sea lamprey do not home to natal rivers; therefore, mortality could not be attributed to any specific site of origin.

6.4.451. Taking this into consideration, alongside the EA's agreement with the river lamprey stock comparator, the ExA is content with the scale of assessment undertaken for sea and river lamprey of the Humber Estuary SAC.

Impingement calculations

6.4.452. The Shadow HRA Report [APP-145] explains that

"if the predicted impingement of a particular species is greater than 1% of the SSB[Spawning Stock Biomass] or - if SSB has not been established for a particular species - fishery landings, further investigation is warranted to determine whether the effect could be significant at a population level."

6.4.453. For river lamprey, the Applicant [AS-173] [Revision 7 of TR406 in AS-238] calculates expected annual impingement losses (with the proposed LVSE intake head design and FRR mitigation) of 215 individuals, equating to 0.03% of the estimated lamprey population in the Humber catchment. It considers this to be negligible.

6.4.454. For sea lamprey, the Applicant [AS-173], [AS-238] and [REP6-016] estimates unmitigated impingement losses to be five fish per annum, dropping to two fish with the proposed LVSE intake head design, and dropping to less than 0.13 fish per annum when considering survival through the fitted FRR (ie taking account of mitigation). The Applicant considers this to be negligible for a stock that is widespread throughout the North Sea. The EA critiqued the report [REP6-016] in [REP7-133] and information on the issues the EA considers to be outstanding are reported in Section 5.15 of this recommendation report.

6.4.455. Dr Henderson on behalf of TASC considered that the number of lamprey that would be impinged had been underestimated [REP7-247].

6.4.456. A number of concerns were raised during the Examination regarding the effectiveness of the LVSE design and the FRR system (see Section 5.15 of this Report). The Applicant's report entitled 'Quantifying uncertainty in entrapment predictions for Sizewell C' [REP6-028] assumed no benefit from the LVSE heads and concluded that for all species, effects are below the thresholds that would trigger further investigation for potential population level effects. It also concluded that for river lamprey, the FRR may be more effective than had been assumed in the initial DCO assessments. The MMO [REP8-164] agreed that the conclusions of the

report were appropriate and that the Applicant's analysis in [REP6-016] confirms that the local impact from fish entrapment is not significant, even when assuming zero benefit from the LVSE and FRR.

- 6.4.457. The Applicant stated [REP7-279] and [REP10-168] that because the mesh for the desalination plant abstraction is at the headworks, biota which are not entrained are not drawn into the system at all (i.e. there is no impingement), and this does not, therefore, require assessment in the HRA.

Monitoring

- 6.4.458. As noted in Section 5.15 of this Report, the Applicant submitted a draft FIEMP at DL7 (Revision 1) [REP7-077]. This was revised at DL8 (Revision 2) [REP8-112] and DL10 (Revision 3) [REP10-138]. The plan was listed as a certified document in Schedule 24 of the dDCO and is to be certified under Article 80 [REP10-009] and Condition 44 of the DML [REP10-009] revised to confirm that monitoring must be in general accordance with the draft FIEMP.

- 6.4.459. By the close of Examination, the content of the draft FIEMP was not agreed with NE [REP8-298e] and [REP10-097] or the EA [REP10-190].

- 6.4.460. The final SoCG between the Applicant and NE [REP10-097] stated NE welcomed the FIEMP but that it advised

"...there is not enough detail regarding future monitoring at Sizewell C over the proposed operational lifetime of the station.

Monitoring appears to only be proposed for 3 years. We request clarity on whether or not this is the case; if so we would consider this to be insufficient.

We believe there is a lack of detail regarding what the Applicant's contingency plan is if there proves to be a significant difference between predicted and actual fish mortality.

Natural England advises that all data produced by the Fish Monitoring Plan should be made publicly available and secured in the terms of reference for the Marine Technical Forum (MTF)."

- 6.4.461. The Applicant [REP10-097] stated that "NE do not allege that there is any risk of an adverse effect on the integrity of any European Site as a result of the entrapment of fish and larvae. Rather, it is concerned that impacts should be adequately monitored." and responded to the reference made by NE to monitoring over the lifetime of the Proposed Development. The Applicant considers this to be neither proportionate nor beneficial in confirming whether the Applicant's predictions of the impact are correct, which is the aim of the FIEMP.

- 6.4.462. The Applicant [REP10-097] confirmed that the FIEMP (secured through Condition 44 of [REP10-009]) provides initially for a programme of simultaneous monitoring at Sizewell B and Sizewell C, with at least 28 randomised sample visits per year. It also allows for the possibility of

longer term, less frequent or targeted monitoring at Sizewell C should it be deemed beneficial and appropriate. The draft FIEMP provides for potential schemes to offset any potential impacts should the ES have under-predicted the levels of entrapment (secured in the DoO); however, the Applicant also confirms these are not necessary and not relied upon in reaching its conclusion of no AEOI to the European sites considered.

Water quality effects - marine environment

- 6.4.463. See earlier paragraphs to this Chapter for more detailed reasoning. As noted above, NE [REP10-097](epage 52-59) maintained at DL10 that it 'disagreed' with the Applicant on the potential effects of the CDO, thermal and chemical plume (including hydrazine and chlorination), and bentonite break out on the Humber Estuary SAC. It is the ExA's understanding that this relates to the river and sea lamprey qualifying features of the SAC as NE also confirmed its agreement with the Applicant's conclusion of no AEOI on the grey seal qualifying feature.
- 6.4.464. In the majority of these cases, NE [REP10-097] stated it expects further information on the effects and mitigation with the WDA permit, which they have not yet been consulted on and therefore cannot provide its final advice until the permitting process is finalised.
- 6.4.465. Without prejudice to the subsequent EP process, the ExA considers that on the basis of the material currently available to the ExA and with the mitigation measures secured and controls through the WDA permit, it is possible to conclude no AEOI from the Proposed Development alone or in combination with other plans or projects. However, the SoS may wish to satisfy themself in this regard.

Cumulative/in-combination effects

- 6.4.466. The Shadow HRA Report states at paragraph 10.3.22 [APP-145] that no other plans or projects have been identified which have the potential to cause the impingement or entrapment of lampreys of the River Humber SAC and, therefore, there is no potential for an in-combination AEOI to arise. The Applicant also considered cumulative/inter-project effects between different elements of the Proposed Development in [AS-174]. The Applicant stated (Appendix A [REP10-168]) that Change 19 did not alter the conclusion that there were no other plans or projects that could give rise to an in-combination AEOI on European sites with migratory fish qualifying features.
- 6.4.467. The Applicant confirmed there was no potential for combined entrapment effects from the desalination plant and operational cooling water system, as the desalination plant will only operate for part of the construction phase (Appendix A of [REP10-168]).
- 6.4.468. The ExA is aware that NE have outstanding concerns with regards to marine water quality effects for Humber Estuary SAC, as described above, and these include matters to be addressed through the WDA EP (NE Issue 9 and 30 to 36) [RR-0878] and [REP10-097]. The ExA is not aware of any further in combination plans or projects that could act in

combination with the Proposed Development and considers, on the basis of the information provided to the Examination, that it could be possible to conclude no AEoI in combination. However, the ExA recommends that the SoS satisfy themselves on the aforementioned outstanding matters before a conclusion on in-combination effects is determined.

ExA's conclusion on sea and river lamprey features of the Humber Estuary SAC

- 6.4.469. As detailed in Section 5.15 of this Report, the ExA acknowledges the concerns raised that relate to underestimation of impacts on sea and river lamprey. The ExA was unable to seek views from NE and the EA as to whether they were satisfied with the final version of the FIEMP. Additionally, it is unclear whether NE concur with the Applicant's conclusion of no AEoI to river and sea lamprey qualifying features of the Humber Estuary SAC with regards to the potential effect pathway 'Physical interaction between species and project infrastructure - entrapment'.
- 6.4.470. However, the ExA is of the view that given the low predicted levels of entrapment of these qualifying features based on sampling compared to the reference populations, coupled with the mitigation and monitoring measures proposed, an AEoI on these qualifying features of the SAC could be excluded alone or in combination. However, the SoS may wish to satisfy themselves in this regard.
- 6.4.471. In respect of water quality impacts, the ExA is of the view it is possible to conclude no AEoI from the Proposed Development alone or in combination with other plans or projects. However, as noted above, the SoS may wish to satisfy themselves in this regard.

ExA's conclusion

- 6.4.472. Having considered the evidence before the Examination, the position of IPs, including the advice of NE as the ANCB, and the implications of the Proposed Development on this SAC in light of its conservation objectives, the ExA is of the view that there would be no AEoI to the grey seal qualifying feature of the Humber Estuary SAC, either alone or in combination with other plans or projects.
- 6.4.473. In respect of the river and sea lamprey qualifying features of the SAC, the ExA is of the view that an AEoI could be excluded on the basis of the evidence before the Examination with regards to the low number of lamprey predicted to be affected, coupled with the proposed mitigation and monitoring. However, the ExA notes that the concerns of NE with regard to the need for EPs, that NE had not provided confirmation of its view on AEoI to these qualifying features and had not had sight of the final FIEMP in this regard. The SoS may therefore wish to satisfy themselves in this regard.

Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar

Introduction

- 6.4.474. The Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar is located adjacent to the MDS.
- 6.4.475. The SAC qualifying features and non-bird Ramsar Criterion³¹ are:
- Annual vegetation of drift lines;
 - European dry heaths;
 - Perennial vegetation of stony banks; and
 - Ramsar Criterion 2 - the site supports a number of nationally-scarce plant species and British Red Data Book invertebrates.
- 6.4.476. The Shadow HRA Report [APP-145] and Shadow HRA Addendums [AS-173][REP7-279] provided information for an appropriate assessment for the potential impact pathways on the following qualifying features below.
- Alteration of coastal processes/sediment transportation
 - Annual vegetation of drift lines (C, O, D)³²
 - Perennial vegetation of stony banks (C, O, D)
 - Ramsar criterion 2 - nationally-scarce plant species and British Red Data Book invertebrates (C, O, D)
 - Changes in water quality – marine environment
 - Annual vegetation of drift lines (C, O, D)
 - Perennial vegetation of stony banks (C, O, D)
 - Ramsar criterion 2 - nationally-scarce plant species and British Red Data Book invertebrates (C, D)
 - Changes in water quality – terrestrial environment
 - Perennial vegetation of stony banks (C, O, D)
 - Ramsar criterion 2 - nationally-scarce plant species and British Red Data Book invertebrates (C, O, D)
 - Alteration of coastal local hydrology and hydro-geology
 - Perennial vegetation of stony banks (C, O, D)
 - Ramsar criterion 2 - nationally-scarce plant species and British Red Data Book invertebrates (C, O, D)
 - Changes in air quality
 - Annual vegetation of drift lines (C, D)
 - European dry heaths (C, O, D)
 - Perennial vegetation of stony banks (C, O, D)
 - Ramsar criterion 2 - nationally-scarce plant species and British Red Data Book invertebrates (C, O, D)
 - Disturbance effects from recreational pressure
 - Annual vegetation of drift lines (C, O, D)
 - European dry heaths (C, O, D)
 - Perennial vegetation of stony banks (C, O, D)

³¹ Criterion related to bird features are discussed together with the Minsmere-Walberswick SPA below

³² C = Construction, O = Operation, D = decommissioning

- Ramsar criterion 2 - nationally-scarce plant species and British Red Data Book invertebrates (C, O, D)

6.4.477. As discussed above, NE also raised concern that the Applicant had not considered the unintentional introduction or spread of INNS (C) (all qualifying features/Criterion). The ExA decided to carry this forward to consideration of AEoI.

Unintentional spread of INNS

6.4.478. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEoI of the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar from the unintentional introduction or spread of INNS as a result of Proposed Development, either alone or in combination.

Alteration of coastal processes/sediment transfer

6.4.479. See earlier paragraphs to this Chapter for more detailed reasoning. Taking account of the identified mitigation measures (ie the adaptive monitoring and management approach and commitment to native particle size distribution as the default position for recharge of the SCDF, as secured through the DCO and DML Conditions, and the CPMMP), the ExA is of the view that it is possible for the SoS to conclude no AEoI to the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar from alteration of coastal processes/ sediment transfer. However, as noted above, both the Applicant and IPs, including NE, were unable to comment on the final representations and updated reports at DL10. The SoS may therefore wish to satisfy themselves with regards to the updated reports [REP10-124] and CPMMP [REP10-041] on this matter.

Changes in water quality – marine environment

6.4.480. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is of the view that, subject to the implementation of the mitigation measures as secured and through the EPs, it is possible to conclude no AEoI on the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar from the changes in marine water quality as a result of the Proposed Development alone. However, the ExA notes the concerns of NE with regard to the need for EPs, which would include for mitigation and monitoring of marine water quality, and which are to be determined by the EA at a later date. As noted above, the SoS may therefore wish to satisfy themselves further in this regard.

Changes in water quality – terrestrial environment

6.4.481. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEoI on the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar from terrestrial water quality effects as a result of Proposed Development, either alone or in combination.

Alterations to local hydrology and hydrogeology

- 6.4.482. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI on the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar from the alteration of local hydrology and hydrogeology as a result of Proposed Development, either alone or in combination.

Changes in air quality

- 6.4.483. See earlier section in this Chapter. The ExA has concluded that an AEOI on the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar as a result of changes in air quality cannot be excluded.

Recreational pressure

- 6.4.484. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI on the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar from recreational pressure as a result of the Proposed Development, either alone or in combination.

Damage to notified habitats due to impediment to management practices

- 6.4.485. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA has considered how impeding management could impact on these European sites and is of the view that the SoS could conclude there would no AEOI to the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar with the mitigation proposed in the form of a access for management, either alone or in combination. However, a firm commitment from the Applicant that it would not impede the RSPB's existing access route to the Minsmere reserve via Lower Abbey Farm was not submitted to the Examination and the ExA recommends that the SoS may wish to satisfy themselves in this regard before reaching a conclusion on this matter.

Cumulative/in-combination effects

- 6.4.486. The Shadow HRA Report provided an in-combination assessment of the potential for AEOI on the habitat qualifying features of the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar arising from changes in coastal processes/sediment transport and changes to water quality (marine environment) from the Proposed Development together with the Suffolk SMP. An in-combination assessment of the potential for AEOI to arise from recreational disturbance from the Proposed Development together with plans/projects identified in Tables 7.8 and 7.10 [APP-145] was also provided.
- 6.4.487. The Applicant stated that the effects on water quality (marine environment) from the Suffolk SMP would not greatly change the current

baseline and that changes to coastal processes/ sediment transport due to the Proposed Development would be very small, localised and too far away to interact with the proposed coastal management approaches of the SMP. The Applicant considered that mitigation measures proposed to mitigate recreation disturbance (as reported in earlier paragraphs to this Chapter) and via the Suffolk RAMS Strategy would avoid a AEOI in combination with the identified plans/projects.

6.4.488. Taking account of proposed mitigation measures, the Applicant concluded there was no potential for an AEOI on the Minsmere to Walberswick Heaths and Marshes SAC or Minsmere-Walberswick Ramsar in combination with other plans or projects [APP-145].

6.4.489. The Applicant additionally considered cumulative/inter-project effects between different elements of the Proposed Development in [AS-174] and [REP7-279]. The 'Supplementary assessment of inter-pathway effects' (Appendix 1 of [AS-174]) considered that inter-pathway effects to the habitat qualifying features of the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar could only occur via the pathways for marine water quality effects, terrestrial water quality effects (Ramsar only), alteration of local hydrology and hydrogeology (Ramsar only), changes in air quality and disturbance due to recreational pressure during all phases of the Proposed Development (aside from local hydrology and hydrogeology, which is during construction and decommissioning). It stated as follows:

- The location of the qualifying interest features of the SAC and Ramsar Criterion above the level of mean high water spring (MHWS) tides means that there is a very low potential for effect due to changes in marine water quality and there is no realistic potential for any significant effects between this pathway and other pathways.
- Any effect arising from air quality or disturbance due to recreational pressure would not make the habitat more susceptible to damage from the effect of the other pathway.
- The predicted effect on groundwater is expected to be localised, short-term and reversible and implementation of mitigation measures in respect of terrestrial water quality effects and alteration of local hydrology and hydrogeology would avoid any significant effect on the Minsmere-Walberswick Ramsar.

6.4.490. It concluded that given the nature of the effect pathways and predicted effects on the habitats, there would be no AEOI due to inter-pathway effects.

6.4.491. Coastal processes/ sediment transport was also screened into the in-combination assessment but it was concluded that the '*effect pathway does not have any influence on European sites, and could not interact with other pathways to result in a different effect*' so was not considered further in [AS-174].

6.4.492. The ExA is aware that NE have outstanding concerns with regards to alteration of coastal processes/ sediment transportation, marine water quality, and air quality effects for Minsmere-Walberswick Heaths and

Marshes SAC, as described above, and these include matters to be addressed through the WDA EP (NE Issue 9 and 30 to 36) [RR-0878] and [REP10-097]. Additionally, there are a number of matters relating to alteration of coastal processes/ sediment transportation, marine water quality, air quality, and damage to notified habitats due to impediment to management practices flagged to the SoS above. The ExA is not aware of any further in-combination plans or projects that could act in combination with the Proposed Development and considers, on the basis of the information provided to the Examination, that it could be possible to conclude no AEOI in combination. However, the ExA recommends that the SoS satisfy themselves on the aforementioned outstanding matters before a conclusion on in-combination effects is determined.

ExA's conclusion

- 6.4.493. The ExA has concluded that an AEOI on the Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick Ramsar as a result of changes in air quality cannot be excluded.
- 6.4.494. Additionally, the ExA is aware that NE have outstanding concerns with regards a number of matters as reported above, and this includes matters to be addressed through the WDA EP (NE Issue 9 and 30 to 36) [RR-0878] [REP10-097].

Minsmere-Walberswick SPA and Minsmere to Walberswick Ramsar

Introduction

- 6.4.495. The Minsmere to Walberswick-Walberswick SPA and Minsmere to Walberswick Ramsar are located adjacent to the MDS.
- 6.4.496. The Shadow HRA Report [APP-145](Section 8) and Shadow HRA Addendums [AS-173][REP7-279] provided information for an appropriate assessment for the following potential impact pathways on the following qualifying features of the Minsmere-Walberswick SPA and Ramsar (see Table 6.4 below).

Table 6.4 Potential effects on Minsmere-Walberswick SPA and Ramsar carried forward for consideration of AEOI by the Applicant

	Alteration of coastal processes/ sediment transport	Changes in water quality – marine environment	Changes in water quality – terrestrial environment	Alteration of coastal local hydrology and hydro-geology	Changes in air quality	Direct habitat loss and direct/ indirect habitat fragmentation	Disturbance effects (noise, light and visual)	Disturbance effects from recreational pressure	Physical interaction with project infrastructure
Breeding avocet	x	x	✓ C, O, D	✓ C, O, D	✓ C, O, D	X	✓ C, O, D	✓ C, O, D	x
Breeding bittern	x	x	✓ C, O, D	✓ C, O, D	✓ C, O, D	X	✓ C, O, D	✓ C, O, D	x
Breeding gadwall	x	x	✓ C, O, D	✓ C, O, D	✓ C, O, D	x	✓ C, O, D	✓ C, O, D	x
Breeding little tern	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	x	✓ C, O, D	✓ C, O, D	✓ O
Breeding marsh harrier	x	x	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	x
Breeding nightjar	x	x	x	x	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	x
Breeding shoveler	x	x	✓ C, O, D	✓ C, O, D	✓ C, O, D	x	✓ C, O, D	✓ C, O, D	x
Breeding teal	x	x	✓ C, O, D	✓ C, O, D	✓ C, O, D	x	✓ C, O, D	✓ C, O, D	x

	Alteration of coastal processes/ sediment transport	Changes in water quality – marine environment	Changes in water quality – terrestrial environment	Alteration of coastal local hydrology and hydro-geology	Changes in air quality	Direct habitat loss and direct/ indirect habitat fragmentation	Disturbance effects (noise, light and visual)	Disturbance effects from recreational pressure	Physical interaction with project infrastructure
Wintering gadwall	x	x	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	x
Wintering hen harrier	x	x	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	x
Wintering shoveler	x	x	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	x
Wintering white fronted goose	x	x	✓ C, O, D	✓ C, O, D	✓ C, O, D	x	✓ C, O, D	✓ C, O, D	x
Ramsar criterion 2 – an important assemblage of rare and breeding birds associated with marshland and reedbeds	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D	✓ C, O, D

- 6.4.497. The Applicant concluded no AEOI for all qualifying features of the Minsmere-Walberswick SPA and Minsmere to Walberswick Ramsar from all potential effect pathways screened in, with the exception of noise and visual disturbance effects to the marsh harrier qualifying feature of the SPA and Ramsar during construction.
- 6.4.498. As noted in Table 6.2 and Section 6.2 above, NE considered there could also be LSE from the following impacts, which have been carried forward to consideration of AEOI by the ExA:
- Unintentional spread of INNS (C) (all qualifying features/Criterion);
 - Physical interaction between species and project infrastructure (O) (all qualifying features/Criterion);
 - Changes to coastal processes/sediment transport (C, O, D) – for additional features that the Applicant had screened out; and
 - Damage to notified habitats due to impediment to management practices (C, O, D) – all qualifying features.
- 6.4.499. During the Examination, matters were also raised with regards to baseline data, the Applicant’s noise assessment, and potential disturbance effects associated with the creation of the marsh harrier compensatory measures site. These are also considered separately below.

Baseline data

- 6.4.500. NE (NE Issue 27) [RR-0878], [REP2-071] and [REP2-153] stated that it expected a minimum of two complete winter’s survey effort to be undertaken. However, it noted that the Applicant had concluded no AEOI in the absence of any project-specific breeding bird survey and without a single complete winter’s project-specific bird survey.
- 6.4.501. The Applicant’s Shadow HRA Addendum [AS-173] to [AS-178] explained that further survey work was undertaken in 2019-20 to augment the existing baseline data for wintering and breeding waterbirds, nightjar, marsh harrier, and terns. The relevant baseline information for the HRA was contained within the following submissions:
- wintering waterbirds [AS-208];
 - breeding waterbirds [AS-021] and [AS-208];
 - nightjar [AS-036];
 - marsh harrier [AS-036]; and
 - terns [AS-022].
- 6.4.502. The Shadow HRA Addendum [AS-173] stated that the analyses of the new data did not alter the conclusions reached in the Shadow HRA Report [APP-145].
- 6.4.503. The RSPB/SWT [REP2-506], [REP5-164], [REP5-166] and [REP8-173] were concerned that only one year of distributional data for breeding birds had been provided by the Applicant. It also considered the approaches used by the 2020 project-specific breeding wader and waterbird surveys in the Minsmere South Levels depart from standard methodologies and may have underestimated breeding activity.

- 6.4.504. The Applicant [REP3-042] considered its methodologies to be similar to that used by RSPB and explained that it had supplemented its data with RSPB data for Spring 2021. It acknowledged that it only had a single year of distributional data but noted that the data is consistent with what would be expected, given that the distributions are broadly coincident with that of the main pool systems within the Minsmere South Levels (and hence likely preferred habitats of both species). The Shadow HRA Report [APP-145] does not include a definition of main pool systems but makes reference to the largest pool system in the survey area for Minsmere South Levels being located to the east of the centre of survey area, stated to be shown on Shadow HRA Figures 6.12 and 6.13 [APP-146] and being located approximately 1km from the MDS boundary at the nearest point. The pools can additionally be seen from the OS base map to the Applicant's figures (such as ES Ornithology Figures 14.A.7 [APP-239]) but are not specifically labelled. The Applicant confirmed that its conclusions did not depend on distributional information.
- 6.4.505. The ExA acknowledges the concerns in relation to the adequacy of the baseline information and notes the single year of distributional data provided for breeding birds and waterbirds. The ExA also notes that the baseline has been established using seven years of data for breeding birds, and over five years of recent winters of WeBS count data, plus two full winter seasons and one partial winter season of data for non-breeding birds.
- 6.4.506. We note that Applicant's assessment does not entirely rely on distributional information, although subsequently one year of data was provided, and that the RSPB/SWT [REP5-116] and [REP10-111] has agreed that the assumption of an even distribution is a reasonable approach in the absence of distributional data.
- 6.4.507. We consider this to be an adequate baseline on which an assessment can be undertaken. The Applicant's assessment and conclusions for specific qualifying features are discussed below.

Alteration to coastal process/sediment transport

- 6.4.508. See earlier paragraphs to this Chapter for more detailed reasoning. Taking account of the identified mitigation measures (ie the adaptive monitoring and management approach and commitment to native particle size distribution as the default position for recharge of the SCDF, as secured through the DCO and DML Conditions, and the CPMMP), the ExA is of the view that it is possible for the SoS to conclude no AEOI to the Minsmere-Walberswick SPA and Minsmere to Walberswick Ramsar (bird features/Criterion) from alteration of coastal processes/ sediment transfer. However, the Applicant and IPs, including NE, were unable to comment on the final representations and updated reports at DL10. The SoS may therefore wish to satisfy themselves with regards to the updated reports [REP10-124] and CPMMP [REP10-041] on this matter.

Changes in water quality – marine environment

- 6.4.509. As noted above, potential effects associated with changes to water quality in the marine environment to the breeding little tern qualifying feature of the Minsmere-Walberswick SPA and Ramsar (included in Criterion 2 (breeding bird assemblage) for the latter) remains a concern of NE [REP10-097] and [REP10-199] (NE Issues 9 and 30 to 26). NE expects further information on the effects and mitigation to be included with the WDA permit, which they have not yet been consulted on and therefore cannot provide final advice on, until the permitting process is finalised. RSPB/SWT [REP10-111] also remain concerned about potential impacts on terns (and their prey), from thermal and chemical plumes and about combined effects of the Proposed Development on the marine water environment.
- 6.4.510. NE [REP10-097] state that direct risks to little terns from the chemical discharges have not been considered. However, the Applicant [REP10-155] contests this statement; stating that NE has failed to engage with the information it has provided to the Examination on this matter (eg in [REP3-042], [REP5-120] and [REP7-073]). The ExA is of the view that these submissions have considered this issue.
- 6.4.511. Recognising that a further level of detailed information will be provided in respect of the WDA permit and that this will be subject to a separate and detailed HRA, the ExA has considered the submissions from the Applicant and IPs currently available to the ExA as submitted to the Examination, together with the implications for the aforementioned European sites in light of their conservation objectives, to the extent possible at this stage.
- 6.4.512. The ExA notes the concerns raised about the increased risk of chemical exposure for predatory seabirds. However, it is not persuaded that chemicals consumed by SPA species would be at such a concentration that would affect the population of the qualifying features. The ExA does however note that controls on marine water quality will be addressed by the WDA Permit and the SoS may therefore wish to satisfy themselves further in this regard.
- 6.4.513. With regards to bentonite from potential frack-out events, the ExA is of the view that the measures secured through the CoCP [REP10-072], including the commitment to use of a bentonite recovery system, could ensure no AEoI of the SPA and Ramsar, alone or in combination. However, as noted above, due to the timing of the Examination, NE did not have the opportunity to comment on the updated CoCP and therefore, the SoS may wish to satisfy themselves in this regard.
- 6.4.514. Additionally, as noted in Section 5.16 of this Recommendation Report, the ExA suggests that the SoS may wish to satisfy themselves that the MMO is content with the conclusions of the updated version of the BEEMS Technical Report TR552 [REP10-052]. The ExA has reviewed this report and can see no reason not to agree with the findings. However, because of the timing at the end of the Examination, the MMO has not had the opportunity to comment.

- 6.4.515. With regards to operational discharge activities associated with the cooling water system, including thermal and chemical (including hydrazine and chlorination) plume, and moribund biota, the ExA has reviewed the proposed mitigation measures to address these matters, which include measures in the scheme design (such as location of outfalls, and intake and outfall design and position) (secured through DCO), the Chlorination Strategy (secured through WDA), controls over chemicals used within the marine environment (secured through the DML), measures in the CoCP in relation to bentonite (secured through DCO), and commitments to management and monitoring of discharges from the cooling water outfall, CDO and desalination plant outfall (secured through WDA). The ExA considers that these measures are capable of achieving the required mitigation, and are demonstrably secured, allowing a conclusion that AEoI could be excluded.
- 6.4.516. Without prejudice to the subsequent EP process, the ExA considers that on the basis of the material currently available to the ExA and with the mitigation measures secured and controls through the WDA permit, it is possible to conclude no AEoI to little terns of the Minsmere-Walberswick SPA and Ramsar from the Proposed Development alone or in combination with other plans or projects. However, the SoS may wish to satisfy themselves in this regard, both from the Proposed Development alone and in combination.

Changes in water quality – terrestrial environment

- 6.4.517. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEoI of the Minsmere-Walberswick SPA and Ramsar from terrestrial water quality effects as a result of Proposed Development, either alone or in combination.

Alterations to local hydrology and hydrogeology

- 6.4.518. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEoI of the Minsmere-Walberswick SPA and Ramsar from the alteration of local hydrology and hydrogeology as a result of Proposed Development, either alone or in combination.

Changes in air quality

- 6.4.519. See earlier section in this Chapter. The ExA has concluded that an AEoI on the Minsmere-Walberswick SPA and Ramsar as a result of changes in air quality cannot be excluded.

Disturbance effects - noise, light and visual

- 6.4.520. Sections 8.8 and 8.9 of the Shadow HRA Report [APP-145] and Section 8.3, 8.5 and 8.7 of the Shadow HRA Report Addendum [AS-173] present the assessment of these potential effects on the Minsmere-Walberswick SPA and Ramsar. The Shadow HRA Third Addendum [REP7-279] at

Section 8.2 also includes an assessment of these disturbance effects associated with the desalination plant.

- 6.4.521. As noted in the RIES [PD-053], NE (NE Issue 27) [RR-0878] and the RSPB/SWT [REP2-506] raised concerns with regards to the Applicant's assessment of disturbance effects (noise, light and visual) to specific bird qualifying features of the Minsmere-Walberswick SPA and Ramsar. These matters are discussed below.
- 6.4.522. The RSPB/SWT's Written Representation [REP2-506] and [REP5-166] provided extensive comments in relation to:
- the baseline data (see earlier paragraphs to this Chapter);
 - assessment methodology;
 - noise and visual disturbance evidence base;
 - the extent of noise and visual disturbance impacts; and
 - the Applicant's conclusions.
- 6.4.523. The Applicant responded to these in [REP3-042] and [REP5-120]. A summary of these matters was provided in paragraphs 4.3.17 to 4.3.27 of the RIES [PD-053].
- 6.4.524. The Applicant also provided further noise modelling within the Shadow HRA Addendum [AS-173 to AS-178] to incorporate the construction of the water resource storage area located in the northeast of the MDS into the modelling, and to refine the model presented in the application documents. It provided information on chronic noise levels and night-time noise levels during the construction period.

Assessment methodology and mitigation

- 6.4.525. The RIES [PD-053] at paragraph 4.3.17 includes a list of concerns raised by the RSPB/SWT [REP2-506] regarding the Applicant's assessment methodology. The RSPB/SWT [REP2-506] and [REP5-166] considered that impacts on wintering waterbirds of Minsmere-Walberswick SPA and Ramsar could have been significantly underestimated, due to the significant overlap of the daytime 70dB_{L_{Amax}} peak noise contour with the eastern area of Sizewell Marshes during construction Phases 1 and 2 in particular; the limited understanding of bird movements around these areas; or their usage during dark hours. It was concerned that noise impacts on breeding birds of the Minsmere South Levels and Sizewell Marshes in construction Phases 1 to 4 would be potentially significant, and that these areas are functionally linked to Minsmere-Walberswick SPA. Furthermore, it remained concerned that effects on breeding birds could arise from chronic noise levels.
- 6.4.526. The Applicant responded [REP5-120] that it considered it had acknowledged any limitations and undertaken a precautionary assessment that accounts for overlapping construction phases and models the longest construction phases. It considered it would be unreasonable to suggest the worst-case scenario would apply for the lifetime of the works and that the noise modelling is a reasonable representation of the likely noise levels. It confirmed that acoustic

barriers would be an early priority during Phase 1 of construction as stated in Section 3.3a in Part B of the CoCP [REP2-056] (final version is [REP10-072]). The final CoCP [REP10-072] states that solid barriers or landscaping, or a combination of the two, would be installed as early as is practicable in the construction process. The location of the proposed acoustic barriers is shown on the Construction Parameter Plans [REP7-269], which are secured by dDCO Requirement 13 [REP10-009].

- 6.4.527. The Draft MDS Noise Monitoring and Management Plan (Draft NMMP) [REP7-048], which was submitted to the Examination by the Applicant to set out how details of noise management identified in the CoCP would be discharged, describes that three barriers would be installed as primary mitigation but does not specify the timing of installation.
- 6.4.528. The Draft NMMP [REP7-048] also states that additional barriers would be installed if needed following further assessment, which would be carried out in accordance with the Noise Mitigation Scheme (Annex W to the DoO [REP10-084]) and NMMP. The installation of additional barriers as a potential intervention measure, following proposed monitoring of breeding waterbirds (ie abundance and distribution for avocet, gadwall, shoveler and teal; indication of extent of usage for bittern), is also included in Table 2.1 of the TEMMP [REP10-090]. The TEMMP is secured by Requirement 4 of the dDCO [REP10-009]. By the end of the Examination, RSPB/SWT [REP10-204] remained of the view that the initial and additional measures proposed for noise and visual disturbance to birds *"will not mitigate potential effects, as no evidence has been provided as to where these measures could be deployed or to what extent they would reduce noise and visual disturbance, particularly as some of that disturbance is likely to originate from plant operating at height."* Additionally, NE [REP5-160] recommended during the Examination that monitoring and adaptive management in respect of disturbance to shoveler and gadwall should be more robust than that currently proposed within the TEMMP.
- 6.4.529. The RSPB/SWT [REP5-166] considered that a commitment to commence the construction of the acoustic barriers at the beginning of construction Phase 1 (and before other significantly noisy activity occurs) should be secured. It welcomed the Applicant's response but continued to have concerns regarding noise levels during construction Phase 5 and remained of the view that chronic noise during construction Phases 1, 2 and 5 should be modelled and assessed.
- 6.4.530. With regards to acoustic barriers, the ExA asked the Applicant [PD-052] (epage 9) whether the Applicant was willing to commit to commence the construction of acoustic barriers at the beginning of construction Phase 1 (and before other significantly noisy activity occurs), as recommended by RPSB/SWT, and if so, whether it would update the CoCP. In response, the Applicant [REP10-154] stated it had updated the final CoCP [REP10-072] which states that it:

"...must be installed as early as is practicable in the construction process and retained in the long term to maximise potential acoustic screening"

- 6.4.531. The ExA considers that the timing of the acoustic screening lacks certainty in the final CoCP [REP10-072], the SoS may wish to satisfy themselves regarding the precise timing of the installation of the acoustic screening.
- 6.4.532. In response to RSPB/SWT concerns regarding noise levels during construction Phase 5, the Applicant [REP3-042] and [REP10-164] considers that noise levels during Phase 5 will be broadly similar to Phase 1. The corrected Figure 8.6 for Phase 5 (provided as Appendix U of [REP5-120]) shows a slight reduction in encroachment of both the 70dB and 65dB L_{Amax} contours on the Minsmere South Levels during Phase 5 compared to Phase 1 (ie Figure 8.3 of [APP-147]). Phase 5 noise contours also show less encroachment on to the Sizewell Marshes SSSI compared to Phase 1. The Applicant [REP10-164] states this is largely due to the absence of construction works in the MDS area closest to the SSSI.
- 6.4.533. In response to RSPB/SWT concerns with regards to chronic noise and noise modelling, the Applicant [REP3-042] has explained that
- "Chronic noise is modelled for Phases 3 and 4 because these phases will extend over a considerably longer period than Phases 1, 2 and 5 (i.e. 7-8 years as opposed to approximately 4.5 years for Phases 1 and 2, or approximately 2 years for Phase 5). As such, the outputs of the modelling for Phases 3 and 4 will be more representative of the 'typical' chronic noise levels that birds will be exposed to during the construction period."*
- 6.4.534. The Applicant has based the assessment primarily upon thresholds for impulsive noise and provided information on chronic noise as further context, as explained in [REP3-042] and [REP10-164] and paragraph 8.8.51 of the Shadow HRA Report [APP-145]. The RSPB/SWT [REP2-506] highlighted the potential for chronic noise to affect densities and distribution of breeding birds. It acknowledged a lack of evidence regarding the species of interest; however, advised a chronic noise level threshold of 45 dB_{LAmax} .
- 6.4.535. The Applicant responded at DL10 [REP10-164] that the:
- "...RSPB/SWT do not contest the approach of basing the assessment of displacement of marsh harrier from foraging habitat or of non-breeding waterbirds on an impulsive noise threshold but suggest that a threshold for chronic noise should be used to determine potential effects on breeding waterbirds (paragraphs 3.293 to 3.296 in [REP2-506]). The Applicant considers that such an approach is fundamentally flawed because many of the studies that have been undertaken on the effects of chronic noise and which provide evidence for effects associated with particular noise levels are focussed on songbird species which have markedly different biology and behaviour to waterbirds."*
- 6.4.536. The ExA notes the RSPB/SWT's reservations about the Applicant's use of a 70 dB_{LAmax} threshold for impulsive noise impacts on wintering waterbirds (a 65 dB_{LAmax} threshold has been applied for breeding

waterbirds). The ExA is of the view that the Applicant's use of the Waterbird Disturbance Toolkit (TIDE tool³³) and associated supporting studies have set appropriate thresholds for impulsive noise. Given the lack of available evidence as to what noise levels would affect breeding waterbirds, the ExA is content with the Applicant's approach of applying a lower noise threshold for breeding birds and providing information on chronic noise levels as further context.

- 6.4.537. In response to RSPB/SWT [REP2-506] concerns regarding the definition of daytime and night-time periods, the Applicant provided 'Appendix N Evening noise and bird disturbance' of [REP5-120]. This concluded that there is no material difference between daytime and night-time noise levels at locations within the Minsmere South Levels, Minsmere-Walberswick SPA and Ramsar and Sizewell Marshes SSSI. It stated there is no evidence to suggest that birds would be more sensitive to construction noise over the night-time period compared with the daytime period in the key areas used by waterbirds around the MDS. The Applicant also stated there is no reason to suggest that a different disturbance threshold should be applied after dusk (ie evening or night time), regardless of the timing of that period throughout the year.
- 6.4.538. The RSPB/SWT [REP6-046] responded that the Applicant has not considered the potential for different bird behaviour and changes in distribution when it is dark. It had particular concerns about birds roosting on the Minsmere South Levels and whose flights between daytime and roosting locations would take them close to or over the construction site, and those birds which may feed in different locations at night. The RSPB/SWT considered that impacts on wintering waterbirds of Minsmere-Walberswick SPA and Ramsar could have been significantly underestimated (due to the significant overlap of the daytime 70dB peak noise contour with the eastern area of Sizewell Marshes during construction Phases 1 and 2 in particular; the limited understanding of bird movements around these areas; or their usage during dark hours).
- 6.4.539. In the final SoCG with RSPB/SWT [REP10-111], the Applicant reiterates the conclusion in the Shadow HRA Addendum [AS-173] that night-time noise levels are low and unlikely to disturb waterbirds and that further assessment in Appendix N of [REP5-120] suggests that the conclusion is unaffected by the fact that daytime noise level would persist beyond dusk, particularly during the winter period. The Applicant [REP10-111] states that nocturnal flight surveys [REP5-125] indicate limited use of the Minsmere South Levels by roosting white-fronted goose. The Applicant [REP10-111] states that the CoCP [REP10-072] includes a range of measures to reduce impacts on ecology.

³³ N. Cutts, K. Hemingway and J. Spencer. Waterbird disturbance mitigation toolkit. Informing estuarine planning and construction projects. Institute of Estuarine and Coastal Studies for TIDE. 2013.

- 6.4.540. RSPB/SWT [REP10-111] state that they retain concerns about potential night-time noise disturbance to white-fronted geese and other waterbirds and that insufficient monitoring and mitigation is proposed.
- 6.4.541. The RSPB/SWT [REP2-506] and [REP5-166] also does not agree with the Applicant's reliance on a 150m visual disturbance buffer where woodland or other habitat features would provide natural screening. The ExA shares its concerns that due to the height of some of the infrastructure, the screening will not reduce all potential visual impacts, although it is acknowledged in the Shadow HRA Report [APP-145] that "*...it is possible that high structures (e.g. cranes) may remain visible on the skyline but other activities (e.g. movement of vehicles and people) would be concealed.*" The ExA notes impracticalities associated with screening high structures such as cranes. We note this 150m visual buffer has been applied in three main areas (described in paragraph 8.8.97 of the Shadow HRA Report [APP-145] and is shown on Figure 8.7 of the Shadow HRA Report [APP-147]).
- 6.4.542. Nevertheless, we are content that the Applicant's assessment has acknowledged limitations (Section 1.3.33 of [APP-204]) and models the likely worst-case noise levels. We agree with the Applicant [REP3-042] that it would be unreasonable to suggest the worst-case scenario would apply for the lifetime of the works and that the noise modelling is a reasonable representation of the likely worst-case noise levels. The ExA acknowledges there is no set threshold of effect for waterbirds with regards to noise, and a lack of evidence with regards to thresholds is acknowledged by the RSPB/SWT. The ExA notes the concerns of NE and RSPB/SWT with regards to the Applicant's conclusions on matters of disturbance (noise, visual and light) of specific qualifying features and its overall conclusion with respect to AEOI of the SPA and Ramsar. Matters related to specific qualifying features of the Minsmere-Walberswick SPA and Ramsar are detailed below in this chapter.

Noise levels – Change 19 request

- 6.4.543. The Shadow HRA Third Addendum [REP7-279] provided an update to the Applicant's assessment of noise impacts to birds from Change 19, the desalination plant.
- 6.4.544. The RSPB/SWT [REP8-171] argued that the Applicant had not discussed all additional noise sources arising from Change 19 in relation to potential effects on waterbirds, including little tern of the Minsmere-Walberswick SPA; in particular the omission of the additional HGV movements required to bring water to the construction site before the desalination plant is operational and the use of diesel generators in the early stages of operation of the desalination plant.
- 6.4.545. The Applicant [REP9-024] confirmed that additional HGV movements would not result in HGV numbers exceeding the cap that had already been assessed. [REP9-024] also included an assessment of potential noise from the diesel generators, including combined noise with other MDS construction activities during Phases 3 and 4 (on the basis that the Phase 3/4 night-time period in particular represents the period with the

greatest potential for an increase in noise from the desalination plant, as other activities will be at their quietest) and for the two scenarios relating to location (ie in its initial location in the main construction area (MCA), then moving to the temporary construction area (TCA)). The Applicant concluded that noise levels previously assessed would not materially alter and therefore its conclusion of no AEOI is unchanged.

- 6.4.546. The ExA is of the view that, on the basis that the assessed HGV cap (and associated noise) is inclusive of the potential vehicle numbers associated with the desalination plant, the Applicant's assessment includes consideration of the potential noise associated with the HGV numbers. With regards to noise from the use of diesel generators, the ExA is of the view that the Applicant has demonstrated in [REP9-024] that the noise associated with the diesel generators for Change 19 would not result in an additive effect or make a material change to the predicted noise levels assessed in [APP-145] [AS-173] [REP7-279].

Noise, light and visual disturbance - gadwall and shoveler

- 6.4.547. The Applicant's Shadow HRA Report [APP-145] ruled out an AEOI for breeding and non-breeding gadwall and shoveler of the Minsmere-Walberswick SPA and Ramsar from disturbance effects, on the basis that the potential visual impact zone does not extend onto the SPA (other than in the south-eastern extremity, which does not include suitable habitat for these species). The peak noise levels within the SPA (again excepting the south-eastern extremity), which occur during construction of the MDS, are predicted to remain below the 64dB LA_{max} threshold.
- 6.4.548. However, it acknowledged that gadwall and shoveler may breed and forage in FLL at the Minsmere South Levels and Sizewell Marshes (outside of the European sites) and stated that up to 11% of the breeding gadwall, 7% of the breeding shoveler could be displaced from the FLL. In respect of non-breeding birds, 4-18% and 4-10% of peak winter counts for non-breeding gadwall and shoveler, respectively have been recorded on the Sizewell Marshes.
- 6.4.549. The Applicant noted that the populations of gadwall and shoveler are currently more than three times and almost double the size of the population at the time of citation, respectively. It considered that the potential displacement of birds from Sizewell Marshes would not prevent achievement of the Supplementary Advice on the generic conservation objectives to maintain the non-breeding populations, whilst avoiding deterioration from their current levels.
- 6.4.550. The Applicant concluded that there would be no AEOI as the assessment was based on a worst-case during Phase 1 of the construction period and therefore, it considered it unlikely that the potential for displacement of breeding shoveler from the Minsmere South Levels would be as high as is estimated, nor would it be predicted to extend over the full duration of the construction period. It also stated that the displaced birds may be functionally linked to the SPA rather than being from the designated population.

- 6.4.551. NE [REP2-071][REP2-153][REP5-160] advised that the Applicant's conclusions for these species is lacking precaution on the basis of:
- i. limited data;
 - ii. uncertainties about behavioural responses of breeding birds to visual and acoustic disturbance;
 - iii. the compounding effects of recreational pressure;
 - iv. the significant % of predicted breeding bird displacement (where new data show breeding numbers remain consistent), and;
 - v. the significant increase in non-breeding birds.

- 6.4.552. NE [REP5-160] concluded that

"The lack of impact is a possible scenario but, for a development of this scale, the information provided in the HRA is insufficient to exclude adverse effect on site integrity for breeding and nonbreeding gadwall and shoveler.

Consequently, we advise that, in the context of the precautionary principle which is enshrined in the Habitats Regulations, the applicant has not been able to exclude adverse effect on site integrity beyond reasonable scientific doubt. Therefore, we advise that the applicant must either provide more robust data on the distribution of these species to inform their conclusions, or look to provide mitigation / compensation in the event that a significant amount of gadwall and/or shoveler are displaced by the development.

Additionally, considering the limited data informing conclusions, we would recommend that monitoring and adaptive management should be more robust than that currently proposed within the Terrestrial Ecology Monitoring and Mitigation Plan. We advise that the inclusion of a wetland element of habitat creation, to be delivered as part of the marsh harrier compensation, might also be considered in relation to its potential to support displaced SPA waterbirds."

- 6.4.553. The RSPB/SWT [REP2-506], [REP3-074] and [REP6-046] supported NE's comments and expressed concerns regarding the limited survey data and the significant night-time noise and chronic daytime noise during the construction period. The RSPB/SWT [REP10-204] also expressed concerns with regard to the screening measures proposed by the Applicant to reduce noise and visual effects.

Breeding gadwall and shoveler

- 6.4.554. In respect of breeding gadwall and shoveler, the Applicant confirmed that the surveys detailed in the Shadow HRA Addendum [AS-173] demonstrated that the gadwall and shoveler breeding on the Minsmere South Levels are concentrated in the northeast of the area, outside those areas where displacement due to noise and visual disturbance from construction activities is predicted to occur. However, it also explained [REP3-042] that in the absence of distribution data, the conclusion in the Shadow HRA Report (ie at the point of DCO application submission and in the absence of the 2020 breeding bird surveys) had assumed a uniform distribution of birds on the Minsmere South Levels and that all gadwall

and shoveler on the Sizewell Marshes would be displaced. RSPB/SWT [REP5-116] and [REP8-173] agreed that an assumption of an even distribution is a reasonable approach, but not necessarily a “highly precautionary” approach.

- 6.4.555. The Applicant’s surveys undertaken in 2020 provided distributional data on breeding gadwall and shoveler in the Minsmere South Levels and Sizewell Marshes [AS-173], [AS-021] and [AS-208]. The Applicant considered that these *“demonstrated that the gadwall and shoveler breeding on the Minsmere South Levels are concentrated in the northeast of the area, outside those areas where displacement due to noise and visual disturbance from construction activities is predicted to occur.”* And that although information on distribution relates to a single year of data only *“it is important to note that it is consistent with what would be expected, given that these distributions are broadly coincident with that of the main pool systems (and hence likely preferred habitats of both species) within the Minsmere South Levels.”*
- 6.4.556. The Applicant confirmed that all of the birds predicted to be displaced occur on the FLL (at the Minsmere South Levels) as opposed to those within the boundaries of the designated SPA (and Ramsar) and considered that NE’s position fails to recognise this fact.
- 6.4.557. The RSPB/SWT [REP2-506], [REP5-164] and [REP6-046] did not agree that a distinction can be drawn between designated and functionally linked populations for the purposes of HRA, as the linked areas are equally important to these species. The RSPB/SWT highlighted movement of breeding and wintering gadwall and shoveler within the Minsmere-Walberswick SPA and nearby sites such as the Minsmere South Levels and Sizewell Marshes and stated that the Supplementary Advice on the Conservation Objectives refers to management of the South Levels. Although it acknowledged that birds on the Minsmere South Levels and Sizewell Marshes are *“additional breeding birds on these nearby habitats outside the designated site”* (as stated by the Applicant), it did not consider it possible to affect such significant proportions of the populations associated with the SPA and on the FLL (ie 11% of gadwall and 7% of shoveler) without the potential for AEOI of the Minsmere-Walberswick SPA. It considered the Applicant’s position for gadwall and shoveler to be inconsistent with the approach it took for marsh harrier.
- 6.4.558. Both the Applicant [REP3-042] and [REP7-051] and the RSPB/SWT [REP2-506] cited guidance regarding functionally linked populations published by NE (Chapman and Tyldesley, 2016). The RSPB/SWT noted the guidance states that
- “...if effects on functionally linked land or sea are likely to have a significant effect on the population of species for which a European site was designated or classified, those effects must be considered fully in a Habitats Regulations Assessment.”*
- 6.4.559. However, the Applicant explained that the guidance also states that such assessments have to determine how critical the area of FLL is to the designated population and whether it is necessary to maintain or restore

favourable conservation status of the qualifying feature. The Applicant [REP5-112] considered that the birds which breed within the designated site are not dependent on the functionally linked habitats on the Minsmere South Levels and Sizewell Marshes for the provision of resources which cannot be obtained from within the designated site itself; rather the functional linkage is concerned with the occurrence of additional breeding birds on nearby habitats outside of the designated site. It explained that the functional linkage is fundamentally different to that for the marsh harrier population, for which the functionally linked habitats provide a foraging resource to the birds which breed within the designated site.

- 6.4.560. The Applicant [REP7-051] also noted that NE and RSPB/SWT were concerned that between-year movements of breeding birds between the SPA and the FLL might affect the conclusions of the assessment (because the FLL may be more important in some years than others). It explained that the assessment relies on seven years of abundance data and that it would be unreasonable to suggest this is not sufficient to adequately capture the potential for between year movements and enable the issue to be accounted for within the assessment.
- 6.4.561. Furthermore, the Applicant [REP3-042] noted that the breeding gadwall and breeding shoveler Minsmere-Walberswick SPA (and Ramsar) populations are more than three times and almost double the size of the population at the time of citation. It considered that it is highly unlikely that the FLL on the Minsmere South Levels and Sizewell Marshes is necessary to achieving the conservation objectives for these features.
- 6.4.562. However, the RSPB/SWT [REP2-506] explained that the Supplementary Advice on Conservation Objectives for breeding gadwall sets a target to *“Maintain the size of the breeding population at a level which is above 24 pairs, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent”*
- 6.4.563. The Applicant [REP3-042] concluded that the predicted displacement of a relatively small number of breeding pairs from FLL outside the designated site would not prevent achievement of the Supplementary Advice on the generic conservation objectives to maintain the SPA population size at above the citation level, whilst avoiding deterioration from its current level.

Non-breeding gadwall and shoveler

- 6.4.564. In respect of non-breeding gadwall and shoveler, NE [REP2-071] raised a number of matters, namely that the higher numbers of gadwall and shoveler recorded on the Minsmere South Levels during the 2019 – 2020 surveys compared to those recorded during the previous project specific non-breeding water bird surveys, represent a ‘significant increase’. The Applicant [REP3-042] responded that marked annual fluctuations in wintering waterbird numbers at individual sites are a frequent occurrence, as demonstrated by the Wetland Bird Survey (WeBS) data.

- 6.4.565. NE [REP2-071] also considered the mapping of winter survey records to be inadequate, because the peak counts are represented by a single point location for gadwall and three-point locations for shoveler. The Applicant [REP3-042] responded that these species often occur in large, concentrated aggregations during the non-breeding season, so distribution can be sufficiently well indicated by the mapped point locations. Furthermore, it noted that the distribution of both non-breeding gadwall and non-breeding shoveler on the Minsmere South Levels is shown to be consistently centred around the main pool systems on the Minsmere South Levels, and beyond the areas within which effects of noise and visual disturbance are predicted to occur.
- 6.4.566. The RSPB/SWT [REP2-506] and [REP5-166] considered that with the levels of displacement predicted, an AEOI could not be excluded for non-breeding gadwall and shoveler populations of the Minsmere-Walberswick SPA. As with the breeding gadwall and shoveler, the RSPB/SWT [REP2-506] noted that although the current population level may be above that at the time of designation, any deterioration from current population levels would compromise the site's ability to meet the requirement to "*avoid deterioration from its current level*" set in the Supplementary Advice on Conservation Objectives.
- 6.4.567. The Applicant confirmed [REP5-112] that the effects of disturbance and displacement are only relevant to the FLL at Sizewell Marshes. It explained that there are several other sites in the wider area which are used by the SPA birds during the winter period, and it is highly likely that there is interchange of birds between these sites and the Sizewell Marshes; therefore, it is not possible to provide an estimate of the SPA population that would be affected by displacement from the Sizewell Marshes. The Applicant considered that the relatively small proportion of the SPA population of non-breeding gadwall and shoveler which is likely to depend upon the Sizewell Marshes, combined with the fact that other sites outside the SPA have the potential to provide more extensive areas of supporting habitat, means that the predicted displacement of birds from substantial parts of the Sizewell Marshes will not prevent the SPA from continuing to support the existing populations.

Overall positions

- 6.4.568. Following the Applicant's response at DL3, NE [REP5-160] and [REP10-199] remained of the view that the information provided in the HRA is insufficient to exclude AEOI for breeding and non-breeding gadwall and shoveler in the absence of any compensation. It requested more robust data on the distribution of these species to inform its conclusions, or the provision of mitigation/compensation in the event that a significant amount of gadwall and/or shoveler are displaced by the Proposed Development. Additionally, NE recommended that monitoring and adaptive management should be more robust than that currently proposed within the TEMMP (as described above). NE [REP5-160] acknowledged that "*The lack of impact* [ie Disturbance/displacement effects on breeding and non-breeding gadwall and shoveler using functionally linked land to Minsmere-Walberswick SPA/Ramsar due to

noise and visual disturbance] *is a possible scenario but, for a development of this scale, the information provided in the HRA is insufficient to exclude adverse effect on site integrity for breeding and nonbreeding gadwall and shoveler.*"

- 6.4.569. The RSPB/SWT [REP5-164] agreed that there is a need for a robust monitoring and mitigation plan. It also remained of the view [REP8-173] that an AEoI cannot be excluded and that levels of displacement predicted

"are significant for breeding birds (11% of the total SPA and functionally linked land population for breeding gadwall and 7% for breeding shoveler) and for wintering birds (around 4% displacement predicted)."

- 6.4.570. The Applicant [REP7-051] maintained its conclusion that the predicted levels of displacement on FLL would not prevent the maintenance of the favourable conservation status of gadwall and shoveler. It considered [REP10-155] that displacement from the FLL would not affect the designated populations and the conservation objectives of any European site. It also argued that NE has failed to acknowledge that the assessment has been informed by seven years of abundance data for breeding gadwall and shoveler and that a third winter of project-specific survey data was collected in 2019/20. It committed to monitoring of breeding waterbirds in the TEMMP [REP10-090]³⁴ (epage 16 to 17), with potential intervention identified as

"further boundary screening and or other approaches to noise reduction and visual disturbance to lessen any apparent impacts and to maintain populations."

- 6.4.571. The RSPB/SWT [REP10-204] did not consider that the mitigation provided for in the TEMMP is sufficient and no evidence has been provided as to where these could be deployed or to what extent this would reduce noise and visual disturbance, particularly as some of that disturbance is likely to originate from plant operating height.

- 6.4.572. The Applicant, NE and RSPB/SWT agree that the Minsmere South Levels and Sizewell Marshes comprise FLL to the Minsmere-Walberswick SPA and Ramsar for the breeding and non-breeding shoveler and gadwall features. The ExA concurs with this view and therefore has considered the implications of the Proposed Development on the shoveler and gadwall qualifying features present in FLL, and how these are liable to affect the conservation objectives. In doing so, the ExA has also considered how critical the area of FLL is to the designated population and whether it is necessary to maintain or restore the favourable conservation status of the SPA/Ramsar (with reference to the supplementary advice to maintain the breeding size of the population of these qualifying features at a level above the designated population

³⁴ The TEMMP is listed as a certified document in Schedule 24 of the dDCO [REP10-009] and is to be certified under Article 80. Its implementation is secured through Requirement 12.

level, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent).

- 6.4.573. The ExA considers that the Applicant has adopted a precautionary approach in its assessment of worst-case noise levels and the application of a reduced noise threshold of $65\text{dB}_{L_{\text{Amax}}}$ for breeding waterbirds. The ExA acknowledges that there remain uncertainties with regards to noise, the use of thresholds, and the likely behavioural responses of breeding birds to visual and acoustic disturbance and this also remains a concern to NE.
- 6.4.574. With regards to proposed mitigation, we note some changes were made by the Applicant to Table 2.1 (Monitoring Measures Relating To Relevant Qualifying Interest Features of The Minsmere Habitat Sites) of the TEMMP for breeding waterbirds (including shoveler and gadwall) between the DL8 [REP8-089] and DL10 [REP10-089 and REP10-090] versions. The changes included some further detail with regards to timing and frequency of the monitoring surveys; inclusion of monitoring at Sizewell Marshes (in addition to Minsmere South Levels); and to include for survey results to be assessed against/compared with the findings of RSPB survey results. It is not known whether these final amendments would remove the concerns of NE and the RSPB/SWT, although it would appear unlikely that these amendments would satisfy the concerns of the RSPB/SWT with regards to the 'screening (or other approaches)' mitigation/potential intervention. NE [REP5-160] also raised concerns in the Examination that the measures in the TEMMP were not sufficiently robust.
- 6.4.575. The ExA is concerned that the proposed intervention, should monitoring prove it to be necessary, lacks specificity in terms of the likely screening (or other approach) or evidence that it is implementable during the construction period. The SoS may therefore wish to satisfy themselves with regards to the adaptive measures, including potential intervention in the form of further screening, currently described in the latest TEMMP [REP10-090].
- 6.4.576. The Applicant's worst-case assessment predicts 11% of breeding gadwall and 8% of breeding shoveler (and c.4% of the non-breeding populations) would experience noise and visual disturbance within areas of FLL. It is noted that the Minsmere South Levels support greater numbers of both gadwall and shoveler than the Sizewell Marshes (the latter supporting between zero and seven breeding pairs over the years) and that the Sizewell Marshes are predicted to experience greater levels of noise and disturbance than the Minsmere South Levels. Encroachment of the $64\text{dB}_{L_{\text{Amax}}}$ noise contour (in combination with the potential visual impact zone) is predicted to affect 40% of the area of the Minsmere South Levels during Phase 1. The ExA is concerned that such a percentage of the breeding gadwall and shoveler populations, and to a lesser extent the non-breeding, could be adversely affected by noise and visual disturbance from the Proposed Development during construction which could conflict with the conservation objectives for the SPA.

- 6.4.577. The ExA considers that, although there is no evidence that these birds would be present in greater numbers in the southern section of the Minsmere Levels South (which is predicted to experience the noise and visual disturbance), the limited distributional data and uncertainties with regards to behavioural response and noise thresholds, coupled with uncertainties with regards to intervention measures, presents us with concerns with regards to reaching a conclusion beyond reasonable scientific doubt.
- 6.4.578. Overall, the ExA agrees with NE and the RSPB/SWT that there is insufficient evidence to recommend an AEOI can be excluded for breeding and non-breeding gadwall and shoveler of the Minsmere-Walberswick SPA and Ramsar beyond reasonable scientific doubt.

Noise, light and visual disturbance - marsh harrier

- 6.4.579. Noise and visual disturbance during construction of the Proposed Development at the MDS would potentially result in the displacement of breeding marsh harrier (a qualifying feature of the Minsmere-Walberswick SPA and a component species of the breeding bird assemblage qualifying feature of the Ramsar) from wetland and arable habitats they would have otherwise used for foraging. These habitats are located outside of the boundary of the European sites but are deemed to be functionally linked to the Minsmere-Walberswick SPA and Ramsar.
- 6.4.580. The Applicant's assessment of potential AEOI on marsh harrier of the Minsmere-Walberswick SPA and Ramsar as a result of disturbance during construction, operation, and decommissioning of the Proposed Development is set out in Sections 8.8. and 8.9 of the Shadow HRA Report [APP-145]. Evidence cited by the Applicant to support its assessment approach included a study by Madders and Whitfield (2006)³⁵, which provided a review of the displacement effects of wind farms on foraging raptors. The Applicant [APP-145] explained that there are no available studies that provide specific information on the behavioural responses of marsh harrier to anthropogenic noise. Observations of marsh harrier flight activity at Trimley Marshes (in relation to noise generation from the Port of Felixstowe) were used to inform the assessment in [APP-145], in addition to evidence from studies on other bird species.
- 6.4.581. NE's RR (NE Issue 27) [RR-0878], [REP2-153] and [REP2-071] set out its concerns regarding noise, light and visual disturbance (from the MDS element of the Proposed Development) to marsh harrier using FLL. NE also expressed concerns about the barrier effect of the construction phase preventing marsh harrier from accessing foraging habitats at Sizewell Marshes.
- 6.4.582. The RSPB/SWT's WR [REP2-506] set out concerns regarding the Applicant's evidence base for the assessment of sensitivity of marsh

³⁵ M. Madders and D. P. Whitfield. Upland raptors and the assessment of wind farm impacts. *Ibis*, 2006, 148, p. 43-56.

barriers to noise and visual disturbance, querying the relevance of the Madders and Whitfield study to construction of the Proposed Development.

- 6.4.583. The Shadow HRA Report [APP-145] explains that the main marsh harrier nesting area is within the SPA and Ramsar at Minsmere, over 1km away from the closest part of the MDS. However, NE has advised that marsh harriers have large foraging ranges and that this issue affects foraging undertaken beyond the boundary of the SPA/Ramsar rather than disturbance at nesting locations [RR-0878], [REP2-153] and [REP2-071].
- 6.4.584. The Applicant presented calculations of estimated habitat loss to foraging marsh harrier during construction in Table 8.12 of the Shadow HRA Report [APP-145] (habitat 'loss' in this context was taken to mean disturbance that may exclude marsh harriers from using habitat for foraging, rather than direct habitat loss). It was estimated that:
- **103.6ha** (20.9%) of the total wetland habitats within 0-4km of the Minsmere marsh harrier breeding site would be 'lost' as a result of disturbance effects during in Phase 1 of construction (98.7ha (19.9%) in Phase 2).
 - **261.0ha** (24%) of the arable habitat within 0-4km of the Minsmere marsh harrier breeding site would be lost as a result of disturbance effects during in Phase 1 of construction (263.3ha (24.2%) in Phase 2).
 - The aggregated figure for wetland habitat loss plus arable habitat loss was **364.6ha** (23%) in Phase 1 of construction and 362ha (22.8%) in Phase 2.
- 6.4.585. In response to question Bio.2.16 of ExQ2 [PD-033], the Applicant confirmed [REP7-051] the total areas of habitat loss for foraging marsh harrier are as set out in bold in the paragraph above.
- 6.4.586. The Applicant considered that the overall potential 'loss' of foraging resource amongst wetland habitats, would be less than the calculated extent of habitat area (20.9%), due largely to the effect of distance from the breeding area on levels of flight activity [APP-145]. The Applicant [APP-145] considered that usage by foraging marsh harriers of the areas that are predicted to be potentially 'lost' is estimated to be relatively low, based on flight activity data (collected from 2014 to 2016³⁶) which estimated the use of Sizewell Marshes to be approximately 60% of that for the Minsmere South Levels on average (see Table 6.7 [APP-145] and Figures 6.3 to Figure 6.5 in [APP-146]). To take account of this difference in usage with distance from the nesting area, the Applicant presented calculations for the potential 'loss' of Sizewell Marshes with regard to the available foraging wetland resource (Table 8.13 [APP-145]).
- 6.4.587. The Applicant considered it likely that the marsh harriers would modify their existing behaviour to use alternative areas of existing agricultural

³⁶ Further surveys were undertaken in 2020, as reported later in this chapter

land, noting that there are extensive areas of land in arable production in proximity to the Minsmere marsh harrier breeding site [APP-145].

- 6.4.588. Therefore, explaining that wetland is the key foraging habitat for marsh harrier of the Minsmere-Walberswick SPA and Ramsar, the Applicant considered only the potential 'loss' of the foraging resource from the wetland habitats in assessing potential impacts to breeding marsh harriers [APP-145]. The RSPB/SWT has disputed this approach [REP2-506] and [REP2-088, NV1]. The Applicant provided further justification to support this approach in [REP2-088, NV1], in Appendix M of [REP5-120] and in its response to question Bio.2.16 of ExQ2 [REP7-051].
- 6.4.589. The Applicant's overall conclusion as presented in the Applicant's HRA Report [APP-145] was that an AEoI (resulting from noise and visual disturbance during construction) from the project alone could not be excluded for the breeding marsh harrier qualifying features of the Minsmere-Walberswick SPA and Ramsar. The Applicant therefore provided a case for Alternative Solutions, IROPI and Compensatory Measures.
- 6.4.590. The Shadow HRA Report [APP-145] stated that an AEoI is not predicted to arise during decommissioning, given that the identified effect would be compensated for in the construction phase³⁷ (see Section 6.8 below for discussion of compensatory measures) and that alternative compensatory habitat at Abbey Farm in the north-eastern part of the EDF Energy Estate would be available for use by foraging marsh harrier (rather than the Sizewell Marshes) during decommissioning.
- 6.4.591. Applying the same argument presented in the Shadow HRA Report in respect of breeding avocet (Section 8.8 b iv of [APP-145]), the Applicant considers that noise and visual disturbance during operation of the Proposed Development are unlikely to differ substantially from the existing baseline situation, except in relation to artificial lighting. The extent of light spillage from the operational Proposed Development is not predicted to affect the nesting areas used by the marsh harriers and the species does not hunt at night [APP-145]. Therefore, the Applicant concludes that an AEoI for marsh harrier of the Minsmere-Walberswick SPA and Ramsar is not predicted to arise from noise and visual disturbance during operation [APP-145].
- 6.4.592. The Shadow HRA Addendum [AS-173] considered the implications of Change 5 (change to the location of the water resource storage area and the addition of flood mitigation measures to lower flood risk) on the conclusions reached in respect of disturbance to marsh harrier of the Minsmere-Walberswick SPA and Ramsar. The Applicant [AS-036] provided further baseline surveys of marsh harrier flight activity (undertaken in the 2020 breeding season). The Shadow HRA Addendum [AS-173] confirmed that the data from the 2020 surveys closely

³⁷ The Applicant confirms that this conclusion is without prejudice to the SoS's determination with regard to Regulation 63(1) and Regulation 64(1) of the Habitats Regulations.

corresponded with that presented in the Shadow HRA Report [APP-145] and did not alter the conclusions presented in the Shadow HRA Report in respect of an AEOI of breeding marsh harrier of the Minsmere-Walberswick SPA and Ramsar.

- 6.4.593. The Shadow HRA Addendum [AS-173] also considered the implications of additional noise modelling outputs for the construction works at the MDS on breeding marsh harrier populations; concluding that these did not alter the conclusions presented in the Shadow HRA Report [APP-145].
- 6.4.594. Appendix 1A to the Shadow HRA Addendum [AS-174] provided further consideration of inter-pathway effects during construction on breeding marsh harrier of the Minsmere-Walberswick SPA and Ramsar; concluding it was “highly unlikely” that increased recreational disturbance would add to the effects of noise and visual disturbance. The Applicant therefore considered there would be no change to the conclusions of the Shadow HRA Report [APP-145] in this regard.
- 6.4.595. The Applicant also considered marsh harrier of the Minsmere-Walberswick SPA and Ramsar to be relevant to the scope of the assessment of effects of Change 19. Section 8.2 of the Shadow HRA Third Addendum [REP7-279] considered noise and visual disturbance effects to all qualifying features of the Minsmere-Walberswick SPA and Ramsar resulting from construction of Change 19, concluding that this did not alter the conclusions of the Shadow HRA Report [APP-145].
- 6.4.596. The Applicant’s conclusion that an AEOI of the marsh harrier qualifying features of the Minsmere-Walberswick SPA and Ramsar (resulting from noise and visual disturbance during construction) could not be excluded has not been disputed by NE or other IPs. In its RR, NE [RR-0878] confirmed it was satisfied that the criteria for derogating from the Habitats Regulations were fulfilled in respect of marsh harrier of the Minsmere-Walberswick SPA and Ramsar.
- 6.4.597. The discussions and representations made by the Applicant and IPs during the Examination in respect of marsh harrier of the Minsmere-Walberswick SPA and Ramsar were largely around the compensatory measures proposed by the Applicant.
- 6.4.598. On the basis of the information before us, having regard to the views of NE as the ANCB, the ExA is of the view that an AEOI of the marsh harrier qualifying features of the Minsmere-Walberswick SPA and Ramsar resulting from noise and visual disturbance during construction cannot be excluded. The ExA has therefore considered the Applicant’s case for Alternative Solutions, IROPI and Compensatory Measures later in this Chapter.
- 6.4.599. Having regard to the nature and extent of the likely impacts compared to the existing baseline situation and the characteristics of the operational development, the ExA is of the view that there would be no AEOI of the marsh harrier qualifying features of the Minsmere-Walberswick SPA and

Ramsar resulting from noise and visual disturbance (including lighting) during operation.

- 6.4.600. The ExA is also of the view that AEOI of the marsh harrier qualifying features of the Minsmere-Walberswick SPA and Ramsar during decommissioning can be excluded. This is on the basis that the compensatory habitat for construction disturbance effects is proposed to be retained and managed during operation as part of the Estate Wide Management Plan³⁸ and would therefore be available for use by foraging marsh harrier (rather than the Sizewell Marshes) prior to impacts from noise and visual disturbance during decommissioning occurring.

Noise, light and visual disturbance – white-fronted goose (wintering/non-breeding)

- 6.4.601. The Applicant's Shadow HRA Report [APP-145] ruled out an AEOI for white-fronted geese of the Minsmere-Walberswick SPA and Ramsar from disturbance effects. This was on the basis that the potential visual impact zone does not extend to the SPA (other than in the south-eastern extremity, which does not include suitable habitat for white-fronted goose), whilst the peak noise levels within the SPA during construction of the MDS are predicted to remain below the 70dB LA_{max} threshold (again excepting the south-eastern extremity).
- 6.4.602. NE [RR-0878] highlighted that the construction site would be active 24 hours a day and therefore nocturnal surveys for white-fronted geese should be undertaken as they are most active outside daylight hours and daytime surveys only may therefore overlook potential impacts. The RSPB/SWT [REP2-506] also stated that the surveys were not presented in a way that it was possible to attach any confidence to conclusions regarding the likely noise levels experienced by roosting geese.
- 6.4.603. The Applicant undertook further white-fronted geese surveys in winter 2020/2021 and submitted the white-fronted goose survey report to the Examination at DL5 [REP5-125]. However, the RSPB/SWT [REP6-046] raised some concerns about limitations of the survey schedule and considered that the Applicant had a limited understanding of bird movements and therefore had potentially underestimated impacts. It noted that the construction site lies on the flight line of white fronted goose and stated that the report provides further evidence that AEOI of the Minsmere-Walberswick SPA cannot be ruled out. The Applicant responded to the points raised by RSPB/SWT in [REP8-120] (epage 9-14). It responded to points on limitations, stating its view on the usefulness of the data collected. The Applicant also reiterated that the number of geese movements in 2020/21 was unusually high by recent standards and not an annual event, and that there was no evidence from the analysis that the white-fronted goose calls were particularly associated with the post-dusk or pre-dawn periods which would be expected for local/roosting overflights.

³⁸ [REP10-136] (DCO Requirement 8 [REP10-009])

- 6.4.604. NE [REP8-298I] stated that it expected the nocturnal survey work to include thermal imaging. Nevertheless, it stated that
- "the acoustic surveys which have been provided confirm that during a survey year in which white-fronted goose numbers nationally were higher than normal, and 600 white-fronted geese were recorded an[sic] RSPB North Warren, for the majority of nights no geese were detected and there was no regular movement suggesting the presence of a roost. Natural England therefore has no further concerns in relation to white-fronted goose."*
- 6.4.605. The SoCG between the Applicant and NE [REP10-097] confirmed that there are no matters outstanding in relation to white fronted goose.
- 6.4.606. At the close of Examination, the RSPB/SWT [REP10-204] confirmed its concerns still remain and stated that the Applicant's conclusions (that the majority of goose movements were related to longer range overflights rather than roosting overflights) are based on one year of data and are not in agreement with their local observations over a period of years. It considered the Applicant's argument that birds using the FLL may be functionally linked to the SPA as opposed to being from the designated population represents a serious gap in the assessment and consideration of potential effects. It highlighted particular concerns for noise disturbance at night [REP10-111].
- 6.4.607. The ExA welcomed the further survey information in respect of white-fronted goose. The ExA notes the concerns of the RSPB/SWT with regards to movements but is of the view that the evidence provided to the Examination does not support the presence of a regular local roost of white-fronted goose that could be disturbed by the Proposed Development such that an AEoI would occur. The ExA has taken the advice of NE in this regard, who concur with the Applicant's conclusion of no AEoI, including the view that the evidence indicates no presence of a roost that could be affected by the Proposed Development.
- 6.4.608. The ExA is therefore of the view that an AEoI of the white-fronted goose qualifying feature of the Minsmere-Walberswick SPA and Ramsar can be excluded.

Disturbance impacts to breeding teal

- 6.4.609. The Applicant excluded an AEoI for breeding teal on the basis of the species sporadic recent breeding on the Minsmere South Levels and Sizewell Marshes and because noise impacts are not expected on the main areas of habitat suitable for breeding teal, and the potential visual impact zone does not extend to the Minsmere-Walberswick SPA (and Ramsar) (other than in the south-east extremity, which does not include suitable teal habitat). The Applicant excluded AEoI from artificial lighting during operation on the basis that light spillage is not predicted to affect areas that may be used by the breeding teal population. It also excluded an AEoI from recreational disturbance, as noted in earlier paragraphs to this chapter.

- 6.4.610. The RSPB/SWT [REP2-506] considered that much of the Minsmere South Levels would provide suitable habitat for teal. It noted that the population has declined dramatically to a five year mean peak count (2011/12 - 2015/16) of one pair and the conservation objectives for the site therefore require the feature to be restored. It considered that the potential for the Proposed Development to affect the ability of conservation measures to restore this feature (if causes are understood and suitable solutions can be proposed) should be considered.
- 6.4.611. The Applicant responded in [REP3-042] that during annual surveys from 2010 to 2017, no breeding pairs were recorded on the Minsmere South Levels, whilst the one pair recorded on the Minsmere South Levels during the 2020 surveys was outside the area within which potential effects of noise and visual disturbance are predicted to occur. This record from 2020 can only be regarded as 'potential breeding', because of the difficulty of confirming actual breeding unless young are observed. It also stated that there are extensive areas of potentially suitable habitat which occur throughout much of the SPA (and Ramsar). The RSPB did not provide a response to the Applicant's [REP3-042].
- 6.4.612. At DL10, the RSPB/SWT [REP7-152] and [REP10-204] remained of the view that an AEOI for teal could not be excluded; however, it did not provide a direct response to the Applicant.
- 6.4.613. NE did not raise concerns during the Examination with regards to disturbance to breeding teal or AEOI as a result of impeding the ability of the conservation objectives to be achieved.
- 6.4.614. The ExA notes the target within the Supplementary Advice to the conservation objectives to "*restore the size of the breeding population to a level which is above 73 breeding pairs, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent. [currently considered to be 1 breeding pair]*" We also note the site-specific note that states that "*The aspiration is to restore the size of the population, however it is unclear what is driving declines so site-specific conservation measures may not fully succeed. Further investigative actions are required to understand the causes of the decline in population numbers.*"
- 6.4.615. Based on the limited extent of noise and visual disturbance (lacking overlap with suitable teal habitat) and the presence of suitable teal habitat for this species throughout the remainder of the SPA and Ramsar, the ExA is of the view that there would be no AEOI. The ExA also considers that the Proposed Development would not prevent the target to restore the population size, acknowledging that the specific reasons for the decline in this species at the site are not currently known.

Noise, light and visual disturbance - other features

- 6.4.616. NE's RR (NE Issue 27) [RR-0878] stated that an AEOI from noise, light and visual disturbance could not be excluded for all features of the Minsmere-Walberswick SPA and Ramsar.

- Minsmere-Walberswick SPA
 - avocet (breeding)
 - little tern (breeding)
 - nightjar (breeding)
 - hen harrier (wintering)
- Minsmere-Walberswick Ramsar
 - Criterion 2 (supports nine nationally scarce plants and at least 26 red data book invertebrates)

6.4.617. However, NE did not expand further on its concerns for these qualifying features in its subsequent representations and by DL10, and as stated in its final SoCG with the Applicant [REP10-097], NE's outstanding issues only related to the shoveler and gadwall qualifying features (as described above).

6.4.618. The ExA has considered the evidence provided to the Examination, including information in the Shadow HRA Report (Sections 8.8 and 8.9) [APP-145], Section 8.3, 8.5 and 8.7 of the Shadow HRA Report Addendum [AS-173], and Section 8.2 of the Shadow HRA Third Addendum [REP7-279], and is of the view that AEOI can be excluded to all other qualifying features as a result of noise, light and visual disturbance from the Proposed Development.

Indirect impacts on birds from disturbance of prey species by underwater noise and vibration – little tern

6.4.619. The Shadow HRA Report [APP-145] acknowledged the potential for noise and vibration from impact piling during the construction of the BLF and dredging and drilling for construction of cooling water intakes and outfalls. It concluded no AEOI for all qualifying features of all European sites due to the short term, temporary nature of underwater noise.

6.4.620. In relation to little tern, the RSPB/SWT [REP2-506] noted that a significant area of the foraging range of little terns from the Minsmere-Walberswick SPA and Outer Thames Estuary SPA (Minsmere colony) is expected to coincide with the area over which a fish 'behavioural response' (including displacement) is predicted. It stated that a piling restriction would resolve concerns about noise disturbance from piling affecting foraging terns from sites.

6.4.621. The ExA notes the Applicant's proposal in the Shadow HRA Addendum [AS-173](epage 89) which states that "*All construction works for both the enhanced permanent BLF and temporary BLF would occur outside the little tern breeding season, which is assumed to be May to August, inclusive*" and also "*To mitigate the potential for impacts on breeding birds, no piling would occur in May to August inclusive.*" (epage 106). This commitment is also included in the draft MMMP [REP10-028], which states "*No piling will occur in the months of May to August inclusive to minimise the potential for effects on designated breeding birds*" (epage 11). The dDCO [REP10-009] includes a commitment in the DML (Schedule 20, Part 3) as Condition 36, which places obligations on the Applicant not to commence any impact piling (if required) of Work no. 1A(I) (permanent beach landing facility) and 1a(aa) (temporary marine

bulk import facility) between May and July of any year and must not commence until (amongst other matters) a MMMP in general accordance with the draft MMMP has been submitted and approved by the MMO in writing.

- 6.4.622. The ExA notes that RSPB/SWT wanted a piling restriction to address its concerns on this matter. The restriction in the DML does not restrict 'all construction works' (as stated in [AS-173]) but does restrict the timing of impact piling of the BLF (if required). The Condition does not exclude the commencement of impact piling for the BLF in the month of August, which is the statement made in both the Applicant's HRA [AS-174] and the draft MMMP [REP10-028], but does stipulate that impact piling must not commence between May and July of any year and must not commence until (amongst other matters) a MMMP in general accordance with the draft MMMP has been submitted and approved by the MMO in writing.
- 6.4.623. This matter is not referred to further in representations made by RSPB/SWT nor is it mentioned in the final RSPB/SWT SoCG [REP10-111]. It was not a matter raised by NE during the Examination and NE concur with the Applicant's conclusion of no AEoI to the little tern qualifying feature of the Minsmere-Walberswick SPA and Outer Thames Estuary SPA due potential disturbance effects [REP10-097].
- 6.4.624. The ExA is of the view that the Shadow HRA Addendum conclusion of no AEoI is based upon a restriction for 'all construction works' for the BLF to not be undertaken between the months of May to August (inclusive). This is not currently secured through the DML [REP10-009] or draft MMMP [REP10-028]. It is necessary for the DML to restrict all construction works for the BLF to take place outside of the little tern breeding season. The ExA notes the potential discrepancy between the request of the RSPB/SWT and the statement of the Applicant not to undertake piling for the BLF in August and Condition 36(3), which states it cannot commence between May and July, although the Condition also requires the final MMMP to be submitted to and approved by the MMO prior to commencement of piling.
- 6.4.625. The ExA would therefore recommend that the SoS may wish to consult with the Applicant with regards to an amended DML condition that takes into account all construction works and a restriction of works between May and August, inclusive.

Disturbance associated with the creation of compensatory measures wetland habitat and flood compensation area - breeding bittern, gadwall and shoveler (construction)

- 6.4.626. The RSPB/SWT [REP2-506] noted that the works to create the new wetland habitats in the proposed marsh harrier compensatory habitat area on the EDF Energy Estate would occur in the first winter of Phase 1 of the construction period. It was concerned that should works stretch into the breeding season, impacts on breeding bittern, gadwall and shoveler, could be more significant than predicted. It specifically noted that breeding bittern start booming in February.

6.4.627. The Applicant subsequently confirmed [REP3-042] (epage 239) that works on the flood compensation area and wetland habitat would only be carried out in winter and that in the event that works are not completed in the first winter (October to February, inclusive), that they would be continued in the second winter. The RSPB/SWT confirmed that securing this commitment would resolve its concerns on this issue [REP5-166].

6.4.628. The Applicant incorporated this commitment into the CoCP submitted at DL8 [REP8-082]. This is included in the final version at DL10 [REP10-072] (epage 82), which states

"The excavation works to create the wetlands as defined in the 'On-site Marsh Harrier Compensatory Habitat Strategy (Doc Ref. 10.21)³⁹ (secured pursuant to Requirement 14A)⁴⁰ must be commenced in the first winter of construction on the Main Development Site and in accordance with the marsh harrier implementation plan approved pursuant to Requirement 14A.

Excavation works must be undertaken between October and February, unless otherwise agreed with the Ecology Working Group. Any remaining excavation would be completed in the following winter.

This definition is to ensure that there are no noise impacts to breeding bitterns (which commence breeding in February) and breeding marsh harriers at Minsmere, during the summer, from the excavation of the wetlands.

For the avoidance of doubt, wetland planting and other habitat works, other than excavation, are excluded from this seasonal constraint."

6.4.629. The CoCP is a certified document in Schedule 24 of the dDCO [REP10-009] and is to be certified under Article 80. Its implementation is secured through Requirement 2 of the DCO.

6.4.630. The ExA is content that the commitment to undertake works for the marsh harrier compensatory habitat during the winter months would mitigate potential disturbance impacts from these works on breeding bittern, gadwall and shoveler, and that this commitment is adequately secured. However, the ExA notes a discrepancy between the need to avoid works in February when bitterns start booming and the statement that excavation work must be undertaken between October and February. This wording does not specifically exclude February.

6.4.631. The ExA therefore recommends that the SoS may wish to consult with the Applicant with regards to an amendment to the period of excavation works for the marsh harrier compensatory habitat area to specifically exclude February.

Direct habitat loss and fragmentation

³⁹[REP10-128]

⁴⁰ Now Requirement 27 [REP10-009]

- 6.4.632. The Shadow HRA Report [APP-145] (Section 8) provides an assessment of potential AEOI from direct habitat loss and fragmentation during construction, operation and decommissioning of the Proposed Development for the following qualifying features of the Minsmere-Walberswick SPA:
- Marsh harrier (breeding);
 - Nightjar (breeding);
 - Hen harrier (non-breeding).
 - Gadwall (non-breeding); and
 - Shoveler (non-breeding).
- 6.4.633. The Shadow HRA Report [APP-145] states that wetland habitats provide key foraging areas for the breeding marsh harrier and wintering hen harrier populations of the SPA. The Sizewell Marshes SSSI provides such habitat and is used by foraging marsh harrier from the SPA, although to a lesser extent than the Minsmere South Levels, which are closer to the nesting area of marsh harriers at Minsmere. The Applicant [APP-145] identified that construction works at the MDS would result in the permanent loss of 7.03ha⁴¹ of the Sizewell Marshes SSSI. The Applicant confirmed this loss represents approximately 8% of the total coastal grazing marsh and reedbed habitats within the Sizewell Marshes, but also stated this is a much smaller proportion of the total area of wetland foraging habitat available to the SPA marsh harrier population (eg the extent of wetland foraging habitat on the Minsmere South Levels exceeds that found within the Sizewell Marshes).
- 6.4.634. The Applicant [APP-145] concluded no AEOI to the SPA marsh harrier population from the direct loss and fragmentation of this habitat (during all stages of the Proposed Development) as it represents a small proportion of the available wetland foraging habitat in a wider area that is less heavily used than other areas of wetland habitat, eg Minsmere South Levels, which are closer to the nesting area. The Applicant [APP-145] reached the same conclusion of no AEOI in respect of wintering hen harrier, noting that baseline surveys demonstrated relatively little recorded foraging activity by wintering hen harriers within the vicinity of the MDS.
- 6.4.635. The Applicant [APP-145] referenced the primary mitigation measures that have been implemented adjacent to the Sizewell Marshes at Aldhurst Farm⁴² to create like for like replacement reedbed and ditch habitat to mitigate for loss of the SSSI habitat but confirmed at paragraph 8.8.154 [APP-145] that these measures were not considered or required to reach the conclusion of no AEOI for marsh harrier.

⁴¹ Later reduced to 5.74ha of the Sizewell Marshes SSSI [Table 2-2 of REP8-120]. Whilst a revised percentage of the total coastal grazing marsh and reedbed habitats within the Sizewell Marshes (previously 8% based on 7.03ha permanent loss) does not appear to have been provided, the ExA has calculated this to be approximately 5.45%.

⁴² Described in ES Chapter 14 [APP-224] as an area west of the site consisting of 49ha of acid grassland and scrub, 5ha of reedbeds and 2km of ditches.

- 6.4.636. The Shadow HRA Report [APP-145] explained that baseline surveys demonstrate no evidence of breeding nightjar within or close to the MDS. The Applicant [APP-145] stated that breeding nightjar of the SPA are unlikely to rely on suitable habitat near to the MDS for foraging, because their main breeding sites are more than 1km from the MDS and studies of radio-tracked birds in south-east England recorded a mean maximum distance of 747m from territory centres. On that basis, the Applicant [APP-145] concluded no AEOI for breeding nightjar of the SPA.
- 6.4.637. The Shadow HRA Report [APP-145] identified that wintering gadwall and shoveler of the Minsmere-Walberswick SPA could be affected by the loss of the wetland habitat in Sizewell Marshes and that these habitats may be functionally linked to the SPA. The Applicant [APP-145] stated that baseline surveys demonstrate relatively low numbers of wintering gadwall and shoveler on the Sizewell Marshes, compared to those occurring in other areas of suitable habitat within, and in close proximity to, the SPA. The Applicant stated that the areas of habitat to be lost are not of disproportionate importance relative to other parts of the Sizewell Marshes and represent only 6.4% of the total area of the Sizewell Marshes. The Shadow HRA Report [APP-145] therefore concludes that direct habitat loss and fragmentation would not result in an AEOI to gadwall and shoveler during construction, operation or decommissioning of the Proposed Development.
- 6.4.638. The Shadow HRA Report states (paragraphs 8.9.3 to 8.9.6 [APP-145]) that although the Ramsar qualifying criteria are different from those of the SPA, the bird species cited as part of the breeding bird assemblage under Ramsar Criterion 2 are also qualifying features of the SPA with the exception of bearded tit. Thus, the assessment in relation to the qualifying features of the Minsmere-Walberswick SPA, and the conclusion of no AEOI, is also considered to apply to the Ramsar.
- 6.4.639. The ExA notes the outstanding concerns from NE and RSPB/SWT regarding the survey work undertaken for waterbirds (including gadwall and shoveler), as reported above. There are also outstanding concerns regarding the impact from permanent land take on Sizewell Marshes SSSI from both NE [REP10-097] (epage 59) and RSPB/SWT [REP10-111], which are discussed in Section 5.6 of this Recommendation Report. However, NE [REP10-097] and RSPB/ SWT [REP10-111] did not dispute the Applicant's conclusions of no AEOI of the Minsmere-Walberswick SPA and Ramsar from direct habitat loss and fragmentation at DL10.
- 6.4.640. The ExA is of the view that because the loss of 5.74ha of wetland foraging habitat for marsh harrier and hen harrier within the Sizewell Marshes SSSI is located outwith the SPA and Ramsar and based on survey evidence is less heavily used by marsh harrier and hen harrier than other areas in the vicinity of the SPA and Ramsar (such as Minsmere Levels South), the conservation objectives of the SPA in relation to the marsh harrier and hen harrier qualifying features would not be undermined.

- 6.4.641. The Applicant's conclusion of no AEOI of marsh harrier from direct habitat loss and fragmentation is not reliant on the mitigation measures to create like for like replacement reedbed and ditch habitat, which have been implemented adjacent to the Sizewell Marshes at Aldhurst Farm.
- 6.4.642. The ExA is therefore satisfied that there would be no AEOI of the marsh harrier, hen harrier, shoveler and gadwall qualifying features of the Minsmere-Walberswick SPA and Ramsar from direct habitat loss and fragmentation of FLL during construction, operation and decommissioning of the Proposed Development.
- 6.4.643. Baseline surveys demonstrated no evidence of breeding nightjar within or close to the MDS. The ExA is therefore satisfied that there would be no AEOI on the nightjar qualifying feature of the Minsmere-Walberswick SPA and Ramsar from direct habitat loss and fragmentation during construction, operation and decommissioning of the Proposed Development.

Physical interaction with project infrastructure (entrapment of prey species) – bittern

- 6.4.644. The ExA's consideration of AEOI for the potential effect pathway 'Physical interaction with project infrastructure (entrapment of prey species) – breeding bittern' as reported for Benacre to Easton Bavents SPA above, is equally applicable to the bittern qualifying feature of the Minsmere-Walberswick SPA and Ramsar. The ExA is satisfied that entrainment of eel by the Proposed Development would not result in an AEOI of breeding bittern of the Minsmere-Walberswick SPA and Ramsar.

Physical interaction with project infrastructure (entrapment of prey species) - little tern and Ramsar Criterion 2

- 6.4.645. See earlier paragraphs to this Report for more detailed reasoning. Overall, the ExA considers the SoS could conclude that there would be no AEOI on the Minsmere-Walberswick SPA and Ramsar **Error! Reference source not found.** as a result of impacts on prey species from entrapment. However, in the absence of clear agreement on this conclusion from NE as ANCB together with the outstanding issues expressed by the EA (reported in Section 5.15 of this Recommendation Report), the ExA considers the SoS may wish to satisfy himself on these matters before reaching a conclusion.

Physical interaction between birds and project infrastructure (pylons and power lines)

- 6.4.646. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the monitoring (and mitigation measures, if required) as secured, there would be no AEOI of the Minsmere-Walberswick SPA from the physical interaction between birds and project infrastructure (pylons and power lines) as a result of Proposed Development, either alone or in combination.

Recreational disturbance – all features

- 6.4.647. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI of the Minsmere-Walberswick SPA and Ramsar from the disturbance arising from recreational pressure as a result of the Proposed Development, either alone or in combination.

Unintentional spread of INNS

- 6.4.648. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI of the Minsmere-Walberswick SPA and Ramsar from the unintentional introduction or spread of INNS as a result of Proposed Development, either alone or in combination.

Impediment to management practices

- 6.4.649. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA has considered how impeding management could result in impacts to these European sites and is of the view that the SoS could conclude there would no AEOI to the Minsmere-Walberswick SPA and Ramsar with the mitigation proposed in the form of access for management, either alone or in combination with other plans or projects. However, a firm commitment from the Applicant that it would not impede the RSPB's existing access route to the Minsmere reserve via Lower Abbey Farm was not submitted to the Examination and the ExA recommends that the SoS may wish to satisfy themselves in this regard before reaching a conclusion on this matter.

Cumulative/in-combination effects

- 6.4.650. The Shadow HRA Report provides an in-combination assessment of the potential for AEOI on the qualifying features of the Minsmere-Walberswick SPA arising from changes in coastal processes/sediment transport, changes to water quality, disturbance and recreational disturbance from the Proposed Development together with the plans/projects identified in Tables 8.22, 8.23, 8.24 and 8.25 of [APP-145].
- 6.4.651. The Applicant argued that the effects on water quality (marine environment) from the SMP would not greatly change the current baseline and that changes to coastal processes/ sediment transport due to the Proposed Development would be very small, localised and too far away to interact with the proposed coastal management approaches of the SMP. It was stated in [APP-145] that an in-combination assessment with Sizewell B decommissioning (anticipated to commence in 2035) was not possible due to a lack of information. The Applicant considered that mitigation measures proposed to mitigate recreational disturbance (as reported above) and via the Suffolk RAMS Strategy would avoid a AEOI in combination with the identified plans/projects.

- 6.4.652. Taking account of proposed mitigation measures, the Applicant concluded there was no potential for an AEoI on the Minsmere-Walberswick SPA in combination with other plans or projects [APP-145]. The Applicant considers that the assessment summarised above in relation to the qualifying features of the Minsmere-Walberswick SPA, and the conclusion of no AEoI in combination, also applies to Minsmere-Walberswick Ramsar site (paragraph 8.9.9 [APP-145]).
- 6.4.653. The Applicant additionally considered cumulative/inter-project effects between different elements of the Proposed Development in [AS-174] and [REP7-279]. The 'Supplementary assessment of inter-pathway effects' (Appendix 1 of [AS-174]) considered that inter-pathway effects to the bird qualifying features of Minsmere-Walberswick SPA and Ramsar could occur via the pathways for marine water quality effects, alteration of local hydrology and hydrogeology, changes in air quality, direct habitat loss and fragmentation, disturbance of species populations, disturbance due to increased recreational pressure and interaction with project infrastructure during the operational phase. The assessment concluded that an AEoI would not occur when the respective effects are considered together [AS-174].
- 6.4.654. The ExA is aware that NE have outstanding concerns with regards to coastal processes, marine water quality effects, air quality, and noise, light and visual disturbance (gadwall and shoveler) for Minsmere-Walberswick SPA and Minsmere to Walberswick Ramsar (bird criterion), as described above, and a number of these include matters to be addressed through the WDA EP, such as water quality and air quality (NE Issue 9 and 30 to 36)[RR-0878][REP10-097].
- 6.4.655. The ExA is not aware of any further in-combination plans or projects that could act in combination with the Proposed Development and considers, on the basis of the information provided to the Examination, that it could be possible to conclude no AEoI in combination. However, the ExA recommends that the SoS satisfy themselves on the outstanding matters before a conclusion on in-combination effects is determined.

ExA's conclusion

- 6.4.656. The ExA has concluded that an AEoI on the Minsmere-Walberswick SPA and Ramsar as a result of changes in air quality cannot be excluded.
- 6.4.657. The ExA is also of the view that an AEoI of the SPA and Ramsar from the Proposed Development alone due to noise and visual disturbance during construction on the following qualifying features cannot be excluded:
- Marsh harrier (breeding);
 - Gadwall (breeding and non-breeding); and
 - Shoveler (breeding and non-breeding).
- 6.4.658. Additionally, the ExA is aware that NE have outstanding concerns on a number of matters which have been expressed above. The SoS may therefore wish to satisfy themselves with regard to these outstanding matters.

Orfordness to Shingle Street SAC

Introduction

- 6.4.659. Orfordness to Shingle Street SAC is located 8.9km from the MDS and 5.9km to the closest associated development site (the A1094/B1069 south of Knodishall).
- 6.4.660. The qualifying features for which the site is designated, and which have been carried forward to consideration of AEoI are:
- coastal lagoons;
 - annual vegetation of drift lines; and
 - perennial vegetation of stony banks.
- 6.4.661. The Shadow HRA Report [APP-145] and Shadow HRA Addendums [AS-173] and [REP7-279] provided information for an appropriate assessment for the following potential impact pathways for all qualifying features except where indicated:
- alteration of coastal processes/sediment transport (construction, operation and decommissioning);
 - changes in water quality – marine environment (construction, operation and decommissioning) (except perennial vegetation of stony banks during operation);
 - changes in air quality (construction, operation and decommissioning); and
 - disturbance effects from recreational pressure (construction, operation and decommissioning) (except coastal lagoons).

Alteration to coastal processes/sediment transport

- 6.4.662. See earlier paragraphs to this Chapter for more detailed reasoning. As noted above, NE raised no concerns with the Applicant's assessment of alteration to coastal processes/sediment transport to the Orfordness and Shingle Street SAC arising from the Proposed Development alone. Having regard to the characteristics of the Proposed Development, the distance to the European site, and the extent of the likely impacts based on the evidence provided, the ExA is satisfied that there would be no AEoI of the Orfordness and Shingle Street SAC from the alteration to coastal processes/sediment transport as a result of the Proposed Development, either alone or in combination.

Changes in water quality – marine environment

- 6.4.663. See earlier paragraphs to this Chapter for more detailed reasoning. As noted above, NE raised no concerns with the Applicant's assessment of changes in marine water quality to the Orfordness and Shingle Street SAC. Having regard to the characteristics of the Proposed Development, the distance to the European site, and the extent of the likely impacts based on the evidence provided, the ExA is satisfied that there would be no AEoI of the Orfordness and Shingle Street SAC from the changes in marine water quality as a result of the Proposed Development, either alone or in combination.

Changes in air quality

- 6.4.664. See earlier paragraphs to this Chapter for more detailed reasoning. As noted above, NE raised no concerns with the Applicant's assessment of changes in air quality to the Orfordness and Shingle Street SAC. Having regard to the characteristics of the Proposed Development, the distance to the European site, and the extent of the likely impacts, the ExA is satisfied that there would be no AEOI on the Orfordness and Shingle Street SAC from changes in air quality as a result of Proposed Development, either alone or in combination.

Recreational pressure

- 6.4.665. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is content that the Proposed Development would not prevent the extent, distribution, structure, function and supporting processes of the qualifying habitats of Orfordness to Shingle Street SAC from being maintained. The ExA therefore agrees that there would be no AEOI arising from recreational pressure due to the Proposed Development, either alone or in combination.

Cumulative/in-combination effects

- 6.4.666. The Shadow HRA Report provides an in-combination assessment of the potential for AEOI on the qualifying features of the Orfordness to Shingle Street SAC arising from changes to water quality (marine) and alteration of coastal processes/ sediment transport, from the Proposed Development together with Suffolk SMP and the Shingle Recycling from Sudbourne Beach to Slaughden Sea Defences (Section 7.9 e i and ii and Table 7.12 of [APP-145]).
- 6.4.667. The Applicant's assessment [APP-145] concluded that none of the proposed coastal management approaches outlined within the preliminary assessment carried out for the SMP have potential to cause an in-combination effect due to changes in water quality or alteration of coastal processes/ sediment transport on the Orfordness to Shingle Street SAC together with the Proposed Development. The Applicant stated that the changes to coastal processes/ sediment transport due to the Proposed Development would be very small, localised and too far away to interact with the proposed coastal management approaches of the SMP. No AEOI in combination was predicted.
- 6.4.668. With regards to the proposed Shingle Recycling from Sudbourne Beach to Slaughden Sea Defences, the assessment considers potential in-combination effects on the annual vegetation of drift lines qualifying feature of the SAC. It concludes that any decrease in vegetation cover would not be significant in comparison to changes to the drift line vegetation caused by storms and storm surges. Furthermore, the Proposed Development is located approximately 8.8km from the proposed Shingle Recycling. No AEOI in combination was predicted [APP-145].

- 6.4.669. The Applicant also considered cumulative/inter-project effects between different elements of the Proposed Development in [AS-174] and [REP7-279].
- 6.4.670. The Applicant's conclusion of no AEOI of the Orfordness to Shingle Street SAC in combination with other plans or projects was not disputed by NE during the Examination. Additionally, this SAC was not raised by NE as a site of concern in relation to cumulative and in-combination effects (NE Issue 9) [RR-0878] and [REP10-097] (epage 17).
- 6.4.671. Based on the distance to the SAC, predicted limited scale of impact, and considering the potential impacts of the two in combination, coupled with the advice of NE as the ANCB, the ExA is satisfied that there would be no AEOI on the qualifying features of the Orfordness to Shingle Street SAC from the Proposed Development in combination with other plans or projects.

ExA's conclusion

- 6.4.672. Having considered the evidence before the Examination, the position of NE as the ANCB and the implications of the Proposed Development on this SAC in light of its conservation objectives, the ExA is of the view that there would be no AEOI to Orfordness to Shingle Street SAC, either alone or in combination with other plans or projects.

Outer Thames Estuary SPA

Introduction

- 6.4.673. The Outer Thames Estuary SPA overlaps the DCO application site. The qualifying features for which the site is designated, and which have been carried forward to consideration of AEOI are:
- red-throated diver (wintering);
 - little tern (breeding); and
 - common tern (breeding).
- 6.4.674. The Shadow HRA Report [APP-145] and Shadow HRA Addendums [AS-173] and [REP7-279] provided information for an appropriate assessment for the following potential impact pathways for all qualifying features:
- changes in water quality – marine environment (construction, operation and decommissioning);
 - disturbance effects (construction, operation and decommissioning); and
 - physical interaction with project infrastructure (increased collision risk with construction and decommissioning vessels/activities and entrapment of prey species during operation).
- 6.4.675. The Applicant concluded no AEOI for all qualifying features of the Outer Thames Estuary SPA from all LSEs screened in.

Water quality effects – marine environment

- 6.4.676. See earlier paragraphs to this Chapter for more detailed reasoning. As noted above, potential effects associated with changes to water quality in the marine environment on the wintering red-throated diver and breeding little tern and common tern qualifying features of the SPA remain a concern of NE [REP10-097] and [REP10-199] (NE Issues 9 and 30 to 26). NE expects further information on the effects and mitigation to be included with the WDA permit, which they have not yet been consulted on and therefore cannot provide final advice on, until the permitting process is finalised. RSPB/SWT [REP10-111] also remain concerned about potential impacts on terns (and their prey), from thermal and chemical plumes and about combined effects of the Proposed Development on the marine water environment.
- 6.4.677. NE [REP10-097] states that direct risks to little terns from the chemical discharges have not been considered. However, the Applicant [REP10-155] contests this statement; stating that NE has failed to engage with the information it has provided to the Examination on this matter (eg in [REP3-042], [REP5-120] and [REP7-073]). The ExA is of the view that these submissions have considered this issue.
- 6.4.678. Recognising that a further level of detailed information will be provided in respect of the WDA permit and that this will be subject to a separate and detailed HRA, the ExA has considered the submissions from the Applicant and IPs currently available to the ExA as submitted to the Examination, together with the implications for the aforementioned European sites in light of their conservation objectives.
- 6.4.679. The ExA notes the concerns raised about the increased risk of chemical exposure for predatory seabirds. However, it is not persuaded that chemicals consumed by SPA species would be at concentrations that would affect the population of the qualifying features. The ExA does however note that controls on marine water quality will be addressed by the WDA Permit and the SoS may therefore wish to satisfy themselves further in this regard.
- 6.4.680. With regards to bentonite from potential frack-out events, the ExA is of the view that the measures secured through the CoCP [REP10-072], including the commitment to use of a bentonite recovery system, could ensure no AEOI to Outer Thames Estuary SPA, alone or in combination. However, as noted above, due to the timing of the Examination, NE did not have the opportunity to comment on the updated CoCP and therefore, the SoS may wish to satisfy themselves in this regard.
- 6.4.681. Additionally, as noted in Section 5.16 of this Recommendation Report, the ExA suggests that the SoS may wish to satisfy themselves that the MMO is content with the conclusions of the updated version of the BEEMS Technical Report TR552 [REP10-052]. The ExA can see no reason not to agree with the findings. However, because of the timing at the end of the Examination, the MMO has not had the opportunity to comment.
- 6.4.682. With regards to operational discharge activities associated with the cooling water system, including thermal and chemical (including

hydrazine and chlorination) plume, and moribund biota, the ExA is of the view that AEOI could be excluded on the basis of the mitigation and monitoring measures secured. These include measures in the scheme design (such as location of outfalls, and intake and outfall design and position) (secured through DCO), the Chlorination Strategy (secured through WDA), controls over chemicals used within the marine environment (secured through the DML), measures in the CoCP in relation to bentonite (secured through DCO), and commitments to management and monitoring of discharges from the cooling water outfall, CDO and desalination plant outfall (secured through WDA).

- 6.4.683. Without prejudice to the subsequent EP process, the ExA considers that on the basis of the material currently available to the ExA and with the mitigation measures secured and controls through the WDA permit, it is possible to conclude no AEOI from the Proposed Development alone or in combination with other plans or projects. However, the SoS may wish to satisfy themselves in this regard, both from the Proposed Development alone and in combination.

Disturbance effects: disturbance from vessels - red-throated diver

- 6.4.684. The Applicant assessed a worst-case scenario maximum transit through the Outer Thames Estuary SPA of c.0.1 hours of vessel activity per km² per month [APP-145] and [REP3-042] [Appendix P of REP5-120]. This was compared to existing levels within the SPA, which are frequently at values of at least 1.5 hours per km² per month and can be above 5 – 10 hours per km² per month in shipping lanes and in proximity to wind farms. The Applicant considered that the scale and extent of displacement of the SPA red-throated divers which is expected to occur as a result of the operation of the BLFs and the associated vessel movements is highly unlikely to lead to any discernible increase in mortality amongst the SPA population.
- 6.4.685. NE [REP2-153], [REP5-159] and [REP5-160] explained that red-throated divers are a species that are highly sensitive to disturbance and considered that insufficient evidence had been presented to draw a conclusion of no AEOI. It requested a full vessel management plan, detailing appropriate mitigation to reduce red-throated diver disturbance and displacement, be secured within the DCO. NE's position was supported by the MMO [REP3-070] and [REP6-039] and the RSPB/SWT who made extensive comments in [REP2-506], [REP3-074], [REP5-165] and [REP5-164] and did not support the Applicant's conclusion of no AEOI.
- 6.4.686. In response, the Applicant produced an Outline Vessel Management Plan (oVMP) [REP6-027] outlining the vessel movements and routes and providing the strategy for planning the vessel movements to protect the Outer Thames Estuary SPA. The oVMP also summarised the approach to monitoring of red-throated divers, the governance around this monitoring, the setting of disturbance thresholds and approach which would be taken in relation to directing vessels to use alternative routes. The oVMP would be supplemented during the detailed planning and

construction stages by specific Vessel Management Plans prepared by the contractors to accord with the principles in this oVMP. The Applicant [REP6-025] considered that the oVMP provides reassurance that an AEoI for red-throated diver can be avoided.

- 6.4.687. The oVMP was revised a number of times in the Examination⁴³ in response to comments from NE [REP7-141] and [REP8-298m] and the RSPB/SWT [REP7-152], [REP7-153], [REP7-154], [REP8-173] and [REP10-204]. Through these revisions, the Applicant committed to no vessel movements through the SPA during the winter months (1 November to 31 March inclusive), unless a Vessel Management Plan (VMP) has been submitted to and approved by the MMO. The RSPB/SWT additionally listed a number of concerns with, and suggested amendments to, the wording of the Applicant's oVMP in its final DL10 submission [REP10-204] (epage 15), particularly in relation to 'preferred routes'. The RSPB/SWT [REP10-204] did however also confirm in their final response that they had "...discussed these issues with the Applicant and expect further progress within the Deadline 10 submissions including in particular a strengthened commitment to the route selection hierarchy and therefore the use of the preferred routes." The ExA notes that amendments have been made to the oVMP [REP10-133] (as shown in [REP10-134] tracked changed version), which appear to address RSPB/SWT's concerns.
- 6.4.688. A Condition to require the undertaker to manage vessels in accordance with the oVMP unless otherwise approved by the MMO was incorporated into the dDCO/DML at DL 7⁴⁴. The wording of the condition was revised at DL8 [REP8-036] to, inter-alia: refer to vessel movements in the Outer Thames Estuary SPA; require the oVMP that would be submitted to and approved by the MMO to be in general accordance with the draft; and to include procedures to minimise disturbance to red-throated diver. The condition was included at Schedule 20 (DML), Part 3, Condition 28 [REP10-009] in respect of vessel movements during winter months, as defined in the oVMP. The oVMP was listed as a certified document in Schedule 24 of the dDCO and is to be certified under Article 80 [REP10-009]
- 6.4.689. It is noted that the oVMP [REP10-133] commits to no vessel movements through the SPA during the winter months unless a Winter Vessel Management Plan has been submitted to and approved by the MMO, pursuant to DML Condition 31(a), which is now Condition 28 in the DML [REP10-009].
- 6.4.690. At the end of the Examination, NE [REP10-198], [REP10-199] and [REP10-097] confirmed that the Applicant had made sufficient alterations to the oVMP and agreed that there would be no AEoI of over wintering red-throated diver of the Outer Thames Estuary SPA.

⁴³ Revision 2 [REP7-046], Revision 3 [REP8-106] and Revision 4 [REP10-133]

⁴⁴ Schedule 20 (DML), Part 3, Paragraph 31a [REP7-007]

- 6.4.691. The final SoCG between the Applicant and the RSPB/SWT [REP10-111] confirms that the main concerns relating to the oVMP have been resolved in the oVMP that would be submitted by the Applicant at DL10 (ie Revision 4 [REP10-133]). The Applicant states that the DL10 revision [REP10-133] is the agreed update between the parties.
- 6.4.692. The ExA has taken into account the Supplementary Advice on Conservation Objectives for this site, which note the vulnerability of red-throated diver to disturbance by boats and the strong stress response exhibited by birds in response to such disturbance by marine activity and construction.
- 6.4.693. We welcome the Applicant's commitment to avoid vessel movements in the SPA during winter months, and the commitment to the oVMP, which is to be submitted to and approved by the MMO, should this not be possible. We are satisfied that the measures within the draft oVMP would provide effective mitigation to minimise disturbance to red-throated diver and that a winter VMP is secured through Condition 28 of the DML.
- 6.4.694. We are satisfied that that vessel disturbance impacts would not compromise the SPA objective to maintain the distribution of the qualifying features within the site. We therefore recommend that there would no AEOI to red-throated diver of the Outer Thames Estuary SPA from vessel disturbance from the project alone. Effects in combination are considered below.

Disturbance effects: disturbance due to light – all qualifying features

- 6.4.695. The RSPB/SWT made numerous representations [REP2-506], [REP5-165], [REP8-173] and [REP10-204] highlighting concerns that no assessment has been made or mitigation proposed for the potential effects of lighting on red-throated divers of the Outer Thames Estuary SPA through disturbance and displacement and was particularly concerned about light from the BLFs.
- 6.4.696. The Applicant included consideration of disturbance from lighting in the Shadow HRA Report [APP-145], Shadow HRA Addendum [AS-174] in respect of changes to the proposed BLFs, and Shadow HRA Third Addendum [REP7-279] in respect of Change 19, the desalination plant (together with inter-related effects).
- 6.4.697. The Applicant [REP10-111] responded to the RSPB/SWT stating its position that
- "There is little potential for artificial lighting from the BLFs to have any effects on the SPA red-throated diver population, as is determined in the Shadow HRA Addendum [AS-173]. It is only the temporary BLF which could potentially operate over the winter period, although this is unlikely. This would extend c.500m from shore and so effects of artificial lighting would be restricted to a relatively small area around this BLF, representing a very small part of the SPA only. Furthermore, as detailed in Shadow HRA [APP-145], these potential effects would occur within a*

part of the SPA where red-throated diver densities tend to be relatively low, compared to other parts of the SPA (so any effects on the population would not be proportionate to the (small) area of the SPA”).

- 6.4.698. The ExA notes that task-related and ambient lighting would be required along the BLF and that both construction and operational phase lighting would be controlled through a Lighting Management Plan [REP10-033]⁴⁵. Condition 36 of the DML [REP10-009] also includes for the submission of activity details to (and approval from) the MMO, in consultation with the EA prior to the commencement of the BLF, including matters of mitigation and navigational lighting.
- 6.4.699. Although NE (NE Issue 27) [RR-0878] and [REP10-097] included all qualifying features of the Outer Thames Estuary SPA in its list of sites in respect of concerns with effects noise, visual and lighting disturbance from the MDS, it made no further representations regarding impacts from light. NE’s representations in regards of disturbance to the Outer Thames Estuary SPA appear to relate to the noise and disturbance associated with vessel movements, for which they have provided agreement with the Applicant’s conclusion of no AEoI to the Outer Thames Estuary SPA, subject to the secured measures.
- 6.4.700. The RSPB/SWT has not provided any contrary evidence regarding the sensitivity of red-throated diver to light, nor any persuasive arguments that a significant proportion of the Outer Thames Estuary population would be disturbed/displaced from light from the BLF. The Applicant [REP10-111] and [REP10-033] contends that the lighting of the temporary BLF would be when in use and unlikely to be in winter (as noted in respect of vessel movements above) and that effects of artificial lighting would be restricted to a relatively small area around this BLF.
- 6.4.701. The ExA is content that, when taking into account the mitigation measures proposed in the Lighting Management plan, light from the Proposed Development would not affect the ability to maintain the distribution or populations of all qualifying features in the SPA and therefore recommends that an AEoI can be excluded.

Disturbance effects: indirect impacts on birds from disturbance of prey species by underwater noise and vibration - red-throated diver

- 6.4.702. The Shadow HRA Report [APP-145] and Shadow HRA Addendums [AS-173] and [REP7-279] concluded that no AEoI would arise from indirect effects on the prey of red-throated diver due to the relatively short duration of the works, and because the area affected is limited to the north-west corner of the SPA where red-throated diver concentrations are lower than the southern part of the SPA. The RSPB/SWT [REP2-506] disagreed that this part of the SPA is of lower importance and noted that the construction is expected to take place over two winters.

⁴⁵ Certified in Schedule 24 and secured through Schedule 2 Requirement 14 of the dDCO [REP10-009].

- 6.4.703. The Applicant explained [Appendix P of REP5-120] and [REP10-155] that its assertion that red-throated diver densities are lower in the north-west block of the Outer Thames Estuary SPA than in the larger southern block was based on data and conclusions derived from two separate programmes of NE commissioned digital aerial surveys for the entire SPA area; therefore, it queried why RSPB/SWT did not accept the findings of these surveys. Furthermore, it stated that the largest areas within which effects on fish from underwater noise are predicted to occur represent a small percentage of the total SPA area (considerably less than 1%); those effects which extend out to this (largest) area are limited to behavioural effects, which will be temporary and (likely) short-term. As such, it concluded there is no basis for considering potential effects on the red-throated diver population from effects of underwater noise on their fish prey.
- 6.4.704. The ExA is content that the evidence presented in relation to the abundance and distribution of red-throated diver in the Outer Thames Estuary SPA provides an appropriate basis for making an HRA assessment and that any indirect effects from underwater noise would be experienced by red-throated diver across a very small part of the SPA. We therefore conclude that this would not affect the ability to maintain the distribution or populations of red-throated divers in the SPA and recommend that an AEOI can be excluded.
- 6.4.705. The ExA notes that the RSPB/SWT has not provided any further evidence to substantiate its concerns. Furthermore, no concerns have been raised by NE on this matter.

Indirect impacts on birds from disturbance of prey species by underwater noise and vibration – little tern and common tern

- 6.4.706. The Shadow HRA Report [APP-145] acknowledged the potential for noise and vibration from impact piling during the construction of the BLF and dredging and drilling for construction of cooling water intakes and outfalls. It concluded no AEOI for all qualifying features of all European sites due to the short term, temporary nature of underwater noise.
- 6.4.707. In relation to little tern, the RSPB/SWT [REP2-506] noted that a significant area of the foraging range of little terns from the Minsmere-Walberswick SPA and Outer Thames Estuary SPA (Minsmere colony) is expected to coincide with the area over which a fish 'behavioural response' (including displacement) is predicted. It stated that a piling restriction would resolve concerns about noise disturbance from piling affecting foraging terns from sites.
- 6.4.708. The ExA notes the Applicant's proposal in the Shadow HRA Addendum [AS-173](epage 89) which states that "*All construction works for both the enhanced permanent BLF and temporary BLF would occur outside the little tern breeding season, which is assumed to be May to August, inclusive*" and also "*To mitigate the potential for impacts on breeding birds, no piling would occur in May to August inclusive.*" (epage 106). This commitment is also included in the draft MMMP [REP10-028], which states "*No piling will occur in the months of May to August inclusive to*

minimise the potential for effects on designated breeding birds" (epage 11). The dDCO [REP10-009] includes a commitment in the DML (Schedule 20, Part 3) as Condition 36, which places obligations on the Applicant not to commence any impact piling (if required) of Work no. 1A(l) (permanent beach landing facility) and 1a(aa) (temporary marine bulk import facility) between May and July of any year and must not commence until (amongst other matters) a MMMP in general accordance with the draft MMMP has been submitted and approved by the MMO in writing.

- 6.4.709. The ExA notes that RSPB/SWT wanted a piling restriction to address its concerns on this matter. The restriction in the DML does not restrict 'all construction works' (as stated in [AS-173]) but does restrict the timing of impact piling of the BLF (if required). The Condition does not exclude the commencement of impact piling for the BLF in the month of August, which is the statement made in both the Applicant's HRA [AS-174] and the draft MMMP [REP10-028], but does stipulate that impact piling must not commence between May and July of any year and must not commence until (amongst other matters) a MMMP in general accordance with the draft MMMP has been submitted and approved by the MMO in writing.
- 6.4.710. This matter is not referred to further in representations made by RSPB/SWT nor is it mentioned in the final RSPB/SWT SoCG [REP10-111]. It was not a matter raised by NE during the Examination and NE concur with the Applicant's conclusion of no AEoI to the little tern and common tern qualifying feature of the Outer Thames Estuary SPA due to potential disturbance effects [REP10-097].
- 6.4.711. As reported above in relation to little terns of the Minsmere-Walberswick SPA, the ExA is of the view that the Shadow HRA Addendum conclusion of no AEoI is based upon a restriction for 'all construction works' for the BLF to not be undertaken between the months of May to August (inclusive). This is not currently secured through the DML [REP10-009] or draft MMMP [REP10-028]. It is necessary for the DML to restrict all construction works for the BLF to take place outside of the little tern breeding season. The ExA notes the potential discrepancy between the request of the RSPB/SWT and the statement of the Applicant not to undertake piling for the BLF in August and Condition 36(3), which states it cannot commence between May and July, although the Condition also requires the final MMMP to be submitted to and approved by the MMO prior to commencement of piling.
- 6.4.712. The ExA recommends that the SoS may wish to consult with the Applicant with regards to an amended DML condition that takes into account all construction works and a restriction of works between May and August.

Physical interaction with project infrastructure (entrapment of prey species) – all features

- 6.4.713. See earlier paragraphs to this Chapter for more detailed reasoning. Overall, the ExA considers the SoS could conclude that there would be no

AEoI on the Outer Thames Estuary as a result of impacts on prey species from entrapment. However, in the absence of clear agreement on this conclusion from NE as ANCB together with the outstanding issues expressed by the EA (reported in Section 5.15 of this Recommendation Report), the ExA considers the SoS may wish to satisfy himself on these matters before reaching a conclusion.

Cumulative/in-combination effects

- 6.4.714. The Shadow HRA Report provides an in-combination assessment of the potential for AEoI on the bird qualifying features of the Outer Thames Estuary SPA arising from changes to water quality (marine environment) and disturbance effects on species populations, from the Proposed Development together with the plans and projects set out in Tables 8.29 and 8.30 of [APP-145]).
- 6.4.715. The Applicant's assessment [APP-145] concluded that none of the identified plans or projects have potential to cause an in-combination AEoI due to changes in water quality or disturbance effects to species populations of the Outer Thames Estuary together with the Proposed Development. Whilst the Applicant considered several of the identified plans or projects have potential to result in "*small effects*" on red-throated diver of the SPA, it considered the combined effect together with the "*very small effects*" of disturbance from the Proposed Development would not result in an AEoI in combination [APP-145]. The Applicant's conclusion takes into account proposed mitigation measures.
- 6.4.716. The Applicant additionally considered cumulative/inter-project effects between different elements of the Proposed Development in [AS-174] and [REP7-279]. The 'Supplementary assessment of inter-pathway effects' (Appendix 1 of [AS-174]) considered that inter-pathway effects to the bird qualifying features of Outer Thames Estuary SPA could occur via the pathways for water quality effects (marine environment), disturbance effects on species populations, and physical interaction between species and project infrastructure. The assessment considered that inter-pathway effects could only occur via the pathways for the marine water quality effects and interaction with project infrastructure during the operational phase. The assessment states that "*These pathways both have the potential to affect the foraging conditions and/or food availability for the qualifying features of the Outer Thames SPA. However, the effects from both pathways on each of the qualifying features are predicted to be small and consequently no AEoI is predicted when the respective effects are considered together.*" [AS-174].
- 6.4.717. With regards to disturbance effects due to vessel movements, NE [REP5-160] and RSPB/SWT [REP2-506], [REP3-074], [REP5-165] and [REP5-164] commented during the Examination on the need to consider effects against the vessel movements associated for the offshore windfarm industry. The Applicant [REP5-112] responded that it was confident that all in-combination effects relating to marine impacts had been properly assessed. It concluded [Appendix P of REP5-120] that due to the very small change in vessel numbers due to the Proposed Development compared with baseline levels and the lower densities of red-throated

diver in the north-western section than in the larger southern section of the Outer Thames Estuary SPA, combined with localised nature of construction noise effects, there is no realistic potential for a material effect on the red-throated diver population of the SPA.

- 6.4.718. By the end of the Examination, the RSPB/SWT SoCG [REP10-111] suggested that the Applicant's in-combination assessment is limited but also acknowledged that the Applicant has now provided mitigation for potential adverse effects from the Proposed Development alone. As noted above, the SoCG between the Applicant and RSPB/SWT [REP10-111] records that the final version of the oVMP [REP10-133] containing measures to mitigate from the Proposed Development alone is agreed. Furthermore, NE (as ANCB) [REP10-198], [REP10-199] and [REP10-097] confirmed its agreement there would be no AEOI of over wintering red-throated diver of the Outer Thames Estuary SPA with the mitigation measures secured.
- 6.4.719. The ExA is of the view that the low numbers of vessel numbers, coupled with the commitment to avoid winter vessel movements in the first instance, and the implementation of a VMP where this is not possible, would ensure there would be no AEOI from the Proposed Development. In reaching this conclusion the ExA has had regard to the advice to the advice of NE as the ANCB.
- 6.4.720. NE (NE Issue 9) [RR-0878] and the RSPB/SWT [RR-1059] raised concerns that the combined total impact of disturbance, the reduction in prey availability, various discharges and increased suspended sediment had not been assessed. As noted above, the Applicant provided an assessment of cumulative/inter-project effects between different elements of the Proposed Development in [AS-174] and [REP7-279]. The RSPB/SWT [REP2-506], [REP6-046], [REP8-173], [REP10-111] and [REP10-204] acknowledged the Applicant's assessment; however, considered it did not advance understanding much beyond the assessment of the individual impacts. It explained that where the RSPB/SWT considered individual effects had been underestimated, the impact when combined with others would therefore also be underestimated. It also argued that where impacts considered insignificant alone are not considered further by the Applicant, this disregards the potential for additive and/or synergistic effects. It did not agree on this basis that an AEOI on the Outer Thames Estuary SPA can be excluded.
- 6.4.721. The ExA is aware that NE have outstanding concerns with regards to marine water quality effects and cumulative/in-combination effects for the Outer Thames Estuary SPA, as described above, which includes matters to be addressed through the WDA EP (NE Issue 9 and 30 to 36)[RR-0878] and [REP10-097]. The RSPB/SWT [REP10-111] and [REP10-204] also had outstanding concerns with regards to the Applicant's conclusion for the Outer Thames Estuary SPA, in relation to direct disturbance (lighting), indirect disturbance to prey species and cumulative/inter-project effects. Additionally, there are matters that have been flagged to the SoS above relating to water quality – marine

environment; indirect impacts on birds from disturbance of prey species by underwater noise and vibration; and physical interaction with project infrastructure (entrapment of prey species). The ExA is not aware of any further in-combination plans or projects that could act in combination with the Proposed Development and considers, on the basis of the information provided to the Examination, that it could be possible to conclude no AEOI in combination. However, the ExA recommends that the SoS satisfy themselves on the outstanding matters before a conclusion on in-combination effects is determined.

ExA's conclusion

- 6.4.722. Having considered the evidence before the Examination and the implications of the Proposed Development on the Outer Thames Estuary SPA in light of its conservation objectives, the ExA is of the view that it could be possible to conclude no AEOI on the SPA, either alone or in combination with other plans or projects, subject to the securing of mitigation and monitoring measures, including EPs. However, the ExA recommends the SoS needs to satisfy themselves on the outstanding matters.

Sandlings SPA

Introduction

- 6.4.723. Sandlings SPA is located 1.6km from the MDS at its closest point. The qualifying features for which the site is designated, and which have been carried forward to consideration of AEOI are:

- nightjar (breeding)
- woodlark (breeding)

- 6.4.724. The Shadow HRA Report [APP-145] (Section 8) and Shadow HRA Addendums [AS-173] and [REP7-279] provided information for appropriate assessment for the following potential impact pathways for all qualifying features:

- changes in air quality (construction, operation and decommissioning);
- direct habitat loss and fragmentation (construction, operation and decommissioning);
- noise, light and visual disturbance effects (construction, operation and decommissioning); and
- recreational disturbance effects.

- 6.4.725. The Applicant concluded no AEOI for all qualifying features of the Sandlings SPA.

Changes in air quality

- 6.4.726. See earlier section in this Chapter. The ExA has concluded that an AEOI on the Sandlings SPA as a result of changes in air quality cannot be excluded.

Direct habitat loss and fragmentation

6.4.727. The Applicant assessed these effects at paragraphs 8.11.14 (breeding nightjar) and 8.11.48 (breeding woodlark) of the Shadow HRA Report [APP-145] and concluded no AEoI. The Applicant [APP-145] states that baseline surveys provided no evidence of breeding nightjar and little evidence of any regular occurrence of breeding woodlark within or close to areas encompassed by the MDS. Noting the apparent absence of the qualifying features from the affected areas, the ExA is satisfied that there would be no AEoI on the Sandlings SPA from direct habitat loss and fragmentation as a result of Proposed Development, either alone or in combination.

Recreational disturbance

6.4.728. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEoI on Sandlings SPA from the disturbance arising from recreational pressure as a result of the Proposed Development, either alone or in combination.

Noise, light and visual disturbance

6.4.729. The Shadow HRA Report [APP-145] [APP-148] excluded an AEoI for breeding nightjar and woodlark on that basis that the bulk of the Sandlings SPA (and hence of the breeding nightjar and woodlark habitat within the SPA) is over 9km from the MDS, and well beyond the distance at which effects of noise and visual disturbance associated with the construction of the MDS could occur. This point was challenged by TASC in its response to the RIES [REP10-425], who stated that nightjar and woodlark breed at locations within 4.5km of the MDS (Sizewell Walks and North Warren RSPB reserve, respectively).

6.4.730. NE (NE Issue 27) [RR-0878] included Sandlings SPA in its list of sites of concern with regards to light, visual and noise disturbance at the MDS; however, it did not expand on the reasons for its position in relation to this specific European site, nor did it elaborate on its concerns in subsequent representations.

6.4.731. The RSPB/SWT [REP2-506] considered that a lack of justification had been provided by the Applicant to conclude no AEoI. It considered a significant percentage of the SPA population would be affected. Furthermore, it stated that the assessment fails to consider the potential for combined effects of recreational pressure and visual disturbance during construction on nightjar and woodlark in the north-western part of the Sandlings SPA.

6.4.732. The Applicant [REP3-042] considered that the RSPB/SWT had misunderstood the assessment presented in the Shadow HRA Report [APP-145]. It explained that the Sandlings SPA comprises several discrete blocks of habitat and that only the most northern block is in close proximity to the MDS. The northern block in its entirety is estimated to hold 3% and 9% of the SPA breeding nightjar and woodlark populations, respectively.

- 6.4.733. The Applicant stated that noise levels are predicted to be below the threshold levels (ie 65dB LA_{max} for breeding birds) throughout the entire area of the Sandlings SPA but acknowledged that the visual impact zone (or visual buffer) encroaches onto a small area in the northwest corner of the discrete northern block of the SPA. Consequently, it considered that there is little potential for construction-related noise and visual disturbance to affect any breeding woodlark or nightjar associated with the Sandlings SPA, and the possibility that there could be effects on a significant percentage of either of these SPA populations can be rejected. The Applicant furthermore considered that there is no potential for the effects of noise and visual disturbance to contribute in any substantive way to inter-pathway effects on the Sandlings SPA populations of breeding woodlark and nightjar.
- 6.4.734. The RSPB/SWT [REP5-166] acknowledged that only part of the northern block of the Sandlings SPA would be affected by the visual disturbance buffer but requested further detail regarding the numbers of woodlark and nightjar that would be affected.
- 6.4.735. The RSPB/SWT subsequent representations and SoCG [REP10-111] did not address the matter of noise, light and visual disturbance to the Sandlings SPA, and were focussed on potential impacts from recreational disturbance.
- 6.4.736. The ExA acknowledge the potential for woodlark and nightjar utilising part of the northern block of the Sandlings SPA to be affected by visual disturbance during the construction of the MDS. However, The ExA is content that any disturbance from the Proposed Development would not prevent the population and distribution of the qualifying bird features from being maintained on the basis of the low levels of noise (below the 65dBL_{Amax} threshold) predicted and small area of potential visual disturbance. The ExA notes TASC's representation that nightjar and woodlark breed at locations within 4.5km of the MDS (Sizewell Walks and North Warren RSPB reserve); however, the ExA does not consider there to be a credible risk to birds at these sites, should they be part of the SPA population, given the distance and predicted noise and visual impacts.
- 6.4.737. Furthermore, we note that this matter is now agreed between the Applicant and NE in the SoCG [REP10-097].
- 6.4.738. The ExA is therefore of the view that there would be no AEoI to the woodlark and nightjar qualifying features of the Sandlings SPA arising from noise, light and visual disturbance from the Proposed Development.

Cumulative/in-combination effects

- 6.4.739. The Shadow HRA Report provides an in-combination assessment of the potential for AEoI on the qualifying features of the Sandlings SPA arising from disturbance effects on species populations and disturbance due to increased recreational pressure (Tables 8.32 and 8.33 of [APP-145]). No AEoI in combination was predicted.

- 6.4.740. It was stated in [APP-145] that an in-combination assessment with Sizewell B decommissioning (anticipated to commence in 2035) was not possible due to a lack of information. In-combination effects with construction of the onshore cable route for East Anglia ONE North and East Anglia TWO were not predicted to result in a AEoI as baseline surveys indicated that breeding territories of the nightjar and woodlark qualifying features do not interact with the onshore cable corridor. Maintenance activities for the cable route during operation are explained to be limited. The Applicant considered that mitigation measures proposed to mitigate recreation disturbance (see above) and via the Suffolk RAMS Strategy would avoid an AEoI in combination with the identified plans/projects.
- 6.4.741. The Applicant additionally considered cumulative/intra-project effects between different elements of the Proposed Development in [AS-174] and [REP7-279]. The 'Supplementary assessment of inter-pathway effects' (Appendix 1 of [AS-174]) considered that inter-pathway effects to the qualifying features of Sandlings SPA could occur via the pathways for changes in air quality, disturbance effects on species populations and disturbance due to increased recreational pressure. The assessment concluded that there would be no AEoI when the respective effects are considered together [AS-174].
- 6.4.742. The ExA has considered whether any of the potential effect pathways identified above, where a conclusion of no AEoI from the Proposed Development alone had been reached, could result in some effect on a European site and thus have the potential to act in combination with other plans or projects. Having considered the information provided by the Applicant and the views of IPs, the ExA is of the view that this would apply to the following potential effects: disturbance effects on species' populations and disturbance due to increased recreational pressure. The ExA is only aware of East Anglia ONE North, East Anglia TWO and Suffolk RAMS Strategy as plans or projects that could act in combination with the Proposed Development in this regard. Having considered the information available the ExA agrees with the Applicant that there would be no AEoI in combination with these plans and projects.
- 6.4.743. As noted above, NE (NE Issue 9) [RR-0878][REP10-199] identified this European site in its list of sites for which it had outstanding concerns with regards to cumulative/inter-project and in-combination effects. However, the ExA understands that the outstanding concerns of NE [REP10-097] relate to in-combination effects from matters subject to further consents not yet determined, including those of the EPs, and where any single site issues remained outstanding from the Proposed Development alone.
- 6.4.744. The ExA additionally notes that NE confirmed agreement with the Applicant's conclusion of no AEoI on the Sandlings SPA as a result of potential effects of disturbance effects on species' populations, and disturbance due to increased recreational pressure from the Proposed Development. This is reported above.

ExA's conclusion

- 6.4.745. The ExA has concluded that an AEOI on the Sandlings SPA as a result of changes in air quality cannot be excluded.
- 6.4.746. For all other impact pathways, having considered the evidence before the Examination, the position of NE as the ANCB and the implications of the Proposed Development on this SPA in light of its conservation objectives, the ExA is of the view that there would be no AEOI for Sandlings SPA, either alone or in combination with other plans or projects.

Southern North Sea SAC

Introduction

- 6.4.747. The Southern North Sea SAC is adjacent to the Sizewell C Project area.
- 6.4.748. The following effects were screened in to consideration of AEOI for the harbour porpoise qualifying feature of this SAC [APP-145](Section 9.5).
- Water quality effects (marine environment);
 - Direct habitat loss and direct/indirect habitat fragmentation;
 - Disturbance effects on species' population (underwater noise); and
 - Physical interaction between species and project infrastructure – collision risk with vessels and effects on prey species.
- 6.4.749. The Applicant's Shadow HRA Report [APP-145] and Shadow HRA Addendums [AS-173][REP7-279] concluded no AEOI to harbour porpoise from the Southern North Sea SAC either from the project alone, or in combination with other plans or projects.

Baseline data – reference populations

- 6.4.750. During the Examination, the Applicant provided an update to the reference populations used in the marine mammal assessments since the Shadow HRA Report [APP-145] and first Shadow HRA Addendum [AS-178] were prepared by the Applicant. The updated reference populations were included in Table 6.2 of the Shadow HRA Third Addendum [REP7-279]. The Applicant's marine mammal assessments in Section 9 of the Shadow HRA Third Addendum were based on the updated reference populations, but the previous reference populations were also provided to give a like-for-like comparison. In response to the ExA's Rule 17 request [PD-054], the Applicant provided a tabulated summary of the potential effects of the Proposed Development on harbour porpoise of the Southern North Sea SAC alone and in combination with other plans and projects – a comparison of the previous and updated reference populations (see Table 3 of Appendix B [REP10-168]).

Water quality effects - marine environment

- 6.4.751. See earlier paragraphs to this Chapter for more detailed reasoning. NE [RR-0878][REP10-097] was satisfied with the Applicant's conclusions of no AEOI for the harbour porpoise qualifying feature of the Southern North Sea SAC due to marine water quality effects. The ExA is content that an AEOI from water quality effects can be excluded, either alone or in combination.

Direct habitat loss and direct/ indirect habitat fragmentation

- 6.4.752. The Applicant provided an assessment of direct habitat loss and direct/indirect habitat fragmentation in the Shadow HRA Report [APP-145] (epage 689) as a result of the dredging for the BLF during construction and the presence of permanent structures during operation. The assessment was updated in respect of Change 19, as provided in the Shadow HRA Third Addendum [REP7-279].
- 6.4.753. The Applicant concluded that potential effects on habitats as a result of dredging during construction would be short in duration and at individual scales with limited, localised impacts. For operation, the Applicant concluded the total area of long-term habitat loss and potential changes to the habitat is 0.026km² (including the enhanced permanent BLF and temporary BLF) and that the addition of the dredge area for the desalination plant would result in an updated total of 0.0286km². *"This equates to 0.0002% of the winter area of the Southern North Sea SAC (12,696km²) and below the spatial disturbance threshold of 20% and the seasonal average displacement threshold of 10% of the seasonal component. Consequently, no adverse effect on the integrity of the Southern North Sea SAC is predicted."*
- 6.4.754. Under 'Issue 7: Physical interaction between species and project infrastructure and subsequent ecological effects', NE [RR-0878] (NE Issue 7) highlighted that conservation objectives for the SNS SAC include that *"3. The condition of supporting habitats and processes, and the availability of prey is maintained"* and advised that the long term/permanent loss of foraging area within the SAC for the operational phase of the Proposed Development (from intake tunnels) would result in harbour porpoise having to move out of the area to feed. NE advised that this would constitute an AEoI and that compensation for this loss of area should be proposed.
- 6.4.755. By the close of Examination, NE [REP8-298h] [REP10-199][REP10-097] confirmed that it no longer considered that compensation for the loss of foraging area is required, as the Applicant has demonstrated that any impacts can be adequately mitigated. The ExA [EV-188] sought clarification from NE with regards to its concerns, which we understood related to potential impingement of prey species that in turn could result in a loss of foraging area for harbour porpoise. NE [REP8-298h] responded that *"In light of the updated assessments of prey species impingement provided by the Applicant, Natural England do not have concerns about loss of foraging area for harbour porpoise in the Southern North Sea SAC, and agree with the Applicant's conclusion of no AEoI from this impact pathway for this species."* The Applicant stated on this matter in the SoCG with NE [REP10-097] that it had provided further updated information with the Shadow HRA Addendums [AS-173][REP7-279], including information on potential for impingement, entrainment and entrapment of prey species.
- 6.4.756. Having considered the evidence before the Examination, the position of IPs, including the advice of NE as the ANCB, and the implications of the Proposed Development on this SAC in light of its conservation objectives,

the ExA is of the view that there would be no AEOI of the harbour porpoise due to direct habitat loss and direct/indirect habitat fragmentation. Matters of entrainment of prey species are also discussed below.

Disturbance effects on species' population (underwater noise)

- 6.4.757. The potential for physiological and behavioural effects on marine mammals and their prey species from underwater noise⁴⁶ during construction and decommissioning was assessed in Section 9.5b of the Shadow HRA Report [APP-145].
- 6.4.758. In assessing potential impacts on the harbour porpoise of the SNS SAC, the Applicant has applied thresholds set out in conservation objectives for the site, as follows
- "Noise disturbance within an SAC from a plan/project individually or in combination is significant if it excludes harbour porpoise from more than:*
- 1. 20% of the seasonal component of the Southern North Sea SAC in any given day, and*
 - 2. An average of 10% of the relevant area of the site over a season".*
- 6.4.759. Whilst these thresholds are specifically referred to within the conservation objectives for noise disturbance, the Applicant also applied these thresholds for other potential effects assessed within the Shadow HRA Report [APP-145], such as for direct habitat loss (above).
- 6.4.760. The Applicant's Shadow HRA Report Addendum [AS-173] and Shadow HRA Third Addendum [REP7-279] concluded that there is no change to the underwater noise assessment in the Shadow HRA Report [APP-145] (i.e. there would be no AEOI) as a result of Changes 2 and 19.
- 6.4.761. This conclusion relied upon a MMMP to mitigate potential underwater noise impacts, which, as noted above, was subject to revision during the Examination.
- 6.4.762. However, with specific reference to the SNS SAC, NE [RR-0878] considered there to be flaws in the assessment of disturbance effects from underwater noise in terms of the pin pile effective deterrent radius applied and the worst-case scenario applied in terms of UXO detonations.
- 6.4.763. Further to submission of the Applicant's Shadow HRA Addendum [AS-173], NE confirmed that it was
- "satisfied with the mitigation measures that have been proposed with regards to the effects of piling from the construction of both BLFs, and believe that if they are implemented it is unlikely there will be a resulting adverse effect on the integrity of the Southern North Sea SAC".*

⁴⁶ The potential noise sources assessed were impact piling, wet drilling, dredging and unexploded ordnance (UXO) detonations.

- 6.4.764. Although the MMO deferred to NE on the appropriateness of the HRA assessment [REP10-195], it sought clarification over the underwater noise model and input parameters and noted that potential underwater noise effects of any mechanical cutting that might be required during decommissioning of the temporary BLF have not been assessed [REP2-140]. It subsequently confirmed [REP8-164][REP10-195] that the Applicant's DL5 report entitled 'Underwater noise effect assessment for the Sizewell C revised marine freight options' (Revision 1) [REP5-124] had addressed its concerns.
- 6.4.765. The ExA notes that the Applicant's assessment in the Shadow HRA Report [APP-145]⁴⁷ concluded that in permanent threshold shift (PTS) effects, harbour porpoise would need to be in very close proximity of drilling (c.50m) for over 24 hours, and for dredging within 1.66km of the activity for a period of 24 hours. Given this, the low number of individuals that may be at risk (i.e. 3.8 individuals) and the small percentage of the North Sea Management Unit reference population that would be affected (i.e. 0.001%), the Applicant concludes that the risk of permanent auditory injury is considered to be unlikely. Taking account of the updated reference populations [REP7-279], the Applicant confirmed this would still equate to 3.8 individuals: representing up to 0.001% of the updated reference population [REP10-168].
- 6.4.766. In terms of temporary loss of hearing sensitivity (temporary threshold shift (TTS)) (and fleeing response), the Applicant considered that taking into account the temporary disturbance and intermittent duration of underwater noise from both dredging and drilling activities, there is unlikely to be any significant disturbance or barrier effects for harbour porpoise. The Applicant's predicted maximum area of effect from TTS (and fleeing response) equated to 1.1% of the winter area of the Southern North Sea SAC (12,697km²); therefore, below the spatial disturbance threshold of 20% of the seasonal component of the Southern North Sea SAC. The overall temporal disturbance was calculated to be 1.1% of the winter season, which is below the temporal disturbance threshold of 10% of the seasonal component.
- 6.4.767. As reported in respect of the Humber Estuary SAC, we are satisfied the draft MMMP [REP10-028] and Schedule 20 (DML), Part 3, Condition 36(3)(b) of the dDCO [REP10-009] secures deliverable measures to mitigate injurious effects from underwater noise during piling operations.
- 6.4.768. Therefore, we are content that harbour porpoise would remain a viable component of the Southern North Sea SAC and that there would not be significant disturbance of the species. We therefore recommend that there would be no AEOI to harbour porpoise of the Southern North Sea SAC as a result of underwater noise from the project alone.

Physical interaction between species and project infrastructure – entrapment of prey species

⁴⁷ [AS-173] confirms that this is a worst-case assessment

- 6.4.769. The Applicant's assessment of physical interaction between species and project infrastructure considered the entrapment of prey species. This was informed by the assessment of entrapment of fish, which, as discussed in Section 5.15 of this Report and summarised in this Chapter above, was subject to extensive discussions during the Examination.
- 6.4.770. In view of the number of harbour porpoise that could be impacted (25 individuals, expressed as 0.007% of the North Sea reference population), the Applicant [APP-145] concluded that there would be no AEOI on harbour porpoise of the Southern North Sea SAC as a result of entrapment of prey species. The Applicant's predicted maximum area of effect from the loss of prey availability equated to 0.3% of the winter area of the Southern North Sea SAC (12,697km²); therefore, below the spatial disturbance threshold of 20% of the seasonal component of the Southern North Sea SAC. The overall temporal disturbance was calculated to be 0.3% of the winter season, which is below the temporal disturbance threshold of 10% of the seasonal component [APP-145]. Taking account of the updated reference populations [REP7-279], the Applicant confirmed these figures would remain unchanged [REP10-168].
- 6.4.771. In respect of impacts on harbour porpoise, NE's Relevant Representation (NE Issue 7) [RR-0878] highlighted that conservation objectives for the SNS SAC include that
- "3. The condition of supporting habitats and processes, and the availability of prey is maintained".*
- 6.4.772. NE advised that the intake tunnels would result in long term/permanent loss of foraging area within the Southern North Sea SAC during the operational phase of the Proposed Development. NE advised that this would result in harbour porpoise having to move out of the area to feed which could constitute an AEOI and that compensation for this loss of foraging area should be proposed.
- 6.4.773. However, NE later confirmed [REP7-294] that its concerns were resolved in light of the updated assessments of prey species impingement (ie [AS-173] [AS-238][REP6-016][REP8-298h]). It further advised [REP10-199] that it no longer consider that compensation for the loss of foraging area is required, as the Applicant has demonstrated that any impacts can be adequately mitigated.
- 6.4.774. The ExA is mindful of the Southern North Sea SAC conservation objective to maintain the availability of harbour porpoise prey. Having considered the evidence before the Examination, including the advice of NE as the ANCB, and the implications of the Proposed Development on this SAC in light of its conservation objectives, the ExA is of the view that there would be no AEOI of harbour porpoise of the Southern North Sea SAC due to physical interaction between species and Proposed Development – entrapment of prey species. In reaching this conclusion the ExA has had regard to the small number of harbour porpoise that are predicted to be impacted by impingement of prey species. The ExA also notes NE's agreement with the Applicant's conclusion in this regard [REP7-294].

Physical interaction between species and project infrastructure – collision risk with vessels

- 6.4.775. The Shadow HRA Report [APP-145] identified that construction, operation and decommissioning activities associated with the Proposed Development could result in a potential increase in collision risk between harbour porpoise and vessels. The Applicant concluded there would be no AEOI during construction and decommissioning, on the basis of the number of harbour porpoise that could be impacted (4 individuals, expressed as 0.001% of the North Sea reference population⁴⁸) and the relatively small increase in vessel movements compared to existing (180 deliveries between 31 March and 31 October). The Applicant [APP-145] reaches the same conclusion for the operational phase on the same basis, stating that the number of deliveries would be significantly reduced during this phase (a worse-case of 6 to 12 deliveries at the BLF over a 60 year period).
- 6.4.776. The Applicant [REP7-279] stated that the dredge area (0.0026km²) for offshore infrastructure associated with the desalination plant is within the area of 6.5km² used for the assessment of increased vessel collision risk in the Shadow HRA [APP-145] and concluded that there would be no additional risk associated with Change 19. The Shadow HRA Third Addendum states that the increased number of vessels would be small and also slow moving. It also referenced the speed restrictions of <10 knots within the CoCP (final version is [REP10-072]). The Applicant [REP7-279] maintained the conclusion that there would be no AEOI.
- 6.4.777. NE [RR-0878](NE Issue 7) initially highlighted the risk of collision for mobile species including from marine vessel activity, capital dredging, piling and drilling works. NE advised such risks should be assessed to inform any necessary mitigation measures and that collision avoidance measures during construction and operation may be required.
- 6.4.778. The Applicant [REP8-094] reiterated that it has provided information about collision risk with vessels as part of the Shadow HRA Report and that no further assessment was planned in relation to marine mammals. NE [REP8-298n] subsequently confirmed that updates to the MMMP, a more refined idea of construction plans and a meeting with the Applicant resolved its earlier concerns.
- 6.4.779. With regard to Change 19, NE [REP8-298i] stated that it had no comment to make on the potential for physical interaction between species and project infrastructure, including marine mammals.
- 6.4.780. NE [REP10-097] did not dispute the Applicant's conclusion of no AEOI arising from the potential for physical interaction between harbour porpoise and vessels. The MMO [REP2-082][REP10-107][REP10-195]

⁴⁸ Taking account of the updated reference populations [REP7-279], the Applicant confirmed this would still equate to 4 individuals; representing 0.001% of the updated reference population.

also did not dispute the Applicant's conclusion of no AEOI in respect of physical interaction between species and project infrastructure.

- 6.4.781. Having considered the implications of the Proposed Development on this SAC in light of its conservation objectives, the ExA is of the view that the available information is sufficient to demonstrate that there would be no AEOI for harbour porpoise of the Southern North Sea SAC as a result of collision with marine vessels. In reaching this conclusion the ExA has had regard to the small number of harbour porpoise that are predicted to be impacted by collision risk and the relatively small increase in vessel movements compared to the existing situation. The ExA notes that this conclusion has not been disputed by NE [REP10-097] or the MMO [REP2-082][REP10-107][REP10-195].

Cumulative/in-combination effects

- 6.4.782. The Shadow HRA Report provided an in-combination assessment of the potential for AEOI on the harbour porpoise qualifying feature of the Southern North Sea SAC arising from changes to water quality, direct habitat loss, underwater noise disturbance and collision risk from the Proposed Development together with the plans/projects identified in Tables 9.34, 9.35, 9.36 and 9.37 of [APP-145]).
- 6.4.783. Paragraph 9.5.80 of the Shadow HRA Report [APP-145] states that none of the identified projects have the potential to cause the impingement of harbour porpoise prey species and, therefore, this effect was not considered further within the in-combination assessment.
- 6.4.784. Displacement of harbour porpoise as a result of in-combination water quality effects together with East Anglia ONE North and East Anglia TWO was estimated in [APP-145] as 0.12% of the North Sea reference population. Taking account of the updated reference populations [REP7-279], the Applicant confirmed this would represent 0.14% of the updated reference population (Table 3 of Appendix B [REP10-168]).
- 6.4.785. Displacement of harbour porpoise as a result of in-combination habitat loss together with the same projects was estimated as 0.01% of the North Sea reference population [APP-145]. Taking account of the updated reference populations [REP7-279], the Applicant confirmed this would still represent 0.1% of the updated reference population (Table 3 of Appendix B [REP10-168]).
- 6.4.786. Noting the commitments in the draft MMMP [REP10-028], taking into account the short duration of piling for the Proposed Development and the estimated number of harbour porpoise that could be at increased collision risk (estimated in [APP-145] as 0.025% of the North Sea Management Unit, with (Table 3 of Appendix B [REP10-168]) confirming this figure was unchanged by the updated reference populations in [REP7-279]), the Applicant concluded there was no potential for an AEOI on the Southern North Sea SAC in combination with other plans or projects [APP-145].

- 6.4.787. The Applicant also considered cumulative/inter-project effects between different elements of the Proposed Development in [AS-174] and [REP7-279]. The Applicant confirmed that the updated marine mammal reference populations and counts provided in [REP7-279], as well as impacts resulting from Change 19, did not alter the conclusions of no AEOI presented in the Shadow HRA Report and Shadow HRA Addendum for European sites with harbour porpoise qualifying features.
- 6.4.788. NE [RR-0878] noted that the spatial extent of the winter portion of the Southern North Sea SAC that could be impacted by underwater noise in combination exceeds the maximum threshold of exclusion of harbour porpoise from 20% of the relevant area⁴⁹ in any given day (32.8% (4,168km²), reducing to 22.2% (2,819km²) when taking the average overlap into account). On this basis, NE did not agree with the Applicant's conclusion of no AEOI.
- 6.4.789. Both NE [RR-0878] and the MMO [RR-0744] [REP1-025] advised that a Southern North Sea SAC Site Integrity Plan (SIP) would need to be submitted to, and approved by, the MMO to ensure no AEOI to the Southern North Sea SAC before the commencement of any construction activities. The SIP must demonstrate that the Proposed Development, in combination with other plans or projects, will not exceed the noise thresholds assessed within the SAC Review of Consents HRA undertaken by the SoS alongside the MMO.
- 6.4.790. In response, the Applicant submitted a draft SIP (Appendix 9A of [AS-178]), with an overall objective to reduce the risk of any significant disturbance to harbour porpoise in the Southern North Sea SAC winter area as a result of underwater noise in combination with other plans and projects. The draft SIP was revised three times during the Examination to respond to IP comments [REP4-004] [REP8-047] [REP10-022].
- 6.4.791. A condition requiring a Southern North Sea SAC SIP to be submitted to and approved by the MMO should impact piling be required was incorporated into the dDCO at DL2. The condition was revised at DL7 [REP7-006] to require the SIP to be submitted to and approved by the MMO to be in general accordance with the draft. The condition was included at Schedule 20 (DML), Part 3, Condition 36(3)(c) of Revision 11 of the dDCO [REP10-009] for any impact piling for the construction of Work no. 1A(l) (permanent beach landing facility) and 1a(aa) (temporary marine bulk import facility). The SIP was listed as a certified document in Schedule 24 of the dDCO and is to be certified under article 80 [REP10-009].
- 6.4.792. The MMO has confirmed that it defers to NE regarding the appropriateness of the Southern North Sea SAC SIP [REP10-107].
- 6.4.793. NE commented on Revision 3 of the draft Southern North Sea SAC SIP in [REP10-200]; however, it did not have the opportunity to comment on

⁴⁹ The Shadow HRA Report states that the winter area of the Southern North Sea SAC is 12,697km².

the Applicant's final version (Revision 4) [REP10-022]. NE highlighted areas of confusion, particularly around terminology and language used in the SIP which made the in-combination assessment difficult to follow. Furthermore, it considered that the calculations provided were not accurate and requested clarity on the potential piling scenarios being assessed [REP10-097]. NE stated that it required these issues to be addressed before it is able to agree with the Applicant's conclusion of no AEOI to the Southern North Sea SAC.

- 6.4.794. NE also advised that the final SIP should be submitted to the MMO no later than six months prior to the start of piling, to ensure that there is adequate timing for the document to be reviewed, signed off and any mitigation put in place [REP10-200]. This wording was included in the condition included at Schedule 20 (DML), Part 3, Condition 36(3)(c) of Revision 11 of the dDCO [REP10-009].
- 6.4.795. The Applicant [REP10-155] confirmed that the draft SIP provides an assessment of the potential worst-case effects of piling and explained that that the SIP would be finalised with details prior to construction.
- 6.4.796. NE also advised throughout the Examination [RR-0878][REP2-153][REP10-199] that until a mechanism for managing, monitoring and reviewing multiple SIPs from multiple plans or projects alongside one another is developed by regulators, it is unable to advise that this approach is sufficient to address the in combination impacts and therefore the risk of AEOI of the Southern North Sea SAC cannot be fully ruled out. NE [REP10-199] clarified in response to the RIES that "*While Natural England are unable to advise no AEOI on the Southern North Sea Special Area of Conservation (SAC), this is part due to a need for regulators to develop a mechanism to manage multiple SIPs.*"
- 6.4.797. Given the concerns raised by NE regarding the content of the draft SIP, the ExA has doubts about the ability of this document as currently drafted to ensure that the conservation objective of no significant disturbance of the species can be met in order to ensure no AEOI to the Southern North Sea SAC from in-combination disturbance impacts.
- 6.4.798. The ExA also notes NE's concerns regarding the need for a regulatory mechanism to manage, monitor and review SIPs and that this is a strategic matter out of the Applicant's control. However, similar concerns have not been expressed by the MMO.
- 6.4.799. The ExA considers that it is not possible to undertake an accurate assessment of the likely in-combination effects associated with the construction of the Proposed Development until the details of construction, especially timing of any piling, are confirmed. It follows that it is not possible to determine exactly which mitigation measures would be required at the current time.
- 6.4.800. The SIP will be required to demonstrate that the Proposed Development, in combination with other plans or projects, will not exceed the noise thresholds assessed within the SAC Review of Consents HRA undertaken

by the SoS alongside the MMO. The ExA notes that any impact piling licensed under the DML could not begin until the MMO has provided written approval for the SIP. This provides an additional point of control where construction can only begin if the Applicant can demonstrate that it would be able to provide adequate mitigation. The ExA is content that the SIP would provide a mechanism to ensure no AEOI to the Southern North Sea SAC in combination with other plans or projects.

6.4.801. With regards the content of the draft SIP, the ExA notes Revision 4 of the draft SIP was submitted at DL10 [REP10-022]; however, we do not consider there to be any clearly substantial differences to Revision 3 which NE's comments were based upon.

6.4.802. In view of NE's outstanding concerns with the content of the draft SIP which are in the ExA's view unlikely to have been resolved by Revision 4 of the draft SIP, we consider that the SoS may wish to consult with the Applicant, NE and the MMO in effort to resolve the outstanding concerns.

ExA's conclusion

6.4.803. As detailed above, the ExA recommends that an AEOI for the Southern North Sea SAC can be excluded from all potential impacts from the project alone. For in-combination effects, the ExA is content that the SIP would provide a mechanism to ensure no AEOI to harbour porpoise of the Southern North Sea SAC in combination with other plans or projects. However, in view of NE's outstanding concerns with the content of the draft SIP, the SoS may wish to consult with the Applicant, NE and the MMO in effort to resolve the outstanding concerns.

Stour and Orwell Estuaries SPA and Ramsar

Introduction

6.4.804. The Stour and Orwell Estuaries SPA and Ramsar are located 33.7km from the MDS and 1.6km from the closest associated development site (freight management facility). The qualifying features for which the site is designated, and which have been carried forward to consideration of AEOI are:

- avocet (breeding);
- pintail (wintering);
- dark-bellied Brent goose (wintering);
- dunlin (wintering);
- knot (wintering);
- black-tailed godwit (wintering);
- grey plover (wintering);
- redshank (wintering);
- Assemblage qualification: wetland of international importance and waterbird assemblage;
- Ramsar criterion 2 (supports seven nationally scarce plants and five red data book invertebrates);
- Ramsar criterion 5 (assemblages of international importance: waterfowl); and

- Ramsar criterion 6 (species/ populations occurring at levels of international importance).
- 6.4.805. The Shadow HRA Report (Sections 8.12 and 8.13 [APP-145]) and Shadow HRA Addendums [AS-173][REP7-279] provided information for appropriate assessment for the following potential impact pathways for all qualifying features:
- Disturbance effects on species' population (noise and visual stimuli) (construction, operation and decommissioning)
- 6.4.806. As explained in earlier paragraphs to this Chapter, submissions from NE indicated that the following impacts should be considered at appropriate assessment stage:
- Alteration of local hydrology and hydrogeology
- 6.4.807. As discussed in earlier paragraphs to this Chapter, the ExA decided to carry this forward to consideration of AEOI.

Disturbance effects on species' population (noise and visual stimuli)

- 6.4.808. The Applicant concluded no AEOI for all qualifying features of the Stour and Orwell Estuaries SPA alone (paragraphs 8.12.3 to 8.12.10 [APP-145]) from disturbance effects. In-combination effects were not taken forward to AEOI stage (paragraph 8.12.11 [APP-145]). These conclusions were not disputed by IPs, including NE, during Examination.
- 6.4.809. The Applicant considered that the distance of the Proposed Development from the Stour and Orwell Estuaries SPA means disturbance of the qualifying features is highly unlikely. In addition, when considering the context of the existing vehicle movements on the A14, increased vehicle movements during construction, operation and decommissioning are considered by the Applicant to be of little consequence in terms of disturbance to the qualifying features.
- 6.4.810. Artificial lighting sources would be introduced, but the Applicant stated [APP-145] that lighting designs would ensure minimal light spillage, with reference to the CoCP [REP10-072]. The CoCP [REP10-072] states that site lighting must be installed in accordance with section 1.3 of the Lighting Management Plan [REP10-033] and must be positioned and directed to minimise intrusion into ecologically sensitive areas. The Lighting Management Plan is secured by Requirement 14 of the dDCO [REP10-009], while the CoCP is secured by Requirement 2. Both would be certified documents under Schedule 24 of the dDCO [REP10-009].
- 6.4.811. The Shadow HRA Report states (paragraph 8.13.3 [APP-145]) that although the Ramsar qualifying criteria are different from those of the SPA, the bird species cited as a qualifying feature under Ramsar Criterion 6 and waterbird assemblage under Criterion 5 are also qualifying features of the SPA. Thus, the assessment summarised above in relation to the qualifying features of the Stour and Orwell Estuaries SPA, and the

conclusion of no AEOI is also considered to apply to the Ramsar. These conclusions were not disputed by IPs, including NE, during Examination.

- 6.4.812. Having considered the extent of the likely impacts and the advice of NE as the ANCB, the ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI on the qualifying features of the Stour and Orwell Estuary SPA and Ramsar from the disturbance of species' populations as a result of the Proposed Development, either alone or in combination.

Alteration of local hydrology and hydrogeology

- 6.4.813. See earlier paragraphs to this Chapter for more detailed reasoning. The ExA is satisfied that, subject to the implementation of the mitigation measures as secured, there would be no AEOI on the Stour and Orwell Estuaries SPA and Ramsar from the alteration of local hydrology and hydrogeology as a result of Proposed Development, either alone or in combination. The ExA notes this conclusion is shared by NE [RR-0878].

Cumulative/in-combination effects

- 6.4.814. As noted above, in-combination effects were not taken forward to AEOI stage in the Applicant's assessment for Stour and Orwell Estuaries SPA and Ramsar; no other plans or projects were identified that could act in combination. The Stour and Orwell Estuaries SPA and Ramsar were not raised by NE as sites of concern in relation to cumulative and in-combination effects (NE Issue 9) [RR-0878] and [REP10-097] (epage 17).
- 6.4.815. The ExA is not aware of any plans or projects that could act in combination to result in an AEOI to these European sites by disturbance and/or alteration of local hydrology and hydrogeology. The ExA is satisfied that there would be no AEOI on the qualifying features of the Stour and Orwell Estuaries SPA and Ramsar from the Proposed Development in combination.

ExA's conclusion

- 6.4.816. Given the distance to these European sites from the Proposed Development, together with the predicted limited scale of impacts and secured mitigation measures with regards to lighting, and having considered the advice of NE as ANCB, the ExA is of the view that there would be no AEOI to the Stour and Orwell Estuaries SPA and Ramsar, either alone or in combination with other plans or projects.

The Wash and North Norfolk Coast SAC

Introduction

- 6.4.817. The Wash and North Norfolk Coast SAC is located 88.2km from the Proposed Development.
- 6.4.818. The following effects were screened in for consideration for AEOI on the harbour seal qualifying feature of this SAC [APP-145] (Section 9.6):

- Water quality effects (marine environment);
- Disturbance effects on species' population (underwater noise)⁵⁰; and
- Physical interaction between species and project infrastructure.

Baseline data – reference populations

6.4.819. During the Examination, the Applicant provided an update to the reference populations used in the marine mammal assessments since the Shadow HRA Report [APP-145] and first Shadow HRA Addendum [AS-178] were prepared by the Applicant. The updated reference populations were included in Table 6.2 of the Shadow HRA Third Addendum [REP7-279]. The Applicant's marine mammal assessments in Section 9 of the Shadow HRA Third Addendum were based on the updated reference populations, but the previous reference populations were also provided to give a like-for-like comparison. In response to the ExA's Rule 17 request [PD-054], the Applicant provided a tabulated summary of the potential effects of the Proposed Development on harbour seal of The Wash and North Norfolk Coast SAC alone and in combination with other plans and projects – a comparison of the previous and updated reference populations (see Table 4 of Appendix B [REP10-168]).

Water quality effects - marine environment

6.4.820. See earlier paragraphs to this Chapter for more detailed reasoning. NE [RR-0878][REP10-097] was satisfied with the Applicant's conclusions of no AEOI on the harbour seal qualifying feature of this SAC. The ExA is content that an AEOI from water quality effects can be excluded, either alone or in combination.

Disturbance effects on species' population (underwater noise)

6.4.821. The Applicant's conclusion of no AEOI relied upon a MMMP to mitigate potential underwater noise impacts, which, as noted above, was subject to revision during the Examination.

6.4.822. As reported in respect of the Humber Estuary SAC above, we are satisfied the draft MMMP [REP10-028] and Schedule 20 (DML), Part 3, Condition 36(3)(b) of the dDCO [REP10-009] secures measures to mitigate injurious effects from underwater noise during piling operations.

6.4.823. The ExA acknowledges that underwater noise from piling would be temporary and intermittent and that harbour seal numbers in and around the Proposed Development are low. We are satisfied that the Applicant has demonstrated that there is unlikely to be any significant disturbance or barrier effects, or temporary auditory injury effects to foraging harbour seal. On this basis and taking into account the proposed mitigation measures secured in the draft MMMP, the ExA is content that an AEOI can be excluded.

Physical interaction between species and project infrastructure

⁵⁰ The potential noise sources assessed were impact piling, wet drilling, dredging and unexploded ordnance (UXO) detonations.

- 6.4.824. The Applicant [APP-145] assessed the potential for increased collision risk to harbour seal from vessels during construction, operation and decommissioning of the Proposed Development. The Applicant [APP-145] concluded that there would be no AEoI during construction and decommissioning, on the basis of the number of harbour seals that could be impacted (0.01 individuals, expressed as 0.0002% of the South East England reference population⁵¹ in the study area used (6.5km²)) and the relatively small increase in vessel movements compared to existing (180 deliveries between 31 March and 31 October). The Applicant [APP-145] reaches the same conclusion for the operational phase on the same basis, stating that the number of deliveries would be significantly reduced during this phase (6 to 12 deliveries at the BLF over a 60 year period).
- 6.4.825. The Applicant [REP7-279] stated that the dredge area (0.0026km²) for offshore infrastructure associated with the desalination plant is within the area of 6.5km² used for the assessment of increased vessel collision risk in the Shadow HRA [APP-145] and concluded that there would be no additional risk associated with Change 19. The Applicant [REP7-279] maintained the conclusion that there would be no AEoI.
- 6.4.826. As reported in earlier paragraphs to this Chapter, the Applicant's assessment of entrapment of prey species concluded there would be no adverse food-web effects to European sites.
- 6.4.827. NE [RR-0878] (NE Issue 7) initially raised concerns about the potential for some built elements of the Proposed Development to present a physical interaction (ie collision) risk to mobile species, including prey species. The Applicant [REP8-094] reiterated that it has provided information about collision risk with vessels as part of the Shadow HRA Report [APP-145] and that no further assessment was planned in relation to marine mammals. NE [REP8-094] confirmed that it had no further concerns about physical interaction between project infrastructure and marine mammals having reviewed the information submitted by the Applicant.
- 6.4.828. With regard to Change 19, NE [REP8-298i] stated that it had no comment to make on the potential for physical interaction between species and project infrastructure, including marine mammals.
- 6.4.829. NE [REP10-097] did not dispute the Applicant's conclusion of no AEoI arising from the potential for physical interaction between harbour seal and vessels.

⁵¹ Taking account of the updated reference populations [REP7-279], the Applicant confirmed this would still equate to 0.01 individuals; representing up to 0.00027% of the updated reference population, or up to 0.00036% of the updated Wash and North Norfolk Coast SAC count [REP10-168].

- 6.4.830. The MMO [REP2-082] [REP10-107] [REP10-195] did not dispute the Applicant's conclusion of no AEOI in respect of physical interaction between species and project infrastructure.
- 6.4.831. No specific concerns have been raised regarding the effects on prey species of harbour seal of The Wash and North Norfolk Coast SAC.
- 6.4.832. Having considered the implications of the Proposed Development on this SAC in light of its conservation objectives, the ExA is of the view that the available information is sufficient to demonstrate that there would be no AEOI for harbour seal of the Wash and North Norfolk Coast SAC. In reaching this conclusion the ExA has had regard to the small number of harbour seal that are predicted to be impacted by collision risk and the relatively small increase in vessel movements compared to existing. We note that this conclusion has not been disputed by NE [REP10-097] or the MMO [REP2-082] [REP10-107] [REP10-195].

Cumulative/in-combination effects

- 6.4.833. The Shadow HRA Report provides an in-combination assessment of the potential for AEOI on the harbour seal qualifying feature of The Wash and North Norfolk Coast SAC arising from changes to water quality, underwater noise disturbance, and increased vessel collision risk from the Proposed Development together with the plans/projects identified in Tables 9.46, 9.47 and 9.48 of [APP-145].
- 6.4.834. The Applicant also considered cumulative/inter-project effects between different elements of the Proposed Development in [AS-174] and [REP7-279]. The Applicant confirmed that the updated marine mammal reference populations and seal counts provided in [REP7-279], as well as impacts resulting from Change 19, did not alter the conclusions of no AEOI presented in the Shadow HRA Report and Shadow HRA Addendum for the harbour seal qualifying feature of The Wash and North Norfolk Coast SAC.
- 6.4.835. None of the identified plans or projects were considered by the Applicant to have potential for in-combination effects on harbour seal from changes in marine water quality.
- 6.4.836. With regards to potential noise disturbance effects and collision risk, noting the commitments in the draft MMMP [REP10-028] and taking into account the short duration of piling for the Proposed Development and the estimated number of harbour seal that could be at increased collision risk (estimated as 0.44 individuals; representing 0.009% of the South-East England reference population or 0.01% of the Wash and North Norfolk Coast SAC count based on the reference populations set out in [APP-145]⁵²), the Applicant concluded there was no potential for an AEOI

⁵²Taking account of the updated reference populations [REP7-279], the Applicant confirmed this would still equate to 0.44 individuals; representing up to 0.01% of the updated reference population, or up to 0.016% of the updated The Wash and North Norfolk Coast SAC count [REP10-168].

on harbour seal of The Wash and North Norfolk Coast SAC in combination with other plans or projects [APP-145].

- 6.4.837. As noted above, NE [RR-0878] (Issue 9) identified this European site in its list of sites for which it had outstanding concerns with regards to cumulative/inter-project and combination effects. However, the ExA understands that the outstanding concerns of NE [REP10-097] relate to cumulative/in-combination effect of the Proposed Development with other consents required, including the WDA permit from the EA which relates to marine water quality, and also where NE considers there to be outstanding concerns regarding effects from the Proposed Development alone. Although The Wash and North Norfolk Coast SAC is listed in NE's Issue 9, the ExA notes that NE [EV-160] [REP7-294] [REP10-199] has also confirmed its agreement with the Applicant's conclusion of no AEoI to the harbour seal qualifying feature of The Wash and North Norfolk Coast SAC for all potential effect pathways.
- 6.4.838. The ExA is of the view that the Applicant has assessed potential in-combination adverse effects on the harbour seal qualifying feature from the Proposed Development. Based on the evidence submitted to the Examination, the ExA is of the view that any cumulative/in-combination effect with subsequent consents would not result in an AEoI to The Wash and North Norfolk Coast SAC.

ExA's conclusion

- 6.4.839. We note that NE agreed with the Applicant's assessment of no AEoI of the Wash and North Norfolk Coast SAC in [EV-160] [REP7-294] [REP8-298h] [REP10-199]. The MMO [REP7-136] also confirmed that it considered the assessment for seals to be appropriate and that there would be no AEoI for the Wash and North Norfolk Coast SAC; however, it deferred to NE for further comments.
- 6.4.840. Having considered the evidence before the Examination, the position of IPs, including the advice of NE as the ANCB, and the implications of the Proposed Development on this SAC in light of its conservation objectives, the ExA is of the view that there would be no AEoI of the harbour seal qualifying feature of The Wash and North Norfolk Coast SAC, either alone or in combination with other plans or projects.

European sites outside the NSN and the qualifying features for which LSE has been identified

- 6.4.841. The Applicant's Shadow HRA Report [APP-145], Shadow HRA Addendum [AS-174] and Shadow HRA Third Addendum [REP7-279] provided information for an appropriate assessment from physical interaction with project infrastructure (entrapment) during operation for the sites and qualifying features identified in Table 6.3 of this Chapter. It excluded AEoI to twaite shad and river lamprey of any European site during the operation of the Proposed Development.
- 6.4.842. The Applicant also provided in Appendix A of [REP10-168] information for an appropriate assessment from physical interaction with project

infrastructure during operation of the desalination plant in the construction phase for all European sites and their migratory fish qualifying features (twait shad, river lamprey and allis shad) considered in the Shadow HRA Report [APP-145] and Shadow HRA Addendum [AS-173]. The Applicant stated this was provided without prejudice to its position that it was not necessary, but to provide additional comfort. The Applicant excluded AEOI to migratory fish features of any European site during construction of the Proposed Development.

- 6.4.843. As reported above, the Applicant's assessment of entrainment impacts was disputed by Dr Henderson on behalf of TASC, who considered that the impact on twait shad, river lamprey and allis shad (amongst numerous other species) had been underestimated [REP2-481h]. However, these concerns were not raised specifically in relation to individual species populations of sites in EEA States.
- 6.4.844. The ExA has considered whether there are any AEOI in respect of migratory fish qualifying features of European sites (twait shad, river lamprey and allis shad) outside of the UK. The ExA is satisfied that there would be no AEOI on these species on the basis of the available evidence summarised as follows:
- the predicted levels of entrapment of these qualifying features compared to the reference populations, as set out in section 3 of [REP10-135];
 - the mitigation and monitoring measures proposed (in particular the draft FIEMP [REP10-138])⁶; and
 - the separation distances of the European sites outside the UK from the Proposed Development, relative to UK sites with the aforementioned migratory fish qualifying features for which the ExA is satisfied there would be no AEOI.
- 6.4.845. The special arrangement for nuclear NSIPs as described in the Planning Inspectorate's Advice Note 12 has been followed in this instance. All relevant states party to the UNECE Espoo and Aarhus conventions which includes non-EEA states have been informed of the Proposed Development. No IPs or EEA States provided representations to the Examination or to the SoS' transboundary screening consultations to date that directly disputed the Applicant's conclusions of no AEOI on migratory fish features of specific European sites in EEA States.

6.5. AEOI ASSESSMENT OUTCOMES

- 6.5.1. The Applicant has concluded that AEOI can be excluded for all European sites (both within the NSN and in EEA States) and qualifying features with the exception of the marsh harrier qualifying feature of the Minsmere-Walberswick SPA and Ramsar.
- 6.5.2. The Applicant's conclusions of no AEOI to a number of European sites within the NSN and their qualifying features were disputed by IPs, including NE as the ANCB, during the Examination, as described above.

- 6.5.3. Based on the findings of the Examination, the ExA is satisfied that there would be no AEOI to the following European sites from the Proposed Development, either alone or in combination with other plans or projects:
- Alde-Ore and Butley Estuaries SAC;
 - Benacre to Easton Bavents Lagoons SAC;
 - Deben Estuary SPA;
 - Deben Estuary Ramsar;
 - Dew's Ponds SAC;
 - Orfordness to Shingle Street SAC;
 - Stour and Orwell Estuaries SPA;
 - Stour and Orwell Estuaries Ramsar;
 - The Wash and North Norfolk Coast SPA; and
 - European sites outside the NSN (as identified in Table 6.3 above).
- 6.5.4. The ExA is satisfied that the conclusion of no AEOI can be reached for the sites listed in the paragraph above in the absence of further mitigation or information.
- 6.5.5. The ExA agrees with the Applicant's conclusion that an AEOI of the marsh harrier qualifying feature of the Minsmere-Walberswick SPA and Ramsar cannot be excluded as a result of noise and visual disturbance from construction activities.
- 6.5.6. However, the ExA is of the view that there is insufficient evidence to recommend that an AEOI on the following European sites and qualifying features can be excluded beyond reasonable scientific doubt:
- Minsmere-Walberswick SPA and Ramsar - breeding and non-breeding gadwall and shoveler (as a result of noise and visual disturbance from construction activities); and
 - Minsmere to Walberswick Heaths and Marshes SAC, Minsmere-Walberswick SPA and Ramsar and Sandlings SPA – all features (as a result of changes in air quality during construction and operation).
- 6.5.7. There are also a number of sites and features for which the ExA considers a conclusion of AEOI could be reached, but considers that the SoS may wish to satisfy themselves on final outstanding matters before reaching their conclusion. These sites and qualifying features are listed below in Table 6.5. In light of the number of unresolved matters at the close of the Examination and considering the precautionary principle applicable to HRA as to whether no reasonable scientific doubt remains, the ExA is of the view that it cannot confidently exclude AEOI for the sites and qualifying features listed in Table 6.5.
- 6.5.8. Furthermore, in view of the uncertainty around the permanent water supply solution, the ExA cannot preclude the potential identification of AEOI on European sites and qualifying features during construction and operation of the Proposed Development, either alone (if considering the solution such as the preferred pipeline/transfer main as part of the project) or in combination with solutions such as the preferred pipeline/transfer main. The ExA does not have sufficient information or

certainty and advises that the information required to inform the HRA is incomplete in this regard.

Table 6.5 – European sites and features for which the ExA considers a conclusion of AEOI could be reached, but considers that the SoS may wish to satisfy themselves on final outstanding matters before reaching their conclusions

Site name	Qualifying Feature(s)	Potential Impacts
Alde-Ore Estuary SPA	Little tern (breeding); sandwich tern (breeding); and lesser black backed gull (breeding)	Changes in water quality – marine environment; Physical interaction between species and project infrastructure: indirect impacts from entrapment of prey species on bird qualifying features; and In-combination effects.
Alde-Ore Estuary Ramsar	Ramsar Criterion 3 (breeding and wintering wetland assemblage); and Criterion 6 (species/ populations according at levels of international importance),	Changes in water quality – marine environment; Physical interaction between species and project infrastructure: indirect impacts from entrapment of prey species on bird qualifying features; and In-combination effects.
Benacre to Easton Bavents SPA	Little tern (breeding)	Physical interaction between species and project infrastructure: indirect impacts from entrapment of prey species on bird qualifying features; and In-combination effects.
Humber Estuary SAC	Sea lamprey; river lamprey	Changes in water quality – marine environment; Physical interaction between species and project infrastructure; and In-combination effects.
Outer Thames Estuary SPA	Red-throated diver (wintering); little tern	Changes in water quality – marine environment;

Site name	Qualifying Feature(s)	Potential Impacts
	(breeding); and common tern (breeding)	Physical interaction between species and project infrastructure: indirect impacts from entrapment of prey species on bird qualifying features; and In-combination effects.
	Little tern (breeding); and common tern (breeding)	Indirect impacts on birds from disturbance of prey species by underwater noise and vibration
Southern North Sea SAC	Harbour porpoise	In-combination effects

Derogations

- 6.5.9. If the competent authority cannot conclude the absence of an AEOI, such that no reasonable scientific doubt remains, then under the Habitats Regulations the project can proceed only if there are no alternative solutions and there are imperative reasons of overriding public interest (“IROPI”) why the project must be carried out. Suitable Compensatory Measures must also be secured to ensure the overall coherence of the UK NSN.
- 6.5.10. In light of the conclusion reached with regards to an AEOI of the Minsmere-Walberswick SPA and Ramsar in respect of the breeding marsh harrier qualifying feature, the Applicant submitted an assessment of Alternative Solutions, a case for IROPI, and proposed Compensatory Measures.
- 6.5.11. The ExA concurs with the Applicant’s conclusion of an AEOI of the Minsmere-Walberswick SPA and Ramsar in respect of the breeding marsh harrier qualifying feature. NE, as the ANCB, also agreed with the Applicant’s conclusion in this regard. The consideration of these matters within the Examination are therefore discussed in the following sections of this Chapter.
- 6.5.12. The ExA is also of the view that there is insufficient evidence to support a recommendation of no AEOI on the following European sites and their qualifying features:
- Minsmere-Walberswick SPA and Ramsar - breeding and non-breeding gadwall and shoveler (as a result of noise and visual disturbance from construction activities); and
 - Minsmere to Walberswick Heaths and Marshes SAC, Minsmere-Walberswick SPA and Ramsar and Sandlings SPA – all features (as a result of changes in air quality during construction and operation).
- 6.5.13. No information was provided by the Applicant during the Examination in relation to a derogation case for the sites and features listed above. In the absence of an assessment of Alternative Solutions, a case for IROPI, and proposed Compensatory Measures for the European sites and qualifying features listed in the paragraph above, the ExA can only recommend that the requirements for Habitats Regulations are not fulfilled in this regard.

6.6. CONSIDERATION OF ALTERNATIVE SOLUTIONS

- 6.6.1. The Habitats Regulations specify that the competent authority can only consider IROPI once it is satisfied that there are no alternative solutions. An assessment of alternatives was undertaken as part of the selection of the eight sites identified for new nuclear power stations in NPS EN-6.
- 6.6.2. The Applicant’s assessment of alternative solutions to deliver the objectives of the Proposed Development, including a ‘do-nothing scenario’, is presented in in Volume 2 of the Shadow HRA Report [APP-150] (‘the Applicant’s Assessment of Alternative Solutions’).

- 6.6.3. Alternatives to the Proposed Development (although different to the “alternative solutions” test in the Habitats Regulations) have been discussed in a wider sense during the Examination and the ExA has reported on this in Section 5.4 of this Report. The conclusion reached by the ExA in Section 5.4 is that the Applicant has met the requirements of relevant policy and legislation in respect of the consideration of alternatives, and that there are no policy or legal requirements that would lead it to recommend development consent be refused for the Proposed Development in favour of another alternative.
- 6.6.4. The need case for the Proposed Development is set out in Section 3 of [APP-150] and in [APP-151]. This focuses on the continuing growth in electricity demand for the UK, which the Applicant explains, together with the retirement of existing electricity capacity by 2035, will lead to a generation shortfall of 95GW by 2035. The Applicant states in [APP-150] and [APP-151] that the urgent need for new nuclear power stations in the energy mix is firmly established in the NPSs, EN-1 and EN-6⁵³. The ExA has reported on the need case in Section 5.19 of this Report. The conclusion reached by the ExA in Section 5.19 is that there is an urgent need for new nuclear energy generating infrastructure of the type comprised by the Proposed Development. The ExA concludes that the Proposed Development responds directly to that urgent need, and to national policy commitment to deliver a large scale new nuclear power station to meet that requirement.
- 6.6.5. The objectives of the Proposed Development are set out in Table 3.1 of [APP-150], alongside detail on how the Applicant considers that each of the objectives reflect – and are supported by – national and local planning policies. The ExA has considered the objectives and is satisfied that they are consistent with relevant policy.
- 6.6.6. The Applicant identified a long list of potential alternative solutions in Section 5 of [APP-150], looking at:
- 1) Do nothing scenario;
 - 2) Alternative locations,
 - 3) Alternative scales;
 - 4) Seasonal restrictions;
 - 5) Phasing the construction works differently; and
 - 6) Alternative construction methods/ locations for construction activities.

⁵³In ExQ3 [PD-044, G.3.0], the ExA noted that the draft Overarching National Policy Statement for Energy (EN-1) was published on 6 September 2021. In addition, the associated ‘Planning for New Energy Infrastructure Draft National Policy Statements for energy infrastructure’ consultation document was published which includes comments in relation to EN-6. The ExA asked the Applicant to provide an update in the light of these recent publications setting out any perceived implications for the application of policy to the Sizewell C Project and the need for new electricity generating infrastructure of the type of proposed. The Applicant’s response is set out in [REP8-116].

- 6.6.7. The Applicant discounted potential alternative solutions 1- 5 listed above on the basis that these would not meet/deliver the need or objectives of the Proposed Development. The Applicant assessed the feasibility of alternative construction methods/ locations for construction activities in Section 6 of [APP-150].
- 6.6.8. Paragraph 8.1.2 of [APP-150] concludes the Applicant's position that there are no feasible alternative solutions which would result in a lesser effect on the Minsmere-Walberswick SPA and Ramsar to that predicted to occur as a result of the Proposed Development.
- 6.6.9. No representations have been made by NE querying or disputing the Applicant's consideration of alternative solutions in the Shadow HRA Report or its conclusions in that regard.
- 6.6.10. Concerns about the Applicant's consideration of alternative solutions have been raised by IPs during the Examination. For example, S.A.G.E Community Group considered that the Applicant's approach to alternative solutions was "*narrow and restrictive*" [REP10-361].
- 6.6.11. The discussions and representations made during the Examination in respect of marsh harrier of the Minsmere-Walberswick SPA and Ramsar were largely around the adequacy, delivery and efficacy of compensatory measures and these points are considered later in this Chapter.
- 6.6.12. Having considered the policy tests regarding the IPC's (now SoS's) assessment of alternative solutions in NPS EN-6, the Applicant's Assessment of Alternative Solutions in [APP-150] and the views of IPs, the ExA is satisfied that there are no alternative solutions which would deliver appreciable benefits in terms of adverse effects on marsh harrier of the Minsmere-Walberswick SPA and Ramsar from noise and visual disturbance during construction and still meet the objectives of the Proposed Development.
- 6.6.13. The ExA considers that sufficient information has been provided by the Applicant to allow the SoS as the competent authority to consider alternative solutions to the Proposed Development in accordance with the requirements of the Habitats Regulations.

6.7. IMPERATIVE REASONS OF OVERRIDING PUBLIC INTEREST (IROPI)

- 6.7.1. The Applicant's information to support (if required) the SoS making a case for IROPI is presented in Volume 3 of the Shadow HRA Report [APP-151] ('the Applicant's IROPI case').
- 6.7.2. The Applicant stated that its assessment of IROPI has been undertaken in accordance with the guidance set out in Section 4.2 of [APP-151]. During the pre-Examination period, in February 2021, DEFRA published new guidance on Habitats Regulation Assessment: protecting a European

site⁵⁴, which discusses derogation notices and the duty to protect, conserve and restore European sites. The Applicant [REP2-100] stated that this new guidance represents the re-statement of principles which are already found in relevant case law and previous guidance and did not necessitate a revision of the Shadow HRA Report. NE [REP2-152] confirmed in response to the ExA's question HRA.1.0 [PD-018] that the new guidance has not altered their advice in regard of the Applicant's Shadow HRA.

6.7.3. The Applicant's IROPI case [APP-151] draws from and relies upon the assessment undertaken by the Government to demonstrate the IROPI for the designation of the nuclear NPS (EN-6)⁵³, including identification of Sizewell C as a potentially suitable site for new nuclear generation. The Applicant's IROPI case for breeding marsh harrier of the Minsmere-Walberswick SPA and Ramsar does not relate to any priority habitats or species (as identified in Annex 1 and 2 of the Habitats Directive) [APP-151]. Therefore, the IROPI is not restricted to reasons of human health, public safety or beneficial consequences of primary importance to the environment.

6.7.4. The Applicant's IROPI case [APP-151] focuses on the following points, with reference to supporting evidence:

- **Imperative** - the importance and urgency of the need for new nuclear power generation, including:
 - the continuing growth in electricity demand for the UK, the retirement of existing electricity capacity and a generation shortfall of 95GW by 2035;
 - the required scale of nuclear new build;
 - the UK's commitments to reducing greenhouse gas emissions to net zero by 2050;
 - the continuity and reliability of supply delivered by nuclear energy as part of a diverse energy mix;
 - the urgent need for new nuclear power stations in the energy mix having been firmly established in NPS EN-1 and EN-6 and committed to by the Government, who are proposing to carry forward the sites listed in EN-6 (that are not yet developed) into the new NPS;
 - the urgent need for new nuclear power in the UK, including at Sizewell; and
 - the national importance of these matters.
- **Overriding** - that the national, regional and local interests served by the Proposed Development outweigh the harm (or risk of harm) to the integrity of the Minsmere-Walberswick SPA and Ramsar identified in the Shadow HRA Report [APP-145].

6.7.5. The Applicant concludes at paragraph 9.1.5 [APP-151] that there are IROPI in favour of allowing the Proposed Development to proceed,

⁵⁴ DEFRA, NE, the Welsh Government and Natural Resources Wales (2021) Habitats Regulations assessments: protecting a European site

"...despite the precautionary assessment of potential harm to the Minsmere - Walberswick SPA and Ramsar".

- 6.7.6. The ExA has reported on the case for Development Consent in Chapter 7 of this Report. The conclusion reached by the ExA in Chapter 7 is that there is an urgent need for new nuclear energy generating infrastructure of the type comprised by the Proposed Development. The ExA concludes that the Proposed Development responds directly to that urgent need, and to national policy commitment to deliver a large scale new nuclear power station to meet that requirement.
- 6.7.7. NE stated in its RR [RR-0878] that it agrees *"The criteria for derogating from the Habitats Regulations are fulfilled with respect to marsh harrier, with regards to Minsmere-Walberswick SPA and Ramsar"*. Otherwise, NE has not made representations or raised concerns directly around the IROPI case made by the Applicant in the Shadow HRA Report.
- 6.7.8. Concerns about the Applicant's IROPI case have been raised by IPs during the Examination. For example, TASC considered that there was no IROPI justification for the Proposed Development [REP2-481c]. S.A.G.E Community Group considered that the Applicant *"...regards IROPI as an opportunity to reinforce its NPS case for the project, and not, as we understand it, more correctly, to be a special, last resort provision for protecting nature assets through the full and proper application of HRA processes as from time to time revised by policy (currently under way) and, over many years, by court authorities"* [REP10-361].
- 6.7.9. The case for Development Consent is set out in Chapter 7 of this Report and concludes that the Proposed Development would respond to the urgent need for nuclear generating infrastructure of this type, in accordance with the NPSs EN-1 and EN-6, which in the ExA's view are important and relevant considerations to which the SoS should have regard in reaching his decision. Taking into account the policy context of the Proposed Development under NPSs EN-1 and EN-6, the information surrounding the need case for the Proposed Development together with the benefits of the Proposed Development put forward by the Applicant as summarised in [APP-590][REP2-043][REP10-068], the ExA is of the opinion that IROPI for the Proposed Development could be established subject to satisfying themselves of the outstanding matters raised in relation to the assessment of AEOI.

6.8. COMPENSATORY MEASURES

- 6.8.1. Volume 4 of the Shadow HRA Report [APP-152] ('the Applicant's Compensatory Measures report') presented an overview of the compensation package proposed by the Applicant to offset the potential AEOI of the breeding marsh harrier population of the Minsmere-Walberswick SPA and Ramsar, as a result of noise and visual disturbance from construction activities. This new area of habitat would be created to offset marsh harrier displacement, rather than direct habitat loss.

6.8.2. As noted above, the discussions and representations made during the Examination in respect of marsh harrier of the Minsmere-Walberswick SPA and Ramsar were largely around the adequacy, delivery and efficacy of compensatory measures. The details of the compensation package have developed during the Examination as a result of these discussions, as summarised below.

Proposed marsh harrier compensatory habitat area as described in Shadow HRA Report

6.8.3. The Applicant's Compensatory Measures report [APP-152] describes a proposed permanent marsh harrier compensatory habitat area (hereafter 'the MHCHA') of 48.7ha in size, on land at Abbey Farm located immediately adjacent to the northern part of the Minsmere South Levels. This is illustrated on Appendix A of [APP-152] and Figure 8.10 of [APP-148]. The Applicant states in [APP-152] that this area is located entirely within the EDF Energy estate "*...and is, therefore, already legally secured by EDF Energy*".

6.8.4. The Applicant concluded in [APP-152] that the proposed compensatory measures as set out in that document (the MHCHA) would meet the requirements of NPS EN-6⁵⁵ (Table 1.3 of [APP-152]).

6.8.5. The proposed MHCHA is aimed specifically at increasing the foraging resource available to marsh harrier during construction, via habitat management of the arable land, to increase both the abundance and availability of a range of potential prey species (birds and small mammals). The Applicant's documentation cites evidence from studies which found that birds and small mammals make up the majority of marsh harrier prey items [APP-259].

6.8.6. The Applicant's Compensatory Measures report [APP-152] explains that the design of the MHCHA was informed by a feasibility and design report (provided within Volume 2, Appendix 14C5 of the ES [APP-259] ('the Wood Report')).

6.8.7. The habitat components of the Applicant's preferred option(s) for the MHCHA, based on Option 2 (and two sub-options, 2a and 2b) of the Wood Report [APP-259], are set out in Table 1.1 of [APP-152] and include:

- Tussocky grassland to be managed to provide a mosaic of tall and short vegetation;
- Existing and reinforced hedges;
- Hedge/ scrub belts;
- Earth banks provided alongside scrub belts, sown with tussocky grass mix; and
- Scrub foci (small patches of gorse/ broom around wood/ brush piles).

⁵⁵ Department of Energy and Climate Change (2011) NPS EN-6, Volume II of II - Annexes

- 6.8.8. Subsequent to the Wood Report [APP-259], the Applicant developed the proposals to include a temporary water storage area in the north-eastern part of the MHCHA. This would incorporate wetland habitat margins and wetland habitats extending to the south, along the edge of The Grove (comprising 0.7ha of wet woodland and 1.2ha of reedbed habitat). Tree/hedgerow planting would also be undertaken around the perimeter of the field.
- 6.8.9. In Section 3 of [APP-152], the Applicant describes its assessment of the suitability of the proposed MHCHA and explains how its extent has been calculated and its location has been established. The Applicant explains the reasoning behind its predictions that the MHCHA would increase the abundance and availability of potential prey species for foraging marsh harrier, with reference to the Wood Report [APP-259]. The Wood Report [APP-259] cites research from Schlaich et al (2015)⁵⁶, explaining that Schlaich designed and used a similar approach for increasing prey abundance and availability for Montagu's Harriers.
- 6.8.10. Change No.5 to the application involved relocating the proposed water storage area from the north-eastern part of the MDS (within the compensatory habitat area) to a location adjacent to a proposed attenuation pond (see Figure 2.2.13 in [AS-190]). The original proposed location for the water storage area would be utilised for fluvial flood mitigation and to create new wetland habitats. These wetland habitats would link up with the proposed permanent wetland habitat corridor immediately to the south to create a single integrated wetland feature, as illustrated on Figure 2.2.14 of [AS-190].
- 6.8.11. The Shadow HRA Addendum [AS-173] included consideration of whether Change No.5 would have any implications for the assessment of disturbance effects on species of the Minsmere-Walberswick SPA and Ramsar (including marsh harrier). The Shadow HRA Addendum [AS-173] concludes that the change in the location of the water storage area and its replacement with new wetland habitats and flood mitigation land would not affect the conclusions of the Shadow HRA Report in relation to the Minsmere-Walberswick SPA and Ramsar.
- 6.8.12. As reported above, the implications of the other changes to the application which were considered by the Applicant to be of relevance to the HRA (Changes 1, 2 and 19) were considered in the Shadow HRA Addenda and appendices [AS-173][AS-174][REP7-279], with the Applicant concluding that these would not affect the conclusions of the Shadow HRA Report in relation to noise and visual disturbance effects to the qualifying features of the Minsmere-Walberswick SPA and Ramsar.
- 6.8.13. The MHCHA would require ongoing management to maximise its potential as a foraging area for marsh harrier. The Applicant would implement a programme of monitoring to assess the effectiveness of the

⁵⁶ Schlaich, A.E., Klaassen, R.H.G., Bouten, W., Both, C. and Koks, B.J. (2015). Testing a novel agri-environment scheme based on the ecology of the target species, Montagu's Harrier *Circus pygargus*. *IBIS*, 157 (4): 713-721.

compensation measures (prey abundance and use of the area by foraging marsh harrier) prior to the start of construction. In terms of funding and implementation, habitat management and monitoring would be the responsibility of the Applicant [APP-152].

Examination of proposed compensatory habitat area

- 6.8.14. The details of the Applicant's compensation package have developed during the Examination as a result of discussions between the Applicant, ExA, NE and other IPs and are summarised here.
- 6.8.15. NE's initial representations to the Examination (NE Issue 27) [RR-0878],[REP2-153][REP2-071] and in Bio.1.49 [REP2-152] stated that additional information was required regarding the detailed design of the marsh harrier compensation area. This position was supported by the RSPB/SWT [REP2-506][REP3-074]. NE confirmed that the optimal habitat for foraging marsh harrier is wetland.
- 6.8.16. The RSPB/SWT [REP2-506] provided detailed comments on the proposed compensatory habitat area for marsh harrier, outlining what they considered to be constraints on the functionality of the compensation area. The RSPB/SWT did not agree that the Applicant's proposed compensation package was acceptable, or that it met the requirements of NPS EN-6 and the additional criteria contained in the European Commission's (EC) 2018 Managing Natura 2000 guidance⁵⁷.
- 6.8.17. The DL2 SoCG between the Applicant and the RSPB/SWT [REP2-088] set out the position of the parties on this matter at ref. NV1, marking this matter as 'Not Agreed'. It recorded that the RSPB & SWT "*...remain concerned that areas of foraging provided will be inadequate to compensate for the overall loss. We believe the extent of dry habitat provided will not adequately compensate for the significantly larger loss of valuable wetland*" [REP2-088]. The Applicant's position was that there was a high level of confidence that the habitat improvement measures proposed would be sufficient to compensate for the predicted potential 'loss' of the marsh harrier foraging resource due to disturbance, as set out in [REP2-088, NV1].
- 6.8.18. The SoCG also recorded the RSPB/SWT's concerns regarding the calculations of compensatory habitat required (including how this had been calculated in the Wood Report) and the location of the compensatory habitat area adjacent to the main construction area [REP2-088, NV1]. The RSPB/SWT also considered that the uplift in prey provisioning from the compensatory habitat area compared to the baseline had been overestimated. The Applicant [REP2-088, NV1] wished

⁵⁷ European Commission (2018) Commission notice "Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC". Available from: https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/Provisions_Art_6_nov_2018_en.pdf

to understand the RSPB/SWT's concerns in this regard in more detail before commenting further.

- 6.8.19. The RSPB/SWT noted [REP2-088, NV1] that a forthcoming update to the Wood Report [APP-259] would incorporate the new wetland habitats proposed (Change No.5) and that it would update its position following this. However, the RSPB/SWT was concerned that these wetland habitats would *"...not be established before construction commences and hence could represent a loss to the compensation area"*.
- 6.8.20. The Applicant confirmed that the new wetland habitats proposed as part of the compensation area would be created in the first winter of the construction phase to avoid disturbance to breeding marsh harriers and would subsequently be combined with the rest of the area under conservation management [REP2-088, NV1]. This position is discussed further below.
- 6.8.21. At DL2, the Applicant submitted a Marsh Harrier Habitat Report⁵⁸ (Marsh Harrier Compensation Area Design Update to Include Wetland) - revision 1 [REP2-119]. This provided an updated design report for the MHCHA, to take account of Change No.5 (with Table 3.2 updating the habitat components of Options 2a and 2b set out in the Wood Report [APP-259] to include the new wetland habitats) and other design amendments.
- 6.8.22. In ExQ1 [PD-018], the ExA posed a number of questions of relevance to the proposed MHCHA. The Applicant's responses to ExQ1 are provided in [REP2-100] with reference to accompanying figures and appendices [REP2-101 to REP2-114]. The Applicant provided a detailed response to Bio.1.48 in Appendix 7F of its responses to ExQ1 [REP2-110]. This included confirmation from the Applicant that the marsh harrier population of Minsmere-Walberswick SPA was in favourable condition and held 17 breeding pairs in 2018. The Applicant also explained why in its view, the Shadow HRA Report was *"highly precautionary"* in assessing the extent of the marsh harrier foraging resource that could be lost during construction [Appendix 7F, REP2-110].
- 6.8.23. The Applicant confirmed that the permanent foraging habitat within the proposed MHCHA was taken out of agricultural production approximately 4 years ago and some habitat management – for the purposes of creating compensatory foraging habitats for marsh harriers – has been implemented in the intervening period and is ongoing. Further habitat enhancement, including scrub and hedgerow planting was undertaken in early 2020, and further enhancement and management is proposed [REP2-100 and Appendix 7F, REP2-110]. The Applicant lists the measures undertaken in the MHCHA to date in its response to HRA.1.7 [REP2-100], confirming that it considered a DCO would need to be in place before establishment of the proposed wetland habitats (open

⁵⁸ Later renamed 'On-site Marsh Harrier Compensatory Habitat Strategy', with the final version submitted at Deadline 10 [REP10-128]

water, wet woodland, reedbed and open water channel) could commence.

- 6.8.24. The On-site Marsh Harrier Compensatory Habitat Strategy [REP10-128] states that the habitat management measures in the MHCHA would be required for a limited duration (10-12 years) to cover the construction period and do not need to be permanent. Notwithstanding this, the Applicant has confirmed that following construction, the habitats within the MHCHA will be retained and managed for wildlife as part of the estate-wide habitat proposals set out in the 'Estate Wide Management Plan' and will form a wider area of habitat of value to foraging marsh harriers in the operational phase of the development [REP7-051, Bio.2.16].
- 6.8.25. An Estate Wide Management Plan for the EDF Energy Estate [REP10-136] is secured under dDCO Requirement 8 [REP10-009, version 11] and would be a certified document under Schedule 24. This commitment is also set out in paragraph 4.1.6 of the On-site Marsh Harrier Compensatory Habitat Strategy [REP10-128].
- 6.8.26. The Applicant stated [Appendix 7F, REP2-110] that the new wetland habitat creation (Change No.5) would augment the previously proposed management that was focussed solely on enhancing prey abundance and availability on 'dry' habitats – noting that the high suitability of wetland habitats for foraging marsh harriers was a point recognised throughout the discussions on the design of the MHCHA and was acknowledged by NE in its RR. The Applicant confirmed that the new wetland habitat creation would mean 10% of the 48.7ha MHCHA would be wetland habitat [REP2-100].
- 6.8.27. As set out in [REP10-128], the wetland component of the MHCHA would comprise:
- wet woodland (0.7ha);
 - wet reedbed (2.85ha); and
 - open water (0.75ha).
- 6.8.28. The Applicant has provided a draft Wet Woodland Plan [REP10-150], along with a Wet Woodland Strategy⁵⁹ [REP8-092, Revision 2] which included (amongst other wet woodland areas) delivery of 0.7ha of wet woodland in the new wetland corridor within the MHCHA. Requirement 26 of the dDCO [REP10-009, version 11] secures the development and implementation of a Wet Woodland Plan in general accordance with the Wet Woodland Strategy. The draft Wet Woodland Plan and Wet Woodland Strategy are certified documents in Schedule 24 of the dDCO [REP10-009, version 11].

⁵⁹ As explained in Section 5.6 of this Report, the Applicant intended to submit a Revision 3 of the Wet Woodland Strategy at Deadline 10, but this was omitted from the Deadline 10 submissions in error.

- 6.8.29. In response to Bio.1.110 of ExQ1, the Applicant [REP2-100] noted that the MHCHA would be further enhanced by the inclusion of the new wetland habitat, as described further in the Applicant's response to Bio 1.107 of ExQ1 and in Appendix 7F of [REP2-100]. NE [REP2-152, Bio.1.110] reiterated that it had yet to see detailed plans for the revised marsh harrier compensation area (to include the wetland component).
- 6.8.30. At DL3, the RSPB/SWT [REP3-074] acknowledged that, in the longer term, the wetland habitats proposed as part of the MHCHA are likely to be beneficial to marsh harriers and wider biodiversity. However, due to the timing constraints around establishment of these habitats, the RSPB/SWT considered "*...that the compensation proposed may not be adequate, particularly during the early stages of construction*" [REP3-074]. The timing of the wetland habitat creation is discussed further later in this Chapter.
- 6.8.31. The DL3 position of RSPB/SWT [REP3-074 and REP3-075] remained that wetland habitat would represent the most beneficial habitat for foraging marsh harriers with a greater certainty of success as compensation, but based on current timelines, the replacement of any of the currently proposed dry habitat compensation with wet habitats would not be desirable unless it could be made functional by the time construction commences.
- 6.8.32. In [REP3-042], the Applicant responded to comments in the WRs of NE [REP2-153] and the RSPB/SWT [REP2-506] regarding the proposed compensatory measures for marsh harrier. The Applicant referred to the Marsh Harrier Habitat Report it provided at DL2 [REP2-119]⁶⁰ for details of the MHCHA including the new wetland habitats. The Applicant has also emphasised (with reference to supporting evidence in Figures 6.3 to 6.5, Plate 8.11 and Table 8.12 of [APP-145]) the proximity of the MHCHA to the Minsmere nesting area and to the north-central parts of the Minsmere South Levels, as a key factor which in its view, would increase the likely usage by foraging marsh harriers [REP7-051, Bio.2.16].
- 6.8.33. Details of the proposed marsh harrier compensation were discussed at ISH7 [EV-129 to EV-132; EV-137 to EV-138a]. This included comments raised by the Heveningham Hall Estate [REP2-287] and [REP5-279], who considered that the Applicant had not yet provided sufficient information to evidence that the proposed compensatory measures for marsh harriers would work. The Applicant subsequently provided a response to these comments in Appendix B of [REP6-002], as discussed later in this chapter.
- 6.8.34. NE stated [REP5-160] that it would like reassurance from the Applicant that the wetland creation element of the compensation area is feasible, given the Applicant's previous justification for not including it in its initial proposals (unsuitable ground levels, geology and ground and surface water regimes). NE advised that the wetland element of the habitat

⁶⁰ Later renamed 'On-site Marsh Harrier Compensatory Habitat Strategy', with the final version submitted at Deadline 10 [REP10-128]

creation should be in place prior to construction (should consent be granted). This matter was pursued by the ExA in question HRA.2.8 of ExQ2 [PD-033], which asked the Applicant to respond to NE's points regarding the feasibility and timings of the wetland habitat areas within the MHCHA.

- 6.8.35. In response to question HRA.2.8 of ExQ2 [PD-033], the Applicant explained [REP7-051] that it had previously considered that creation of new wetlands in the north of the EDF Energy estate was unlikely to be possible due to the topography of this area. However, this was considered further in light of discussions with NE and the Applicant concluded that by excavating material to intercept near surface groundwater levels, it would be possible to provide flood compensation and a wetland in this area. The Applicant also explained these points at ISH10 [REP7-069].
- 6.8.36. The Applicant further explained [REP7-073] that the creation of a larger area of optimal wetland habitat in the MHCHA on the EDF Energy Estate is not considered feasible, with the remaining land (an elevated 'sandy ridge') being unsuitable for this purpose.
- 6.8.37. The timing of the wetland habitat creation is discussed further later in this Chapter.
- 6.8.38. The RSPB/SWT stated at ISH10 that there are no detailed habitat establishment and management plans available for either the wet or dry habitats at Lower Abbey Farm (the MHCHA) [REP7-153]. The RSPB/SWT considered that there was insufficient detail to explain how the reeds would be established and how the habitats would be managed in future. Without this level of detail, the RSPB/SWT stated it was not yet confident that the necessary vegetation structure would be achieved [REP7-154]. As reported later in this chapter, the Applicant submitted further iterations of the On-Site Marsh Harrier Compensatory Habitat Strategy to the Examination and NE confirmed [REP6-042] that it was satisfied that the design *"...is sufficient to compensate for habitat losses within the Main Development Site which will be impacted by noise and visual disturbance during construction"*.
- 6.8.39. The Applicant confirmed [REP7-069] that detailed management measures for the wetlands would be included in the approved plans, *"notably the LEMP"*. High level management proposals for the wetland habitats are set out in the outline LEMP (oLEMP) [REP10-061]. Preparation of a LEMP in general accordance with the measures set out in the oLEMP is secured under Requirement 24 of the dDCO [REP10-009, version 11] and the oLEMP is a certified document under Schedule 24.
- 6.8.40. The Applicant submitted a further iteration of the On-site Marsh Harrier Compensatory Habitat Strategy at DL8 [REP8-100] which contained some additional information on the design specifics. The final version was submitted at DL10 [REP10-128].

Land at Westleton

- 6.8.41. In response to Bio.1.108 of ExQ1, the Applicant confirmed it considered that the proposed 48.7ha area of permanent foraging habitat within the EDF Energy estate (the MHCHA) was sufficient to compensate for the potential loss of foraging resource to marsh harrier of the Minsmere-Walberswick SPA and Ramsar [REP2-100]. The Applicant maintained this position throughout the Examination.
- 6.8.42. The Applicant has stated [REP2-100, Bio.1.108] that provision of additional marsh harrier foraging habitat on land at Westleton during construction (as referenced in Chapter 14 of the ES [AS-033]) "... *would only form part of the habitat compensation proposals and only in the shadow HRA context, if the Secretary of State determines that additional habitat is required to compensate for the potential habitat loss*". It considers that if the SoS agrees with the Applicant that the permanent marsh harrier foraging habitat within the EDF Energy estate (the MHCHA) is sufficient compensation, the Applicant would expect the SoS to omit Work No. 8 (Marsh Harrier Habitat, Westleton) from the DCO and not to include powers for the compulsory acquisition of that land. The Applicant reiterated this position in Appendix 7F of [REP2-100].
- 6.8.43. Given that the Applicant does not consider the additional marsh harrier foraging habitat on land at Westleton would be required, it had not originally prepared a detailed habitat proposal plan for this area. However, to assist the ExA the Applicant prepared a habitat plan for this location (entitled "Westleton Marsh Harrier Compensatory Habitat Strategy") [REP10-129]. It detailed the proposed approach to marsh harrier habitat provision on this additional land, described as approximately 54ha in extent, should the SoS consider that additional compensatory habitat is required. This would focus on habitats which would establish quickly and support high numbers of small mammals and birds. The location of the marsh harrier compensatory habitat at Westleton is shown on Figure 1.1 of [REP10-129].
- 6.8.44. NE stated [REP5-160 and REP6-042] that "*The offer of additional compensatory habitat at Westleton will minimise residual concerns that the displacement of marsh harriers could result in an impact. If Natural England can be provided with further information on the above two points [regarding feasibility and timing, as summarised in paragraph 6.8.34 above] and if, after review by our specialists, detailed plans are deemed satisfactory then we advise that risks through this impact pathway can be adequately compensated for, provided plans and monitoring are robustly implemented.*"
- 6.8.45. At DL6, NE confirmed [REP6-042] that it had reviewed the updated MHCHA proposals including wetland habitats (as set out in the Marsh Harrier Habitat Report [REP2-119]³¹) and the Westleton Marsh Harrier Compensatory Habitat Strategy [then REP3-053, later REP10-129]. NE considered "...*that the design is sufficient to compensate for habitat losses within the MDS which will be impacted by noise and visual disturbance during construction*" [REP6-042].

- 6.8.46. The Applicant submitted further iterations of the On-site Marsh Harrier Compensatory Habitat Strategy and Westleton Marsh Harrier Compensatory Habitat Strategy at DL8 ([REP8-100] and [REP8-102], respectively) which contained some additional information on the design specifics. The final versions were submitted at DL10 ([REP10-128] and [REP10-129], respectively).
- 6.8.47. At close of the Examination, NE was "...satisfied that the compensatory habitat outlined by the Applicant at Abbey Farm is of sufficient extent to ensure the integrity of the network of European sites is maintained for marsh harrier" [REP10-097, epage 42]. This matter was marked as agreed in the final SoCG between the Applicant and NE [REP10-097, epage 42]. NE's position recorded in the final SoCG was that residual concerns about the use of terrestrial non-wetland habitat for marsh harrier could be addressed by a monitoring strategy and adaptive management, noting that as part of this approach the Applicant had proposed additional compensatory habitat. However, we note that NE has clearly stated in [REP10-097] that the compensatory habitat at Abbey Farm (the MHCHA) is of sufficient extent to ensure the integrity of the National Site Network, without making a case that the land at Westleton is essential for this purpose.
- 6.8.48. Notwithstanding NE's agreement on the extent of the MHCHA, NE maintained its concern regarding the timing in terms of the habitat being in place and functioning in the final SoCG (as discussed further below) and this matter was marked as disagreed [REP10-097, epages 42 and 43].

Timing

- 6.8.49. Throughout the Examination, NE and the RSPB/SWT have expressed concerns concerned about the timing of the wetland element of habitat creation in the MHCHA. They have maintained their positions that the wetland element of habitat creation should be in place prior to construction.
- 6.8.50. NE advised [REP6-042] [REP5-160] that this would be in line with section 24 of the Habitats Directive: guidance on the application of article 6(4), Alternative solutions, imperative reasons of overriding public interest (IROPI) and compensatory measures (DEFRA, 2012)⁶¹ which states "*Compensation must be secured before damage occurs. This includes ensuring all legal, technical and financial arrangements are in place. Compensation measures should normally be delivered before the adverse effect on the European site occurs, as this reduces the chance of harming the network of sites and also ensures there is no loss during the period before the compensatory measures are implemented.*"

⁶¹ DEFRA (2012) Habitats Directive: guidance on the application of article 6(4), Alternative solutions, imperative reasons of overriding public interest (IROPI) and compensatory measures

- 6.8.51. The RSPB/SWT recommended that construction of the wetland habitats should be brought forward so that these habitats are functional by the time construction starts [REP5-164][REP7-154], stating at ISH10 that it did not think the newly constructed wetland habitats would support sufficient prey to provide any function for the first year or two [REP7-153].
- 6.8.52. The Applicant's position [REP6-002] is that whilst the proposed reedbeds would not be fully established in the first summer of construction, the wetland is expected to be a shallow open water body at this stage, with some limited marginal vegetation and "...*would provide valuable marsh harrier foraging habitat during this period*". The Applicant expects that by the second summer, the reedbeds would be well established and noted that with the exception of the wetland, the compensation habitat will have been developing for approximately seven years by the time construction starts [REP6-002].
- 6.8.53. The Applicant considers [REP10-155] that the excavation works required to create the wetland habitats are reliant on powers in the Order and has maintained its position (as set out previously in [REP2-088, NV1] [REP6-002] [REP7-051, HRA.2.8]) that the new wetland habitats proposed as part of the MHCHA would be created in the first winter of the construction phase following the grant of any DCO (currently estimated to be winter 2022-2023). The Applicant confirmed in [REP7-073] that this was an "*absolute commitment*".
- 6.8.54. The Applicant stated [REP7-051, HRA.2.8] [REP10-155] that the works would not be undertaken during February-October to avoid impacts on breeding birds (including marsh harriers) and that this would be secured in the CoCP. As such, the Applicant's position is that there would be no point during the important summer period during which the MHCMA would be unavailable to marsh harriers, as no construction of the wetlands will be undertaken in this period.
- 6.8.55. In response to Questions HRA.3.1 and HRA.3.2 of ExQ3 [PD-045] regarding how these specific commitments would be secured, the Applicant updated the CoCP at DL8 [REP8-083], to include in Table 6.2 the following text (which was retained in the final version of the CoCP submitted at DL10 [REP10-071, version 7] with updated document reference):
- 6.8.56. *"The excavation works to create the wetlands (as defined in the 'On-site Marsh Harrier Compensatory Habitat Strategy' (Doc Ref. 9.16(A)) secured pursuant to Requirement 14A⁶²) must be commenced in the first winter of construction on the Main Development Site and in accordance with the marsh harrier implementation plan approved pursuant to Requirement 14A. Excavation works must be undertaken between October and February, unless otherwise agreed with the Ecology Working Group. Any remaining excavation would be completed in the following winter. This definition is to ensure that there are no noise impacts to*

⁶²Renumbered as Requirement 27 in the final dDCO [REP10-009, version 11]

breeding bitterns (which commence breeding in February) and breeding marsh harriers at Minsmere, during the summer, from the excavation of the wetlands. For the avoidance of doubt, wetland planting and other habitat works, other than excavation, are excluded from this seasonal constraint."

- 6.8.57. The ExA sought an explanation from the Applicant of how construction works at the MDS would be phased to avoid impacts on breeding birds (including marsh harrier) and their habitats before the establishment of the compensatory habitat [PD-052, question 13]. The Applicant [REP10-154] reiterated their commitment in the CoCP (as set out in the paragraph above) regarding the excavation works to create the wetlands but did not provide explanation in respect of other construction works at the MDS.
- 6.8.58. Construction of the development in accordance with the CoCP is secured by Requirement 2 of the dDCO [REP10-009, version 11] and the CoCP would be a certified document under Schedule 24.
- 6.8.59. The Applicant also noted [REP8-116, HRA.3.1] that the Wet Woodland Strategy [REP8-092] (see paragraph 6.8.28 above for further details) states at paragraph 5.1.12 that the flood mitigation area and wetland habitats will be constructed during winter in the first two years of the construction phase.
- 6.8.60. The Applicant's position [REP7-051, HRA.2.8] [REP10-155] is that in the first summer of construction (assumed to be summer 2023), the MHCHA will comprise the dry habitat components, with a shallow open water body. The Applicant expects it is likely to take until the second summer following construction of the wetland for the reedbeds to become fully established and reach optimal condition but has repeatedly emphasised [as per REP6-002] that the open water habitats and their margins would provide valuable habitats for foraging marsh harrier.
- 6.8.61. The Applicant has also emphasised that the majority of the dry habitat in the MHCHA was created in 2016 and has been under conservation management ever since and is available to foraging marsh harrier [REP10-111, pages 27 and 28].
- 6.8.62. Whilst NE agreed by close of Examination that the compensatory habitat at Abbey Farm (the MHCHA) is of sufficient extent [REP6-042] [REP10-097, page 42] it had outstanding concerns about the timing, in terms of habitat being in place and functioning. NE reiterated that wetland habitat must be established before the onset of disturbing construction activity, or this represents a loss in extent of the habitat provided [REP10-097, pages 42 and 43]. This matter was marked as 'disagreed' in the final signed SoCG between the Applicant and NE [REP10-097, pages 42 and 43].
- 6.8.63. The RSPB/SWT also had outstanding concerns at close of the Examination [REP10-204] that the compensatory wetland habitat would not be provided and established in advance of impact and therefore,

considered that it does not meet the legal/policy requirement for compensation to be functional in advance of impact. They considered the reedbed would not provide marsh harrier hunting opportunities for the first 1-2 years while the habitat is establishing (noting the need to protect the reeds to enable establishment). Therefore, the RSPB/SWT maintained that the timing of the wetland habitat creation should be brought forward to ensure these habitats are functional before the main construction period commences [REP10-204]. This matter was marked in red ('significant concerns remain') in row NV1.4 of the final signed SoCG between the Applicant and RSPB/SWT [REP10-111, epages 27 and 28].

Efficacy

- 6.8.64. At ISH7, the Applicant provided a summary of the MHCHA on the EDF Energy estate (including the new wetland habitats) and of the "*contingency site*" at Westleton, reiterating that the additional compensatory habitat at Westleton can be provided if the SoS considers it necessary [REP5-112]. The Applicant highlighted the adaptable nature of foraging marsh harrier and confirmed that it was confident that marsh harriers will use the MHCHA and that given their extent and proximity to the Minsmere reedbeds, that the on-site habitats are sufficient [REP5-112].
- 6.8.65. The Applicant provided a response to RSPB/SWT [REP2-506] in Appendix M of [REP5-120], addressing issues such as the levels of precaution in its assessment and the metric used in the calculation of the area.
- 6.8.66. The RSPB/SWT has expressed concerns during the Examination [REP5-165] about the likely effectiveness of dry habitats on the land at Westleton as foraging habitat for marsh harrier, given that the proposals were "*more limited in scope*" than those at the MHCHA at Lower Abbey Farm (the MHCHA). The RSPB/SWT remained concerned about this matter at the close of the Examination, as detailed in Section 16 of its final submissions [REP10-204].
- 6.8.67. Whilst the RSPB/SWT was of the view that additional compensation for foraging marsh harriers is required due to the concerns about the extent and effectiveness of the habitats at Lower Abbey Farm, they recommended that further consideration should be given to any opportunities to create optimal wetland habitat [REP5-165] [REP7-153] [REP7-154]. The Applicant confirmed at ISH10 that Westleton could not be used to create wetland habitats as it is a high sandy ridge [REP7-073].
- 6.8.68. The RSPB/SWT raised concerns throughout the Examination about the required uplift in small mammal prey abundance and whether this was achievable on dry habitats. They retained these concerns at the close of the Examination, as detailed in Section 16 of its final submissions [REP10-204] with this matter marked in orange ('moderate concerns remain') in the final signed SoCG between the Applicant and RSPB/SWT [REP10-111, epages 25 and 26].

- 6.8.69. The Applicant provided further commentary [REP5-128, re Bio.1.48] on how it considered the dry and wet habitats in the MHCHA would maximise prey abundance. The Applicant considers that its approach to maximising prey populations relies on established methods of habitat management which are known to increase the abundance of bird and mammal prey items for marsh harrier [REP7-073].
- 6.8.70. The Applicant submitted a paper relating to the sufficiency of compensatory measures for marsh harrier [REP6-002, Appendix B] in response to matters raised at ISH7. This included additional information on:
- The sufficiency of the compensatory habitat, comprising comments on:
 - Range of habitat types;
 - Predicted use of compensatory habitat by marsh harrier and the importance of proximity;
 - Prey resource for marsh harrier; and
 - Timing of compensatory habitat provision.
 - Monitoring proposals
 - Land at Westleton, comprising:
 - Role of the land at Westleton; and
 - Selection of the land at Westleton.
 - How the compensatory habitat provision meets the tests of the Habitats Regulations.
- 6.8.71. The Applicant also submitted a 'Note on Marsh Harrier Habitat' [AS-408], setting out why it considered that the condition in section 122(2) of the PA2008 (required for the granting powers of compulsory acquisition of land) had been met. Additional detail on this matter was provided in Appendix 7F of [REP2-110].
- 6.8.72. An alternative to the Westleton land in the vicinity of Middleton (the 'Theberton alternative') was suggested during the Examination by the future landowner of the Westleton land, pending completion of the purchase. The Applicant stated in [AS-408] that the suitability of this land as an alternative was being investigated but noted that the land is under an Environmental Stewardship scheme which lasts until late 2023 and had previously been screened out when identifying appropriate land parcels. This alternative was discussed further at ISH10 and Compulsory Acquisition Hearing 1; the Applicant noted that this alternative had only been put forward very recently and stated in [REP7-069] that "*...at this late stage it does not see how a switch to this alternative site could be achieved without delay*".
- 6.8.73. The Applicant provided additional information on the selection of the Westleton site, including the alternative sites which were considered, in [REP6-002].

- 6.8.74. [AS-408] sets out the matters that the Applicant considers the SoS should have regard to in deciding whether habitat within the EDF Energy Estate constitutes sufficient compensation without the need for additional land at Westleton.
- 6.8.75. The Applicant submitted an analysis of the compensation habitat on the EDF Energy estate (the MHCHA) and at Westleton, concluding that these satisfied the requirements of NPS EN-6 and the new DEFRA guidance⁵⁴**Error! Bookmark not defined.** [Appendix C of REP7-073]. This was disputed by the RSPB/SWT in [REP7-154] for the following reasons:
- Lack of confidence that dry habitats can sustain the necessary level of prey provision or marsh harrier activity;
 - The compensatory habitat extent is not adequate;
 - The wetland habitats would not be functional before construction commences; and
 - The lack of detailed habitat establishment and management plans for both the wetland and dry habitats at Abbey Farm (the MHCHA).
- 6.8.76. The Applicant's 'HRA Signposting Document' submitted at DL7 [REP7-079] summarised its submissions (to that date) relevant to the Shadow HRA Report, including those relating to compensatory habitat for marsh harrier.

Monitoring

- 6.8.77. The TEMMP [REP10-089] sets out the Applicant's proposed monitoring measures relevant to marsh harrier for the MHCHA and land at Westleton in Table 2.1 (*'Monitoring measures relating to relevant qualifying interest features of the Minsmere habitat sites'*) and Table 3.3 (*'Monitoring for Marsh Harrier habitat establishment'*).
- 6.8.78. Three strands of monitoring are proposed in the TEMMP, summarised as follows:
- Surveys of foraging activity levels of marsh harrier on the existing wetland foraging habitats (Minsmere South Levels and Sizewell Marshes), the MHCHA and the land at Westleton;
 - Surveys to determine the success of establishment of foraging habitats for marsh harriers, to include vegetation establishment and botanical monitoring; and
 - Survey to determine the success of establishment of prey species (small mammals and birds) for marsh harriers.
- 6.8.79. The Applicant has confirmed that if the land at Westleton is included by the SoS in any made Order, monitoring of that site will be undertaken, including monitoring of the use of the site by marsh harriers, monitoring of the prey species and monitoring of the establishment of the vegetation [REP8-116, HRA.3.3]. The Applicant stated that this was secured by updates to Table 2.1 and Table 3.3 of the TEMMP at DL8 [REP8-090, version 3] which were retained in the final version of the TEMMP at DL10 [REP10-089, revision 4].

- 6.8.80. The TEMMP [REP10-089] details in Tables 2.1 and 3.3 potential interventions that could be deployed in response to the findings of the monitoring, if necessary.
- 6.8.81. Requirement 4 of the final dDCO [REP10-009, version 11] states that the construction and operation of the authorised development must be carried out in accordance with the TEMMP, which is a certified document in Schedule 24 of the dDCO.
- 6.8.82. NE has confirmed [REP6-042] that it is content with the proposed monitoring in the TEMMP in relation to marsh harrier and the Marsh Harrier Compensation area. This confirmation was based on an earlier iteration of the TEMMP [REP5-089, revision 2] but the ExA has no reason to suggest that the subsequent updates to the TEMMP (addition of monitoring measures for the land at Westleton) would change NE's view in this regard.
- 6.8.83. The RSPB/SWT had outstanding concerns at the close of the Examination about the monitoring measures for marsh harrier set out in the TEMMP, as detailed in Section 10 of their final submissions [REP10-204]. This included concerns about the adequacy of the targets and effectiveness measures and the potential interventions detailed in Tables 2.1 and 3.3 of the TEMMP.

Securing delivery of measures

- 6.8.84. The Applicant confirmed in [REP8-124] that the works required to create the MHCHA were the subject of Work No.1A(dd) ("flood mitigation area and associated habitat") in Schedule 1 of the dDCO (then [REP8-035]). This became Work No.1A(cc) in the Applicant's final dDCO [REP10-009].
- 6.8.85. If the SoS agrees with the Applicant that the permanent marsh harrier foraging habitat within the EDF Energy estate (the MHCHA) is sufficient compensation, the Applicant expects that the SoS would omit Work No.8 (marsh harrier habitat, Westleton) from the DCO and not include powers for the compulsory acquisition of that land [AS-408].
- 6.8.86. The Applicant has stated [AS-408] that provisions are included in the DoO to secure the delivery of the additional compensatory habitat at Westleton, should the SoS conclude this is required.
- 6.8.87. The Applicant has explained [REP7-079] that the delivery of key mitigation, which includes the marsh harrier habitat improvement works (if required), is secured by Schedule 9 (Implementation Plan) in the DoO [REP10-074 to REP10-084].
- 6.8.88. Schedule 11 of the DoO states that a Habitats Bond shall be put in place to provide for the cost of the completion of the Habitats Works (which includes the marsh harrier habitat improvement works (if required)) if SZC Co fails to complete the Habitats Works by reason of a "*Default Event*".

- 6.8.89. Question HRA.3.3(b) of ExQ3 [PD-045] asked the Applicant to explain whether the Local Authority was bound to the delivery of the Marsh Harrier Compensatory Habitat Report⁶³ in line with (then) Requirement 14C of the dDCO in the situation of a "Default Event". Text was subsequently added to the DoO to state that "*In the event of failure by SZC Co to complete the Habitats Works by reason of a Default Event, the Councils shall use the Habitats Bond to carry out, or procure the carrying out of, the Habitats Works*" (Schedule 11 (provision 13.2)) [REP10-074].
- 6.8.90. Implementation of a Marsh Harrier Implementation Plan, which must be in general accordance with the Westleton Marsh Harrier Compensatory Habitat Strategy (if required) and the On-site Marsh Harrier Compensatory Habitat Strategy, is secured by Requirement 27 of the dDCO [REP10-009, version 11]. The Marsh Harrier Implementation Plan is to be submitted to ESC for approval, following consultation with NE.
- 6.8.91. The Westleton Marsh Harrier Compensatory Habitat Strategy [REP10-129] and the On-site Marsh Harrier Compensatory Habitat Strategy [REP10-128] are both certified documents in Schedule 24 of the dDCO [REP10-009, version 11].
- 6.8.92. The wording of Requirement 27 (formerly Requirement 14C in earlier iterations of the dDCO) was discussed and updated during the Examination in response to comments from IPs and the ExA, as reported in paragraphs 7.1.68 to 7.1.70 of the RIES [PD-053].

ExA's conclusion on the Compensatory Measures

- 6.8.93. The Applicant proposed a compensation package to offset the potential AEoI of the breeding marsh harrier population of the Minsmere-Walberswick SPA and Ramsar, as a result of noise and visual disturbance from construction activities.
- 6.8.94. The Applicant considers that the proposed 48.7ha area of permanent foraging habitat at Abbey Farm within the EDF Energy estate (the MHCHA, an area previously in agricultural production) is sufficient to compensate for the potential loss of foraging resource to marsh harrier of the Minsmere-Walberswick SPA and Ramsar. At close of the Examination, NE was "*...satisfied that the compensatory habitat outlined by the Applicant at Abbey Farm is of sufficient extent to ensure the integrity of the network of European sites is maintained for marsh harrier*" [REP10-097, epage 42].
- 6.8.95. The approach to the compensation measures in the MHCHA is defined in the On-site Marsh Harrier Compensatory Habitat Strategy [REP10-128], the details of which have been discussed and developed during the Examination in response to comments from the ExA and IPs. As set out above, the Applicant has explained the enhancement and habitat management measures undertaken in the MHCHA to date for dry habitats and has confirmed it would require the powers sought in the

⁶³ Later renamed the 'Westleton Marsh Harrier Compensatory Habitat Strategy'

dDCO to create the wetland habitats. Noting that the area of foraging habitat which breeding marsh harriers may be displaced from is FLL and outwith the Minsmere-Walberswick SPA and Ramsar boundary, the ExA is satisfied that the Applicant's application documents and submissions to the Examination have demonstrated that the proposed compensation measures are additional to normal practice.

- 6.8.96. The Applicant has provided additional evidence [REP5-128][REP6-002, Appendix B][REP7-073] to support its position regarding the technical feasibility and efficacy of the proposed compensatory measures. Proposed monitoring measures have been agreed with NE [REP6-042] and would be secured and delivered under the provisions of the TEMMP [REP10-089]. Potential interventions are identified in the TEMMP that could be deployed in response to the findings of the monitoring, if necessary.
- 6.8.97. Although the habitat management measures in the MHCHA would be required for a limited duration (10-12 years) to cover the construction period and do not need to be permanent, the Applicant has confirmed that following construction, the habitats within the MHCHA will be retained and managed for wildlife as part of the estate-wide habitat proposals set out in the Estate Wide Management Plan and will form a wider area of habitat of value to foraging marsh harriers in the operational phase of the development.
- 6.8.98. The ExA has carefully considered advice from NE and the RSPB/SWT that the wetland element of habitat creation (which is the optimal habitat for foraging marsh harrier) should be in place and functional prior to construction, and the Applicant's argument that it would be acceptable for the excavation works to create the wetlands to be commenced in the first winter of construction. The ExA considers that the advice from NE and RSPB/SWT is in line with established practice and guidance for compensatory measures, including that from DEFRA⁶¹. Therefore, in order to reduce the chance of harming the network of sites and to ensure there is no loss of marsh harrier foraging resource during the period before the compensatory measures are implemented, the ExA considers it is necessary for the wetland element of habitat creation to be in place and functional prior to the onset of disturbance to marsh harrier from construction activities. We therefore recommend that the SoS may wish to undertake consultation with the Applicant, NE and relevant parties including the RSPB/SWT on how this would be achieved in practice.
- 6.8.99. In view of the available evidence and having regard to the view of NE as the ANCB, we agree that the MHCHA at Abbey Farm is of sufficient extent to ensure the integrity of the National Site Network is maintained for marsh harrier of the Minsmere-Walberswick SPA and Ramsar. This conclusion is made on the basis that the timing of the wetland habitat creation is brought forward to ensure it is in place and functional prior to construction, in line with our recommendation.
- 6.8.100. On the basis of the information before us, having regard to the measures secured through the Recommended DCO (rDCO) and DoO and the views

of NE as the ANCB, the ExA is of the view that the compensatory measures at Abbey Farm (the MHCHA) are adequate in extent, feasible and appropriate. We are satisfied that the compensatory measures, with the exception of the timing as referenced above, are adequately secured under the provisions of the and DoO.

- 6.8.101. As noted above, NE has clearly stated in [REP10-097] that the compensatory habitat at Abbey Farm (the MHCHA) is of sufficient extent to ensure the integrity of the National Site Network, without making a case that the land at Westleton is essential for this purpose. The ExA considers that there is no evidence to demonstrate that at this stage, provision of additional dry habitat for foraging marsh harrier on land at Westleton is absolutely necessary to ensure the network of European sites is maintained for marsh harrier. The ExA's position is therefore that since it is not necessary to acquire this land to facilitate the Proposed Development a case for the compulsory acquisition of this land cannot be made under s122 PA2008 and we recommend that the SoS removes the relevant provisions relating to Work No 8 from any Order made. The rDCO reflects that position.
- 6.8.102. However, should the SoS determine that additional compensatory habitat is required, the Applicant has made provision for the additional dry habitat for foraging marsh harrier, on the land at Westleton, to form part of the habitat compensation proposals. The approach is defined in the Westleton Marsh Harrier Compensatory Habitat Strategy [REP10-129] and provisions to secure its delivery are included in the final dDCO [REP10-009] and DoO. However, any case for compulsory acquisition of this land would require careful consideration by the SoS and attention is drawn to the ExA's comments in relation to this in Chapter 8 of this Report.
- 6.8.103. The ExA has concluded that there is insufficient evidence to recommend that AEoI can be excluded for Minsmere-Walberswick SPA and Ramsar - breeding and non-breeding gadwall and shoveler (as a result of noise and visual disturbance during construction) and Minsmere to Walberswick Heaths and Marshes SAC, Minsmere-Walberswick SPA and Ramsar and Sandlings SPA – all features (as a result of changes in air quality during construction and operation). Considering this, together with the other outstanding matters on which the SoS may seek additional information (see Table 6.5 above) and the uncertainty associated with the water supply strategy, the ExA cannot preclude the potential need for additional compensation relating to other European sites and qualifying features at this time. The ExA does not have sufficient information or certainty and advises that the HRA is incomplete in this regard. As noted above, the SoS may therefore wish to satisfy themselves further in this regard.

6.9. HRA CONCLUSIONS

- 6.9.1. The Proposed Development is not directly connected with, or necessary to, the management of a European site, and therefore the implications of the project with respect to adverse effects on potentially affected sites must be assessed by the SoS.

LSE

- 6.9.2. 56 European Sites and their qualifying features were considered in the Applicant's assessment of LSE, as listed in paragraph 1.2.6 and Table 6.1 above.
- 6.9.3. The ExA has concluded that LSE could occur for the qualifying features of 19 European sites in the NSN, from both the project alone or in combination with other projects and plans. These sites, qualifying features and the potential effects are presented in Table 6.2 above.
- 6.9.4. Table 6.3 above identifies European sites outside the NSN for which the Applicant also concluded LSE. The ExA concurs with the Applicant's conclusion in this regard.
- 6.9.5. These conclusions and Tables 6.2 and 6.3 take account of the ExA's agreement with the Applicant's position that the mesh screen for the desalination plant intake structures is not an additional mitigation measure intended to avoid or reduce impacts on European sites with migratory fish features.
- 6.9.6. In view of the uncertainty around the permanent water supply solution, the ExA cannot preclude the potential identification of LSE on European sites and qualifying features during construction and operation of the Proposed Development, either alone (if considering the solution such as the preferred pipeline/transfer main as part of the project) or in combination with solutions such as the preferred pipeline/transfer main.
- 6.9.7. The ExA is otherwise satisfied that the correct European sites and qualifying features have been identified for the purposes of assessment, and that all potential impacts which could give rise to significant effects have been identified.

AEoI

- 6.9.8. The Applicant's Shadow HRA Report, Shadow HRA Addendums and accompanying submissions have been considered carefully, along with the evidence and submissions discussed in this Chapter in order to form the ExA's assessment of the Proposed Development's implications for European sites. While the SoS is the competent authority under the Habitats Regulations, the ExA's findings are that, subject to the mitigation measures to be secured in the rDCO, DoO or other legal mechanisms, the SoS can reach the conclusion that AEoI of the following European sites from the Proposed Development, when considered alone or in combination with other plans or projects, can be excluded from all impact pathways assessed:
- Alde-Ore and Butley Estuaries SAC;
 - Benacre to Easton Bavents Lagoons SAC;
 - Deben Estuary SPA;
 - Deben Estuary Ramsar;
 - Dew's Ponds SAC;
 - Orfordness to Shingle Street SAC;

- Stour and Orwell Estuaries SPA;
 - Stour and Orwell Estuaries Ramsar;
 - The Wash and North Norfolk Coast SPA; and
 - European sites outside the NSN (as identified in Table 6.3 above).
- 6.9.9. The ExA is satisfied that the conclusion of no AEoI can be reached for the sites listed in the paragraph above in the absence of further mitigation or information.
- 6.9.10. The ExA agrees with the Applicant's conclusion that an AEoI of the marsh harrier qualifying feature of the Minsmere-Walberswick SPA and Ramsar cannot be excluded as a result of noise and visual disturbance from construction activities.
- 6.9.11. However, the ExA is of the view that there is insufficient evidence to recommend that an AEoI on the following European sites and qualifying features can be excluded beyond reasonable scientific doubt:
- Minsmere-Walberswick SPA and Ramsar - breeding and non-breeding gadwall and shoveler (as a result of noise and visual disturbance from construction activities); and
 - Minsmere to Walberswick Heaths and Marshes SAC, Minsmere-Walberswick SPA and Ramsar and Sandlings SPA – all features (as a result of changes in air quality during construction and operation).
- 6.9.12. There are also a number of sites and features for which the ExA considers a conclusion of AEoI could be reached, but considers that the SoS will need to satisfy themselves on outstanding matters before reaching their conclusion. These sites and qualifying features are listed above in Table 6.5. In light of the number of unresolved matters at the close of the Examination and considering the precautionary principle of HRA as to whether no reasonable scientific doubt remains, the ExA is of the view that it cannot confidently exclude AEoI for the sites and qualifying features listed in Table 6.5.
- 6.9.13. Furthermore, in view of the uncertainty around the permanent water supply solution, the ExA cannot preclude the potential identification of AEoI on European sites and qualifying features during construction and operation of the Proposed Development, either alone (if considering the solution such as the preferred pipeline/transfer main as part of the project) or in combination with solutions such as the preferred pipeline/transfer main. The ExA does not have the information necessary to provide certainty there would be no AEoI for the purposes of the Habitats Regulations.
- 6.9.14. If the competent authority cannot conclude the absence of an AEoI, such that no reasonable scientific doubt remains, then under the Habitats Regulations the project can proceed only if there are no alternative solutions and there are IROPI why the project must be carried out. Suitable Compensatory Measures must also be secured to ensure the overall coherence of the UK NSN.

Alternative Solutions, IROPI and Compensatory Measures

- 6.9.15. The Applicant has submitted an assessment of alternative solutions, a case for IROPI, and proposed compensatory measures in respect of the breeding marsh harrier qualifying feature of the Minsmere-Walberswick SPA and Ramsar. The ExA is satisfied that there are no alternative solutions which would deliver appreciable benefits in terms of adverse effects on marsh harrier of the Minsmere-Walberswick SPA and Ramsar from noise and visual disturbance during construction and still meet the objectives of the Proposed Development. Given the evidence available, with regards to the case for IROPI the ExA is of the opinion that IROPI for the Proposed Development could be established.
- 6.9.16. The findings of the Examination are that the compensatory measures proposed at Abbey Farm within the EDF Energy estate (the MHCHA) are adequate in extent, feasible and appropriate. We are satisfied that the compensatory measures, with the exception of the following outstanding matter, are adequately secured under the provisions of the rDCO and DoO:
- **Timing of the habitat creation** - in order to reduce the chance of harming the network of sites and to ensure there is no loss of marsh harrier foraging resource during the period before the compensatory measures are implemented, the ExA considers it is necessary for the wetland element of habitat creation to be in place and functional prior to the onset of disturbance to marsh harrier from construction activities. We therefore recommend that the SoS may wish to undertake consultation with the Applicant, NE and relevant parties including the RSPB/SWT on how this would be achieved in practice.
- 6.9.17. Should the SoS determine that additional compensatory habitat is required for foraging marsh harrier beyond the MHCHA, the Applicant has made provision for the additional dry habitat, on the land at Westleton, to form part of the habitat compensation proposals.
- 6.9.18. The ExA has concluded that there is insufficient evidence to recommend that AEoI can be excluded for Minsmere-Walberswick SPA and Ramsar - breeding and non-breeding gadwall and shoveler (as a result of noise and visual disturbance during construction) and Minsmere to Walberswick Heaths and Marshes SAC, Minsmere-Walberswick SPA and Ramsar and Sandlings SPA – all features (as a result of changes in air quality during construction and operation). Considering this, together with the other outstanding matters on which the SoS may seek additional information (see Table 6.5 above) and the uncertainty associated with the permanent water supply solution, the ExA cannot preclude the potential need for additional compensation relating to other European sites and qualifying features at this time. The ExA does not have sufficient information or certainty and advises that the HRA is incomplete in this regard.
- 6.9.19. In the absence of an assessment of Alternative Solutions, a case for IROPI, and proposed compensatory measures for the European sites and qualifying features listed above, the ExA can only recommend that the Habitats Regulations are not fulfilled in this regard.

Overall, the ExA considers that there is insufficient information before the SoS to enable them to undertake an appropriate assessment and to apply the derogation tests of the Habitats Regulations of alternative solutions, IROPI, and compensation in order to fulfil their duty under the requirements of the Habitat Regulations.

7. CONCLUSION ON THE CASE FOR DEVELOPMENT CONSENT

7.1. INTRODUCTION

- 7.1.1. As set out in section 3.3 of Chapter 3 of this Report the application falls to be considered under s105 of the Planning Act 2008 (PA2008). The Secretary of State (SoS) must therefore have regard to:
- any Local Impact Report (LIR) (within the meaning given by PA2008 s60(3)) submitted to the SoS before the deadline for submission;
 - any matters prescribed in relation to development of which the application relates;
 - and other matters that the SoS thinks are both important and relevant to their decision.
- 7.1.2. Section 3.3 of Chapter 3 also draws attention to the statutory sustainable development duty placed on the SoS by s10 PA2008.
- 7.1.3. The Examining Authority (ExA) has set out in Section 4.3, Chapter 4, the issues arising in the Joint LIR [REP1-045] and Table 1 records the issues outstanding in the Statement of Common Ground (SoCG) [REP10-102] and the LIR Review [REP10-183] at the close of the Examination.
- 7.1.4. In section 4.4 of Chapter 4 of this Report, the ExA confirms that we consider National Policy Statement (NPS) EN-1: Overarching NPS for Energy, and NPS EN-6: Nuclear Power Generation continue to be important and relevant to the SoS when making his decision whether or not to grant development consent.
- 7.1.5. The ExA's findings and conclusions in respect of the generic planning issues are set out in Chapter 5, and Habitats Regulations Assessment (HRA) matters are considered in Chapter 6 of this Report. In this Chapter of the Report the ExA shall summarise the conclusions reached in relation to the need for the development set out in Section 5.19, Chapter 5, and the benefits and adverse impacts identified under the different topic headings in Chapter 5. We shall also have regard to any HRA matter identified in Chapter 6. We shall weigh the adverse impacts against the benefits, taking account of all relevant and important matters, in the light of the relevant legislative and policy background, which is set out in Chapter 3, before reaching a conclusion on the case for development consent.
- 7.1.6. In Section 1.4 of Chapter 1, and Section 2.2 of Chapter 2 of this Report, the ExA draws attention to its Procedural Decisions advising all Interested Parties (IP) of the acceptance of a total of 22 material and non-material changes to the application. These Procedural Decisions are respectively dated 21 April 2021 [PD-013], 10 August 2021 [PD-039], 10 September 2021 [PD-050], and 13 October 2021 [PD-056] and set out in full the ExA's reasoning in relation thereto. These changes are not considered to be so material when taken individually or as a whole as to

constitute a new application, and the development now proposed is in substance that which was originally applied for.

7.2. THE NEED FOR THE PROPOSED DEVELOPMENT

- 7.2.1. The ExA has considered the need for the development in the light of the policy background in Section 5.19 of Chapter 5 of this Report. Whilst we have had regard to all relevant NPS, National Planning Policy Framework (NPPF) and local plan policies as important and relevant considerations, we believe that the nuclear specific policies in the NPSs should prevail, and form the primary means of assessing the acceptability in planning policy terms of the Proposed Development.
- 7.2.2. Since NPS EN-1 and EN-6 have neither been suspended nor revoked, the Written Ministerial Statement (WMS) requires the SoS to have regard to their content in reaching his decision on the application. The WMS also states that: *"For projects yet to apply for development consent and due to deploy beyond 2025, Government continues to give its strong in principle support to project proposals at those sites currently listed in EN-6."* The ExA does not consider that there has been any relevant change of circumstances that would reduce the weight to be afforded to the policies in those NPSs, and that significant weight should therefore be attached to them in accordance with the WMS.
- 7.2.3. The ExA has taken into account the more recent developments in national policy and the references made in those documents to the need for new nuclear power generation. These include the Energy White Paper, the Ten Point Plan, and the Draft NPS EN-1. We find that through this sequence of various policy documents and reports, the Government has clearly and consistently explained the role that nuclear power generation has to play in decarbonising the energy sector, and the wider economy. Furthermore, it is the Government's position on need which is determinative. This leads us to the certain conclusion that there is an urgent need for new nuclear energy generating infrastructure of the type comprised by the Proposed Development.
- 7.2.4. The ExA finds that the Proposed Development responds directly to that urgent need, and national policy commitment to deliver a large scale new nuclear power station to meet that requirement. We conclude that the Proposed Development's *"actual contribution"* to satisfying the need for this type of infrastructure would be very substantial. This is a factor to which we attribute very substantial weight for the Order being made.

7.3. THE APPLICANT'S APPROACH TO THE POTENTIAL BENEFITS OF THE PROPOSED DEVELOPMENT

- 7.3.1. The Planning Statement - Final Update and Signposting Document [REP10-068] sets out what the Applicant puts forward by way of potential benefits over and above the national benefit of delivering a new power station.

- 7.3.2. The total value of the Sizewell C Project is estimated at £20bn. The Applicant estimates that there could be a local retention of in excess of £1.5bn over the construction period, equivalent to an average of £125m per year. The Applicant indicates that it has worked closely with stakeholders in the region to develop economic strategies with a range of measures to create an environment in which education, skills and workforce development could flourish, to the benefit of both the Proposed Development and the region⁶⁴.
- 7.3.3. The potential benefits therefore include economic benefits both to the region and the local economy during construction and operation; separate local and regional long term infrastructure benefits through the delivery of the upgrades to the Saxmundham to Leiston branch rail line, the Two Village Bypass (TVB), the Sizewell Link Road (SLR) and a series of road safety improvement schemes for the local highway network; a series of enhancements to facilities for pedestrians, cyclists and equestrians; and local sports and recreation facilities would also be enhanced through the further improvements proposed at Aldhurst Farm for recreation, and the investment in community sports facilities at the Alde Valley Academy in Leiston.
- 7.3.4. The enhancement measures, and why the Applicant considers it appropriate for these to be taken into account were set out in its Deadline (DL) 9 Response to Request for Further Information [REP9-021]. In addition, the Applicant provides its understanding of the law and policy on materiality and weight in relation to what the SoS may take into account by way of enhancements in section 2 of the Explanatory Memorandum for the Deed of Obligation (DoO) [REP7-043].
- 7.3.5. The Planning Statement - Final Update and Signposting Document [REP10-068] Table 1.1, section 7.2, provides further details in relation to economic benefits and draws attention to the Applicant's responses to the ExA's first written questions (ExQ1) G.1.24 and G.1.25 [REP2-100], and the additional information to substantiate the benefits set out in the Economic Statement [APP-610]. Table 2.1 identifies those measures which it considers to go beyond simply mitigating for the adverse impacts of the Proposed Development and measures proposed as an enhancement or as corporate social responsibility measures, as opposed to mitigation.
- 7.3.6. The ExA has considered the materiality of the enhancement that would result from measures other than those which are the subject of planning obligations in the light of the Newbury⁶⁵ criteria. We believe that the effects of any associated development, both positive and negative, fall to be treated as important and relevant considerations. Likewise, the other enhancements mentioned above in relation to facilities for pedestrians, cyclists and equestrians, and local sports and recreation facilities.

⁶⁴ A summary of these initiatives is given in the Applicant's response to G.1.24 and G.1.25 [REP2-100]

⁶⁵ Newbury DC V SSE [1981] AC 578

7.4. FINDINGS

Introduction

- 7.4.1. The ExA has given consideration to the materiality of the various benefits put forward by the Applicant in support of its case and whether those benefits have been substantiated. This is set out in the relevant generic topic sections of Chapter 5 of this Report. The ExA has also made findings in relation to the various potential adverse effects that would occur during the construction, and operation of the Proposed Development. We shall now summarise our Chapter 5 findings in relation to the benefits and adverse impacts of the Proposed Development to be weighed in the overall planning balance.
- 7.4.2. As regards measures to avoid, reduce or compensate for any adverse impacts the Applicant draws attention to the Community Fund. This is based on the approach which has been adopted at Hinkley Point C. It would provide a fund for the community run by the community focused on enhancing the quality of life for communities that may be affected by residual impacts from Sizewell C. The ExA has taken the Community Fund into account as a material consideration in this case.
- 7.4.3. In the light of EN-6 paragraphs 2.7.3 and 2.7.4, the ExA has acted on the basis that the relevant licensing and permitting regimes will be properly applied and enforced; that we should not duplicate matters that are within the remit of the nuclear regulators; and that a decision should not be delayed as to whether to grant consent until completion of the licensing or permitting process. In addition, we note that EN-6 paragraph 2.7.5 makes it clear that consent should not be refused on grounds of matters within the remit of the regulators unless the decision-maker has good reason to believe that any necessary licence, permit or authorisation will not subsequently be granted.

Agriculture and Soils

Soil resources

- 7.4.4. The ExA is satisfied that the Applicant undertook a robust assessment of soil quality and resources. We are content that the Applicant has fully assessed site geology, topography, climate and soil types in order to also address potential effects on soils and interrelationships with ecological processes.
- 7.4.5. There is the potential for invasive weed species to grow within the site and this is to be controlled through appropriate management regimes detailed within the Code of Construction Practice (CoCP). We are satisfied that such measures would adequately address weed growth that might threaten adjoining agricultural land.
- 7.4.6. The provisions of the final Soil Management Plan would be secured through the CoCP and Requirement 2 of the final Development Consent Order (DCO), with the Landscape and Ecology Management Plans (LEMP) secured through Requirements 24 and 36. We consider that the content

of the three Requirements is adequate to ensure no significant adverse effects on soil resources from the Proposed Development.

- 7.4.7. The replacement of areas of arable farmland and plantation woodland with a species-rich semi-natural landscape habitat would be more characteristic of the local area. The Applicant has actively promoted the new landscape habitat as a benefit of the Proposed Development. The ExA agrees that the creation of new semi-natural habitats would represent a benefit in respect of both biodiversity and landscape character and attributes moderate weight to this in the overall planning balance.

Loss of Best and Most Versatile (BMV) land

- 7.4.8. We are satisfied that the Applicant has, through consultation and design iterations, sought to minimise impacts on BMV land where possible. As per the test in NPS-EN-1, we give limited weight to the loss of poor-quality agricultural land of Agricultural Land Classification Grade 3b. The ExA therefore attributes little weight to matters relating to the effect on BMV land in the overall planning balance.

Effect on landholdings

- 7.4.9. Measures within the CoCP and outline Soils Management Plan (oSMP) would provide adequate levels of mitigation, where practicable and would minimise adverse effects. Moderate weight has been attributed to six of the land holdings in respect of the harms that would rise. However, the ExA has identified that very limited or limited weight should be given to the majority of holdings. The ExA concludes that when considered together, the harm that would arise to the agricultural holdings should therefore be given little weight in the overall planning balance.

Compliance with other policies

- 7.4.10. We are satisfied that, in accordance with Chapter 15 of the NPPF, the Applicant has given appropriate consideration to the protection of soils, and this is demonstrated in the mitigation measures contained within the CoCP and oSMP. In addition, we are satisfied that the design of the MDS and the Associated Development Sites (ADS) have been optimised to reduce the overall land take, where practicable.
- 7.4.11. In respect of Policy SCLP10.3 of the East Suffolk Coastal Local Plan, we are content that appropriate measures would be secured via the CoCP and oSMP to reduce and, where necessary, manage land contamination.

Overall conclusions on agriculture and soils

- 7.4.12. In weighing the identified harm against the public benefits referred to in the above paragraphs, the ExA concludes that the benefits of the Proposed Development would be moderate. Overall, the ExA therefore ascribes little weight to the matters relating to agriculture and soils against the making of the Order.

Air Quality

- 7.4.13. The ExA is satisfied that impacts from the construction phase on air quality including dust emissions would be kept to a minimum through implementation of mitigation, including the measures set out in the CoCP.
- 7.4.14. The ExA is also of the view that there would not be significant adverse effects from emissions to air from construction plant and equipment or the desalination plant and Combined Heat and Power plant.
- 7.4.15. In respect of road traffic emissions, all annual mean concentrations are below the Air Quality Objective and as a consequence the ExA is satisfied that the Proposed Development would not result in significant changes to air quality. It should also be recognised that there will be positive benefits in air quality on the A12 at Farnham once the TVB is complete and along the B1122 once the SLR is complete. Both would provide legacy benefits which would count in the planning balance in favour of the scheme.
- 7.4.16. The ExA concludes that the impacts on air quality during the construction and operation stages have been properly assessed and that all reasonable steps have been taken or will be taken to ensure that air quality limits are not breached. There is no evidence of any risk that the project would affect the UK's ability to comply with the Air Quality Directive.
- 7.4.17. This conclusion is based on the assumption that there would be an additional requirement that the Environment Agency (EA) and East Suffolk Council (ESC) are notified at the point in time the desalination plant is first commissioned so that the time period for the operation of the diesel generators operation can be limited to that which was presented to the ExA in the final desalination plant air quality assessment [REP10-153].
- 7.4.18. The ExA is also content that, with the mitigation proposed, the development would comply with the NPPF and local planning policies. The ExA therefore concludes that in respect of air quality issues there are no adverse effects which would weigh against the making of the Order and in the long term the positive benefits that arise from the legacy benefits of the SLR and TVB should be ascribed moderate weight in favour of making the Order.

Alternatives

- 7.4.19. The ExA considers that the Applicant has correctly identified all legal and policy requirements relating to the assessment of alternatives applicable to this project.
- 7.4.20. In relation to the AONB impact, the ExA concludes that the tests for alternatives have been met and we consider that the detrimental effects on the landscape character and views that would arise have been mitigated for both construction and operation as far as is reasonably practicable. In reaching this conclusion, the ExA has had regard to EN-1

sections 4 and 5 including paragraph 5.9.10 which relates to development proposed within nationally designated landscapes.

- 7.4.21. The issue of flood risk and the application of the Sequential and Exception Tests is considered in the Flood Risk section 5.11 of Chapter 5 of this Report. The ExA concludes that the Applicant has fully addressed the flood risk associated with construction and operation of the Proposed Development. In reaching this conclusion, the ExA has had regard to EN-1 sections 4 and 5 including paragraphs 5.7.13 to 5.7.17.
- 7.4.22. The ExA concludes in relation to the consideration of reasonable alternatives to avoid significant harm to biodiversity and geological conservation interests that in accordance with section 4.4 of EN-1, the Applicant has undertaken a proportionate consideration of reasonable alternatives.
- 7.4.23. We are satisfied that the Applicant has demonstrated compliance with the Water Framework Directive (WFD) as far as it is possible without the in-combination consideration of effects from the EA. The EA still need to complete the in-combination assessment for WFD compliance, after completion of the relevant environmental permitting processes. Given this was not completed at the end of the Examination, the SoS may wish to seek confirmation that this has been completed and that the EA are satisfied that the Applicant has demonstrated compliance. This matter is identified in Appendix E to this Report.
- 7.4.24. The ExA has highlighted its concerns in relation to the Habitats Regulations in Chapter 6 of this Report.
- 7.4.25. The ExA concludes that there are no other common law, policy or legal requirements relating to the consideration of alternatives that would lead it to recommend that development consent be refused for the Proposed Development in favour of another alternative including in relation to the siting of the MDS, and the route selection for the SLR and the TVB. Consequently, there are no matters relating to alternatives that would weigh for or against the making of the Order.

Amenity and Recreation

- 7.4.26. The ExA recognises that there are some positive benefits in terms of amenity and recreation that would arise from the Proposed Development taking place and that would provide some legacy benefits for the community into the future.
- 7.4.27. Public Right of Way (PRoW) improvements would be facilitated through the Proposed Development in respect of existing routes but also new improved routes. This would have lasting legacy benefits for the local community and visitors alike. The provision of the off-site sports pitches at Alde Valley Academy Leiston would result in positive community benefits that would continue as a legacy benefit.
- 7.4.28. With the SLR in place the amenity of residents along the B1122 would improve, and this route should become more attractive for residents,

cyclists, and other users. This could be improved further by the enhancements secured under the DoO to promote the B1122 post construction as a repurposed road with the provision of the additional measures provided by the B1122 early years scheme in Theberton and Middleton Moor and the B1122 repurposing scheme.

- 7.4.29. The provision of the TVB would improve the amenity of residents living either side of the A12 who would be bypassed, and it should also be recognised it has the potential to improve the amenity of drivers using the A12.
- 7.4.30. Therefore, Proposed Development, if granted, would achieve a series of benefits in amenity and recreational terms, and each of these are elements that would count in favour of the Order being made. The ExA ascribes moderate weight for the Order being made in regard to these elements of the Amenity and Recreational effects that arise.
- 7.4.31. Turning to the adverse effects of the Proposed Development, the provision of the TVB could result in harms to residents not currently affected by road traffic that should weigh against the scheme in the planning balance.
- 7.4.32. For the Area of Outstanding Natural Beauty (AONB) the mitigation offered and agreed by the Royal Society for the Protection of Birds (RSPB) / Suffolk Wildlife Trust (SWT), National Trust and the Councils through the variety of funds offered and secured through the DoO would result in a suitable package of mitigation measures to address the construction and operation phases of the development. However even with these measures in place residual harms would remain to the AONB and the recreational areas to the north of the MDS particularly during the construction phase, but also during the operational phase of the development.
- 7.4.33. The ExA concludes that during the construction period, there would be substantial harm to the recreational and amenity benefits provided by the AONB at the MDS and in its immediate environs as set out within the Tranquillity Assessment, but this would reduce to little harm for the operational period once construction is complete. The ExA ascribes little weight against the Order being made to this aspect of the project.
- 7.4.34. The ExA remains concerned as regards the timing of the provision of the SLR and the ongoing adverse effect the traffic associated with the development would have on residents and highway users alike. The ExA considers that despite the proposed mitigation, significant adverse effects on the amenity of residents along the B1122 would arise particularly in the early years in advance of the provision of the SLR.
- 7.4.35. Residents would potentially be subject to significant adverse effects from these Heavy Duty Vehicles (HDV) travelling through their communities a considerable number of which could be in the evenings and late at night on a road which the Applicant has themselves described as unsuitable for the construction traffic.

- 7.4.36. The ExA does not consider that the strategy adopted by the Applicant would afford a suitable degree of protection for residents or highway users in the early years without the SLR in place. Nor does the offer of the remedial mitigation offered through the DoO for communities on the B1122 fully resolve this issue particularly as there is no certainty on the timing of the delivery of these additional measures.
- 7.4.37. The ExA concludes that these additional mitigations could be of benefit to the local community, but it is not satisfied that even if they were delivered in advance of the main construction works commencing, they would remedy the problem that arises by routing the construction traffic along the B1122 in the early years. However, given the temporary nature of the harms, the ExA takes the view that this adverse effect on residential amenity is a matter of moderate weight against the Order being made.

Biodiversity and Ecology Terrestrial

Areas of disagreement with Natural England at close of the Examination

In relation to protected species licencing, no Letters of No Impediment were issued by Natural England (NE) by the close of the Examination. However, NE made a submission on the final day of the Examination to say it expected to deliver its responses by 11 November. The SoS will be able to take those into account in their decision. As stated earlier, the ExA considers that matters relating to protected species licensing would not weigh against the making of the Order.

- 7.4.38. For the effects on sites from airborne pollution, apart from HRA matters which are considered in Chapter 6, we accord no weight against the Order being made. We also accord no weight against the Order being made to those matters raised in relation to physical interaction between species and project elements, loss or damage to ancient woodland and ancient or veteran trees including at Foxburrow Wood, air quality and the size of the buffer from Foxburrow Wood, and impacts from coastal processes in relation to the vegetated shingle.
- 7.4.39. In relation to marsh harrier and shoveler, we conclude in Chapter 6 that the adverse effect on integrity cannot be ruled out. We conclude also that the SoS may wish to consult with the parties as to how wetland compensation could in practice be in place before the effect occurs. The disagreement between the Applicant and NE is focussed on HRA issues and the case made by NE is that the same matters apply in the Environmental Impact Assessment (EIA) and SSSI context. Noting our findings there we agree with NE that harm to the SSSI would be likely and we ascribe moderate weight to this issue against the making of the Order unless wetland compensation is put in place and functional before the disturbance due to construction occurs.
- 7.4.40. Turning to the SSSI bird interest in the SSSI wetland, we have had regard to the information provided by the Applicant and the position reached in relation to the impact on relevant features of the SSSI.

Although the Applicant has proposed a number of measures including compensation to address the effects of disturbance, in particular to marsh harrier during construction, this does not appear to have addressed NE's concerns in relation to waterbird species that also form part of the SSSI citation. NE's response in the SoCG [REP10-097] suggests that additional compensatory measures, targeted at waterbirds, may resolve this position. In the absence of any such proposal being made and noting the similar finding reached in relation to the relevant Special Protection Area (SPA) and Ramsar designation in the HRA Chapter of this report, the ExA concludes that harm to the SSSI is likely. As such the ExA ascribes moderate weight to this issue against the making of the Order, again unless wetland compensation is in place and functional before the disturbance due to construction occurs.

Sizewell Marshes

SSSI Crossing

- 7.4.41. The Applicant's major argument for Change 6 over the three-span bridge is that the latter will only reduce the land take from the SSSI by 200 square metres and take 6-12 months longer to deliver, delaying the delivery of the Proposed Development for which there is an urgent need. But the loss of the extra 200 sq m is a matter to be put into the balance of likely adverse effect on notified features against the benefits of the development. We attribute little weight to that against the making of the Order.

Reedbed and ditches

- 7.4.42. NE is satisfied with the provision quantity and quality of tall herb reed fen reprovided. The remaining issue centres on the loss of 200 sq m of SSSI. As that turns on the urgent need and the reedbed has already been reprovided we give this matter little weight.

Fen Meadow

- 7.4.43. We conclude that the Applicant's proposals to recreate fen meadow are satisfactory. Whether this is acceptable depends on whether the benefits of the development clearly outweigh the adverse effect. We put it into the balance. Since the loss is likely to be temporary (albeit for 10 years) the ExA gives it moderate weight against the making of the Order.

Wet Woodland

- 7.4.44. As regards the wet woodland, NE is satisfied with the quantity and location. Re-creation is not difficult though we note that NE prefers a more natural hydrological regime. Our comments on the same issues for fen meadow apply equally here. There will be loss of habitat for a valuable invertebrate assemblage but the evidence is that there is more than adequate suitable habitat remaining in the rest of the SSSI. The question which remains is whether the benefits including need outweigh the adverse effect, and so we take this into the planning balance. We ascribe moderate weight against the Order being made to the loss of the wet woodland.

Protected species

- 7.4.45. Our comments in relation to marsh harrier are set out above. The Environmental Statement (ES) also assesses a moderate significant adverse effect on the barbastelle bat during construction and the same for the Deptford Pink which would need to be translocated as its habitat would be removed. Success of translocation cannot be guaranteed. They are species of principal importance for the conservation of biodiversity. The ExA attributes substantial weight against the making of the Order to the harm to barbastelle bats and the Deptford Pink and its habitat, in accordance with EN-1 paragraph 5.3.17 on the protection of habitats and other species.

Other designated sites

- 7.4.46. In relation to Minsmere – Walberswick Heaths SSSI we have already addressed the effects and harm in relation to the marsh harrier, gadwall and shoveler and other SSSI waterbirds and that substantial weight should be attributed to those losses.
- 7.4.47. Non-significant minor adverse effects are predicted at other SSSIs - Orfordness to Shingle Street SSSI, Minsmere to Walberswick Heaths SSSI, and the SSSIs underpinning the Sandlings SAC. We concluded that there would be no likely significant effect to the Alde – Ore Estuary SSSI. In relation to all of these sites, (except the Alde-Ore Estuary SSSI) we ascribe little weight to matters relating to the issue against making the order
- 7.4.48. Suffolk Shingle Beaches County Wildlife Site (CWS) and the Sizewell Levels and Associated Areas CWS are partially lost. The former hosts the Deptford Pink and nationally important vegetated shingle flora. They are therefore habitats for species of principal importance for the conservation of biodiversity and under paragraph 5.3.17 substantial weight is to be attributed to their loss.

Two Village Bypass

- 7.4.49. We agree with the Applicant's conclusion that there are no significant effects (taking mitigation into account). Whilst we are therefore satisfied on the main issues and other issues for the TVB so far as biodiversity is concerned, on account of the loss of veteran trees we ascribe a little weight against the making of the Order. Section 5.4 reports the overall consideration of alternatives.

Sizewell Link Road

- 7.4.50. There are no impacts identified on designated sites, international, national or local. No ancient woodland or veteran trees are affected and relevant paragraphs in section 5.3 of the EN-1 are met. We have considered the evidence of other parties and agree with the Applicant's assessment of no likely significant adverse effects taking into account mitigation. This matter does not weigh for or against the Order being made.

Northern Park and Ride

- 7.4.51. The ExA does not disagree with the Applicant's assessment of significant effects except in relation to great crested newts on account of the uncertainty of obtaining landowner consent for the mitigation. However, the ExA is satisfied that this matter could be resolved through finding an alternative site for the translocation. The SoS might wish to update themselves on whether an alternative site is necessary and if so the certainty of another site being delivered.
- 7.4.52. Paragraphs 5.3.15 (Biodiversity within Developments), 5.3.17 (Protection of Habitats and Other Species) which addresses s.41 of the Natural Environment and Rural Communities Act 2006 (NERC Act) and the fourth bullet of policy 5.3.18 (taking opportunities to enhance or create new habitats) of EN-1 are dealt with separately in this Report. The proposed development at this site is compliant with the other relevant paragraphs.
- 7.4.53. The ExA considers that the biodiversity effects associated with the Northern park and ride do not weigh for or against the making of the Order.

Yoxford roundabout and other improvements

- 7.4.54. Since the Sandy Stilt Puffball is a s.41 species the test is whether the adverse effect is outweighed by the benefit of the Proposed Development, including need. We therefore put this into the planning balance and give this matter substantial weight against the Order being made.
- 7.4.55. In other respects the ExA is satisfied that the Applicant has properly assessed the effects. Paragraphs 5.3.15 (Biodiversity within Developments), 5.3.17 (Protection of Habitats and Other Species) which addresses s.41 of the NERC Act and the fourth bullet of paragraph 5.3.18 (taking opportunities to enhance or create new habitats) of EN-1 are dealt with separately in this report. The other relevant paragraphs in EN-1 are met.

Southern Park and Ride

- 7.4.56. The ExA is satisfied that the assessment of likely significant effects (LSE) is robust and appropriate. Paragraphs 5.3.15 (Biodiversity within Developments), 5.3.17 (Protection of Habitats and Other Species) which addresses s.41 of the NERC Act and the fourth bullet of paragraph 5.3.18 (taking opportunities to enhance or create new habitats) of EN-1 are dealt with separately in this Report. The other relevant paragraphs in EN-1 are met. This is a factor which does not weigh for or against the making of the Order.

Freight Management Facility

- 7.4.57. The ExA is satisfied the assessment of LSE is robust and appropriate. Paragraphs 5.3.15 (Biodiversity within Developments), 5.3.17 (Protection of Habitats and Other Species) which addresses s.41 of the NERC Act and the fourth bullet of paragraph 5.3.18 (taking opportunities to enhance or

create new habitats) of EN-1 are dealt with separately in this Report. The other relevant paragraphs in EN-1 are met. There are no biodiversity or ecological matters relating to the Freight Management Facility (FMF) that would weigh for or against the making of the Order.

Rail extension

- 7.4.58. The ExA is satisfied the assessment of LSE is robust and appropriate. Paragraphs 5.3.15 (Biodiversity within Developments), 5.3.17 (Protection of Habitats and Other Species) which addresses s.41 of the NERC Act and the fourth bullet of paragraph 5.3.18 (taking opportunities to enhance or create new habitats) of EN-1 are dealt with separately in this Report. The other relevant paragraphs in EN-1 are met. There are no biodiversity or ecological matters relating to the rail extension proposals that would weigh for or against the making of the Order.

Biodiversity Net Gain

- 7.4.59. The Applicant is clearly not relying on the BNG documents as support for the application. We recognise that there is no legal basis for doing a BNG assessment and the Applicant has gone over and above what is required. The ExA gives little weight to the benefits that would arise from the BNG contribution to the making of the Order.

Climate Change and Resilience

- 7.4.60. The ExA considers that, in accordance with EN-1 section 4.8, paragraphs 4.8.5, 4.8.6, 4.8.7, and 4.8.11, the ES as updated during the Examination, has appropriately set out how the Proposed Development would take account of the projected impacts of climate change including climate change adaptation. The ExA finds the Applicant's assessment to be suitably precautionary in its consideration of climate change and appropriately recognises the uncertainties that remain.
- 7.4.61. In relation to EN-1, paragraph 4.8.8, there are no features of the design of the Proposed Development critical to its operation which might be seriously affected by more radical changes to the climate beyond that projected in the latest set of UK climate change projections, taking account of the latest credible scientific evidence and that necessary action could be taken to ensure its operation for its estimated lifetime. Likewise, for EN-6, paragraph 2.10.2, the ExA finds that the proposed adaptation and mitigation measures have appropriately taken into account climate change impacts and the coastal location of the Proposed Development. We are content that all relevant mitigation measures would be secured through the Draft DCO [REP10-009].
- 7.4.62. On greenhouse gas emissions, the ExA finds that emissions of the magnitude demonstrated would not have a significant effect on the UK's ability to meet its carbon budget commitments or the ability of the Government to meet the UK's obligations under the Paris Agreement. The emissions would also be consistent with the aims of relevant regional and local plan policies.

7.4.63. The ExA concludes that all potential impacts of climate change including those associated with the siting of the MDS in this coastal location have been appropriately taken into account. The provision of the proposed mitigation and adaptation measures would ensure that there would be no significant climate change effects on or arising from the Proposed Development which would be consistent with the Government's aims of achieving sustainable development through mitigating and adapting to climate change. Therefore, there are no matters relating to climate change impacts which would weigh for or against the Order being made.

Coastal Geomorphology

7.4.64. The ExA finds the ES assessment principles adopted by the Applicant to be satisfactory and fitting. The ExA also considers the spatial scale of the Applicant's coastal processes assessment to be entirely reasonable and proportionate in its extent. In addition, we find the Applicant's assessment of the Sizewell-Dunwich banks and the Corraline Crag to be suitably precautionary, comprehensive, and robust.

7.4.65. In relation to the potential impacts upon the Minsmere frontage, and the role of the Minsmere sluice, the ExA concludes that the Proposed Development would not affect the sluice's ability to discharge.

7.4.66. The ExA also concludes that the monitoring and mitigation provided for by the Coastal Processes Monitoring and Mitigation Plan (CPMMP), and secured by the dDCO and DML, would provide the necessary safeguards in relation to impacts of any dredging associated with the permanent BLF, the MBIF or barge berthing platform.

7.4.67. Whilst there would be a breach of Shoreline Management Plan (SMP) policy MIN 13.1 [REP1-072], the ExA does not find that the Proposed Development would have any substantive implications for the overall SMP strategy for managing the coast.

7.4.68. The assessment of combinations of spatially and temporally overlapping marine components remains an outstanding area of disagreement in the in the Final SoCG [REP10-094] between the EA and the Applicant. The ExA concludes that the CPMMP [REP10-040] would provide an appropriate mechanism to identify and address coastal changes beyond those predicted by the modelling and assessment work which has been undertaken, including any additional cumulative impacts. However, we have also highlighted that the SoS may wish to consult with IPs in relation to the information provided by the Applicant at DL10 [REP10-124] before reaching a final decision.

7.4.69. The ExA has considered the adequacy of the proposed climate change adaptation measures, and the resilience of the Proposed Development to ongoing and potential future coastal change during its operational life and any decommissioning period including the scope for the Hard Coastal Defence Feature (HCDF) to undergo design adaptation to maintain nuclear safety against predicted sea level rises.

- 7.4.70. We conclude that the Adaptive Design would provide a feasible means of increasing the crest height of the HCDF so that the sea defence could adapt to a credible maximum sea level rise should that scenario develop as a result of climate change. The arrangements for monitoring and assessing the impacts of climate change on sea level rise to determine the trajectory of the projections would enable implementation of the Adaptive Design to take place before the threshold is reached. The Proposed Development would therefore comply with the requirements of EN-1 and EN-6 relating to climate change adaptation, including EN-6, paragraph 2.8.2, which relates to good design.
- 7.4.71. As regards the resilience of the sea defences, the ExA believes that the CPMMP would provide an appropriate mechanism to identify and address coastal changes beyond those predicted by the modelling and assessment work which has been undertaken, including in relation to the design of those features. We conclude that, in accordance with EN-1 paragraph 5.5.10, the Proposed Development would be resilient to coastal erosion and deposition, taking account of climate change, during its operational life and any decommissioning period.
- 7.4.72. In relation to EN-1, paragraph 5.5.7, the assessment of the Proposed Development has taken account of potential impacts from climate change and any adverse impacts resulting from it on other parts of the coast would be minimised. It would also be consistent with the UK Marine Policy Statement and would not conflict with the aims of regional planning policies.
- 7.4.73. Turning to EN-1, paragraph 5.5.1, given our findings in Section 5.21 of this Report in relation to economic and social benefits that the Proposed Development would provide, we are content that it is exceptionally necessary in this coastal area and the risk to such development in an area vulnerable to coastal change would be managed over its planned lifetime.
- 7.4.74. The ExA considers that the necessary monitoring, mitigation, and controls are incorporated within the latest revisions of the dDCO requirements, the DML and the CPMMP. We are therefore satisfied that appropriate monitoring and mitigation would be in place to ensure management of any risks to the Proposed Development, and to secure the long-term sustainability of the coastal area. The ExA concludes that there are no matters relating to Coastal Geomorphology and Hydrodynamics which would weigh for or against the Order being made.
- 7.4.75. However, we have identified the Preliminary design and maintenance requirements for the Sizewell C Soft Coastal Defence Feature (Version 4) TR544 [REP10-124] provided by the Applicant at DL10 and the Sizewell B salient in Appendix E to this Report as matters on which the SoS may wish to seek further evidence before reaching a final decision.

Community Effects

- 7.4.76. The Applicant has in preparing the application and the ES recognised the sensitivity of the location and presented a range of extensive measures in order to mitigate the anticipated adverse effects on local communities. In addition, the Applicant has set up a community fund in order to address non-tangible effects which are not easily identified but nevertheless give the community an opportunity to work with the Applicant to manage impacts through contributions towards community schemes.
- 7.4.77. The ExA considers this to be an appropriate and reasonable response in order to provide a mechanism to address concerns as they arise through the construction of such a project as the one proposed. When taken together with the other mitigation that would be provided through the strategy of plans and controls through requirements and the DoO, the ExA finds that the whole package would achieve a suitable degree of mitigation.
- 7.4.78. With mitigation in place the Proposed Development would result in some residual adverse effects, as anticipated in the NPS. However, the Community Fund would have an important role to play. It would provide a fund for the community run by the community focused on enhancing the quality of life for communities that might be affected by those residual adverse effects.
- 7.4.79. The ExA therefore concludes that the adverse effects to some of the communities that would arise from the construction and operation of the Proposed Development should be ascribed little weight against the Order being made.

Cumulative Impact

- 7.4.80. The ExA considers that the Applicant has appropriately reviewed the relevant schemes and, in accordance with paragraph 4.2.5 of EN-1, has adequately assessed how the effects of the Proposed Development would combine and interact with the effects of other development.
- 7.4.81. The ExA is content that the project-wide impacts relating to the Pro Corda music school and Leiston Abbey with the potential for a significant cumulative effect have been satisfactorily resolved. The other project-wide impacts identified by the ES have been considered further where they remain relevant in the appropriate generic sections of Chapter 5 of this Report.
- 7.4.82. For interrelationship effects, various such effects have been identified and consideration given to the adequacy of the mitigation proposed in the light of those cumulative effects. The ExA concludes that the mitigation proposed to overcome the additional significant adverse inter-relationship effect that is likely to be experienced by the identified receptors would be satisfactory and would achieve that purpose.
- 7.4.83. The ExA has considered the cumulative effects of the Proposed Development with other major infrastructure proposals. The ExA believes that the cumulative transport effects with other plans, projects, and

programmes identified in the 'cumulative' assessment would be acceptably and reasonably mitigated through coordinated programming of works as proposed between the Proposed Development and EA1N and EA2 and the mitigation and transport related contributions that would be secured by the DoO [REP10-076].

- 7.4.84. The assessment of combinations of spatially and temporally overlapping marine components is considered further in the Coastal Geomorphology and Hydrodynamics Section 5.8 of Chapter 5 of this Report. The conclusion reached is set out in that section and summarised above under that topic heading.
- 7.4.85. There would be no other such cumulative impacts of significance other than those identified by the ES in relation to landscape and visual impact, amenity and recreation, and health and wellbeing. These matters are considered in the relevant generic sections of Chapter 5 of this Report. However, the ExA believes that the mitigation that is proposed to alleviate those impacts and would be secured by the DoO [REP10-076], is reasonable and proportionate and that no further mitigation is required.
- 7.4.86. For the purposes of compliance with the relevant legislation and policy, the ExA is satisfied that the ES has given appropriate consideration to the transboundary implications of such matters.
- 7.4.87. The cumulative impacts of the water supply strategy have been considered in Section 5.11 of Chapter 5 and the conclusion reached is set out in that section and summarised below under the next topic heading. For the reasons explained in Section 5.11, the ExA is unable to provide a reasoned conclusion in respect of the cumulative environmental effects of the water supply solution.
- 7.4.88. With the exception of that outstanding matter, the ExA concludes in relation to project-wide effects, interrelationship effects, and cumulative impacts with other plans and projects that all applicable conventions, international and national legislation, and policy have been complied with. Furthermore, there are no additional matters over and above those identified in the relevant generic topic sections of Chapter 5 of this Report relating to cumulative project-wide impacts, interrelationship effects or the cumulative effects with other plans, projects or programmes that would weigh for or against the making of the Order.
- 7.4.89. However, in relation to the overall effects on the AONB and SHC, there would be an adverse impact on the purpose of the designation, and harm to the identified special qualities of the AONB and SHC after taking mitigation into account, as identified in Section 5.14 Landscape Impacts, Visual Effects and Design and 5.18 Amenity and Recreation of this Report. The ExA attributes substantial weight to the residual construction cumulative effects and moderate weight to the residual operational cumulative effects upon the AONB and SHC that weigh against the Order being made.

- 7.4.90. The ExA has also identified in Appendix E to this Report that the SoS may wish to seek additional information in relation to the Nautilus Interconnector and/or the Eurolink Connector in the light of their potential cumulative effects with the Proposed Development.

Flood Risk, Ground Water, Surface Water

- 7.4.91. We have examined all of the Applicant's submitted assessments and considered more detailed concerns raised during the Examination. The ExA is satisfied that the Applicant has fully addressed the flood risk associated with construction and operation of the Proposed Development and has demonstrated that the flood risks associated with the Proposed Development can be satisfactorily mitigated and managed. Consequently, we consider that the Applicant's assessment of flood risk complies with the NPS EN-1 policy aim of making the Proposed Development safe without increasing flood risk elsewhere. This matter does not weigh for or against the Order being made.
- 7.4.92. At the close of the Examination there was an outstanding issue with respect to the approval of the Drainage Strategy. SCC were still in discussion with the Applicant seeking to agree the final Drainage Strategy that would need to replace the DL10 version as a certified document. Additionally, this outstanding issue between SCC (the Lead Local Flood Authority) is in our view a sound reason why SCC should be the discharging authority for the surface water drainage designs. To take account of both of these factors we are therefore recommending the dDCO is suitably amended as set out in Chapter 9 of this Report. Subject to that amendment, we are satisfied that issues relating to the Drainage Strategy have been satisfactorily resolved. This matter does not weigh for or against the Order being made.
- 7.4.93. We have considered all the Applicant's submissions with respect to groundwater and surface water and sought greater clarification on matters of detail throughout the Examination. Taking into account all of the submitted evidence and our considerations during the Examination we are satisfied that the Applicant's approach to groundwater and surface water management is appropriate. This matter does not weigh for or against the Order being made.
- 7.4.94. We also consider that the controls that would be secured within Requirement 11 of the dDCO would ensure that there would be effective ongoing monitoring of the water regime within the Sizewell Marshes SSSI. This matter does not weigh for or against the Order being made.
- 7.4.95. The ExA is satisfied that the Applicant has demonstrated compliance with the WFD as far as it is possible without the in-combination consideration of effects from the EA. However, the EA will need to complete their assessment of the in-combination effects once they have concluded the relevant environmental permitting processes. The SoS may wish to seek confirmation that this has been completed and that the EA are satisfied that the Applicant has demonstrated compliance with the WFD. This consideration is set out in Appendix E to this Report.

- 7.4.96. At the close of the Examination there was still uncertainty as to where the permanent water supply would be sourced from and how the necessary water would be transferred to the MDS. It remained unknown whether Northumbrian Water Limited (NWL) would be able to supply water from the North/ Central WRZ via a new transfer main to the Proposed Development. Both the Applicant and NWL were confident that they would be able to work together to develop a sustainable long term water supply for the Proposed Development. However, it remains the case that there was no assured permanent water supply identified at the close of the Examination.
- 7.4.97. The Office for Nuclear Regulation (ONR) has indicated that for the nuclear site licence to be granted, it would expect the licensee to put in place a reliable source of water before nuclear related activities take place on the site that are dependent on such a supply. Therefore, should a sustainable water supply solution not be able to be identified, then the Proposed Development may not be able to operate as a power station.
- 7.4.98. Whilst the Applicant [AS-189] has outlined a consideration of a cumulative assessment of the originally proposed transfer main solution from the Northern Central WRZ, there remains uncertainty as to whether this will in fact provide the final water supply solution. No cumulative effects assessment has been provided in respect of the other potential solutions outlined by the Applicant and NWL.
- 7.4.99. NE has raised concerns that the environmental impacts that may be associated with the provision of a permanent water supply as a fundamental component of the eventual operation of the power station should be assessed at this stage. The Applicant rejects the NE concerns as being unfounded and points to the fact that any new transfer main would undergo its own planning process with all that that entails. In the Applicant's view there can be no requirement at this stage, to assess development which is not applied for as part of the DCO application.
- 7.4.100. However, the ExA accepts NE's position that the water supply strategy is a fundamental component of the operational phase of the Proposed Development. In the ExA's view, the Applicant's stance does not address the need to fully consider the cumulative assessment of the environmental effects of the permanent water supply solution. The ExA agrees with NE, that it is unable to undertake a meaningful assessment of potential effects arising from the chosen solution for operational supply in combination with the Proposed Development from the evidence presented to the Examination. Accordingly, the ExA considers it has not been provided with sufficient information or certainty on the issue of the permanent water supply. In these circumstances, the ExA is unable to fully understand or provide a reasoned conclusion in respect of the cumulative environmental effects of the water supply solution.
- 7.4.101. In conclusion, we are therefore unable to recommend that this application should be approved without firstly, further details of the provision of a sustainable permanent water supply to be identified and secured through any DCO granted, and secondly, any consequential

cumulative environmental effects identified along with appropriately secured mitigation/monitoring and/or corrective actions. This matter is also highlighted in Appendix E to this Report.

Good Design

- 7.4.102. In terms of the appearance and landscape and visual aspects of good design, the ExA is satisfied that the Applicant presented its design process and how the design evolved and that the reasons for its favoured choice have been set out. We are content that the Applicant utilised a design review process during the design evolution and that it would continue to do so as part of the process of discharge of relevant Requirements. We consider that the Applicant has taken into account functionality as well as aesthetics and demonstrated good design in terms of siting relative to existing landscape character, landform and vegetation and reduced the visual intrusion of the Proposed Development as far as reasonably practicable.
- 7.4.103. The ExA acknowledges that there are likely to be some long lasting adverse direct and indirect effects on landscape character and visual effects on the AONB. In terms of the physical appearance and the siting relative to existing landscape character the ExA considers that the Applicant has made significant effort and achieved a high-quality Design and Access Statement (DAS) which, combined with the series of management documents, set out robust design principles which would give the necessary controls for post-consent discharges to confirm good design acting to mitigate the adverse landscape and visual effects of the MDS and the associated development.
- 7.4.104. Notwithstanding the high-quality DAS, there would be many post-consent details to be approved which could influence the final aesthetics of the proposed substations because of the need for flexibility at this stage. Therefore, the ExA has ascribed little weight against the making of the Order to matters relating to good design in terms of appearance and adverse effects on landscape and views.
- 7.4.105. There are many opportunities for biodiversity benefits which would be built into the wider landscape proposals for the Proposed Development, the principles for which, we consider are adequately secured in the dDCO and the DoO. The ExA considers that the Applicant has developed the overarching landscape vision and Estate Wide Management Plan with multiple benefits in place, such that biodiversity enhancement would complement landscape and visual improvements, which in turn would give green infrastructure benefits. Many of these benefits would not be achievable until after the construction phase. The ExA considers that the Applicant has gone a long way towards maximising the biodiversity benefits. In reaching a conclusion on the way good design has been delivered through biodiversity benefits, we have also given weight to the adverse effects on biodiversity elsewhere. Overall therefore, the ExA has ascribed little weight against the making of the Order to matters relating to good design in terms of biodiversity benefits.

- 7.4.106. Turning to acoustic mitigation, the question of the detailed approach for acoustic mitigation to address adverse noise effects at the TVB and the SLR are not finalised at the end of the Examination. The ExA welcomes the commitment to further negotiations in respect of this issue with relevant landowners. The ExA also agrees that the finalisation of these details would be subject to appropriate post-consent discharge approvals. However, the submitted details have not been presented in a way which fully explains what the acoustic benefit would be or whether there would be adverse visual effects arising from the acoustic mitigation. There being a difference in acoustic benefits and adverse visual effects arising from options under consideration; namely earth bunds or acoustic fencing. There would be opportunities for the details of landform and vegetation at both the TVB and the SLR to demonstrate good design, subject to developing the designs further.
- 7.4.107. Overall, the ExA attributes little weight against the making of the Order to matters of good design.

Health and Wellbeing

- 7.4.108. The ExA concludes that the Proposed Development would accord with NPS EN-1 and EN-6 and that the harm identified to health and wellbeing would be adequately mitigated by the obligations in the DoO and the Requirements of the DCO.
- 7.4.109. The ExA have also had regard to the advice within the NPS that confirms the assessment and decision on the DCO should be undertaken on the basis that the regulatory regime would be properly applied.
- 7.4.110. While adverse impacts arising from the Proposed Development are identified the ExA takes the view that they are appropriately mitigated where necessary and the ExA considers that there are no matters relating to this issue which would weigh against the Order being made.
- 7.4.111. In the medium to long term improved access to the countryside brought about by the changes to the PRoW network would be of beneficial effect to health and wellbeing which can be ascribed moderate weight for the Order being made.
- 7.4.112. With the significant employment opportunities provided during the operation of the power stations there will be the potential for significant health and wellbeing benefits to the local and regional community to which the ExA ascribes moderate weight for the Order being made.
- 7.4.113. Additionally, the provision of the TVB and SLR will provide legacy benefits to health and wellbeing by removing traffic from these communities with the consequent reduction on noise, improved air quality and general sense of place as a consequence of the reduced traffic. The ExA ascribes moderate weight to these benefits for the Order being made.
- 7.4.114. The B1122 repurposing scheme has the potential to provide further health and wellbeing benefits although it is not possible at this stage to be certain as to the extent of these as the scheme is yet to be finalised.

The ExA is of the view benefits will arise, however we have ascribed little weight at this stage as the full details and the potential full beneficial effects are not fully understood.

Historic Environment (Terrestrial and Marine)

- 7.4.115. As required by Regulation 3 of the Infrastructure Planning (Decisions) Regulations 2010, the ExA has given specific consideration to the desirability of preserving listed buildings and scheduled monuments or their setting or any features of special architectural or historic interest which they possess, and the desirability of preserving or enhancing the character or appearance of conservation areas.
- 7.4.116. The ExA finds that policy on the historic environment within NPS EN-1 has been followed by the Applicant. This policy is consistent with the aims of Section 16 of the NPPF and with the aims of the relevant policies of the local authorities' development plans.
- 7.4.117. The ExA considers that a description of the marine and terrestrial heritage assets has been provided in a level of detail proportionate to the importance of the assets. The ExA also considers that the significance of effect on the historic environment has been adequately assessed for the construction, operation and where relevant, reinstatement and removal phases of the Proposed Development.
- 7.4.118. The ExA considers that the necessary monitoring, mitigation, and controls are incorporated within the latest revisions of the dDCO requirements, the DML, the DAS, the LEMPs and the ADDP. We are satisfied that they would be adequately secured via the DCO. The ExA agrees with the findings of the Applicant's ES, that the significance of any adverse effects would be reduced or offset to levels considered non-significant in EIA terms following mitigation.
- 7.4.119. With specific reference to effects on onshore and offshore archaeology, we are content that such effects would be adequately addressed and mitigated by Requirement 3 and also Condition 16 of the DML as set out in the rDCO which would secure the final WSIs. The ExA is content that the WSIs provide the means by which recording would be secured and published.
- 7.4.120. Considering the conclusions relating to each of the identified assets:
- moderate weight should be ascribed to matters relating to effects on heritage significance against the making of the Order in respect of Leiston Abbey (1st site), Leiston Abbey (2nd site), and the TVB and SLR historic landscape character;
 - little to moderate weight should be ascribed to matters relating to effects on heritage significance against the making of the Order in respect of Glemham Hall Registered Park and Garden;
 - little weight should be ascribed to matters relating to effects on heritage significance against the making of the Order in respect of the non-designated Pillbox in Pillbox Field;

- little weight should be ascribed to benefits relating to effects on heritage significance for the making of the Order in respect of Thatched House, The Cottage, Pine Tree Cottage, Church of St Peter, listed buildings within Theberton village, Elm Tree Farmhouse, Elm Tree Cottage, Post Office Stores, George and Dragon, Turret Cottage Turret House, Church of St Andrew and Four cottages 30 metres south of St Andrew's Church;
- little weight should be ascribed to matters relating to effects on heritage significance against the making of the Order for the remainder of the assets identified in the above conclusions.

- 7.4.121. For each of the identified heritage assets, the ExA is satisfied that the Proposed Development would result in less than substantial harm in respect of the heritage significance of those assets.
- 7.4.122. The ExA is also satisfied that no oversight or omission has occurred in respect of the assessment undertaken which may prejudice the SoS duty to consider the desirability of preserving listed buildings and their settings
- 7.4.123. The initiatives secured within the DCO will assist in mitigating any residual effects and will provide legacy benefits in terms of improvement to the longer-term conservation of assets and their settings. Additionally, measures would also enable visitors to gain a better understanding of the heritage significance of the assets through improved interpretation materials. However, in the wider context of the scheme, we consider that little weight should be attached to the benefits arising from the initiatives secured via the DoO in respect of the Order being made.
- 7.4.124. In weighing the harmful impact on the significance of each of the historic assets against the public benefits, the ExA concludes that in all instances the very substantial public benefits of the Proposed Development would strongly outweigh the harm to the significance of the historic asset concerned. The loss of significance to those assets would therefore be justified in this case.
- 7.4.125. The ExA ascribes moderate weight to the matters relating to the historic environment against the making of the Order in the overall planning balance.

Landscape and Visual Effects and Good Design

Effects on landscape character and views

- 7.4.126. The ExA is satisfied that the Applicant carried out a Landscape and Visual Impact Assessment which followed relevant guidance and assessed construction and operation phase effects. The Applicant's assessment included construction phase visibility and operation phase effects on views and visual amenity including lighting. The ExA did not agree with all the findings of the adverse effects of the Applicant's construction phase assessment in the AONB, but we are content that these and other adverse landscape and visual construction effects would be capable of reversal in a reasonable timescale.

- 7.4.127. The ExA has taken into account the information provided during the Examination and its own site inspections to reach a view on the quality of the existing landscape quality. The ExA is content that the Proposed Development has been designed carefully to minimise harm to the landscape, taking account of environmental effects on the landscape, siting, operational and other constraints and providing reasonable mitigation. The ExA is satisfied that details that would be discharged through post-consent approvals are sufficiently developed and secured in the Recommended DCO (rDCO) and DoO.
- 7.4.128. The ExA is satisfied that the Applicant's embedded mitigation and further mitigation addressed reduction in scale of the project. We do not consider that any further reduction would be merited, acknowledging that the scale of the Proposed Development is such that it would be visible for many miles. The ExA does not however consider that the adverse harm to the landscape would be so damaging that it would not be offset by benefits, including the landscape enhancements.
- 7.4.129. Turning to visual effects, the ExA is mindful of the particular vulnerability of coastal areas to visual intrusion because of views along coasts and the need to judge adverse effects on sensitive receptors. We consider that the Applicant has been thorough in its assessment, has considered the building massing and that the DAS, ADDP and LEMPs would give the local authorities sufficient level of design detail against which to discharge post-consent approvals to ensure that the MDS and the ADS would not result in levels of visual harm that would outweigh the benefits of the Proposed Development.
- 7.4.130. In terms of mitigation for adverse landscape and visual effects, the ExA considers that the Applicant has gone to great lengths to site the infrastructure and to set out design principles in the DAS, ADDP and LEMPs to a level of detail for such matters as materials, colours, designs of buildings and landscape schemes that would enable post-consent approvals to ensure that adverse landscape and visual effects are reduced. We are also satisfied with the proposals for off-site planting. The ExA considers that the nuclear-specific policy requirements relating to landscape and visual effects would be met.

Planning balance: landscape and visual effects

- 7.4.131. In drawing together the effects on landscape character and views, the ExA has weighed the benefits and harm on the MDS holistically as one element taking weights from the earlier reporting because its mass and design would form the entity which would be read as the power station. However, the ADS are concluded separately as they would be spread geographically, would deliver a range of different infrastructure assets, would be of very different scales to each other and would vary in degrees of harm and benefit.

Main Development Site

- 7.4.132. The ExA considers that the overarching landscape vision and landscape improvements which would be delivered would bring multiple benefits to

the landscape character of the wider area in which the MDS would be sited. There would also be benefits to biodiversity and green infrastructure and views (covered below). In almost all the development areas of the MDS, the landscape character will change from one of natural landscape and seascape to one mainly comprising large built structures. The exceptions to this are the SSSI crossing and the Goose Hill outage car park, where the ExA considers that mitigation and supplementary planting would integrate the development into the existing landscape. The temporary nature of the desalination plant and the commitment to reinstatement would not give rise to long term changes to landscape character.

- 7.4.133. Overall, therefore the ExA has ascribed little weight against the making of the Order to the landscape effects which would arise from the development of the MDS.
- 7.4.134. In terms of views, there would be improvements in some locations in the wider area resulting from the landscape enhancements. But in the main these would be offset by the changes to views which would introduce large structures, built form mass and associated infrastructure into views, some of which were previously of a natural landscape and some of which comprised the well-known white dome and blue base (described as iconic by some) of the Sizewell B power station. The ExA is content that the DAS is fit for purpose, of a high quality and is based on an appropriate interrogation of the existing landscape, built structures and environs which would inform design decisions on materials and colour. It is also considered to be satisfactorily secured in the DCO.
- 7.4.135. Whilst accepting that a new nuclear power station would inevitably be conspicuous both during construction and operation, in our opinion, the changes to the views for most elements of the MDS would result in some adverse visual effects. Although there are some such as the SSSI crossing and the Goosehill outage car park where we consider that effects on views would be neutral. Even with the Applicant's DAS, which would give the Local Authorities involved in discharge of post-consent approvals comprehensive design information against which to test submitted details, there remains potential for visual amenity to be compromised. In views where the Proposed Development is seen with Sizewell B's celebrated dome, there would be detrimental compromise to those existing views.
- 7.4.136. Overall, therefore the ExA has ascribed little weight against the making of the Order to the visual effects which would arise from the development of the MDS.

Associated Development Sites

- 7.4.137. In reaching conclusions on the landscape effects of the ADS, the ExA finds that, notwithstanding the mitigation proposed by the Applicant and secured through the ADDP, the nature of the various aspects of the Proposed Development would harm the existing landscape character. This would be to different degrees depending on siting, development function and effectiveness of mitigation. For a number of the ADS the

ExA has attributed moderate weight against the making of the Order to landscape effects. These are: the SLR, the TVB, the Southern Park and Ride (SPR), the FMF and the Green Rail Route (GRR). This is because even with general and site-specific design principles set out in the ADDP, the existing landscape character would be changed, and the nature of the development would not be able to be assimilated without adverse effects on the landscape components. This would also include views, and for that reason the ExA has also attributed moderate weight against the Order being made to visual effects of these ADS.

7.4.138. The Northern Park and Ride (NPR) is different because although there would be modifications to the existing landscape, there would be opportunities through planting and buffer zones to blend and screen the site. The ExA has therefore attributed little weight against the Order being made to landscape effects arising from the NPR. Turning to visual effects, there would be visual receptors which would be adversely affected by construction activity and subsequently by lighting columns, security fencing, roofs of taller vehicles and bunds. These would be significant adverse visual effects for up to twelve years. The ExA therefore attributes moderate weight against the making of the Order to visual effects arising from the NPR.

7.4.139. Yoxford Roundabout highway improvements would take place in a landscape setting which already includes highway infrastructure. The proposed works would result in modification and removal of some landscape features, but the retention of existing boundary planting and new planting would integrate the new infrastructure into the existing landscape. The effects are not considered significant. For these reasons the ExA considers that there are no matters relating to landscape effects arising from the highway improvement works at the Yoxford Roundabout that would weigh against the Order being made. Likewise for visual effects, although additional lighting columns would be additional features in the area, they would be in line with the existing highway character, and we are satisfied that light spillage would be satisfactorily minimised through the ADDP. Therefore, the ExA considers that there are no matters relating to visual effects arising from the highway improvement works at the Yoxford Roundabout that would weigh against the Order being made.

Suffolk Coast and Heaths AONB and Suffolk Heritage Coast

7.4.140. The ExA recognises that the MDS is located within the boundaries of the AONB and Suffolk Heritage Coast (SHC), both of which are nationally designated landscapes. However, we are satisfied that the Applicant has adequately considered and addressed the tests for exceptional circumstances in terms of need (concluded in Section 5.19), alternatives and detrimental effect on the environment and landscape and recreational opportunities (the latter covered in Section 5.3). As stated above, the ExA has considered the Applicant's approach to good design and mitigation, whilst accepting that adverse landscape and visual effects could not be eliminated altogether, with little potential for mitigation.

- 7.4.141. The ExA is content that the tests for alternatives have been met, as reported above and we consider that the detrimental effects on the landscape character and views that would arise have been mitigated for both construction and operation phases as far as is reasonably practicable. The ExA also considers that the policy requirement to consider undergrounding and guidelines for routeing overhead lines has been met, although the selected option of an overhead line would result in harm to the landscape qualities of the AONB.
- 7.4.142. The ExA is satisfied that the Applicant's approach to mitigation and good design combined with the wider landscape enhancements that would be secured would conserve as far as possible, the natural beauty of the landscape and countryside. The ExA is persuaded that the AONB's statutory purpose would not be compromised, even though there would be significant adverse landscape and visual effects which would affect a wider part of the AONB especially during construction. Whilst we disagree with the Applicant's interpretation of the extent of significant adverse landscape and visual effects for construction phase over the entire AONB area, we have concluded that these would be capable of reversal in a reasonable timescale, bearing in mind the nature of the Proposed Development.
- 7.4.143. The ExA is satisfied that the rDCO and DoO would secure high environmental standards through Requirements which set out the landscape vision and good design in the DAS and through other enhancements that would provide an enhanced expansive naturalised landscape and would aim to ensure the long-term sustainability and resilience of the landscape. In this regard we have given weight to the Natural Environment Improvement Fund and Resilience Fund, which is secured, but not to the Environment Trust as details were not submitted to the Examination.
- 7.4.144. The ExA has also had regard to parts of the Proposed Development areas outside the AONB boundary which could have effects within. We are satisfied that there are controls in place to ensure that areas outside the boundary would be designed sensitively, such that the AONB purpose would not be compromised in terms of visibility from the AONB or adverse effects on its landscape character.
- 7.4.145. Turning to the NPPF's position on proposed development in AONBs and SHCs, the ExA is satisfied that there are controls in the rDCO and DoO to ensure conservation and enhancement of landscape and scenic beauty. In particular, the ExA gives weight to the Natural Environment Improvement Fund and the proposed wider landscape enhancements, which we are satisfied are secured. The ExA is satisfied that the exceptional circumstances in terms of effects on the landscape are met.

Planning balance: AONB and SHC

- 7.4.146. The ExA recognises that in the longer term there would be benefits to the AONB arising from the lasting enhancements that would be delivered to the wider AONB area. However, these are offset by the harm that would

occur to the natural beauty, special qualities, countryside and seascape of these designated areas.

- 7.4.147. As stated earlier, the ExA is of the opinion that there would be much wider, significant adverse effects in respect of landscape and scenic qualities, relative wildness and tranquillity than concluded in the Applicant's assessment. We consider that the construction phase activities would be evident across a wider area of the AONB than that physically affected. Although we consider these adverse effects to be reversible within a reasonable time scale in light of the nature of the Proposed Development, we note the adverse effects on the AONB.
- 7.4.148. For these reasons the ExA ascribes very substantial weight against the Order being made to effects on the AONB and SHC for the construction phase.
- 7.4.149. For the operational phase, the ExA considers that delivery of the landscape vision and design principles of the DAS would provide enhanced naturalised landscapes in the wider area and that the buildings would meet high design standards, subject to the discharge of post-consent approvals. However, the natural beauty of the landscape, seascape and countryside would be adversely affected. Land, including coastal areas, which was previously part of the designated sites' natural beauty would house large buildings and infrastructure including new overhead lines introduced to the AONB.
- 7.4.150. We also consider that whilst the embedded mitigation would be appropriate for the sensitive landscape, we consider that significant adverse effects would be experienced on a wider geographical scale than concluded by the Applicant, albeit not over such a wide area as during construction.
- 7.4.151. For these reasons the ExA ascribes substantial weight against the Order being made to effects on the AONB and SHC for the operational phase.

Compliance with other policies

- 7.4.152. The ExA is also content that in line with paragraphs 176, 177 and 178 of the NPPF and policies SCLP3.4, 10.4 and 11.1 of the East Suffolk Council Suffolk Coastal Local Plan, the Applicant has given appropriate consideration to the scale and extent of the Proposed Development and undertaken a sufficiently robust assessment of potential impacts on the AONB, making its case for exceptional circumstances. Adequate consideration has also been given to local context and the design of the Proposed Development responds satisfactorily to local context, as far as practicable.

Marine Ecology

Cooling systems - fish stocks - equivalent adult values, entrapment losses, monitoring and acoustic fish deterrents

- 7.4.153. Having taken into account all of the submissions made, the ExA has found that the assessment of impingement, entrainment and entrapment is sound. On the use of the Cefas EAV method, the ExA has found it to be appropriate and this finding is supported by the very convincing answer given to the EA's concerns. The ExA is also satisfied that the scale of assessment and the stock areas used by the Applicant are appropriate together with the draft FIEMP submitted at the end of the Examination. There is no need for AFD. We consider there are no matters relating to this issue which would weigh for or against the order. Based on the evidence we have we are content but the statutory consultee had remaining concerns which were not responded to.
- 7.4.154. The cooling water system and discharge of fish and marine biota from the Fish Recovery and Return system will require a Water Discharge Activity permit from the EA which they state will be subject to the result of cumulative assessment of all the permits. NE will be a consultee on those and adviser on HRA matters. At the close of the Examination NE was unable to say what its final advice would be. The EA's position was that there was nothing to indicate that it would not grant the permits but that it could not guarantee that it would. We agree that there are no likely significant adverse effects on fish stocks. We ascribe no weight to the impact on fish stocks for or against the Order being made.

Fisheries

- 7.4.155. The ExA concludes that access to fisheries was properly addressed by the Applicant in the ES and there are no likely significant adverse effects. We also conclude on the predictions of effects on fish stocks that there would be no likely significant adverse effect. Accordingly, we ascribe no weight to the effects on fisheries for or against the making of the Order.

Matters of disagreement between the Applicant and Natural England

- 7.4.156. In relation to the water strategy and water use impacts (issue 13) we conclude on this in this Chapter 5.11 of this Report and those conclusions are summarised above under the relevant main heading. In relation to issue 19 – the need for single issues to be resolved before proceeding to cumulative assessment, we agree with NE and have considered the individual marine ecology issues raised in the SoCG. Issue 19 is procedural and so we do not ascribe any weight to it. In relation to the others, for the reasons we provide, we give no weight against making the Order.

Chemical, thermal and sediment plumes

- 7.4.157. The ExA sees little evidence of bioaccumulation risks and no evidence of toxic effects for seabirds. Nor do we consider there is any likely significant adverse effect from discharges entering the Minsmere Sluice. We note that the bromoform plume for Sizewell B is approximately six times greater than the predicted plume for Sizewell C. The ExA accepts the Applicant's conclusion of no likely significant environmental effects on this subject. We have concluded there are no likely significant adverse

effects on seabirds from sediment plumes. On the evidence before us we also conclude there would not be any adverse effects on the Alde-Ore Estuary SSSI. This is not a matter to which we ascribe weight for or against the Order being made.

The effects of the desalination plant – Change 19

- 7.4.158. In the light of NE’s position, the Applicant’s replies explained above and the Fourth ES Addendum [REP7-030] the ExA sees no reason not to accept the Applicant’s assessment of no likely significant adverse effects from Change 19

Eels and Eels regulations

- 7.4.159. Mitigation measures to offset impacts to eels by improving fish passes was agreed between the Applicant and the EA and the issue was agreed. There is no weight to be given, for or against making the DCO.

Sabellaria spinulosa

- 7.4.160. This issue has been resolved by a draft Sabellaria spinulosa mitigation and monitoring plan. The plan did not have the full agreement of NE and the Marine Management Organisation (MMO) but we have concluded that the final plan is to be subject to the approval of the MMO and that we recommend that NE is made a consultee on that approval we consider the plan to be satisfactory. There are no matters relating to Sabellaria spinulosa that would weigh for or against the making of the Order.

Cumulative effects

- 7.4.161. There are no matters which cause us to come to a different conclusion from the Applicant’s assessment of cumulative, project wide, inter-relationship or other cumulative effects.

Policy

- 7.4.162. The ExA is content that the marine ecology aspects of the Proposed Development are consistent with the Marine Policy Statement 2011.
- 7.4.163. The Nuclear Sites AoS draws attention to the need for cooling water abstraction to incorporate fish protection measures. The ExA is satisfied that the Applicant has addressed this by incorporating low velocity side entry intakes and the FRR system. We conclude that an acoustic fish deterrent system is not justified.
- 7.4.164. The ExA is satisfied that in relation to marine ecology and fisheries the Proposed Development has aimed to protect the most important biodiversity interests and would avoid significant harm to them. The Applicant’s proposal includes primary and tertiary mitigation and where necessary has used secondary mitigation to address residual effects. We are satisfied that the relevant mitigation has been secured. There are no likely significant adverse residual effects in relation to marine ecology that would weigh for or against the making of the Order.

7.4.165. The ExA therefore concludes that in respect of marine ecology issues there are no matters which would weigh against the making of the Order

Marine Water Quality

7.4.166. The ExA has had regard to marine policy documents and the SoS can be satisfied that the Applicant has taken account of the Marine and Coastal Access Act 2009 and the requirements of the WFD have been considered (NPS EN-1, para 5.5.15 and 5.15.5) and (NPS EN-6 Annexes, para C.8.94.).

7.4.167. In terms of discharges that could affect marine water quality, the ExA is content, as required by NPS EN-1 and NPS EN-6, that the Applicant has engaged satisfactorily with the MMO. Apart from our suggestion that the SoS may wish to seek further clarification from the MMO in respect of the temporary desalination plant discharge assessment, the ExA is satisfied that the MMO is content that potential releases can be adequately regulated by the conditions as set out in the DML in the rDCO.

7.4.168. The ExA is satisfied that the Applicant's ES (including addenda) has described and assessed the impacts that would arise on marine water quality and sediments from the Proposed Development, and that cumulative effects have been considered, except where they relate to nationally and internationally designated sites, and that the mitigation measures set out by the Applicant and secured in the final dDCO together with the requirements for future permitting and post-consent approvals would provide adequate regulation.

7.4.169. The ExA has no reason to believe that future permits, consents and licences would not be granted, but equally do not have confirmation that they would be. This is a matter on which the ExA suggests that the SoS may wish to consult further with the EA.

7.4.170. The ExA is content that all matters relating to the marine water quality and sediment excluding effects on nationally and internationally designated sites or species were satisfactorily resolved, except for two matters. The first is the future environmental permitting and compliance with the WFD, for which we have attributed little weight against the making of the Order because of the uncertainty. We have therefore suggested that the SoS may wish to consult further with the EA on this matter. Secondly, the ExA recommends that the SoS may wish to satisfy themselves on whether the MMO is content with the DL10 updated BEEMS Technical Report TR552 regarding the updated version of the Sizewell C Desalination Plant Construction Discharge Assessment H1 type assessment. Apart from the uncertainty in relation to the WFD, there are no matters relating to marine water quality that would weigh for or against the making of the Order.

7.4.171. These conclusions do not cover matters relating to internationally and nationally designated sites and species, which are concluded in separate sections 5.6 and 5.15 on marine ecology, terrestrial ecology and in relation to HRA matters in Chapter 6 of this Report.

Marine Navigation

- 7.4.172. The Marine and Coastal Access Act 2009 (MCAA2009) is an Act that, amongst other things makes provision in relation to works detrimental to navigation. The ExA identifies as matters to which the SoS must have regard the appropriate marine policy documents, as provided for in the MCAA2009 including Part 4, Section 69, sub-section (1)(c) (MCAA2009) which provides for marine licence decisions to "*have regard to the need to prevent interference with legitimate uses of the sea*".
- 7.4.173. The ExA is satisfied that the Applicant engaged with the relevant bodies, including the Maritime and Coastguard Agency and undertook a Navigational Risk Assessment and has identified navigational risk and potential receptors through the EIA process (East Inshore and East Offshore Marine Plans, para 481 and Policy P2).
- 7.4.174. The ExA is satisfied that the Applicant has sought to minimise adverse effects on shipping activity and navigational safety. We are also satisfied that the mitigation measures which are secured would ensure compliance with international maritime law (UK Marine Policy Statement).
- 7.4.175. Regarding the proposed Harbour Order, the ExA is content that the application contains a statement setting out why the Harbour Order is desirable to facilitate efficient and economic transport of goods by sea (APFP Regulation 6(3)). Also, that the points in the East Inshore and Offshore Marine Plans in connection with ports have been met. The ExA acknowledges points regarding the complexities of setting up a Harbour Order made by the MMO. There are some points on which the ExA recommends that the SoS might wish to consult.
- 7.4.176. The ExA has made changes to the rDCO because it considers the points made by the MMO regarding potential gaps in jurisdiction in the harbour area are valid. In the ExA's opinion, with the recommended amendments incorporated in the Order, none of the matters raised regarding the Harbour Order weigh for or against the Order being made. However the ExA suggests that the SoS might wish to discuss the Harbour Order with DfT to satisfy themselves that matters are all agreed and with the Ministry of Justice in connection with the need for Justice Impact Tests.
- 7.4.177. Based on the above, the ExA is also content that the Applicant has had regard to preventing interference with legitimate users of the sea (Marine Coastal Act). The ExA finds that there are no matters relating to marine navigation that would weigh for or against the Order being made providing that the recommended amendments included in the rDCO are retained.

Noise and Vibration

- 7.4.178. The AONB would be the subject of substantial construction noise which would have a materially harmful effect on tranquillity one of its statutory purposes for the whole construction programme. While the ExA concludes that the package of measures offered through the DCO, DoO and control plans would mitigate and manage these harms as well as could be

expected, they nevertheless would still result in harm to the statutory purpose of the AONB over a substantial area. The ExA ascribes moderate weight to this issue against the making of the Order.

- 7.4.179. The construction of both the NPR, SPR, FMF, SLR and TVB introduces road and construction noise into a countryside environment which introduces noise where there is currently limited or no effect from such a noise source affecting a number of residents and communities in a negative way. The ExA is of the view that with the controls in place appropriate mitigation is secured via the CoCP and Noise Monitoring and Management Plans (NMMP) such that these levels would be controlled to an appropriate level. Nevertheless, there would still be an adverse effect and the ExA ascribes little weight to this issue against the making of the Order.
- 7.4.180. Increased noise during the early years along the B1122 would introduce an increased level of noise to all properties along the B1122 for a period in the region of three years. The Noise Mitigation Strategy (NMS) has been amended to be available to all properties facing onto the B1122 and is not limited to those properties that would trigger the noise thresholds that would require its provision. This could achieve a considerable benefit for those residents in reducing the noise within their properties to an acceptable level. However, the consequential noise environment in people's gardens is not addressed and the ExA ascribes moderate weight to this issue against the making of the Order.
- 7.4.181. Noise in Leiston will come from a variety of sources, construction, road and rail traffic as well as the accommodation at the caravan park. Mitigation is to be provided and this is secured within the DCO and the DoO which in combination would provide an acceptable acoustic environment meeting the policy test set out in the Noise Policy Statement for England (NPSE) and EN-1. The ExA ascribes little weight to matters relating to the issue against the making of the Order.
- 7.4.182. As regards night-time rail noise along the main line, GRR and branch line, the ExA is satisfied the noise from the rail movements has been appropriately assessed, and the sleep disturbance concerns quite reasonably identified by IPs has been understood. The combination of limiting the number of movements, reducing train speeds and the physical changes proposed to the rail line will in conjunction with the Rail Noise Mitigation Plan, in the ExA's view, provide a suitable management regime that will control rail movements satisfactorily and ensure that the noise environment from these movements remains within acceptable tolerances.
- 7.4.183. In relation to Whitearch Park, the Applicant's position is that with the exception of one property which would be subject to the NMS all other properties at the park would have a suitable acoustic environment. The ExA accepts these conclusions and does not rely on the delivery of the barrier in concluding that an acceptable noise environment would be achieved. The ExA ascribes little weight to this issue against the making of the Order.

- 7.4.184. Turning to the benefits, the reduction in noise levels in Farnham once the TVB is operational would be a legacy benefit for the community living either side of the section of the A12 to be bypassed with an improved acoustic environment as a consequence of the majority of traffic moving onto the new section of road. In light of the current poor noise environment in this location and that this would provide a long term solution the ExA ascribes moderate weight to the issue for the making of the Order.
- 7.4.185. The reduced noise along the B1122 once the SLR is operational would be a legacy benefit for the community living either side of the section of road to be bypassed with an improved acoustic environment as a consequence of the majority of traffic moving onto the new section of road. The ExA ascribes little weight to this issue for the making of the Order as the current noise environment along this road does not currently create significant adverse effects.
- 7.4.186. There would also be commensurate benefits for the town of Yoxford as the SLR would facilitate the potential for reduced traffic travelling through the town as traffic travelling from the south wishing to access the coast would have the option to leave the A12 in advance of travelling through Yoxford. The ExA ascribes little weight to this issue for the making of the Order.
- 7.4.187. Overall, it is the ExA's view that whilst it is recognised there would be adverse effects during construction of the Proposed Development these need to be balanced against the positive benefits that also arise.
- 7.4.188. The ExA concludes that the impacts on the noise environment during the construction and operation stages have been properly assessed and that all reasonable steps have been taken or will be taken to ensure that noise standards as set out are not breached, except in respect of the B1122 in the early years. The SoS may wish to confirm that the use of quiet road surfacing has been fully considered and the Councils are satisfied regarding the potential for quiet road surfacing on the B1122 from Yoxford to the junction of the B1125. The ExA is content subject to this outstanding matter that, with the mitigation proposed, the development would comply with the NPS EN-1, and NPSE.
- 7.4.189. In respect of the vibration effects that could occur the ExA is satisfied that with the appropriate mitigation in place as secured through the CoCP, NMMP and dDCO that no significant adverse effects would occur, and that the development would comply with the requirements of the NPS EN-1, and NPSE.
- 7.4.190. The ExA recommends an additional requirement to address the outstanding question of the potential for vibration from construction traffic along the B1122 which was left unresolved at the end of the Examination. The suggested requirement is explained in more detail in Chapter 9 of this Report.

7.4.191. Overall, the effects of noise and vibration is a factor that the ExA concludes has moderate weight against the Order being made.

Radiological considerations

7.4.192. During the Examination, the Councils raised the issue of an amended requirement seeking to achieve the production of a safety management plan, in advance of works commencing (paragraph 22.23 of the LIR) and proposed a requirement wording in Annex J [REP1-055]. The ExA recommends that the wording promoted by SCC be adopted by the SoS.

7.4.193. In relation to dispersion modelling, the ExA is content that the Applicant has satisfied UK regulations in terms of severe accidental releases to air.

7.4.194. The ExA is satisfied that although the Spent Fuel Storage Facility and Intermediate Level Waste Storage Facility (Building Nos. 54 and 56 as shown on Fig 7.4 of the DAS [REP10-057]) does not itself fall within s14 of PA2008 it can be appropriately considered as part of the Proposed Development to be consented under the DCO.

7.4.195. The ExA notes that the Applicant has said decommissioning of the Interim Spent Fuel Store (ISFS) would have taken place by 2140. The time window taken between now and 2140 'the design period' for the coastal defences, provides a 118-year window for operation and decommissioning. This is less than the period which the Applicant states will be required for the safe storage and decommissioning of spent fuel in addition to the 60-year operational period for the power station.

7.4.196. The Applicant has provided evidence that the build would take between 9 to 12 years. The ExA notes that the later the power generation starts the less time which is available for power generation and the period of site safety which has been assessed. Any delay therefore in the commissioning of the power station reduces the benefit of that generation.

7.4.197. The assumptions the Applicant has made in respect of on-site storage of spent nuclear fuel and radioactive waste have been based upon there being a Geological Disposal Facility (GDF) available for the transfer of these materials for the safe storage in the long term. The ExA considers this to be a reasonable assumption based on current information and Government policy on the provision of a GDF as the method for the long-term storage of spent fuel and radioactive wastes.

7.4.198. It is necessary however to recognise that the GDF is not yet in place and there is a degree of uncertainty in this regard which the Applicant has acknowledged.

7.4.199. The Applicant relies upon their duties of meeting their obligations under the Nuclear Site Licence (NSL) which is governed by the ONR. In light of what is stated in paragraph 2.11.5 of EN-6 the SoS needs to recognise that in the absence of a GDF coming forward *"the IPC (SoS) should expect that waste would be on site until the availability of a GDF."*

- 7.4.200. As acknowledged in the coastal geomorphology chapter of this Report the ExA's conclusions are based on what the Applicant has stated in terms of the removal of the ISFS by 2140, it is under these circumstances that the ExA considers that the policy tests in the NPS are met.
- 7.4.201. The ExA takes the view that there is sufficient evidence to enable us to reach a conclusion on this matter. However, the SoS may wish to satisfy themselves that the safe storage of radioactive waste would be achieved for the lifetime of the project given the length of time that spent fuel, high level and intermediate level waste are likely to be stored on site, in light of the modelling undertaken of the coastal defences.
- 7.4.202. On that basis, and subject to the caveats identified above, the ExA concludes that in respect of radioactive waste and other radiological considerations matters should not weigh against the Order being made.

Socio Economics

Tourism

- 7.4.203. The ExA accepts that during construction there would be some impact on tourism in the local area due to the construction activity. The Applicant is proposing the Tourism Fund to address any negative impacts on this important sector of the local economy. We consider that the managed and targeted Tourism Fund would be an effective mitigation approach for any impacts that do arise for local tourism.
- 7.4.204. Overall, in terms of tourism economy we consider that the effects during construction are likely to be negative, although mitigation would be available through the Tourism Fund. Once construction is complete and the Proposed Development is in operation the tourism effects would be neutral. Consequently, little weight should be ascribed to matters relating to tourism effects against the making of the Order.

The Accommodation effects

- 7.4.205. The ExA considers that the Applicant has adequately assessed the LSE created by the need to accommodate the workforce during construction. The Applicant would provide a 2400 bed accommodation campus and a 600 berth caravan site on the Proposed Development site.
- 7.4.206. The Applicant is also proposing a package of mitigation that would be secured through the DoO. The Housing Fund would provide support for both the private housing and tourist market supply. Additionally, the Applicant is proposing support for the consequential effects on the more vulnerable groups who may be affected by the increased demand created by the Proposed Development.
- 7.4.207. The ExA considers that any accommodation effects arising from the Proposed Development do not weigh for or against the Order being made.

The Economy and business effects

- 7.4.208. The Councils and other stakeholders acknowledge that substantial economic opportunities would arise from the Proposed Development. Through engagement with stakeholders the Applicant has developed a package of measures secured by the DoO, that seeks to maximise the opportunities for the local economy to offset any potential adverse effects.
- 7.4.209. The ExA gives very substantial weight to the benefits relating to local economy and business for the making of the Order.

Employment and skills

- 7.4.210. In relation to employment and skills, there would be significant employment opportunities created by the Proposed Development. The Applicant has been working with the Councils and regional stakeholders to maximise the benefits of the opportunities that would be created.
- 7.4.211. The initiatives secured within the DoO would assist in maximising the employment and skills development opportunities created by the Proposed Development. They would also help to mitigate any potential negative effects with respect to concerns about the cumulative impact of a number of large infrastructure projects in the region, and the legacy effect on employment once the Proposed Development is operational.
- 7.4.212. The ExA considers that very substantial weight should be given to the significant benefits on employment and skills arising from the Proposed Development.

Overall conclusions on socio economics

- 7.4.213. The ExA therefore concludes that:
- Little weight should be ascribed to matters relating to tourism effects against the making of the Order.
 - There are no matters relating to the accommodation effects which would weigh for or against the making of the Order.
 - Very substantial weight should be ascribed to benefits relating to economy and business effects for the making of the Order; and
 - Very substantial weight should be ascribed to benefits relating to employment and skills effects for the making of the Order.

Traffic and Transport

- 7.4.214. The Applicant's originally submitted freight management strategy was based around the modal split for freight of 61% by road, 38% by rail and 1% by sea. The changes submitted prior to the start of the Examination changed the mode shares to 40% by road and 60% by rail and sea. The revised approach is better aligned to the emphasis in NPS EN-1, paragraph 5.13.10, with respect to mode of freight movement.
- 7.4.215. The ExA is generally content that the Applicant has properly assessed the LSE resulting from the Proposed Development and where required proposed suitable mitigation. We also consider that the proposed

approach to monitoring review and control of traffic movements is suitably secured in the DoO and the Requirements of the dDCO.

- 7.4.216. The ExA accepts there is a demonstrated need for a relief road for the traffic along the B1122 during the construction of the Proposed Development. However, there are two issues of concern that both relate to the SLR.
- 7.4.217. Firstly, the ExA finds that the route selection did not fully take into account the issues relating to transport sustainability. We regret that the Applicant did not consider the wider transport factors which we have identified in more detail in the route selection process. However, we do not dispute that a relief road is required nor that the proposed SLR would provide suitable relief for communities along the B1122.
- 7.4.218. Secondly, we find the Applicant's approach is not sufficient to address the residual adverse effects that we consider are significant in relation to the Early Years assessment of traffic in advance of the construction of the SLR and TVB.
- 7.4.219. The ExA considers that there is clear evidence that the early years is the most intensive period for HDV movement. It is our view that in transport terms the SLR should be in place in advance of commencement on the MDS due to the transport impacts along the B1122 that would otherwise be experienced for a period of up to two years and nine months otherwise. That is our position notwithstanding the delay that would be caused to the Proposed Development for which there is an urgent need by constructing the mitigation in advance of the works on the main site. The ExA ascribes substantial weight to the transport effects on the B1122 in the Early Years against the making of the Order, unless both the SLR and the TVB are operational in advance of commencement of Phase 1 works on the MDS.
- 7.4.220. For the NPR, the ExA identifies uncertainty regarding the delivery of the upgrade to the Darsham A12 level crossing. The Applicant and Network Rail (NR) have a framework agreement that includes the upgrade of this level crossing. At the close of the Examination the agreed position was that they would both contribute 50% of the cost to full barrier control. However, NR's contribution is subject to CP7 funding. We therefore recommend that the SoS may wish to seek to confirm that in the event this CP7 funding is not secured by NR that the Applicant agrees to meet the full costs of the necessary improvement.
- 7.4.221. The ExA concludes that the transport impact of the Proposed Development would be negative, even allowing for the mitigations secured in the dDCO and DoO. On the basis that an alternative phasing of the SLR and TVB is not before us, the ExA consider that there is substantial weight relating to transport issues against the making of the Order.

Waste (conventional) and material resource

- 7.4.222. The ExA considers that the submissions made by the Applicant and the subsequent addition of measurable targets within the Waste Management Strategy represent an effective approach to waste management. On this basis we find that the Applicant has addressed the effects relating to conventional waste in accordance with the relevant policies within NPS EN-1.
- 7.4.223. The ExA concludes that there are no matters relating to the issue of conventional waste which would weigh for or against the making of the Order.

7.5. THE OVERALL PLANNING BALANCE AND CONCLUSION ON THE CASE FOR DEVELOPMENT CONSENT

- 7.5.1. The Planning Statement - Final Update and Signposting Document [REP10-068] recognises that the policy presumption set out in paragraph 4.1.2 of NPS EN-1 does not formally have effect where the decision falls to be made under s105 PA2008. However, EN-1 and EN-6 continue to be important and relevant to the Secretary of State when making his decision whether or not to grant development consent and the WMS requires us to attach significant weight to them.
- 7.5.2. In accordance with paragraph 4.1.3 of EN-1, in making a determination of the application, the decision maker should take into account:
- the potential benefits, including in addition to its contribution to meeting the need for energy, its contribution to job creation and any long term or wider benefits; and
 - the potential adverse impacts, including any long term and cumulative adverse impacts as well as any measures to avoid, reduce or compensate for any adverse impacts.
- 7.5.3. Turning now to the overall planning balance, the ExA has assessed the potential adverse impacts, including any long-term and cumulative adverse impacts. In so doing, we have taken into account the mitigation proposed to avoid, reduce, or compensate for any such impacts which would be secured by the rDCO. Likewise, the benefits of the Proposed Development have been assessed including any long-term or wider benefits.
- 7.5.4. The ExA recognises the positive impacts of the Proposed Development in terms of its contribution to the policy objectives of low-carbon energy production as set out in Chapter 3 and considered in detail in section 5.19 of Chapter 5 of this Report. The Proposed Development would be in accordance with the aim of Government policy as set out in NPS EN-1 and EN-6 to achieve the delivery of major energy infrastructure including new nuclear electricity generation to meet the urgent need for new electricity Nationally Significant Infrastructure Projects. There is clearly an urgent need for development of the type proposed and the actual contribution that the Proposed Development would make to satisfying that need is a factor to which we attribute very substantial weight. The

other potential benefits that would accrue very substantial weight are those relating to the local economy and business, and employment and skills. There would also be lesser degrees of weight attributed to other factors as outlined above including matters relating to air quality, amenity and recreation, health and wellbeing, and legacy noise benefits for certain residential properties as a result of the SLR and the TVB.

- 7.5.5. Turning now to the potential adverse impacts, we attribute very substantial weight to the landscape and visual construction effects on the AONB and SHC. Those factors to which we attribute substantial weight include the transport effects on the B1122 in the early years and operational landscape and visual effects on the AONB and SHC. In relation to biodiversity and ecology, we attribute substantial weight to the harm to barbastelle bats and the Deptford Pink and its habitat as protected species. Furthermore, we give substantial weight to the partial loss of the Suffolk Shingle Beaches CWS and the Sizewell Levels and Associated Areas CWS which are habitats for species of principal importance for the conservation of biodiversity and to the effects on the Sizewell Marshes SSSI. Since the Sandy Stilt Puffball is a s.41 species we also give this matter substantial weight. In addition, we give substantial weight to the residual construction cumulative effects on the AONB and SHC. There would also be lesser degrees of weight attributed to other factors as outlined above including matters relating to the amenity of residents along the B1122 in the early years in advance of the provision of the SLR, residual landscape and visual effects, biodiversity and ecology, historic environment, good design, noise, marine ecology, tourism during the construction period and residual operational cumulative effects on the AONB and SHC.
- 7.5.6. There are also a number of issues to which we attribute neutral weight in that they do not weigh for or against the making of the Order including the consideration of alternatives, climate change, coastal geomorphology and hydrodynamics, flood risk, groundwater and surface water, marine ecology, marine water quality, marine navigation, radioactive waste and other radiological considerations, accommodation effects, and waste (conventional and material resource).
- 7.5.7. There is also an outstanding issue and the uncertainty which remains as regards a permanent potable water supply. Although the power station could be built, ONR has confirmed that it could not be licensed and could not operate without a secure and permanent water supply. Whilst the Applicant and NWL expressed confidence that they would be able to work together to develop a sustainable long term water supply for the Proposed Development, at the close of the Examination there was no secured permanent water supply identified. This means that there has been no assessment of the potential cumulative environmental effects of the Proposed Development with any assured permanent water supply solution. For the reasons we have explained in section 5.11 of Chapter 5 of this Report, the ExA prefers the position of NE to that of the Applicant on this matter. We consider that, even if the Proposed Development and the water supply are considered to be two separate projects, the cumulative effects associated with it should be assessed at this stage.

- 7.5.8. The ExA appreciates the circumstances that have led the Applicant to pursue what it regards as the most sustainable water supply strategy that currently exists. We also recognise that there is an urgent need for infrastructure of the type proposed and the implications that any delay would have for the achievement of that objective. However, for the reasons we have explained, we consider that greater clarity is required at this stage in relation to the provision of a permanent sustainable water supply solution and the consequential cumulative environmental effects. Therefore, we are unable to recommend that this application be approved without additional information and reassurance on the provision of a permanent water supply. The ExA regards this as an important matter of such magnitude that it should not be left unresolved to a future date.
- 7.5.9. With the exception of the permanent water supply issue, the ExA concludes that in a general planning balance the potential benefits of the Proposed Development including the contribution that the Proposed Development would make to satisfying the urgent need for low-carbon electricity generating infrastructure of this type would strongly outweigh the potential adverse impacts. However, for the reasons explained above, the ExA concludes in the light of the issue which remained unresolved at the close of the Examination in relation to the water supply strategy, that the case for the grant of development consent is not yet made out.
- 7.5.10. Our findings in relation to HRA matters in Chapter 6 of the Report also have a bearing on the grant of development consent and these are set out below.
- 7.5.11. The ExA has outlined, in Appendix E, a number of unresolved issues based on the evidence available at the close of the Examination which the SoS may wish to consider in assisting him reach his final decision on the application for development consent.

7.6. HABITATS REGULATIONS ASSESSMENT

- 7.6.1. Chapter 6 of this Report sets out the ExA's analysis and conclusions relevant to the Habitats Regulations Assessment.

Likely Significant Effects

- 7.6.2. The ExA has concluded that LSE could occur for the qualifying features of 19 European sites in the National Site Network (NSN), from both the project alone or in combination with other projects and plans. These sites, qualifying features and the potential effects are presented in Table 6.2 of Chapter 6. Table 6.3 identifies European sites outside the NSN for which the Applicant also concluded LSE.
- 7.6.3. In view of the uncertainty around the permanent water supply solution, the ExA cannot preclude the potential identification of LSE on European sites and qualifying features during construction and operation of the Proposed Development, either alone (if considering the solution such as the preferred pipeline/transfer main as part of the project) or in combination with solutions such as the preferred pipeline/transfer main.

Adverse Effect on Integrity

- 7.6.4. The ExA agrees with the Applicant's conclusion that an Adverse Effect on Integrity (AEoI) of the marsh harrier qualifying feature of the Minsmere-Walberswick SPA and Ramsar cannot be excluded as a result of noise and visual disturbance from construction activities.
- 7.6.5. The ExA is also of the view that there is insufficient evidence to recommend that an AEoI on the following European sites and qualifying features can be excluded beyond reasonable scientific doubt:
- Minsmere-Walberswick SPA and Ramsar - breeding and non-breeding gadwall and shoveler (as a result of noise and visual disturbance from construction activities); and
 - Minsmere to Walberswick Heaths and Marshes Special Area of Conservation (SAC), Minsmere-Walberswick SPA and Ramsar and Sandlings SPA – all features (as a result of changes in air quality during construction and operation).
- 7.6.6. There are also a number of sites and features for which the ExA considers a conclusion of AEoI could be reached, but considers that the SoS will need to satisfy themselves on outstanding matters before reaching their conclusion. These sites and qualifying features are in Table 6.5. In light of the number of unresolved matters at the close of the Examination and considering the precautionary principle of HRA as to whether no reasonable scientific doubt remains, the ExA is of the view that it cannot confidently exclude AEoI for the sites and qualifying features listed in Table 6.5.
- 7.6.7. In view of the uncertainty around the permanent water supply solution, the ExA cannot preclude the potential identification of AEoI on European sites and qualifying features during construction and operation of the Proposed Development, either alone (if considering the solution such as the preferred pipeline/transfer main as part of the project) or in combination with solutions such as the preferred pipeline/transfer main. The ExA does not have the information necessary to provide certainty there would be no AEoI for the purposes of the Habitats Regulations.

Alternative Solutions, IROPI and Compensatory Measures

- 7.6.8. The Applicant has submitted an assessment of alternative solutions, a case for Imperative Reasons of Overriding Public Interest (IROPI), and proposed compensatory measures in respect of the breeding marsh harrier qualifying feature of the Minsmere-Walberswick SPA and Ramsar. The ExA is satisfied that there are no alternative solutions which would deliver appreciable benefits in terms of adverse effects on marsh harrier of the Minsmere-Walberswick SPA and Ramsar from noise and visual disturbance during construction and still meet the objectives of the Proposed Development. Given the evidence available, with regards to the case for IROPI the ExA is of the opinion that IROPI for the Proposed Development could be established.

- 7.6.9. The findings of the Examination are that the compensatory measures proposed at Abbey Farm within the EDF Energy estate (the MHCHA) are adequate in extent, feasible and appropriate. The ExA is satisfied that the compensatory measures, with the exception of the timing of the habitat creation, are adequately secured under the provisions of the rDCO and DoO. We therefore recommend that the SoS may wish to undertake consultation with the Applicant, NE and relevant parties including the RSPB/SWT on how this would be achieved in practice.
- 7.6.10. The ExA has concluded that there is insufficient evidence to recommend that AEoI can be excluded for Minsmere-Walberswick SPA and Ramsar - breeding and non-breeding gadwall and shoveler (as a result of noise and visual disturbance during construction) and Minsmere to Walberswick Heaths and Marshes SAC and Minsmere-Walberswick SPA and Ramsar and Sandlings SPA – all features (as a result of changes in air quality during construction and operation). Taken together with the other outstanding matters on which the SoS may seek additional information (see Table 6.5) and the uncertainty associated with the permanent water supply solution, the ExA cannot preclude the potential need for additional compensation relating to other European sites and qualifying features at this time. The ExA does not have sufficient information or certainty and advises that the HRA is incomplete in this regard.
- 7.6.11. In the absence of an assessment of Alternative Solutions, a case for IROPI, and proposed compensatory measures for the European sites and qualifying features listed above, the ExA can only recommend that the Habitats Regulations are not fulfilled in this regard. Overall, the ExA considers that there is insufficient information before the SoS to enable them to undertake an appropriate assessment and to apply the derogation tests of the Habitats Regulations of alternative solutions, IROPI, and compensation in order to fulfil their duty under the requirements of the Habitat Regulations. The ExA therefore has no alternative other than to recommend to the SoS as the competent authority that the DCO should not be made pursuant to the Habitats Regulations.

8. COMPULSORY ACQUISITION AND RELATED MATTERS

8.1. INTRODUCTION

- 8.1.1. The full extent of the land which would be subject to powers of Compulsory Acquisition (CA) and required in order to enable the Applicant to construct the Proposed Development, as described in the Statement of Reasons (SoR) [APP-062, REP8-039, REP10-017 and REP10-018], is shown on the Land Plans [REP8-044], Crown Land Plans [REP8-004] and the Works Plans [REP8-005 to 007]. It is further described in the Book of Reference (BoR) [REP10-019], the Explanatory Memorandum (EM) [REP10-013] and in the documents comprising the Environmental Statement (ES).
- 8.1.2. These final documents result from changes made during the Examination. The final Navigation Document [REP10-002] charts the submission of these documents and provides a guide to the structure of the application and its principal contents. The Navigation Document was updated at each Examination deadline.
- 8.1.3. There is no open space, common land or fuel or field garden allotments included in or affected by the Order land and there is thus no requirement for Special Category Land Plans.
- 8.1.4. The total area of land within the Order Limits over which CA powers are sought is about 1,323 ha [REP7-052, CA.2.4]. The total area of land within the Order Limits over which Temporary Possession (TP) powers are sought is about 60 ha. The total area of land within the Order Limits over which CA of rights only powers are sought is about 0.5 ha.

8.2. THE REQUEST FOR COMPULSORY ACQUISITION AND TEMPORARY POSSESSION POWERS

- 8.2.1. The application for development consent seeks powers for the CA of land and rights over land and for the TP of land for construction, operation and maintenance purposes.
- 8.2.2. The Order Limits establish the extent of the land affected by the Proposed Development. As indicated above, a full description of the extent of the land required in order to carry out the construction, operation and maintenance of the Proposed Development is set out within the documents identified.
- 8.2.3. The application was accompanied by an SoR [APP-062 to 065], Funding Statement [APP-066], BoR in five parts [APP-067], Explanatory Memorandum [APP-060], Land Plans and Works Plans [APP-008 and APP-010 to 012], Crown Land Plans [APP-009] and Access and Rights of Way Plans [APP-013]. These accompanying documents and plans have been revised during the course of the Examination. The details of the changes

made during the Examination are also set out in the Schedule of Changes to the BoR [REP10-020].

- 8.2.4. The SoR includes a Site Context Plan which identifies the locations of various discrete elements of the application [APP-065]. Appendices A and B of the SoR comprise justification tables and report on the status of negotiations with owners of the Order land respectively. Appendices A and B were individually updated at various times during the Examination with final versions provided [REP8-039 and REP10-017]. Appendix C of the SoR was requested by the ExA [PD-005] and reports on the status of negotiations with Statutory Undertakers (SUs) [AS-010]. It was also subsequently updated with a final version provided [REP10-018].
- 8.2.5. The final BoR, Part 1, contains the names and addresses of each person within Categories 1 and 2, as set out in s57 of the Planning Act 2008 (PA2008), along with the area of each plot of land in which the development will be carried out [REP10-019]. The description of each plot also includes the reference to the principal land use powers (identified as one of the six Classes of Rights in the BoR) sought in the draft Development Consent Order (dDCO) in respect of that particular plot.
- 8.2.6. The BoR, Part 2, contains the names and addresses (if known by the Applicant) of each person within Category 3, as defined by s57 PA2008. Part 2 has been divided into two parts (Parts 2A and 2B) to aid clarity of presentation. Part 2A contains the details of those who have an interest in land within the Order land and may be entitled to claim compensation for loss resulting from the dDCO. Part 2B contains the details of those with an interest in land outside of the Order land, who may be entitled to claim compensation for loss resulting from the dDCO.
- 8.2.7. The BoR, Part 3, contains the names of all those with easements or other private rights over land which it is proposed shall be extinguished, suspended or interfered with pursuant to the exercise of powers in the dDCO. The BoR, Part 4, specifies the owner of any Crown interest in the land which is proposed to be used for the purposes of the dDCO sought. Part 5 of the BoR is blank as no plots have been identified which may be subject to special parliamentary procedure, special category land or replacement land.
- 8.2.8. The final BoR is divided into 15 areas which are each addressed in turn as follows:
- Main Development Site (MDS) and Rail;
 - Sports Facilities;
 - Fen Meadow (Halesworth);
 - Fen Meadow (Benhall);
 - Marsh Harrier Habitat (Westleton);
 - Northern Park and Ride (NPR);
 - Southern Park and Ride (SPR);
 - Two Village Bypass (TVB);
 - Sizewell Link Road (SLR);

- Freight Management Facility (FMF);
- Yoxford Roundabout;
- A12/B1119 Junction at Saxmundham;
- A1094/B1069 Junction South of Knodishall;
- A12/A144 Junction South of Bramfield; and
- Fen Meadow (Pakenham).

8.2.9. The land in respect of which CA powers are sought is described in this Chapter as the CA land. The Order land, of which the CA land forms part, is described in Chapter 2 of this Report and in the ES which sub-divides the description of this land into eight areas as follows:

- Main Development Site – ES Volume 2 Chapter 1 Introduction [APP-178, section 1.4] which includes the off-site sports facilities, Benhall and Halesworth fen meadow compensation and the Westleton marsh harrier habitat area;
- Northern Park and Ride – ES Volume 3 Chapter 3 Addendum Description of Development Appendix 3.2.A [AS-240, para 2.2.1];
- Southern Park and Ride – ES Volume 4 Chapter 1 Introduction [APP-378, section 1.4];
- Two Village Bypass – ES Volume 5 Chapter 1 Introduction [APP-409, section 1.4];
- Sizewell Link Road – ES Volume 6 Chapter 1 Introduction [APP-444, section 1.4];
- Yoxford Roundabout and Other Highway Improvements – ES Volume 7 Chapter 1 Introduction [APP-478, section 1.4];
- Freight Management Facility – ES Volume 8 Chapter 1 Introduction [APP-509, section 1.4];
- Rail – ES Volume 9 Chapter 1 Introduction [APP-538, section 1.4]; and
- Fen meadow compensation at Pakenham (Change 11) [AS-281, para 2.2.172].

8.2.10. The final BoR [REP10-019] identifies the relevant plots of land and these are shown on the Land Plans. They are divided into nine areas with one overview plan and three key plans. These final Land Plans are as follows and are all identified as 'Showing Proposed Land Changes' [REP8-044]:

- Key Plans 1 to 3 and Overview;
- Main Development Site and Rail Land Plans (showing MDS referenced plots);
- Sports Facilities Land Plans (showing SF referenced plots);
- Fen Meadow (Halesworth, Benhall and Pakenham) Land Plans (showing FM referenced plots);
- Marsh Harrier Habitat (Westleton) Land Plans (showing MH referenced plots);
- Northern Park and Ride Land Plans (showing NPR referenced plots);
- Southern Park and Ride Land Plans (showing SPR referenced plots);
- TVB Land Plans (showing 2VBP referenced plots);
- Sizewell Link Road Land Plans (showing SLR referenced plots);
- Freight Management Facility Land Plans (showing FMF referenced plots); and

- Yoxford Roundabout and Other Highway Improvements (showing OHI referenced plots).

- 8.2.11. The details of the powers sought in order to implement the required CA of land and the other powers sought are set out in the final dDCO [REP10-009]. It should be noted that the article numbering in the SoR [APP-062] changed during the Examination to that shown in the final EM [REP10-013] and the final dDCO. The main powers authorising the CA of land, or interests in, or rights over land, are contained in Article (Art) 28 (formerly 26) (CA of land) and Art 32 (formerly 30) (CA of rights and imposition of restrictive covenants) of the dDCO. The powers sought in relation to the TP of land do not constitute CA and are provided for in separate articles in the dDCO, albeit within the Powers of Acquisition and Possession of Land section.
- 8.2.12. The SoR, section 5.3, sets out the dDCO articles which relate to CA, or the interference with third party rights and additional powers. The additional CA powers are set out in Art 30 (formerly 28) (statutory authority to over-ride easements and other rights), Art 33 (formerly 31) (private rights of way), Art 35 (formerly 33) (acquisition of subsoil and airspace only) and Art 38 (formerly 36) (rights under or over streets).
- 8.2.13. The main powers authorising the TP of land are contained in Art 39 (formerly 37) (temporary use of land for carrying out authorised development) and Art 41 (formerly 39) (temporary use of land for maintaining authorised development).
- 8.2.14. The other rights and powers that the dDCO would confer on the Applicant that may interfere with property rights and private interests are set out in Art 16 (formerly 14) (permanent stopping up of streets, change of status, and extinguishment of private means of access), Art 19 (formerly 17) (temporary closure of streets and private means of access), Art 26 (formerly 24) (protective work to buildings), Art 27 (formerly 25) (authority to survey and investigate the land) and Art 79 (unchanged) (felling or lopping of trees and removal of hedgerows).
- 8.2.15. At the Issue Specific Hearings relating to the dDCO and the Compulsory Acquisition Hearing (CAH), the Applicant described and explained the intended operation of certain dDCO provisions which seek to engage CA and TP powers [REP5-106 and REP7-064 to 067]. The final EM also explains the purpose and effect of the dDCO, Part 5 powers of acquisition and possession of land [REP10-013].

8.3. CROWN LAND

- 8.3.1. Part of the land that is required for the Proposed Development comes within the definition of Crown land under PA2008 [APP-062, section 4.9]. The Applicant has elected not to include Crown Estate interests in the schedule of Order land, although the dDCO includes provision for the CA of those land interests which are not held by the Crown, but which exist in Crown land. The relevant plots are identified in the final BoR, Part 4 [REP10-019] and on the final Crown Land Plans [REP8-004]. The Applicant has had discussions with the Crown Estate in respect of third

party interests in Crown land and matters relating to these discussions are addressed later in this Chapter.

- 8.3.2. The Secretary of State for Business, Energy and Industrial Strategy (BEIS) is the owner of other Crown interests that would be affected by the dDCO. The SoS, being the appropriate Crown authority in relation to this Crown land, is therefore required to authorise the CA of these land interests as a separate responsibility to that as decision maker on the DCO.

8.4. STATUTORY UNDERTAKERS' LAND

- 8.4.1. If a SU makes a representation about the CA of land or a right over land which has been acquired for the purpose of its undertaking, and this is not withdrawn, s127 PA2008 applies. In these circumstances, the DCO can only include a provision authorising the CA of that land or right if the SoS is satisfied that the land or right can be purchased without serious detriment to the carrying on of the undertaking, or that any such detriment can be made good by use of alternative land.

- 8.4.2. Section 138 PA2008 applies where a SU has a relevant right or relevant apparatus in the CA land. In those circumstances, the DCO can only authorise the extinguishment of the right or removal of the apparatus if the SoS is satisfied that this is necessary for the purpose of carrying out the development to which the Order relates.

- 8.4.3. The land affected by the Proposed Development includes land, rights or other interests owned by several SUs [APP-062]. The SoR final Appendix C reports on the Applicant's negotiations with each of these SUs [REP10-018]. The final dDCO requires that the undertaker must not exercise any CA power over any Nuclear Decommissioning Authority (NDA) or Magnox interests within the Order Limits other than by agreement [REP10-009, Schedule (Sch) 19 Part 8].

- 8.4.4. Representations that were subsequently withdrawn by representation or Statement of Common Ground were made by the following SUs:

- Anglian Water Services Ltd [RR-0073 and REP9-014];
- Cadent Gas Limited [RR-0168, REP2-132, REP10-098 and REP10-235];
- National Grid Electricity Transmission PLC [RR-0874, REP2-147 and REP9-016];
- Network Rail Infrastructure Limited [RR-0006, AS-407, REP2-154 to 157, REP5-161, REP5-162, REP7-145, REP7-146, REP8-166 and REP10-099];
- Nuclear Decommissioning Authority and Magnox Limited [REP1-029 to 031, REP2-409, REP2-410, REP7-237 and REP9-031]; and
- Virgin Media Limited [REP5-300].

8.5. SPECIAL CATEGORY LAND

- 8.5.1. There is no open space, common land or fuel or field garden allotments included in or affected by the Order land [APP-062, section 4.9].

8.6. THE PURPOSES FOR WHICH LAND IS REQUIRED

- 8.6.1. At the final Appendix A of the SoR, the Applicant sets out the purposes for which CA and TP powers are necessary and the interest to be acquired in relation to each individual plot of the land. Reference is also made to any relevant dDCO Work No., Article and Schedule. The article numbering in the final Appendix A [REP8-039, Table 1.1] and the final BoR [REP10-019, Table 2.1] relates to the application dDCO and not the final dDCO.
- 8.6.2. The interest to be acquired, with the final dDCO numbering, is categorised as follows:
- Class 1 - All freehold and leasehold interests to be compulsorily acquired under Art 28 (formerly 26) (non-highway land) and shaded pink on the Land Plans.
 - Class 2 - Acquisition of rights by the creation of new rights or the imposition of restrictive covenants under Art 32 (formerly 30) and shaded blue on the Land Plans. Relevant restrictions on the nature of the rights which may be acquired in relation to particular plots are specified in Sch 15 of the Order.
 - Class 3 - Land proposed to be temporarily possessed (non-highway land) under Art 39 (formerly 37) and Sch 17 and shaded yellow on the Land Plans.
 - Class 4 - Statutory authority to override easements and other rights, and to extinguish private rights of way upon the appropriation of the land for the purposes of the Order under Arts 30 and 33 (formerly 28 and 31). This comprises the land within the Order Limits and shown outlined in red on the Land Plans.
 - Class 5 - Land proposed to be temporarily possessed (presumed highway land) under Art 39 (formerly 37) and Sch 17 and shaded green on the Land Plans.
 - Class 6 - All freehold and leasehold interests to be compulsorily acquired (presumed highway land) under Art 28 (formerly 26) and shaded orange on the Land Plans.
- 8.6.3. Appendix A is divided into the 15 individual areas which are each addressed in the BoR. The Proposed Development in, and use of, these areas is described in the application SoR [APP-062, section 4].
- 8.6.4. The Applicant's response to ExQ2 [REP7-052, CA.2.4] provides a further table which sets out the total number of plots falling within each of the six classes identified above. This indicates that a total of 232 plots fall within Class 1, 2 plots within Class 2, 114 plots within Class 3, 488 plots within Class 4, 74 plots within Class 5 and 66 plots within Class 6.
- 8.6.5. The Applicant's response to CA.2.4 also confirms that following various changes to the Order limits, the total area of land within the Order limits over which CA powers are sought at that stage was 13,238,694.41 sqm and the total area of land within the Order limits over which TP powers are sought was 599,393.59 sqm. The total area of land within the Order limits over which CA of rights only powers are sought was 5,580.79 sqm.

However, these figures do not reflect the subsequent minor changes to the Order limits the subject of Changes 20-22 [PD-056].

8.7. LEGISLATIVE REQUIREMENTS

- 8.7.1. CA powers can only be granted if the conditions set out in s122 and s123 PA2008 are met.
- 8.7.2. S122(2) requires that the land must be required for the development to which the development consent relates or is required to facilitate or is incidental to the development. In respect of land required for the development, the land to be taken must be no more than is reasonably required and be proportionate, as set out in CA Guidance⁶⁶.
- 8.7.3. S122(3) requires that there must be a compelling case in the public interest which means that the public benefit derived from the CA must outweigh the private loss that would be suffered by those whose land is affected. In balancing public interest against private loss, CA must be justified in its own right. That does not mean that the CA proposal can be considered in isolation from the wider consideration of the merits of the project. There must be a need for the project to be carried out and there must be consistency and coherency in the decision-making process.
- 8.7.4. S123 requires that one of three conditions is met by the proposal. The ExA is satisfied that the condition in s123(2) is met because the application for the DCO includes a request for CA of the land to be authorised.
- 8.7.5. A number of general considerations also have to be addressed either as a result of following applicable guidance or in accordance with legal duties on decision-makers:
- All reasonable alternatives to CA must be explored.
 - the Applicant must have a clear idea of how it intends to use the land and to demonstrate funds are available; and
 - the decision-maker must be satisfied that the purposes stated for the acquisition are legitimate and sufficiently justify the inevitable interference with the human rights of those affected.
- 8.7.6. The Applicant considers the statutory conditions for the exercise of CA powers and the CA guidance in the Statement of Reasons [APP-062, section 7]. There is also general guidance in relation to CA in the Department for Levelling Up, Housing and Communities Guidance on compulsory purchase process and the Crichel Down Rules 2019.

8.8. OTHER MATTERS

- 8.8.1. Articles 37(2) to (5) (formerly 35) of the dDCO amend the provisions of the Compulsory Purchase Act 1965 so they are consistent with the terms and timeframes under the dDCO and PA2008. Article 37(6) makes it clear

⁶⁶ Planning Act 2008; Guidance related to procedures for the compulsory acquisition of land, former Department for Communities and Local Government, September 2013

that the counternotice process under Part 2 of Schedule 2A of the 1965 Act, introduced by the Housing and Planning Act 2016, does not apply to the TP or use of land under Arts 26, 27, 39, 41 or 48 of the dDCO [REP10-013, para 7.37]. Similar provisions can be found in Art 25 of the made Silvertown Tunnel DCO 2018.

- 8.8.2. Article 34 (formerly 32) provides for the application of the Compulsory Purchase (Vesting Declarations) Act 1981 ("the 1981 Act"), containing the vesting procedures for land subject to compulsory purchase [REP10-013, para 7.28]. It allows the undertaker to choose between the notice to treat procedure or the general vesting declaration procedure set out in the 1981 Act. Vesting declarations allow title in land concerned to pass to the acquirer more quickly than using the notice to treat procedure. They also enable several parcels of land to be acquired at the same time and therefore more efficiently than under the notice to treat procedure. This Article also clarifies that the undertaker will be a body or person authorised to acquire land for the purposes of the vesting declaration procedure.
- 8.8.3. Section 120(5)(a) PA2008 provides that a DCO may apply, modify or exclude a statutory provision which relates to any matter for which provision may be made in the DCO and s117(4) PA2008 provides that, if the DCO includes such provisions, it must be in the form of a statutory instrument. Since in certain instances the dDCO seeks to apply s120(5)(a), it is in the form of a statutory instrument.
- 8.8.4. The dDCO also seeks to provide a security for CA and TP compensation payable to landowners under the made Order [REP10-09, Art 86].

8.9. EXAMINATION OF THE CA AND TP CASE

- 8.9.1. The ExA requested updated documents prior to the start of the Examination [PD-005]. These documents included an addendum to the application Funding Statement [APP-066] to further explain the availability of funds for CA/compensation [AS-011].
- 8.9.2. The Applicant submitted a notification of a first intention to make Changes 1 to 14 to the application [AS-004 and 005]. The Applicant then submitted a formal request to make these changes [AS-105]. This formal request included an additional Change 15. Changes 10 to 14 include the following Order Limit variations:
- Change 10 - minor reduction, other minor changes and extension of landscaped bund at the SPR;
 - Change 11 - extension to provide additional fen meadow habitat at Pakenham as mitigation for fen meadow loss;
 - Change 12 - extensions and reductions for works on the TVB, SLR and Yoxford roundabout as well as minor changes to the public right of way proposals at these sites;
 - Change 13 - minor extensions and reductions for works on the MDS and related sites (fen meadow mitigation sites and marsh harrier improvement sites); and

- Change 14 - minor reductions at the NPR, the A12/B1119 junction at Saxmundham and the A1094/B1069 south of Knodishall.
- 8.9.3. Changes 11, 12 and 13 include 'additional land' which includes potentially Affected Persons (APs) not included in the application BoR [APP-067]. All affected landowners were consulted regarding the proposed changes prior to the formal request. The Applicant's submissions supporting the change requests include a Statement of Reasons Addendum [AS-149] and a Second Funding Statement Addendum [AS-150].
- 8.9.4. The ExA accepted the 15 changes into the Examination [PD-013]. The ExA was also satisfied that the requirements of the Infrastructure Planning (Compulsory Acquisition) Regulations 2010 (CA Regs) in relation to the Additional Land could be met during the Examination and accepted the CA request in respect of Additional Land pursuant to Regulation 6.
- 8.9.5. The Applicant submitted a notification of a second intention to make Changes 16 to 18 to the application [REP2-131]. The Applicant then submitted a formal request to make these changes [REP5-002]. Changes 17 and 18 included the following Order Limit variations:
- Change 17 - reduction from the removal of a proposed upgrade of existing footpaths to a bridleway at the TVB; and
 - Change 18 - extensions for drainage to the west of the East Suffolk rail line and for works on the B1122.
- 8.9.6. Change 18 includes 'additional land'. However, as all persons with an interest in the land have consented to the dDCO authorising the CA of the additional land, the procedure for CA of additional land set out in Regulations 5 to 10 of the CA Regs does not apply. The ExA accepted the three changes into the Examination [PD-039].
- 8.9.7. The Applicant submitted a notification of a third intention to make Change 19 to the application [AS-397]. The Applicant then submitted a formal request to make this change [REP7-286]. This change does not include any 'additional land' and was accepted by the ExA [PD-050].
- 8.9.8. The Applicant's letter of 24 September 2021 [REP8-001], outlines the finalised reductions sought to the Order Limits at the three fen meadow sites (Pakenham, Halesworth and Benhall), the SLR and the Green Rail Route (GRR). The plots being removed in whole or in part are identified in Appendix B of the Applicant's letter of 24 September 2021 which also provides reasons for the removal or reduction of the relevant plots. The ExA accepted these three non-material changes to the application into the Examination for the reasons set out in its Procedural Decision dated 13 October 2021 [PD-056].
- 8.9.9. The ExA asked 83 first written questions (ExQ1) in relation to the request for CA and TP powers which reflected the requirements of PA2008 and matters raised by parties in their representations [PD-019]. The questions cover a range of issues including:
- the scope and purpose of the CA powers sought;

- whether there is a compelling case in the public interest for the CA of the land, rights and powers that are sought;
- whether all reasonable alternatives to CA have been explored;
- whether adequate funding is likely to be available;
- whether the purposes of the proposed CA justify interfering with the human rights of those with an interest in the land affected;
- the accuracy of the BoR, Land Plans and points of clarification;
- the acquisition of Statutory Undertakers' land – s127 PA2008;
- adequacy of any Protective Provisions set out in the dDCO and the need for any other Protective Provisions to safeguard relevant interests;
- Crown land; and
- objections to the grant of powers of CA and TP.

8.9.10. The Applicant provided responses to ExQ1 at Deadline (DL) 2 [REP2-100].

8.9.11. At DL2, CA and TP related submissions and responses to ExQ1 were also provided by parties including; English Heritage Trust (EHT) [REP2-134]; East Suffolk Council (ESC) [REP2-173 to 178]; Suffolk County Council (SCC) [REP2-187 to 194]; Emma Dowley [REP2-250]; David Grant [REP2-252]; Graham Kenneth Lacey [REP2-280]; Joan Girling [REP2-328 and 329]; Justin and Emma Dowley/LJ and EL Dowley farming partnership [REP2-342 to 344]; The Dowley Family [REP2-370]; Michael Taylor [REP2-372]; N J Bacon Farms, Ward Farming Ltd, A W Bacon Will Trust and Nat and India Bacon [REP2-382 to 384]; Paul and Julie Tillcock [REP2-339, REP2-402 and REP2-405]; Sally Ilett [REP2-424]; Ms Dyball, Ms Hall and S R Whitwell & Co [REP2-425]; Simon Ilett [REP2-430]; Stephen Beaumont [REP2-438 and 439]; Stephen Brett [REP2-440 and 441]; Terence Jeffrey and Margaret Jeffrey [REP2-467]; William Bruce Kendall [REP2-494]; Royal Society for the Protection of Birds (RSPB) and Suffolk Wildlife Trust [REP2-504 to 507]; and Simon Mellen [REP2-514].

8.9.12. Various Accompanied Site Inspections were held during June 2021 [EV-066 to 067]. Unaccompanied Site Inspections were also undertaken during August 2020 and February, June and September 2021 [EV-001 to 002b].

8.9.13. In the light of the responses to ExQ1, the other written submissions including those made by APs and the matters raised at hearings, the ExA decided to ask 27 CA and TP related second written questions (ExQ2) [PD-034]. These questions covered similar issues to those at ExQ1

8.9.14. A Compulsory Acquisition Hearing (CAH) was held in two parts by virtual means on 17 and 18 August 2021 [EV-143 to 155a]. At the CAH, representations were made by and/ or on behalf of a number of parties including: ESC; SCC; Ms Dyball, Ms Hall and SR Whitwell & Co; Ward Farming, NJ Bacon Farms, AW Bacon Will Trust, David Grant, Justin Dowley, Emma Dowley, and the Boden Family; Nathaniel Bacon; Emma Dowley; David Grant; and the NDA and Magnox Limited.

8.9.15. At the CAH, the ExA pursued a number of matters with the Applicant including: outstanding points relating to the general principles applicable

to the CA of land and rights over land; whether adequate funding is likely to be available; whether the purposes of the proposed CA justify interfering with the human rights of those with an interest in the land affected; duties under the Equality Act 2010; Statutory Undertakers' land; and Crown land.

- 8.9.16. A written summary of the oral case presented at the CAH was submitted by the Applicant at DL7 [REP7-064 to 067]. There were also oral case summaries submitted by parties including: ESC [REP7-111]; SCC [REP7-160 and 161]; Nat and India Bacon, Ward Farming Ltd and AW Bacon Will Trust [REP7-171]; David and Belinda Grant [REP7-180]; Justin and Emma Dowley [REP7-202 and 213]; Ms Dyball, Ms Hall and SR Whitwell and Co [REP7-215]; N J Bacon Farms and Ward Farming Limited [REP7-216 and 217]; The Boden Family [REP7-235]; and the Trustees of the A W Bacon Settlement [REP7-238].
- 8.9.17. The Applicant also submitted responses to ExQ2 at DL7 [REP7-052]. There were also CA and TP related responses to ExQ2 submitted by parties including: ESC [REP7-115]; East Suffolk Internal Drainage Board (ESIDB) [REP7-122]; EHT [REP7-124]; and the Environment Agency (EA) [REP7-129].
- 8.9.18. In the light of the responses to ExQ2, the other written submissions including those made by APs, and the matters raised at hearings, the ExA decided to ask four CA and TP related third written questions (ExQ3) [PD-046]. These covered whether adequate funding is likely to be available and protective provisions.
- 8.9.19. The Applicant submitted responses to ExQ3 at DL8 [REP8-116]. There were also CA and TP related responses to ExQ2 submitted by parties including: ESC [REP8-143]; the EA [REP8-159]; the RSPB [REP8-170]; and SCC [REP8-180].
- 8.9.20. At DL8, the Applicant submitted: a final SoR Appendix A justification tables [REP8-039]; final Land Plans [REP8-003]; and final Crown Land Plans [REP8-004].
- 8.9.21. At DL10, the Applicant submitted: a final SoR Appendix B report on the status of negotiations with owners of the Order land [REP10-017] and Appendix C report on the status of negotiations with statutory undertakers [REP10-018]; a final BoR [REP10-019] with a Schedule of Changes [REP10-020]; Access and Rights of Way Plans [REP10-003]; and a final EM [REP10-013].
- 8.9.22. The final BoR [REP10-019], Land Plans [REP8-003] and Rights of Way Plans [REP10-003] are secured in the dDCO [REP10-009, Art 80]. The article numbering in Table 2.1 of the final BoR should however be corrected to reflect the final dDCO before certification of the final BoR.

8.10. THE APPLICANT'S GENERAL CASE FOR THE GRANT OF CA AND TP POWERS

- 8.10.1. The Applicant's case for the grant of CA and TP powers is set out in the: application SoR and Addendum [APP-062 to APP-065 and AS-149]; Funding Statement, Addendum and Second Addendum [APP-066, AS-011 and AS-150], final BoR [REP10-019], final Schedule of Changes to the BoR [REP10-020].
- 8.10.2. The application SoR and Addendum [APP-062 to APP-065 and AS-149] explain that they should be read alongside the other application documents that relate to the CA and TP powers sought by the Applicant and the need for the Proposed Development. Final versions of these documents include the:
- Land Plans [REP8-003];
 - Crown Land Plans [REP8-004];
 - Works Plans [REP8-005 to REP8-007];
 - dDCO [REP10-009];
 - ES (final documents identified in the Applicant's final Navigation Document [REP10-002]);
 - Main Development Site Design and Access Statement [REP10-055, REP10-056 and REP10-058];
 - Associated Development Design Principles [REP10-063];
 - Two Village Bypass Landscape and Ecology Management Plan [REP10-066 and AS-262];
 - Sizewell Link Road Landscape and Ecology Management Plan [REP10-065 and AS-265];
 - Planning Statement [APP-590, REP2-043 and REP10-068]; and
 - Planning Statement Appendices [APP-591 to 598, REP2-044, APP-600, AS-012, REP7-036, AS-038, AS-039 and REP2-043].
- 8.10.3. The Applicant's final Navigation Document [REP10-002] sets out the updates made to documents during the course of the Examination which led to the final versions identified above.
- 8.10.4. The documents which accompanied the application also provide information regarding baseline conditions, site selection, the Proposed Development, environmental impact and other relevant matters [APP-001 to APP-636]. The Applicant's final Navigation Document [REP10-002] also sets out the updates made to these documents during the course of the Examination.

Section 122(2) PA2008 - The Scope and Purpose of the CA Powers Sought

- 8.10.5. The SoR refers to the CA Guidance, paragraph 11, which sets out the considerations that the SoS will take into account in deciding whether the condition in s122(2) has been met [APP-062]. For s122(2)(a) to be met, the Applicant should be able to demonstrate that the land in question is needed for the development for which consent is sought. The SoS will need to be satisfied that the land to be acquired is no more than is

reasonably required for the purposes of the development. Further guidance is also provided in relation to compliance with s122(2)(b).

- 8.10.6. The SoR, section 7.3, states that the land included in the dDCO is no more than is required for the Proposed Development and is therefore necessary to achieve its objectives [APP-062, section 7.3]. The use of CA powers is intended to be proportionate. Where practicable the lesser powers of TP would be used to construct the Proposed Development, with CA powers then used to permanently acquire only the land on which the Proposed Development has been sited.
- 8.10.7. An example of this is for highway works where the Order Limits incorporate sufficient land to allow for the final detailed design to be determined, but no more land than necessary has been included within the Order Limits. This ensures that the detailed road design can meet the relevant standards, including for surface water drainage. The Order land includes the full extent of the area where works may be undertaken. However, in practice, only the land needed for the highway works would be acquired.
- 8.10.8. The Applicant's position on the marsh harrier improvement area at Westleton is that the provision of marsh harrier habitat on this land would not be required to mitigate or compensate for the effects of the Proposed Development [APP-590, section 5]. It is nevertheless part of the application in case the SoS disagrees with this position and takes the view that it is required.
- 8.10.9. A similar situation exists with regard to the flood compensation land associated with the TVB. The Applicant's position is that the provision of flood compensation on this area of land would not be required to mitigate or compensate for the effects of the Proposed Development [APP-590, section 6.7] as shown in the TVB Flood Risk Assessment [APP-119]. It is nevertheless part of the application in case the SoS disagrees with this position and takes the view that it is required.
- 8.10.10. The Applicant has provided further information as regards the scope of the CA powers sought in responses to ExQ1 and ExQ2 [REP2-100, CA.1.4 and REP7-052, CA.2.2]. In addition, the Applicant explained at the CAH why it considers that the land proposed to be acquired is no more than reasonably necessary for the purposes of the dDCO [REP7-064 to 067]. The Applicant submits that the extent of the land which is proposed to be acquired is reasonable and proportionate.
- 8.10.11. The Applicant is therefore satisfied that the condition in s122(2) PA 2008 is met. It considers that the Order land which is proposed to be subject to CA powers is either needed for the development, or is needed to facilitate the development, or is incidental to the development.

Section 122(3) PA2008

- 8.10.12. Turning to the condition in s122(3), the CA Guidance states at paragraphs 12 and 13 that the SoS will need to be persuaded that there is compelling evidence that the public benefits that would be derived

from the CA will outweigh the private loss that would be suffered by those whose land is to be acquired.

Public benefit

- 8.10.13. S122(3) PA 2008 provides that there must be a compelling case in the public interest for the land to be compulsorily acquired. The CA Guidance, paragraph 14, states that, in determining where the balance of the public interest lies, the SoS will weigh up the public benefits that a scheme will bring against any private loss to those affected by CA.
- 8.10.14. The Applicant's position is explained in the SoR [APP-062] and other application documents including the Planning Statement [APP-590]. The Proposed Development would meet an urgent need for new low carbon energy infrastructure. The Overarching National Policy Statement for Energy (EN-1) and the National Policy Statement for Nuclear Power Generation (EN-6) are clear that new nuclear energy generation is a necessary part of the energy mix to reach Climate Change Act 2008 targets. The Climate Change Act 2008 (2050 Target Amendment) Order 2019 makes this urgent need more pressing. The Proposed Development would comprise two nuclear reactors capable of generating up to 3,340MW of electricity. These could provide some 6% of the UK's demand, thereby making a major contribution to this urgent need [APP-062, para 7.4.3].
- 8.10.15. The Proposed Development would provide significant economic benefits to the local area and nationwide [APP-610]. Construction could support over 40,000 person-years of employment. Operation could support 700 direct employees and 200 as contractors plus around 1,000 during shutdowns or outages for maintenance activities. The 900 jobs equate to about 1% of all the jobs in the East Suffolk District and 0.3% in Suffolk. The Proposed Development would also create extensive supply chain opportunities.
- 8.10.16. The Proposed Development would provide long term sustainable local and regional infrastructure benefits through local rail and road network improvements. The SLR, TVB and highway improvements would be retained permanently and create significant positive legacy for both Suffolk and the UK.
- 8.10.17. The Proposed Development would provide substantial beneficial economic effects on skills, employment, the labour market and the supply chain. Benefits would be seen by the creation of new jobs, effects on unemployment and economic inactivity, business activity in the supply chain, and the spending of workers.
- 8.10.18. The Proposed Development would have positive direct and indirect effects on health and wellbeing. A stable power supply helps health and social care services to operate, jobs and economic activity to continue and technology to function. Low-carbon energy generation can also help to reduce climate change and its many adverse effects on physical and mental health and well-being.

- 8.10.19. These substantial benefits can only be realised if the land required for the Proposed Development can be guaranteed in a timely manner through the use of CA powers.

Private loss

- 8.10.20. The Applicant has sought to acquire the required land privately where reasonably possible and negotiations are ongoing [REP10-017]. However, to deliver the benefits of the Proposed Development requires the use of CA powers. This would result in private loss for those persons whose land or interests in land is compulsorily acquired. Appropriate compensation would however be available under the national compensation code.
- 8.10.21. The Applicant has taken pro-active steps to engage with these persons through formal consultation and informal engagement [APP-062, section 9]. This has helped to shape the proposals and, where possible, introduced design changes to minimise private loss. Much of the informal landowner engagement took place through: meetings with the majority of landowners, some with the Applicant's transport specialists present; telephone conversations; and site visits. Resulting design changes included additional accommodation works, access tracks, field entrances, road crossings and changes to the strategy for road closures.
- 8.10.22. The necessity for private loss is demonstrated by the Applicant's identification of the need for each plot, the intended use and the powers sought [REP8-039]. All relevant environmental, social and economic benefits and adverse impacts have been assessed and are reported on in the application documents, most notably the ES. This private loss, however, would be reduced as landowners would be compensated at market value in line with the compensation code.
- 8.10.23. The ES assesses the likely environmental effects that could occur due to the Proposed Development. This includes construction, operation and the associated developments, together with their removal and reinstatement where appropriate. The assessment of operations also includes commissioning, re-fuelling and maintenance outages. The ES includes a qualitative assessment of decommissioning. A separate application for decommissioning would however need to be submitted and a new ES prepared under the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999. The Applicant has also identified primary, secondary and/or tertiary mitigation along with the relevant securing mechanism [REP10-073].

The balancing exercise between public benefit and private loss

- 8.10.24. The Applicant's balancing exercise considers the private loss, after compensation. The Proposed Development as a whole would result in some adverse effects to the individual landowners. These adverse effects (considered individually or collectively) would not however outweigh the important nationally significant benefits of the provision of new safe and secure, low-carbon energy infrastructure alongside the local benefits identified [APP-062, section 7.4].

- 8.10.25. Accordingly, the substantial national and local public benefits that would arise from the Proposed Development demonstrably and overwhelmingly outweigh the private loss that would be suffered by those whose land or interests in land is to be acquired to enable that to occur.

Alternatives to CA

- 8.10.26. Paragraphs 8 to 10 of the CA Guidance set out general considerations to be taken into account by the Applicant in seeking CA powers. Paragraph 8 requires that the Applicant should be able to demonstrate to the satisfaction of the SoS that all reasonable alternatives to CA (including modifications to the scheme) have been explored.
- 8.10.27. The acquisition of land and interests in land is required to construct, operate and maintain the Proposed Development. Accordingly, there is no alternative but to seek powers of compulsory acquisition in the DCO. The Applicant has however considered alternatives to the Proposed Development [APP-062, section 7.5, APP-175, APP-190, APP-353, APP-383, APP-414, APP-450, APP-483, APP-514, APP-544 and APP-591]. The Applicant also responded to ExQ1 and ExQ2 in relation to alternatives to CA [REP2-100, CA.1.17 to CA.1.23 and REP7-052, CA.2.5].

Alternative location or design

- 8.10.28. The need for a new power station at Sizewell C is firmly established within the Government's policy on national significant energy infrastructure [APP-062, section 3]. NPS EN-6 identifies eight sites, including Sizewell C, as potentially suitable locations for the deployment of new nuclear power stations in England and Wales by 2025. Section 2.4 of EN-6 outlines how alternatives were considered through the nomination process that led to the confirmation of the eight sites. Paragraph 2.4.3 states that from the Strategic Siting Assessment and the Alternative Sites Study carried out for EN-6, the Government does not believe that there are any alternatives to the listed sites for new nuclear power stations before the end of 2025. NPS EN-1 explains that there is no general requirement to consider alternatives to the proposed development or to establish whether the proposed project represents the best option.
- 8.10.29. The proposed siting of Sizewell C is set out in EN-6 and decisions relating to the reactor design were completed through the UK Generic Design Assessment process. Having regard to the policy already referred to, the Applicant has not therefore considered strategic alternative technologies or alternative locations for a nuclear power station as part of the assessment of alternatives and site selection at the application stage.
- 8.10.30. The off-site elements of the main development are: the sports facilities; the Benhall, Halesworth and Pakenham fen meadow compensation areas and the Westleton marsh harrier habitat area. These off-site areas were subject to a selection process [APP-190, sections 6.8 to 6.10 and AS-281, para 2.2.181].

Alternatives to the location or design of the Associated Development

- 8.10.31. The Applicant identified the land and rights needed for the Associated Development which is required to construct or operate Sizewell C, or to help mitigate its impacts, through detailed technical and design assessments, land referencing, extensive consultation and site selection processes [APP-062, section 7.5]. It has adopted a two-stage approach to the consideration of alternatives and site selection for the Associated Development.
- 8.10.32. The first stage involves the consideration of alternative strategies and the consequent need for Associated Development in relation to: the movement of people; the movement of freight; and the accommodation of the construction workforce [APP-591, section 2, REP4-005 and APP-613].
- 8.10.33. The second stage relates to site-specific alternatives for each element of the Proposed Development. This includes a consideration of alternative design solutions for the different components of the Associated Development on the MDS and the location and design of each of the required offsite Associated Developments [APP-591, sections 3 to 10].

Accommodation infrastructure

- 8.10.34. In response to the requirement for a non-home-based workforce, the Applicant has developed a balanced strategy which makes use of existing local accommodation where possible in addition to a single accommodation campus on the MDS and a caravan site on Land East of Eastlands Industrial Estate in Leiston [APP-062, section 7.5, APP-591 and APP-613].

Movement of people

- 8.10.35. The strategy for the movement of construction workers was introduced at Stage 1 consultation and has remained largely unchanged since [APP-062, section 7.5]. It identifies the need for two park and ride facilities, one to the north, and one to the south. Whilst alternative locations for these facilities have been considered throughout consultation, the need for these two facilities at the identified locations has remained throughout the consultation process [APP-591, sections 4 and 5].

Movement of freight

- 8.10.36. Construction of the Proposed Development would require large volumes of freight to be transported to the MDS [APP-062, section 7.5 and APP-591]. The principles informing the Applicant's strategy for managing materials and freight movements are as follows. Firstly, to seek to reduce the volume of materials that require movement off-site. Secondly, where bulk and containerised materials must be moved, seek to move by sea or rail. Thirdly, where movement by road remains necessary, seek to manage this in a way which reduces local impacts.

- 8.10.37. In terms of movement by sea, a jetty was proposed at Stage 1 consultation [APP-068], which would have enabled delivery by sea. At Stage 2 consultation, three options were proposed: a wide jetty; a narrow jetty; and a beach landing facility (BLF). A BLF is now the only marine based facility promoted.
- 8.10.38. In terms of rail or road, the Applicant considers that the uncertainty that would be caused as a result of deliverability risks of a rail-led strategy would affect its ability to secure the necessary funding [APP-062, section 7.5]. It would also affect its ability to demonstrate to the Government that the Proposed Development could be deployed by 2035 and meet the urgent need for new nuclear power generation. The Applicant therefore concludes that the rail-led strategy would not be deliverable. Instead, an integrated strategy was developed to seek to secure the best deliverable rail outcome. The Applicant and Network Rail Infrastructure Limited continue discussions, and it is understood that Network Rail supports an integrated strategy.
- 8.10.39. The integrated strategy includes the following components: GRR; refurbishment of the Saxmundham to Leiston branch line; FMF; SLR; TVB; upgrades to eight level crossings; and BLF. It seeks to overcome the deliverability issues associated with the rail-led strategy by requiring only those rail improvements which could be carried out by the Applicant, or where there is sufficient programme certainty. To give confidence in delivering these works, the necessary powers to undertake the works are within the dDCO. The Applicant concludes that the integrated strategy provides the most appropriate strategy to move materials for the construction of the Proposed Development.
- 8.10.40. The accommodation and transport strategies have different operational requirements which direct the requirements for each site, and the location of each Associated Development was determined by a site selection process [APP-062, section 7.5, APP-068, APP-591 and REP2-108].
- 8.10.41. In conclusion, the Applicant considers that reasonable alternatives to the Proposed Development and the Order land have been considered prior to the making of the application. Such consideration includes reasonable factors at relevant stages such as consultee comments, technical feasibility, the anticipated market regime, and the minimisation of environmental and visual impacts and land take.

Availability of Funds for Compensation

- 8.10.42. The Applicant submitted a Funding Statement with the application [APP-066], an addendum to this statement following a request by the ExA [AS-011] and a second addendum with the initial set of change requests [AS-150]. The Applicant also responded to ExQ1, ExQ2 and ExQ3 in relation to funding [REP2-100, CA.1.24 to CA.1.37, REP7-052, CA.2.6 to CA.2.9 and REP8-116, CA.3.0 to CA.3.3]. The Applicant also fully participated in the CAH [REP7-065] and responded to actions arising from the CAH [REP7-066 and REP7-067].

- 8.10.43. The Applicant is currently a wholly owned subsidiary of NNB Holding Company (SZC) Limited (SZC HoldCo), a company incorporated in England [APP-066, section 3]. SZC HoldCo is a joint venture company between EDF Energy Holdings Limited and General Nuclear International Limited who are both incorporated in England. EDF Energy Holdings Limited hold 80% of the shares and General Nuclear International Limited hold 20%. The Applicant's funding to date has been provided by these shareholders. The ultimate parent company of EDF Energy Holdings Limited is Électricité de France S.A. (EDF Energy), a French public limited company. This company has a comfortable investment grade, with a credit rating several grades inside the investment range, from all three major credit rating agencies [REP2-100, CA.1.37]. This indicates a strong financial position, and the company has planned to pre-finance the Proposed Development up to its share (80%) of an initial budget of £458m [REP7-066, section 1.12]. The ultimate parent company of General Nuclear International Limited is China General Nuclear Power Corporation, a Chinese registered company.
- 8.10.44. The current project cost estimate for the Sizewell C Project is circa £20 billion. This includes land acquisition together with any compensation payable for CA of land, interests in land and rights over land. At February 2021, total compensation associated with CA was estimated to be approximately £42m [REP2-100, CA.1.31]. The Applicant has taken expert advice on the level of compensation that may be payable, and this cost estimate also takes into account expected inflation and contingencies.
- 8.10.45. The Government is currently reviewing the viability of a Regulated Asset Base (RAB) financing model for new nuclear projects. In the related consultation, BEIS concludes that a RAB model has the potential to attract new investors to new nuclear projects. The Minister for Energy, Clean Growth and Climate Change also identified RAB as a credible model for financing large-scale nuclear projects on 20 July 2021 [REP7-052, CA.2.6].
- 8.10.46. The RAB model is well-established and widely used for funding UK infrastructure. The value of privately financed infrastructure operating under a RAB model today, including the Thames Tideway Tunnel, is approximately £180bn [REP2-100, CA.1.24 and CA.1.32]. It is attractive to investors as it provides a long-term revenue allowance, indexed to inflation, which is underpinned by a large customer base providing a very high degree of confidence. This revenue allowance is sufficient to cover investor costs and provide a financial return.
- 8.10.47. The Government review is likely to be completed shortly before financial close/final investment decision (FID) [APP-173, Plate 2.1] for the Proposed Development, so that the review can reflect up to date information at the point the project is sanctioned by Government [REP2-100, CA.1.34]. As the review is likely to conclude after the Examination, the judgment on value for money is separate from the decision on acceptability under PA2008. It would therefore be both impractical and

inappropriate for the SoS to seek to pre-judge that issue when determining the DCO application.

- 8.10.48. The funding of the Sizewell C Project is currently expected to comprise third party equity and debt. Although the Applicant has already had positive engagement with potential investors, the development of the RAB financing model would widen the pool of investors who would consider an investment. The Applicant continues discussions with BEIS about the use of a RAB model or another deliverable funding model, such as the contract for difference model used for Hinkley Point C and offshore wind projects [REP2-100, CA.1.36]. Sizewell C is the furthest advanced new nuclear project at the present time, besides Hinkley Point C. This provides confidence that a funding model will be developed to enable the Proposed Development to be realised.
- 8.10.49. EDF Energy and the wider EDF Energy group have significant experience in delivering major energy infrastructure projects. EDF Energy has already committed significant resources to date to bring forward the Proposed Development. Further commitments to provide financial commitments from private sector third parties are not expected to be confirmed until FID.
- 8.10.50. The Applicant is therefore confident that it will be able to raise the funding required for the Proposed Development including funding for any CA to take place within the timescales set by the Order. The availability of funding is therefore not considered to be an impediment to the implementation of the Proposed Development or to the CA sought.
- 8.10.51. Considering the above, the SoS should be satisfied that the Applicant would have adequate funds available for the Proposed Development, including the CA of land, interests in land and rights over land. If any claims for blight arise, the Applicant would be sufficiently capitalised as explained above to meet the costs of dealing with such claims.
- 8.10.52. To provide additional certainty on the availability of CA funding, the Applicant also included a new dDCO article during the Examination which provides security for CA costs before they are incurred [REP7-066, section 1.11]. The type of security draws upon the precedents of the Manston Airport and Swansea Bay Tidal Lagoon DCOs.
- 8.10.53. The Applicant considers that if the SoS were to grant its CA request, the Proposed Development would not be likely to be prevented due to difficulties in sourcing and securing the necessary funding [APP-066, AS-011 and AS-150]. This includes the cost of acquiring any land and rights and the payment of compensation. The Applicant therefore concludes that the SoS can be satisfied that there is a reasonable prospect of the requisite funds for CA becoming available, in accordance with the CA Guidance.

Crown and Statutory Undertakers' Land

- 8.10.54. The Crown Estate Commissioners have reached agreement with the Applicant which provides the Commissioners with sufficient assurance as

to the way in which CA powers may be exercised in respect of third party interests in Crown land [REP10-404]. The Commissioners have therefore given their consent to the CA of the third party interests in Plot MDS/06/02 on the sea bed under s135(1) PA2008.

- 8.10.55. The Applicant has identified SUs which have an interest in CA land or have a right to keep equipment on, in or over CA land [APP-062]. It has engaged with these SUs and had regard to any feedback received. Adequate protection for the SUs is included within the dDCO protective provisions. The Applicant therefore considers that, under s127 PA2008, the SUs would not suffer serious detriment to the carrying on of their undertaking as a result of the CA or TP sought.
- 8.10.56. The dDCO would allow the Applicant to acquire land or rights in land owned by SUs or to interfere with their apparatus by removing or repositioning it [REP10-009, Art 42]. These powers would be controlled by dDCO Sch 19 (protective provisions). Each SU having a right to keep or access apparatus within the Order Limits is identified in the BoR [REP10-019]. The Applicant therefore considers that the necessity test of s138 PA2008 is met.

Other Consents and Agreements

- 8.10.57. The Applicant submitted a final Schedule of Other Consents, Licences and Agreements which lists the status and/ or timeframe for each consent, licence and agreement [REP10-023]. It is not aware of any reason why any consents, permits and licences that may be necessary would not be able to be obtained or of any other obvious impediments to the implementation of the Proposed Development including from any other regulatory requirement.

Acquisition by Negotiation

- 8.10.58. Prior to the commencement of consultation, the Applicant appointed land referencers to identify relevant persons with an interest in land [APP-062, section 9]. This identification process for persons with an interest in land comprised: title searches with the Land Registry; site visits; the issue of land referencing questionnaires; and follow up site visits, letters and telephone calls [APP-068]. Where landowners remained unknown, site notices were erected in suitable visible locations.
- 8.10.59. Category 3 persons were identified due to their proximity to the Proposed Development and the likely impact on their interest in land. A conservative approach was taken to identifying these interests.
- 8.10.60. The Applicant has carried out four stages of public consultation, in addition to further targeted consultation and informal engagement. It has consulted with all the above persons, taking account that, as the Proposed Development has evolved in response to consultation, the number of affected parties has varied, as have the issues identified. Beyond the formal stages of consultation, the Applicant has engaged directly with individual landowners and those with an interest in the affected land. It has also engaged with individual landowners to seek

private agreements and option agreements have been agreed over some plots of land [REP10-017].

- 8.10.61. The Applicant is however applying for CA or TP powers over all of the Order land to ensure that title can be secured with certainty, as there may be unknown rights, restrictions, easements or servitudes affecting that land which may need to be overridden, removed and/or extinguished in order to facilitate the Proposed Development.

Human Rights

- 8.10.62. The Applicant has considered Human Rights Act 1998 and European Convention on Human Rights (ECHR) issues in its SoR [APP-062, section 7.9] and its responses to ExQ1 and ExQ2 [REP2-100, CA.1.38 to CA.1.47 and REP7-052, CA.2.10 to CA.2.12].
- 8.10.63. The dDCO would affect the Article 1 rights of those whose property is to be subject to CA or TP and whose peaceful enjoyment of their property would be interfered with. The Applicant has attributed significant weight to these private losses and sought to reduce the effect on private property and obtain land and interests privately where possible [REP2-100, CA.1.38]. No residential dwellings are required to be demolished as part of the project and instead they will be protected in situ during construction. The residential properties that are to be acquired for the project and any consequential interference has been carefully considered [REP2-100, CA.1.45].
- 8.10.64. Outside of the MDS, the majority of Order land would be subject to TP and is primarily agricultural land. The Applicant recognises the importance of agricultural land as being the basis of livelihoods, and the site selection process also considers the existing land use and its importance [APP-591].
- 8.10.65. There would be no violation of the Article 1 rights as it has been demonstrated that the proposed interference is in the public interest and lawful. Appropriate compensation would be available to those entitled under the national compensation code. From all of the above, the Applicant considers that the requirements of Article 1 are satisfied.
- 8.10.66. Those whose convention rights would be affected by the dDCO have also had an opportunity to object to the grant of CA and TP powers and to have their objection considered at a fair and public hearing. Furthermore, there was opportunity to make representations regarding the dDCO prior to its submission. The Applicant consulted persons set out in the categories contained in PA2008.
- 8.10.67. In addition to the publicity and consultation in relation to the application, there was opportunity to make representations by way of: responses to any notice of the accepted application; the Examination itself; and any written representations procedure that the ExA decided to adopt. Affected Persons also had an opportunity to request that a CAH be held and to make oral representations about the CA and TP request. The

Applicant therefore considers that the requirements of Article 6 are satisfied.

8.10.68. The dDCO seeks CA and TP powers in respect of residential land, and the Article 8 rights of those individuals would be interfered with. However, there would be no violation of those rights as it has been demonstrated that the proposed interference is in the public interest and lawful. The Applicant therefore considers that the requirements of Article 8 are satisfied.

8.10.69. The Applicant has carefully considered the balance to be struck between individual rights and the wider public interest. To the extent that the dDCO would affect individuals' rights, for the reasons summarised in this section, the proposed interference with those rights would be in accordance with law, proportionate and justified in the public interest.

The Equality Act

8.10.70. The Applicant submitted an Equality Statement with the application [APP-158] and an Equality Statement Update [REP10-024], following a request by the ExA at the CAH [REP7-065]. The Applicant also responded to the following ExQs in relation to the Equality Act: ExQ1 [REP2-100, AQ.1.73, AR.1.26, CA.1.42, CI.1.12, HW.1.2, HW.1.6 to HW.1.10 and HW.1.16]; ExQ2 [REP7-050, AR.2.3 and REP7-052, CA.2.27]; and ExQ3 [REP8-116, HW.3.4].

8.10.71. The Applicant is not a public body listed in s19 Equality Act 2010 [REP2-100, CA.1.42]. It has nevertheless had regard to the principles of the public sector equality duty (PSED) when exercising its functions as a private organisation [APP-158]. The potential equality effects of the Proposed Development have been identified together with mitigation measures to minimise those impacts where possible [REP10-024].

8.10.72. In particular, the Applicant has been aware of the need to: eliminate discrimination, harassment, victimisation and any other conduct that is prohibited under the Equality Act 2010; advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it; and foster good relations between persons who share a relevant protected characteristic and persons who do not share it. Regard has been had to this duty throughout all stages of the project.

8.10.73. The Applicant understands there to be APs who have protected characteristics. It believes that none of those APs have been disadvantaged in respect of engaging with it or the Examination or have been in any way disproportionately affected by the Project.

8.10.74. The Applicant recognises and has complied with the requirements of the PSED to make reasonable adjustments to processes that would otherwise unfairly disadvantage those with protected characteristics, if such circumstances had the potential to arise.

The Applicant's Conclusions

- 8.10.75. The application benefits from up to date, authoritative policy support. Not only does national policy establish an urgent need for new, low carbon energy generation, it specifically identifies Sizewell C as potentially suitable to meet that need.
- 8.10.76. The Proposed Development is in the national interest and national policy requires that substantial weight is to be given to the need for its development. Alternative energy sources and alternative sites were considered by Government in developing national policy and do not need to be considered again in the determination of this application.
- 8.10.77. The contribution that the Proposed Development would make to meet the national need for low carbon, secure and reliable energy is substantial. When operational, it would help to bring a stable supply of low-carbon electricity to the UK.
- 8.10.78. To enhance the overarching national benefit of the Proposed Development delivering a new power station, the Applicant has worked closely with stakeholders to develop economic strategies with a range of measures that combine to create an environment in which education, skills and workforce development can flourish.
- 8.10.79. The Applicant has demonstrated that the CA of land is required for the construction, operation and maintenance of the Proposed Development or is required to facilitate or is incidental to the development. The SoS can be satisfied that there is a compelling case in the public interest for the land to be acquired compulsorily. In drawing this conclusion, the Applicant has demonstrated that all reasonable alternatives to CA, including modifications to the Proposed Development, have been explored and that any interference with the rights of those with an interest in the land is for a legitimate purpose and is necessary and proportionate.
- 8.10.80. The Applicant has a clear idea of how it intends to use the CA land. There is a reasonable prospect of the requisite funds for the acquisition becoming available. The purposes for which CA and TP powers are included in the dDCO are legitimate and are sufficient to justify interfering with the human rights of those with an interest in the land affected.
- 8.10.81. The Applicant has actively engaged with landowners and those with an interest in land through the formal consultation process and informal engagement as the proposals have evolved. This has allowed changes to the Proposed Development to minimise private loss where possible. The Applicant has actively sought to acquire land by private agreement rather than by CA. Appropriate compensation would be available to those entitled to claim it under the relevant provisions of the national compensation code.
- 8.10.82. The Applicant therefore concludes that the public benefits, particularly the delivery of new nuclear power generating capacity, could only be

realised with the use of the CA and TP powers sought. These public benefits are overwhelmingly greater than the private loss that would be suffered by those whose land is to be acquired, and there is a compelling case in the public interest for the land to be acquired compulsorily.

8.11. THE OBJECTIONS RECEIVED TO THE CA PROPOSALS

- 8.11.1. A number of objections to the CA proposals have been received from APs. The ExA's Procedural Decision dated 23 October 2020 [PD-005], requested the Applicant to provide the 'Statement of Reasons, Appendix B - Status of Negotiations with Owners of the Order Land' [APP-063] as a standalone and unredacted Examination document in order to facilitate regular updates during the Examination. The ExA also indicated that it would be helpful for a separate addendum to be provided identifying all relevant SUs and the position as regards the agreement of Protective Provisions for each one. The Applicant submitted the Updated Statement of Reasons Appendix B 'Status of Negotiations with Owners of the Order Land' - Revision 3.0 [REP2-021] and the Updated Statement of Reasons Appendix C - Status of Negotiations with Statutory Undertakers' - Revision 2.0 [REP2-022] at DL2 and these documents were updated during the Examination.
- 8.11.2. The latest version of Appendix B [REP10-017] identifies the APs, the category and type of interest held, the land requirement, the relevant work number, the rights and/ or powers sought to be acquired and relevant plot numbers. There is a degree of overlap with some APs falling within one or more parts of the BoR. Appendix B provides a summary update of the status of the objection and/ or negotiations. This sets out the current position on negotiations, and identifies those objections which remain outstanding, and those where agreement has been reached or is expected to be reached.
- 8.11.3. The SoR [APP-062] section 9.1 outlines the process by which the Applicant identified those persons falling within Categories 1, 2 and 3. This explains that landowners and other interested parties were identified through title searches with the Land Registry. Where ownership could not be determined, site visits were conducted. Land referencing questionnaires requesting clarity on land ownership and details of other persons with an interest in the land were issued to all identified parties and follow up site visits, letters and telephone calls were undertaken to clarify land interest. Where landowners remained unknown, site notices were erected where possible in a suitable visible location (for example on gateways or nearby telegraph poles).
- 8.11.4. In response to ExQ1 CA.1.55 [REP2-100], the Applicant confirmed that the following is a definitive list of plots where ownership remains unknown and no information has been provided: MDS/01/04, MDS/02/17, MDS/04/08 and SPR/16/04. The Applicant indicated that it would continue to seek to identify outstanding details through continued inquiries and discussions with affected parties.

- 8.11.5. Appendix B also records that for some plots the name of the AP is still recorded as being unknown. The Applicant indicates that discussions are ongoing with adjoining landowners to identify legal ownership. However, the ExA is content that diligent inquiry to identify all relevant persons with an interest in land has been undertaken including for those plots which remain categorised as unknown.
- 8.11.6. The details of the initial objections raised are set out in the Relevant Representations (RR), and Written Representations (WR) for those persons listed in Appendix B and in their further oral and written responses made during the Examination, including at the CAH and in response to the ExA's questions. Many of the issues raised by Objectors have also been considered by the ExA in relation to the planning issues that they raise. For full details of those objections reference should be made to the submissions of the relevant parties set out in the Examination Library. The objections are considered here in the context of the application for the grant of CA powers.
- 8.11.7. The APs listed within Appendix B include those where no substantive objection has been made. For many of those listed, Appendix B records that Heads of Terms have been agreed and that option agreements are expected to be exchanged shortly after the close of the Examination.
- 8.11.8. In relation to APs that raised specific objections at the CAH, we note that some of those matters have subsequently been resolved. As regards the provision of sports facilities, agreement has been completed with ESC and the Applicant will provide a contribution to fund the construction of the Leiston sports facilities which will be managed by ESC as detailed in the final Deed of Obligation (DoO) [REP10-075]. Likewise, agreement has been reached with SCC on that matter.
- 8.11.9. At the CAH Part 2 SCC also raised the question of the existing sporting facilities at the Alde Valley Academy which are subject to temporary possession under the dDCO for the purpose of the construction and use of the sports facilities by the undertaker's workforce and the public. The relevant plot number is SF/11/01 and SCC are named in the final BoR [REP10-019] as the freeholder.
- 8.11.10. SCC's written submissions of oral case at CAH2 [REP7-161] identifies the remaining issue as being whether the dDCO would override the need for any consent of DfE under section 77 of the School Standards and Framework Act 1998 should the occupation and/ or use of land under the DCO occur. SCC sought an amendment to the dDCO to overcome this concern. In the Final dDCO [REP10-009], Article 39 which relates to the temporary use of land for carrying out authorised development now includes sub-clause 39(12) which reflects the change sought by SCC. This matter is therefore resolved.
- 8.11.11. At the CAH Part 2, Pinsent Masons on behalf of Magnox Ltd and the NDA raised concerns in relation to the protection of their land interests including an 'in principle' objection to the inclusion of Plots MDS/05/06 and MDS/05/07. The SoR Appendix B records in relation to those plots

that the principal terms of the transaction have been agreed REP10-017]. The objections of NDA and Magnox Ltd were subsequently withdrawn [REP9-031].

- 8.11.12. At the CAH Part 2, Savills raised various issues on behalf of Mr David Grant and the Boden family. These are APs where Heads of Terms have been agreed. The matters raised relate to planning issues rather than objections to the CA of land. We note from the Applicant's written summary of oral submissions at CAH Part 2 [REP7-065] that engagement continues to take place with these parties with a view to mitigating and addressing their concerns. In addition, where issues cannot be resolved, the signed Heads of Terms allow for the compensation code to be used. Those generic planning issues which relate to their land have been considered elsewhere in the relevant sections of Chapter 5 of this Report. The same applies to other planning issues raised by APs at the CAH.
- 8.11.13. The ExA now summarises the cases for those APs with substantive objections to the grant of CA powers that have not yet been resolved, followed by the Applicant's response before setting out our considerations for each outstanding objection. In the light of the ExA's conclusion in Chapter 7 of this Report, that development consent should not be granted, these considerations address whether the case is made for the exercise of powers of CA in each instance to enable the development consent to proceed should the SoS take a different view, and grant development consent for the Proposed Development.
- 8.11.14. This will include the consideration of objections made by persons within Categories 1 and 2 and those who also fall within Category 3. The ExA then considers the position in relation to SUs and whether any outstanding objections remain.
- 8.11.15. The ExA sets out later in this Chapter its approach to the consideration of CA issues which also forms the basis of our considerations and conclusions drawn in relation to all the objections made and related matters which now follow. These objections have therefore all been considered against the tests set out in the PA2008, in the light of the CA Guidance and with regard to the provisions of the Human Rights Act 1998 and the Equality Act 2010.

Objectors falling within Parts 1, 2 and 3 of the BoR

- 8.11.16. As indicated above, these are listed together with other APs who have not raised objection, in the SoR Appendix B [REP10-017] which also identifies the type of interest held by them, the relevant plots which are being sought, and the rights and/or powers to which they would be subject. The individual site-specific issues raised by those APs with outstanding CA objections are as follows.

Laurence Justin Dowley, Emma Louise Dowley, and Cripps Trust Corporation Limited (as Trustees of the Dowley Family Discretionary Settlement 2018)

- 8.11.17. There have been a number of submissions made by these Objectors and by Savills on their behalf at various deadlines during the Examination including REP2-342-344, REP2-370, REP5-260-261, REP5-265, REP6-053-056, REP7-176-177, REP7-213, REP10-307-308 and REP10-377. Those matters which relate to generic objections such as flood risk, noise, landscape and visual effects, historic heritage and agricultural severance have been considered in the relevant sections of Chapter 5 of this Report where the ExA considers it important and relevant to do so.
- 8.11.18. By way of introduction, Savills on behalf of Mr and Mrs Dowley explain that their clients' property at Theberton and Eastbridge extends to about 420 acres and is best described as a quintessential small country estate with all of its component parts fully integrated, to the benefit of the whole [REP7-213]. Given their proximity to the MDS and the various proposals, they contend that they would be substantially and detrimentally effected by the Proposed Development in a number of different ways [REP2-370].
- 8.11.19. The Objectors provide details of the impact of the Proposed Development upon them in their WR [REP2-343 and REP2-344]. In summary, the effects of the Proposed Development on their integrated farming estate, involve taking some 12% of their arable acreage. They submit that this would threaten the viability of the arable enterprise and they outline the number of employees that they would have to make redundant from their various enterprises. They contend that the Proposed Development would also have a material adverse effect on their house which has a Grade II* Listing and its setting, as well as on several other properties on the estate. Their DL7 submission [REP7-202] highlights that the proposed SLR would, at its eastern end, involve the destruction of an old wood which acts as a shelter belt between the existing B1122 and their house and park. They seek revision of the proposals to avoid the removal of any of these trees which form the shelter belt. Further submissions in relation to the adverse effects on their business, estate and house can be found in their WR [REP2-344]. They provided a summary of their case and final comments at DL10 [REP10-308].
- 8.11.20. Whilst various generic impacts have been raised, the main CA aspects of their objections relate to first, the lack of substantive engagement by the Applicant, and secondly, the extent of the land sought to be acquired which they consider to be excessive, unreasonable, and inequitable. They specifically seek a reduction in the size of the roundabout at the MDS site entrance and a revision to the SLR proposal. They assert that due to the Applicant's lack of engagement and the individual and aggregate effects on their existing business and properties arising from loss of land and disturbance from various proposals, there would be a breach of their Human Rights under the ECHR. The matter of property 'blight' is also raised.

Lack of engagement

- 8.11.21. Taking these matters in turn, the Objectors raise the question of engagement on the part of the Applicant in their Summary of Written Representation [REP2-343], and in their DL7 submission [REP7-202].

They are critical of the evidence provided to the CAH on behalf of the Applicant in relation to engagement. They contend that there has been little engagement on the part of the Applicant since the meeting which took place on 30 April 2021. On that occasion, the Applicant's agents visited them on site so that they could explain their plans as they affected them, listened to their specific concerns, and had a relatively brief look at their estate for the first time.

- 8.11.22. Savills on their behalf [REP10-377] also express concerns about the continuing delay in engagement on the part of the Applicant. Their clients have indicated they would be prepared to sell their whole property at Theberton and Eastbridge, but this offer has been turned down without substantive reasoning by the Applicant [REP7-213]. Their clients are now being expected to submit a proposal to the Applicant's agent rather than the Applicant's applying themselves to a proposal, which they believe they are potentially obliged to do in the circumstances.
- 8.11.23. Savills' DL10 submission [REP10-377] indicates that the Applicant's agents have now sought to arrange an opinion from a consultant in relation to the overall estate impact that the Proposed Development would have on their clients' property. They seek to encourage the Applicant to engage positively with them. Their clients have put forward options in relation to a potential purchase of their property in good faith. They have suffered years of anxiety, uncertainty and been unable to plan their lives accordingly, and unless a sensible solution is reached, these effects will only continue given the timescales which exist.

The extent of the land-take

- 8.11.24. The extent of the land sought for the proposed MDS roundabout is referred to in the Objectors' Post Hearing submission including written submission of oral case [REP2-370]. They submit that the roundabout affecting their property on the B1122 is one of the largest individual highway structures of the Proposed Development. Its scale and width are a direct function of the number of access legs off it. At the moment, the proposal is for it to have five legs: The B1122 from the North, the B1122 from the South, the link to Eastbridge village picking up the existing T junction, permanent access to the proposed power station and temporary access to the development site. They do not understand why the Applicant could not accommodate the temporary site access off their proposed permanent access thus saving the need for a separate leg for the temporary access. They consider that the extent of the proposal is excessive and in terms of the proposed CA of the relevant land is unreasonable and inequitable. They therefore seek a reduction in the size of the proposed roundabout and hence the land-take.
- 8.11.25. At the CAH Part 2, Savills provided further details as to why they consider that the land-take proposed for the main entrance roundabout is excessive and unjustifiable [REP7-213]. The proposed five leg roundabout would take up to nine acres of their client's productive arable land. They submit that a more reasonable proposal, which would reduce the amount of land to be acquired would involve one access for the Applicant into their site. The advice of their clients' highway consultants

is that reducing the size of the roundabout through the removal of the temporary access would reduce the land required by about 25%. At DL10, Savills [REP10-377] reiterate their concerns that the proposed roundabout is unnecessarily large and contend that the Applicant has not applied the duty upon it to mitigate the effect of its proposals.

Blight

- 8.11.26. Savills indicate that their clients' property is extremely valuable, and would be of interest to a large number of potential purchasers, if it ever became available. However, it is now, in their opinion, totally blighted by the Applicant's proposals within the DCO application [REP10-377]. They submit that this blight arises from the aggregate effect of the whole proposal including the MDS, as well as the SLR [REP7-213].

The Applicant's response

Lack of engagement

- 8.11.27. The Applicant summarised the engagement between it and the APs at the CAH [REP7-065]. The Applicant states that it has been engaging with them since June 2019 and confirms that terms for the land required for the Proposed Development have been put to them on the same basis as the other landowners. On behalf of the Applicant, Mr Smith confirmed that his personal involvement commenced at the start of 2021. He has had a number of discussions, telephone calls and meetings with both their agent, and themselves. The full detail of the engagement, including meetings, is set out in a schedule contained in the Applicant's Written Submissions Responding to Actions Arising from CAH Part 1 Appendix C [REP7-066]. He noted that some progress has been made towards reducing the impact on the APs and that the Applicant continues to work with their agent. Further details of engagement are provided in the Statement of Reasons Appendix B - Status of Negotiations with Owners of the Order Land [REP10-017].

The extent of the land-take for the MDS roundabout

- 8.11.28. The Applicant's written submissions arising from CAH Part 2 [REP7-067] indicate that the MDS entrance roundabout would facilitate access to the Proposed Development on a temporary and permanent basis. The Applicant explains that there are three main operational reasons for the five arm roundabout, namely, safety, vehicle flow, and contingency.
- 8.11.29. In considering the highway design of a five arm roundabout versus four arm roundabout, the arrangement of the roundabout arms need to meet highway design standards for geometric requirements and entry arm deflection. The proximity and arrangement of the roundabout vehicle entry and exit lanes must meet design radius requirements that prevent them being closer in locations. Design development work has confirmed that, to meet the Department of Transport's Design Manual for Roads and Bridges (DMRB) entry deflection and other requirements on all five arms, the roundabout's Inscribed Circle Diameter needs to be 65m. A smaller Inscribed Circle Diameter would not meet DMRB and road safety

audit requirements, therefore SCC would be unlikely to give technical approval for the scheme.

- 8.11.30. For a four-arm roundabout the MDS roundabout would require a minimum 50m-55m diameter to meet geometric requirements. The final size would depend on the location and design of signage and width of splitter islands.
- 8.11.31. The roundabout needs to accommodate abnormal indivisible loads (AILs) travelling not only to the Sizewell C construction site but also to Sizewell B. Both Sizewell C and Sizewell B AILs vehicles will take a route through the central island of the roundabout – so the central island will have elements that are easily demountable. The roundabout size needs to be able to accommodate a safe separate AIL track through the centre. The AIL routes need to be retained in the operation phase, and after the construction entrance is removed.
- 8.11.32. The Applicant submits that to reduce a five arm roundabout to a four arm roundabout post construction phase, it would need to be reconstructed and therefore be disruptive to the operational phase, and also disruptive to maintain existing traffic flows to B1122 (north and south) and Eastbridge Road.
- 8.11.33. The reduction from a five arm to four arm roundabout is shown in Figure 1 [REP7-067] with the consequential reduction in land take. The Applicant contends that given the logistical and highway safety issues, disruption post construction, and difference in land area, that the five arm roundabout shown in the application is a suitable and appropriate form of junction. The very limited reduction in land take that would result from a four arm roundabout would not justify the removal of the fifth arm.

The change to the Order Limits for the SLR

- 8.11.34. Following the CAH Part 2 [REP7-065], the Applicant confirmed in its post hearing note that an additional drawing was provided to the Objectors' agent on 23 July 2021 illustrating a considerable reduction in land take and tree loss along the boundary comprising a narrow width of shrub understory/ hedgerow removal adjoining the road and some minor tree and shrub understory loss at the B1122 junction with Onner's Lane.
- 8.11.35. In relation to other aspects of the land-take, the Applicant indicated at the CAH that as part of the ongoing land acquisition discussions, the owners of the land at Theberton House have requested the removal of a strip of their land from the Order Limits, part of which is required for the tying-in of the SLR with the B1122 and is set out in Appendix A to its DL7 submissions [REP7-066]. At Appendix B Table 1.1 identifies the plots to be removed from the Order Limits and the reason for their removal. This includes Plot SLR/22/23 within the ownership of the Objectors, as shown on sheet 22 of the Land Plans [REP5-004]. Table 1.2 identifies the plots in relation to which the area over which rights are sought is to be reduced, including the extent of and reason for the reduction. This

includes Plots SLR/22/21 and SLR/22/24 within the ownership of the Objectors.

- 8.11.36. The Applicant explains that the landowners have informed it that they wish to retain the land along this boundary to ensure the land can maintain its landscape screening function for the dwelling from the adjacent highway. The Applicant subsequently formally requested reductions in the Order Limits which are explained in its letter of 24 September 2021 [REP8-001]. The reductions to the Order Limits at the SLR remain the same as shown at DL7 [REP7-066].

The ExA's considerations

- 8.11.37. The ExA has considered those issues which raise important and relevant matters relating to the merits of the application under the various topic headings in Chapter 5 of this Report. We consider the various Human Rights implications of what is sought by the application later on in this Chapter in our conclusions on the case for CA. However, we note in relation to Article 8 that the CA powers sought do not extend to seeking the acquisition of the Objectors' residential property, although that has been proposed by themselves during negotiations.
- 8.11.38. In relation to the CA aspects of their objections, the ExA believes that the Applicant has provided a reasoned justification for the need for the MDS roundabout to be of the highway design, and size proposed. We consider the application of the DMRB standards to be appropriate for this particular road. This governs the extent of the land within the scope of the CA powers sought. Furthermore, we recognise that to reduce a five arm roundabout to a four arm roundabout post construction, it is likely that it would need to be reconstructed. That would inevitably be disruptive to the operational phase, and the maintenance of existing traffic flows. We do not consider that the limited reduction in land-take that would result from the provision of a four arm roundabout justifies the removal of the fifth arm. The ExA considers that the Applicant has provided a reasonable explanation of the need for and the extent of the land within the scope of the CA powers sought. The proposed CA powers in relation to this land are necessary for the achievement of the Applicant's reasonable objectives.
- 8.11.39. For the SLR and the shelter belt, the ExA's Procedural Decision subsequently confirmed acceptance of the changes to the Order Limits as sought by the Applicant in relation to this part of the Objector's land in response to their concerns to retain the shelter belt [PD-056].
- 8.11.40. On the topic of engagement, the CA Guidance, paragraph 25, advises that applicants should seek to acquire land by negotiation, wherever practicable. However, it acknowledges that it may not always be practicable to do so where proposals would entail the CA of many separate plots. Paragraph 26, advises that, as a contingency measure, applicants should plan for CA at the same time as conducting negotiations.

- 8.11.41. The Applicant has outlined the negotiations which have taken place with the Objectors, and their agent. This is summarised in the Applicant's Written Submissions Responding to Actions Arising from CAH 1 Part 1 Appendix C [REP7-066], and in the Statement of Reasons Appendix B - Status of Negotiations with Owners of the Order Land [REP10-017]. The ExA does not find merit in the claim that there has been a lack of engagement and genuine attempt to negotiate on the part of the Applicant or that due process has not been followed. Whilst the outcome of those negotiations may not have been to the satisfaction of these Objectors, the available evidence does not support the view that the Applicant has failed to negotiate and engage with them. Indeed, the change to the SLR Order Limits mentioned above represents a positive response to engagement. The ExA considers that the Applicant's actions in this respect reflect the relevant CA Guidance and do not have any bearing upon the Objectors' rights under the ECHR.
- 8.11.42. As regards the question of property blight, the process of seeking redress in such a situation proceeds separately, and outside the DCO process. Thus, the merits of any such claim are not a matter for this Examination. However, the CA Guidance, paragraph 18, requires Applicants to demonstrate that the resource implications of a possible acquisition resulting from a blight notice have been taken into account. The financial resource necessary to accommodate possible acquisition resulting from a blight notice, and whether that has been satisfactorily secured will be considered in our overall conclusions on CA set out below.
- 8.11.43. The ExA is satisfied that the CA of the relevant interests in the Objectors' land would be necessary in order to implement the Proposed Development, and that it would be reasonable and proportionate to do so in this instance. It considers the Applicant's approach in relation to the CA powers sought in respect of this land to be acceptable. The ExA concludes that the matters raised should not, in themselves, preclude the exercise of the relevant CA powers, should the SoS decide to grant development consent for the Proposed Development.

Ms Dyball, Ms Hall and SR Whitwell & Co

- 8.11.44. There have been a number of oral and written submissions made by these Objectors, and on their behalf by Sally Watts at various points during the Examination including their written submissions of oral case at DL2 and DL7 [REP2-425 and REP7-215]. Those matters which relate to generic objections have been considered in the relevant sections of Chapter 5 of this Report where the ExA considers it important and relevant to do so, and those which relate to Habitats Regulations Assessment (HRA) matters in Chapter 6 of this Report.
- 8.11.45. The Objectors are the owners and farmers of some meadows near the village of Pakenham which is just over six miles north of Bury St Edmunds, West Suffolk and some 45 miles distance from the Proposed Development which is on the East Suffolk Coast. An area of 17 ha (41.62ac) of their land at Pakenham has been identified by the Applicant as compensatory mitigation land. This land along with some neighbouring land at Pakenham, and three other sites in Suffolk Coastal, has been

collectively identified as land upon which it is proposed to re-create fen meadow to compensate for the loss of 0.7ha of coastal fenland from the Sizewell Marshes SSSI. They seek consideration of the following five points:

- the distance of this mitigation land from the MDS;
- the amount of mitigation land required;
- the poor consultation, information and engagement time given to her clients to date by the Applicant;
- the cost benefits and feasibility of re-creating fen meadow in West Suffolk, and alternatives should be considered; and
- the impact that this proposed CA would have on her clients' livelihood and also on neighbouring land users.

8.11.46. Further details in support of each point are set out in their written submissions [REP2-425]. At the CAH, oral submissions were also made on their behalf [REP7-215]. They submit that there is no compelling case to state that this land is absolutely necessary to deliver the Proposed Development, and it could quite easily be delivered with a tiny bit less mitigation land.

The Applicant's response

8.11.47. At the CAH Part 2 [REP7-065], in response to the Objectors' questions about why the land is required for mitigation, the Applicant explained that the site is needed in order to meet the impacts of the Proposed Development in response to Natural England's (NE) advice as to the quantum of replacement habitat that ought to be provided. The SoS is not obliged to accept NE's position, but the Applicant is acting prudently by seeking to ensure that the necessary habitat can be delivered if the SoS does agree with NE's approach. The Applicant submits that its approach is reasonable and proportionate.

8.11.48. At the CAH Part 1 [REP7-064], the Applicant stated that the details requested by the ExA in relation to the proposed Fen Meadow at Pakenham were set out in the Fen Meadow Plan [REP6-026]. The Fen Meadow Plan confirms that based on detailed studies, conditions could be created for the establishment of 4.73 ha of fen meadow habitat, and 1.76 ha of wet woodland at the Pakenham site.

8.11.49. The Applicant's updated proposals still embrace all three proposed fen meadow sites including Pakenham. In terms of the size of the area over which CA powers are sought, the Applicant has sought to reduce the area significantly as a result of further engagement with landowners and due to the results of hydrological studies. The Applicant's proposed reduction in the boundaries would reduce the impact on landowners without compromising the ability to deliver the quantum of habitat that needs to be delivered at the site. At the CAH, the Applicant indicated that it would provide further written details of the revised proposals at the Pakenham site where the proposed revised site extent has been reduced.

8.11.50. The Applicant's Written Submissions Responding to Actions Arising from CAH 1 Part 1 [REP7-066] Appendix A further explains the proposed

removal of land from the Order Limits including in relation to the Pakenham site. Appendix E includes the Applicant's rationale for the multiplier used to arrive at the land requirements for the fen meadow mitigation.

- 8.11.51. NE has confirmed [REP2-153] that it considers the quantum proposed, based on the 9x multiplier, to be sufficient. The Applicant is proposing to acquire a greater extent of land than the 4.14ha to ensure that the required habitat quantum of 4.14ha could be delivered. Pakenham was initially not included because an additional site had not been considered necessary (before the larger multiplier was established), and because it was thought to be more challenging in terms of hydrology than the selected sites. However, further investigations set out in the Fen Meadow Plan [REP6-026] show that those challenges are not insurmountable.
- 8.11.52. In relation to the consideration of alternatives, the Applicant has explained in some detail in writing why it selected the site and the process followed to narrow down areas within the site which are proposed to be acquired [REP4-007] [APP-258]. At the CAH Part 1, in response to the ExA's specific query regarding the consideration of alternatives to Pakenham, the Applicant confirmed that the Wood site selection reports (Wood, 2018 [REP4-007] and Wood, 2019 [APP-258]) address the evaluation of alternative sites.
- 8.11.53. In response to points raised on behalf of the Objectors concerning the consideration of alternative sites on a wider geographical basis, the Applicant identified two separate issues regarding consideration of alternative sites: firstly, consideration of specific sites on which the Applicant could recreate the habitat itself under the terms of the DCO (undertaken by means of a site selection process), and secondly, the issue of the contingency provision set out in the Draft DoO [REP5-082] which provides funds for habitats on other sites in East Anglia, if the habitat establishment works were not successful
- 8.11.54. On the second point, the Applicant has proposed a contingency position within the Fen Meadow Strategy [AS-209], secured by Requirement 14A, if the requisite quantum is not delivered, but that is a last resort and the Applicant is confident that fen meadow would be successfully established, particularly given the suitability of the sites, which have been carefully selected. The Applicant's position is that it is preferable and feasible to deliver the fen meadow habitat on land proposed in the application.
- 8.11.55. As regards the extent of the land-take, the Applicant's letter of 24 September 2021 [REP8-001], amongst other things, outlines the finalised reductions to the Order Limits at the three fen meadow sites including Pakenham. Appendix A to the Written Submissions arising from CAH 1 Part 1, [REP7-066], identified indicatively the land proposed to be removed from the Order Limits and explains why this land should be removed. The required reductions to the Order Limits have since been finalised. The plots being removed in whole or in part from the Order limits are identified in the tables at Appendix B of the Applicant's letter [REP8-001]. Appendix B Table 1.1 identifies the plots to be removed

from the Order Limits, and Table 1.2 sets out the plots in relation to which the area over which rights are sought is to be reduced, including the extent of and reason for the reduction. For the Pakenham Fen Meadow site the plots to be reduced include FM/28/01 within the ownership of the Objectors where there is a reduction from 168404.49 to 43581.75 sqm (reduction of 124822.74 sqm).

- 8.11.56. These reductions have arisen as a result of further studies making it possible for the Applicant to identify the required land with greater certainty. The quantum of fen meadow habitat remains unchanged. The Applicant submits that the reductions to the Order Limits demonstrate its commitment to minimise land take where feasible.
- 8.11.57. At the CAH Part 2 [REP7-065], the Applicant responded to questions of engagement with the Objectors, and indicated that it has been engaging with them since September 2020. The Applicant confirmed that it would work with them to see how to mitigate any impacts. However, it is not considered that any further engagement or consultation is required in respect of the reductions to the Order Limits [REP8-001].

The ExA's considerations

- 8.11.58. The ExA has considered the Applicant's proposals for the re-creation of fen meadow in detail in section 5.8 of Chapter 5 of this Report. We conclude that the proposed mitigation would be acceptable; that the immediate loss of fen meadow is acceptable and that there is the possibility that more than the NE multiplier of Fen Meadow would be re-created. In relation to the CA aspects of the need for this land to be acquired, we are satisfied that it is necessary and reasonable for such powers to be sought in order to meet the impacts of the Proposed Development and hence facilitate it.
- 8.11.59. As regards the extent of the land sought, the Applicant's letter of 24 September 2021 [REP8-001], amongst other things, outlines the finalised reductions to the Order Limits at the three fen meadow sites including Pakenham. The relevant plots are identified in Appendix B of the Applicant's letter of 24 September 2021 which also provides reasons for the removal or reduction of the relevant plots.
- 8.11.60. The ExA notes that the reductions in proposed land-take at the fen meadow sites have arisen as a result of further studies making it possible to identify the required land with greater certainty, and that the extent of the area for fen meadow habitat remains unchanged. The ExA observes that all of the Order Limits reductions were discussed with, and welcomed by, the owners of the relevant land. These changes to the Order Limits have been accepted by the ExA for the reasons set out in our Procedural Decision [PD-056]. The ExA is also content with the Applicant's explanation of the likelihood of achieving the successful creation of fen meadow on this particular site, and the operation of the 9x multiplier in the light of NE's confirmation that it considers the quantum proposed based on that multiplier to be sufficient.

- 8.11.61. Against that background, the ExA considers that the Applicant has provided a reasonable explanation of the need for and the extent of the land within the scope of the CA powers sought. We are satisfied that the land to be acquired is no more than is reasonably required for the purposes of the Proposed Development.
- 8.11.62. In relation to the consideration of alternatives, the ExA has given detailed consideration to the site selection process for the fen meadow land in section 5.4 of Chapter 5 of this Report. We conclude that for the purposes of the EIA Regulations, and the required consideration of alternatives, Regulation 14 has been complied with by the Applicant, and the ES approach is reasonable and proportionate in that respect. In addition, we do not consider that there are any other common law or policy requirements which demand further consideration of alternatives to the proposed site at Pakenham.
- 8.11.63. Nevertheless, the CA Guidance, paragraph 8, states that applicants should be able to demonstrate to the satisfaction of the Secretary of State that all reasonable alternatives to compulsory acquisition (including modifications to the scheme) have been explored. The Applicant has explained why it selected the site, and the process followed to narrow down areas within the site which are proposed to be acquired [REP4-007], [APP-258]. In the light of the Applicant's assessment of alternatives, we do not find that the distance of this proposed mitigation land at Pakenham from the MDS to be unreasonable and does not, in itself, preclude it from being used for this purpose.
- 8.11.64. The Applicant has also outlined the engagement which has taken place with the Objectors' and their agent. This was provided orally at the CAH Part 2 [REP7-065], and in the Statement of Reasons Appendix B - Status of Negotiations with Owners of the Order Land [REP10-017]. The reductions in Order Limits for the Pakenham site represents a positive response to engagement with the owners and occupiers of the land which has resulted in a modification of the scheme that responds to their concerns. We do not find the Objectors' criticism of the level of engagement on the part of the Applicant to be justified. The ExA concludes that all reasonable alternatives to CA for this land have been explored.
- 8.11.65. The ExA is satisfied that the CA of the relevant interests in the Objectors' land would be necessary in order to implement the Proposed Development and that it would be reasonable and proportionate to do so, notwithstanding the personal impact upon the Objectors. We consider the Applicant's approach in relation to the CA powers sought to be acceptable. The ExA does not find that the matters raised should, in themselves, preclude the exercise of the CA powers sought, should the Secretary of State decide to grant development consent for the Proposed Development.

Owen Mark Woolnough

- 8.11.66. The RR of this Objector [RR-0921] complain of a lack of meaningful engagement and understanding of landowners' concerns on the part of

the Applicant. He also questions whether alternative options have been adequately considered. Other matters raised include the provision made for severed land, environmental impact of the project and funding.

The Applicant's response

- 8.11.67. The Applicant has explained that this land at Halesworth is also needed for the creation of fen meadow in addition to the Pakenham and Benhall sites. As regards the extent of the land sought, the Applicant's letter of 24 September 2021 [REP8-001], outlines the finalised reduction to the Order Limits at this site. The relevant plots are identified in Appendix B of the Applicant's letter of 24 September 2021 which also provides reasons for the removal or reduction of the relevant plots. The Applicant explains that the reductions at the fen meadow sites have arisen as a result of further studies making it possible for it to identify the required land with greater certainty. The extent of the area for fen meadow habitat remains unchanged. The Applicant submits that the reductions to the Order Limits demonstrate its commitment to minimise land take where feasible. For Plot FM/12/01 there would be a reduction of 11689.58 sqm and for Plot FM/12/03 a reduction of 88.03 sqm. All of the Order Limits reductions have been discussed with, and are welcomed by, the owners of the land to be removed.
- 8.11.68. The Applicant has also outlined the engagement which has taken place with the Objector in the Statement of Reasons Appendix B - Status of Negotiations with Owners of the Order Land [REP10-017]. The current position recorded for this Objector at the close of the Examination is that the Heads of Terms were progressing positively with agreement expected following close of the Examination. The Applicant has submitted information in relation to its consideration of other alternatives and funding as set out above in its general case for the grant of CA powers.

The ExA's considerations

- 8.11.69. As indicated above, the ExA has considered the Applicant's proposals for the re-creation of fen meadow in detail in section 5.8 of Chapter 5 of this Report. In relation to the CA aspects of the need for this land to be acquired, we are satisfied that it is necessary and reasonable for such powers to be sought in order to meet the impacts of the Proposed Development and hence facilitate it.
- 8.11.70. The Applicant's letter of 24 September 2021 [REP8-001], amongst other things, outlines the finalised reductions to the Order Limits at the Halesworth fen meadow sites and Appendix B to that letter details the reductions in the land take for this Objector's land. These changes to the Order Land limits at Halesworth have been accepted by the ExA for the reasons set out in our Procedural Decision [PD-056]. The reductions in Order Limits for the land at Halesworth represents a positive response to engagement with the owner of the land. Given that outcome and the summary of engagement with this landowner set out in Statement of Reasons Appendix B - Status of Negotiations with Owners of the Order Land [REP10-017] we do not find his criticism of the level of engagement

on the part of the Applicant can be maintained. The ExA concludes that all reasonable alternatives to CA for this land have been explored.

- 8.11.71. The ExA has considered those issues which raise important and relevant matters relating to the environmental impacts of the Proposed Development including land severance under the various generic sections of Chapter 5 of this Report. We consider the broader question of funding when we assess the Applicant's case for CA later on in this Chapter. The ExA is satisfied that the CA of the relevant interests in the Objector's land would be necessary in order to implement the Proposed Development and that it would be reasonable and proportionate to do so. We consider the Applicant's approach in relation to the CA powers sought in respect of this land to be acceptable. The ExA does not find that the matters raised should, in themselves, preclude the exercise of the CA powers sought, should the Secretary of State decide to grant development consent for the Proposed Development.

India Bacon

- 8.11.72. There have been a number of oral and written submissions made by and on behalf of this Objector including [REP5-249], [REP7-216] and [REP7-217]. At the CAH Part 2 oral representations were made on behalf of N J Bacon Farms and Ward Farming Limited objecting to the CA of land at Grange Farm, Westleton. They confirmed that there was no formal objection to the CA of any of their other land relating to the SLR and they have negotiated terms with the Applicant in relation to the CA of that land on a voluntary basis by way of the option mechanism. However, formal objection is raised to the CA of land at Grange Farm, Westleton to provide a marsh harrier habitat improvement area.
- 8.11.73. The landowners have put forward an alternative site at Theberton which they consider to be more suitable. Their ecologist has produced a comparison between the Westleton and Theberton sites based on various applicable criteria [REP7-171]. They submit that there is a precedent for a decision selecting and securing land for HRA compensatory actions coming after a DCO Examination has closed and draw attention to the SoS's decision in Hornsea Project Three DCO consent. They contend that the Applicant's concerns about any delays brought about by consideration of the Theberton alternative would not be fatal to the process of the SoS coming to a decision on the dDCO.
- 8.11.74. Their position is that the CA of the land at Westleton would be neither reasonable nor proportionate in relation to securing the necessary rights. They submit that the justification of permanent CA in order to provide the landowner with certainty is not applicable as they do not wish to have the land acquired on a permanent basis. They indicate that the Applicant's preferred option is to acquire a lease and negotiations have commenced accordingly. Given the length of the temporary use envisaged for the marsh harrier habitat improvement area which is for the duration of the construction works of about 12 years, they consider that CA of the land would be unreasonable.

The Applicant's response

- 8.11.75. The Applicant's response is set out in Written Summaries of Oral Submissions made at CAH1 Part 2 [REP7-065]. The Westleton Site has been identified as being potentially required in relation to Marsh Harrier Compensatory Habitat Area (MHCHA). The Westleton land is included in the application as a contingency position, if the SoS determines that the on-site provision on the EDF Energy estate (at Upper Abbey Farm) is insufficient. The Applicant's primary case is that the Westleton land is not required, but if it were required by the SoS, then the Applicant's position is that there is a compelling reason for the CA of the Westleton land.
- 8.11.76. Although the MHCHA is referred to as temporary development in paragraph 4.2.6 of the SoR [APP-062], this land is shown correctly on land plans as being for permanent CA. The reason for this is the duration of the temporary use which would be for the lengthy construction period. It is considered more appropriate and proportionate to provide certainty by taking a permanent rather than a temporary interest. Where there is TP of land for a long period of time, there is uncertainty as to period of occupation and quantum of payment. The Applicant is in negotiations with the owner of the Westleton Site for acquisition of the rights by agreement. If that is agreed, this would be preferred over CA. Therefore, the Applicant submits that there is no discrepancy between the nature of the use and the form of the acquisition.
- 8.11.77. The Applicant confirmed that this approach is consistent with the approach taken for other works and gave the example of temporary rail works where the acquisition was proposed to be freehold. A summary identifying other plots which are similarly treated is contained in the Applicant's Written Submissions Responding to Actions Arising from CAH1 Part 2 [REP7-067]. However, the Applicant indicates that consideration would be given to the nature of the acquisition of the Westleton site, having heard the landowner's preference for a long period of TP of the site. The Applicant has provided a post-hearing note in relation to the MHCHA and the associated CA implications [AS-408].
- 8.11.78. As regards the alternative site at Theberton put forward by the landowners, the Applicant points out that this alternative suggestion has only been suggested by them very recently. The Applicant referred to the relevant legal principles for the consideration of alternative sites, and the NPS EN-1 paragraph 4.4.3 principles that should guide decision-making where there is a policy or legal requirement to consider alternatives. Where an alternative is put forward by a third party, the onus may be placed on the person proposing the alternative to provide evidence of its suitability as such. These principles are relevant in terms of the timing of the Objector's suggestion of this possible alternative.
- 8.11.79. At the CAH Part 2, the Applicant summarised the legal principles involved and noted the need to have regard to all elements of public interest engaged, including delay [REP7-067]. The Applicant also addressed the relevant policy and guidance, including the CA guidance, paragraph 15, and EN-1 paragraph 4.4.3. When considering the alternative recently identified by the Objector here, and its relative merits, it is necessary to consider whether the adoption of the alternative would have implications

for the timing and certainty of the delivery of the new nuclear power station which was a very important public interest objective.

- 8.11.80. Finally, alternatives should wherever possible be identified before an application is made to allow for appropriate consultation and the development of a suitable evidence base in relation to any alternatives which are particularly relevant. Therefore, where an alternative is put forward by a third party, the onus may be placed on the person proposing the alternative to provide evidence of its suitability as such. This principle is also relevant in terms of the timing of the Objector's suggestion of this possible alternative. The practical implications associated with late identification of an alternative are important, going to the likely delay and uncertainty that would be associated with its adoption.
- 8.11.81. As to the factual context, the land at Westleton is put forward on the basis that it is needed to satisfy the requirements of the Habitats Regulations. Those Regulations set a stringent test, and confidence is required for the suitability and delivery of any compensatory habitat. Any application to the SoS to change the scheme so as to provide compensatory habitat on a new site, rather than using the Westleton site, would require an update to the EIA, the HRA, further consultation and engagement with IPs. Careful consideration would need to be given as to whether that is all that likely to be achievable without giving rise to significant delay.
- 8.11.82. In principle it could be that an alternative site is superior in a number of relevant respects, but that this may not be sufficient to justify refusing to grant powers of CA of the subject land if in fact, it would give rise to significant delay, a matter of public interest importance in this case.
- 8.11.83. In response to the question of why the Applicant has not mentioned the taking of a lease instead of CA, this was because the acquisition of a leasehold was not possible by means of CA. It is possible to take a TP of land, to acquire rights over land or to acquire the freehold, but it is not possible to acquire a lease. This is why the option of acquiring a lease by way of CA has not been referred to. The Applicant concludes that the CA powers sought are necessary for the achievement of its reasonable objectives.

The ExA's considerations

- 8.11.84. The ExA has considered the need for the Westleton Site to provide MHCHA for the duration of the construction works in the HRA Chapter 6 of this Report. The ExA concludes that the MHCHA at Abbey Farm would be adequate in extent, feasible and appropriate to ensure the integrity of the National Site Network is maintained for marsh harrier of the Minsmere-Walberswick SPA and Ramsar. The provision of additional dry habitat for foraging marsh harrier on land at Westleton is not necessary to ensure the network of European sites is maintained for marsh harrier. The ExA's position is therefore that since it is not necessary to acquire this land to facilitate the Proposed Development a case for the CA of this land cannot be made under s122 PA2008 and we recommend that the

SoS removes the relevant provisions relating to Work No 8 from any Order made. The Recommended DCO (rDCO) reflects that position.

- 8.11.85. However, should the SoS disagree, and determine that additional compensatory habitat is required, then the land at Westleton could be utilised to perform that function. In those circumstances, all reasonable alternatives to the CA of the land would also need to be considered in accordance with the CA guidance.
- 8.11.86. The Applicant has explained the reasons why permanent CA of the land is sought even though the need is only for the temporary duration of the construction period. The Objector has expressed a preference for TP only of the land to be taken, as opposed to it being the subject of CA powers. Whilst the ExA appreciates the advantages of such an approach for many APs to avoid the uncertainty that might otherwise result from the taking of a lengthy temporary interest, the Objector in this case has expressed a strong preference for the lesser TP powers to be utilised. Given that stance, the ExA considers that it would be unreasonable for CA powers to be exercised and more appropriate and proportionate for TP of the land to be taken. The relevant provisions of any Order made should be amended to reflect that.
- 8.11.87. The Applicant has also explained why it cannot acquire a lease instead of permanent acquisition by means of CA, although that is, of course, a matter that might be voluntarily explored and agreed between the parties outside the Examination.
- 8.11.88. As regards the alternative site at Theberton which was put forward during the Examination on behalf of the Objector, the ExA has given consideration to this in the alternatives section 5.4 of this Report. We highlight that due to the timing of the suggested alternative site at Theberton, this prospect was not able to be explored in the necessary detail before the close of the Examination. We note that compliance with the Habitats Regulations would require a number of steps to be taken including further consultation and engagement with IPs and APs. The SoS would need to consider the alternative site in the light of the relevant legal principles, policy and guidance including whether it was likely to be achievable without giving rise to significant delay and the implications of that for the public interest.

STATUTORY UNDERTAKERS' LAND

Sections 127 and 138 PA2008

- 8.11.89. S127(2) provides that a DCO may include provisions authorising the CA of Statutory Undertakers' land only to the extent that the SoS is satisfied of the matters set out in subsection (3). The matters set out in subsection (3) are that the nature and situation of the land are such that:
- it can be purchased and not replaced without serious detriment to the carrying on of the undertaking;

- or if purchased it can be replaced by other land belonging to, or available for acquisition by, the undertakers without serious detriment to the carrying on of the undertaking.

8.11.90. S127(5) provides that a DCO may include provisions authorising the CA of a right over Statutory Undertakers' land by the creation of a new right over land only to the extent that the SoS is satisfied of the matters set out in subsection (6). The matters set out in subsection (6) are that the nature and situation of the land are such that:

- the right can be purchased without serious detriment to the carrying on of the undertaking;
- or any detriment to the carrying on of the undertaking, in consequence of the acquisition of the rights, can be made good by the undertakers by the use of other land belonging to or available for acquisition by them.

8.11.91. S138(4) provides that a DCO may include provision for the extinguishment of the relevant right, or the removal of the relevant apparatus, only if the SoS is satisfied that the extinguishment, or removal, is necessary for the purpose of carrying out the development to which the order relates.

8.11.92. The SoR, section 4.9, [APP-062] confirms that the Applicant has identified SUs which have an interest in land required for the proposals or have, or may have, a right to keep equipment (in connection with their undertaking) on, in or over the land required for the proposals. The Applicant indicates that adequate protection for the statutory undertakers will be included within protective provisions in the dDCO. It therefore considers that the SUs will not suffer serious detriment to the carrying on of the undertaking as a result of the CA of land or rights over land or powers of TP. The Applicant's Statement of Reasons Appendix C - Status of Negotiations with Statutory Undertakers [REP10-018] identifies the relevant plots and their location. It includes the latest position on negotiations with SUs, and in those instances where agreement has not been reached, an indication as to why it considers that the conditions in s127 and s138 PA2008 would be satisfied.

8.11.93. At CAH Part 1 [REP7-064], the Applicant explained that its approach has been to work with SUs to reduce the extent to which there would be any impact on their apparatus and the carrying on of their undertakings. In response to ExQ2 CA.2.21 [REP7-052] the Applicant provided an updated table identifying the relevant SUs whose apparatus may need to be removed or rights extinguished in order to facilitate the delivery of the project. In response to CA.2.22 [REP7-052], the Applicant also provided specific details in relation to those SUs and plots where formal agreement had not been reached including why it nevertheless considered that compliance with the statutory provisions could be achieved. All interactions with relevant SUs would be regulated through appropriate protective provisions which would ensure appropriate protection of apparatus.

- 8.11.94. Where bespoke provisions have not been agreed, the Applicant's position is that the SoS would still be able to conclude that the s127 and s138 PA2008 tests are met, in particular in relation to serious detriment, because no SU is submitting that protective provisions are in principle incapable of adequately protecting its interest. Furthermore, the protective provisions as set out in Parts 1 and 2 of Schedule 19 of the final DCO [REP10-009] would ensure that no serious detriment could be caused to the carrying on of the undertaking as a consequence of the acquisition of any right over land which they own or have an interest in. The Applicant is seeking to apply s127 and s138 to extinguish rights or remove apparatus only where it is deemed absolutely necessary.
- 8.11.95. The ExA has considered all representations associated with s127 PA2008. No SUs made representations about the CA of land or a right over land which has been acquired for the purpose of its undertaking which were not subsequently withdrawn during the Examination. Further details in relation to those instances where protective provisions had not been formally agreed by SUs at the close of the Examination are set out below. Nevertheless, the ExA considers that adequate protection for SUs' assets is included in the Protective Provisions in Schedule 19 Parts 1 to 11 to the dDCO [REP10-009]. It concludes that the proposed Protective Provisions are appropriate to protect the relevant interests of SUs and that the SoS can be satisfied that the prescribed tests set out in s127 PA2008 are met.
- 8.11.96. In relation to s138 of the PA2008, the ExA is satisfied that, throughout its scope, the extinguishment and the removal or relocation of apparatus under the rDCO would be necessary for the purpose of carrying out the Proposed Development. In the context of s127 and s138 PA2008, the ExA cannot see anything in the Examination representations that should prevent the grant of the CA powers sought.

CROWN LAND

Section 135 PA2008 – CA of an interest in Crown Land

- 8.11.97. The extent and location of the affected land owned by the Crown Estate is identified in the final BoR, Part 4 [DL10-019] and associated Crown Land Plans [REP8-004]. Although the BoR excludes those interests held in the right of the Crown, the dDCO [REP10-009] includes provision for the CA of those land interests in Crown Land which are not held by the Crown. The relevant dDCO provision relating to Crown Rights is Article 85 which provides for written consent in relation to such land to be obtained from the Crown Estate Commissioners, the government department having the management of that land or the government department to which it belongs as appropriate.
- 8.11.98. The Order land includes Crown land at the MDS [REP10-019, section 3.5]. The Crown Estate Commissioners have given their consent to the CA of the third party interests in Plot MDS/06/02 on the seabed under s135(1) PA2008 [REP10-404]. The drafting of the final dDCO Article 85 reflects that sought by the Crown Estate Commissioners in their letter confirming that agreement had been reached in relation to Plot

MDS/06/02 for the purposes of section 135 PA2008 [REP10-404]. As a result of this consent, the ExA cannot see anything to prevent the CA of the interests sought in respect of this plot. This is the only plot of Crown land involved needing the Crown Estate Commissioners approval.

- 8.11.99. The SoS for BEIS is the owner of other Crown interests that would be affected by the dDCO at the MDS. The consent of the SoS, being the appropriate Crown authority in relation to this Crown land, has not been submitted during the Examination. This consent is therefore required to authorise the CA of these land interests before the Order can be made, as a separate matter to the SoS BEIS decision on the Order.

PROTECTIVE PROVISIONS

- 8.11.100. The Protective Provisions within the rDCO have been agreed with all SUs identified by the Applicant under s127 and s138 PA2008 with the exception of CityFibre, Galloper Offshore Windfarm Limited, Greater Gabbard, GTC Pipelines Limited (GTC), GTT, Highways England (now National Highways), SCC Highways, UK Power Networks Ltd (UKPN) and Vodafone [REP10-018].
- 8.11.101. National Highways and SCC Highways have apparatus within the Order Limits. The carrying out of works in the highway would be regulated by the New Road and Street Works Act 1991 in accordance with Part 3 of the rDCO. An update on the Applicant's discussions with SCC regarding protective provisions is provided in the Applicant's Written Submissions Responding to Actions Arising from CAH Part 1 [REP7-066]. This also explains the Applicant's position that there is no need for protective provisions relating to highways in addition to the provision for agreements set out in Article 21 of the dDCO. At the end of the Examination, the agreed SoCG did not identify any outstanding matters relating to Protective Provisions or indeed any other outstanding matters in respect of National Highways [REP10-095] and that the dDCO was agreed with SCC [REP10-102].
- 8.11.102. CityFibre, GTC and GTT have apparatus within the Order Limits. They have provided asset information to the Applicant but have not responded with regards to the Protective Provisions. The Applicant advises that the Proposed Development is not deemed to impact GTC's or GTT's apparatus.
- 8.11.103. Galloper Offshore Windfarm Limited, Greater Gabbard, UKPN and Vodafone have apparatus within the Order Limits. The Applicant advises that: Diamond Transmission, the Galloper Windfarm operators; Equitix, Greater Gabbard's asset operator; UKPN; and Vodafone agree in principle to the Protective Provisions, but this has not been confirmed in writing by the bodies involved. Equitix have apparatus which would need to be protected.
- 8.11.104. At the end of the Examination, there are no identified outstanding concerns relating to Protective Provisions. From all of the above, and in the context of s127 and s138 of the PA2008 and the extent and nature of

the Protective Provisions within the rDCO, the ExA cannot see anything relating to Protective Provisions that would prevent the grant of the CA powers sought.

OTHER CONSENTS AND AGREEMENTS

8.11.105. The application documentation identifies the consents that have been, or must be, obtained for the Proposed Development, in addition to development consent under PA2008 [APP-153]. The Applicant has reported on the latest position at the end of the Examination [REP10-023], and the outstanding consents include:

- Consent under the Building Regulations 2010 from ESC in respect of buildings and structures to be sought prior to and during construction.
- Relevant Protected Species Licences from NE under the Wildlife and Countryside Act 1981 to be sought prior to construction.
- Consent under the Wildlife and Countryside Act 1981 from NE for works in a Site of Special Interest (SSSI) to be sought prior to construction.
- Operational Water Discharge Activity (WDA) Permit under the Environmental Permitting (England and Wales) Regulations 2016 (EP Regulations) from the EA for discharge to the sea.
- Construction WDA Permit under the EP Regulations from the EA for surface and waste water to be sought prior to relevant activities.
- Licences under the Water Resources Act 1991 from the EA for water abstraction, impoundment or transfer to be sought prior to relevant activities.
- Flood Risk Activity Environmental Permits under the EP Regulations from the EA for works on or near a main river, in a flood plain or on or near a flood or sea defence to be sought prior to relevant activities.
- Land Drainage Consents from the ESIDB or SCC under the Land Drainage Act 1991 for water discharge together with works to all ordinary watercourses, within 9m of the Sizewell Drain and The Canal to be sought prior to relevant activities.
- Consent under the Salmon and Freshwater Fisheries Act (1975) from the EA for fish passes to be sought prior to relevant activities.
- Operational Combustion Activity Permit under the EP Regulations from the EA for emissions to air which is currently the subject of a live application.
- Construction Combustion Activity Permit under the EP Regulations from the EA for combustion plant to be sought prior to relevant activities.
- Greenhouse Gas Emissions Permits under the Greenhouse Gas Emissions Trading Scheme Regulations 2012 from the EA for construction, commissioning and operational plant to be sought prior to relevant activities.
- Waste Permits and Exemptions under the EP Regulations from the EA for waste operations and plant to be sought prior to relevant activities.
- Waste Permits under the EP Regulations from ESC for emissions to air to be sought prior to relevant activities.

- Hazardous Substances Consent under the Planning (Hazardous Substances) Act 1990 from ESC for the holding of substances to be sought prior to construction.
- Control of Major Accident Hazards (COMAH) compliance under the 2015 Regulations for the Office of Nuclear Regulation (ONR), the Health and Safety Executive and the EA for the storage of dangerous substances with notification prior to construction.
- Radioactive Substances Regulation Environmental Permit under the EP Regulations from the EA for radioactive waste which is currently the subject of a live application.
- Funded Decommissioning Programme under the Energy Act 2008 from the SoS for BEIS which is currently the subject of discussions.
- Nuclear Site Licence under the Nuclear Installations Act 1965 from the ONR for nuclear safety which is currently the subject of a live application.
- Noise Prior Consents under the Control of Pollution Act 1974 from ESC for the control of construction noise and vibration to be sought prior to relevant activities.
- Movement Orders under the Road Vehicles (Authorisation of Special Types) (General) Order 2003 and the Road Traffic Act 1988 from SCC or National Highways (NH) for abnormal indivisible loads to be sought prior to relevant activities.
- Temporary Access Licences under the Highways Act 1980 from SCC to be sought prior to relevant activities.
- Section 50 Street Works Licences under the New Roads and Street Works Act 1991 from SCC for excavation to be sought prior to relevant activities.
- Temporary Signals and Traffic Management consent under the Highways Act 1980 and the Road Traffic Regulation Act 1984 from SCC for highway works to be sought prior to relevant activities.

8.11.106. Under paragraph 19 of the CA Guidance, the Applicant needs to demonstrate that any potential risks or impediments to implementation have been properly managed and that any legal matters, including the need for any operational or other consents, have been taken into account. Considering the bodies involved in the above outstanding consents, the Applicant has completed a SoCG with ESC and SCC [REP10-102] which includes agreed air quality mitigation and an operational noise summary [REP10-101]. It has also entered into a DoO with ESC and SCC [REP10-075] including noise, vibration, air quality, drainage and highways matters. This would provide secure contractual mitigation [REP10-086]. SCC has outstanding matters not agreed which include matters relating to highways, drainage, the outage car park at Goose Hill and the SSSI crossing design. The ExA's response to these matters is set out in the relevant sections of Chapter 5 of this Report.

8.11.107. The parties consider that the outstanding marine and coastal matters could be resolved through the approval and implementation of the Coastal Processes Monitoring and Mitigation Plan (CPMMP) under the rDCO.

- 8.11.108. The Applicant has completed a SoCG with NE [REP10-097]. NE would also have a role in matters regulated by the DoO including European Sites mitigation measures and fen meadow habitats. The Applicant provided all draft Relevant Protected Species Licences to NE during the Examination. The timing of this submission however was such that NE advised that it could only aim to complete its review of the draft licences, and thereby all outstanding protected species issues, by 11 November 2021 [REP10-201 and REP10-634]. The review could therefore not be taken into account as part of this Examination.
- 8.11.109. NE's position at the end of the Examination is that it is not yet possible to ascertain that the Proposed Development would not have adverse effects on European and/ or nationally protected species and therefore letters of no impediment (LONIs) cannot currently be provided. NE also have outstanding concerns relevant to licensing and consents including: impacts on designated sites including Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and SSSIs; specific impacts on the Minsmere to Walberswick SAC and SPA together with the associated Ramsar site and SSSI; specific impacts on the Sizewell Marshes SSSI including the crossing design; impacts on the Southern North Sea SAC; and integral and inextricably linked elements of the Proposed Development where impact assessments would be 'pushed down the line' into other consenting regimes.
- 8.11.110. The Applicant has completed a SoCG with the EA [REP10-094]. The EA would have a role in matters regulated by the DoO including Eel and Migratory Fish Mitigation Measures and a Fish Contingency Fund. The EA also has a Deed of Covenant with the Applicant relating to eel and migratory fish pass funding [REP10-088 and REP10-193]. On matters identified and relating to permits, consents and licenses, the parties consider that no further work is necessary for the Examination. The EA however has some outstanding concerns relevant to licensing and consents including:
- Further sea defence modelling, although the CPMMP approach for further work is considered to be in line with best practice for addressing uncertainty; and
 - Fish monitoring methods and data, particularly relevant for the Operational WDA Permit [REP7-131].
- 8.11.111. The Applicant has completed a SoCG with the ESIDB [REP10-093]. The matters not agreed in the SoCG relate to detailed drainage design and the ESIDB's requests for their requirements to be referenced in the Schedule of Other Consents. These amendments have now been made. The ESIDB also raised strategic concerns in respect of water discharge from the campus but added that this discharge was not unacceptable in theory [REP10-184].
- 8.11.112. The ONR is satisfied with the progress made towards the target of completing its licensing assessment by mid-2022 [REP7-150, R.2.0]. However, in section 5.11 of Chapter 5 and in Chapter 7 of this Report we note that although the power station could be built, ONR has confirmed that it could not be licensed and could not operate without a secure and

permanent water supply. That represents a potential impediment to the scheme in the event that the water supply issue is not satisfactorily resolved.

- 8.11.113. The Applicant has completed a SoCG with NH [REP10-095] in which all matters are agreed. In terms of the Health and Safety Executive, their role in COMAH compliance lies alongside that of the ONR and EA. The ExA therefore considers that any potential difficulties with compliance which are apparent at this stage would have been identified and the subject of comment.
- 8.11.114. In relation to the outstanding consents, the ExA has considered the available information. It finds that the Applicant has not properly managed the need for consents from NE in terms of the timing of submission of draft Protected Species Licences for the Proposed Development. In this regard, the Applicant has not complied with the CA Guidance.
- 8.11.115. In respect of the other consents and licences identified by the Applicant, the ExA finds that the Applicant has demonstrated that, notwithstanding the outstanding matters identified, potential risks or impediments to implementation have been properly managed and that the need for operational or other consents has been taken into account. The ExA also considers, in terms of EN-1 paragraph 4.10.8, that there is no good reason to believe that these other operational pollution control permits or licences would not subsequently be granted. This finding is given without prejudice to the exercise of discretion by future decision-makers in relation to these outstanding consents. In view of the above and before the making of any Order, the SoS may wish to seek LONIs from NE together with confirmation that the extent of any such letters is considered to be sufficient for the purposes of the matters considered during the Examination.

THE EXA'S CONSIDERATION OF THE APPLICANT'S GENERAL CASE FOR THE GRANT OF CA AND TP POWERS

- 8.11.116. The ExA's approach to the question whether and what CA powers it should recommend to the SoS to grant has been to seek to apply the relevant sections of the PA2008, notably s122 and s123, the Human Rights Act 1998 and the Equality Act 2010; and, in the light of the representations received and the evidence submitted, to consider whether a compelling case has been made in the public interest, balancing the public interest against private loss.
- 8.11.117. A number of general considerations also have to be addressed in the light of the CA Guidance, namely, whether all reasonable alternatives to CA have been explored; the Applicant must have a clear idea how it intends to use the land and to demonstrate funds are available and the Applicant must demonstrate that the proposed interference with the rights of those with an interest in land is for a legitimate purpose and that it is necessary and proportionate.

- 8.11.118. The Final dDCO [REP10-009] deals with both the development, itself, and CA powers. The case for CA powers cannot properly be considered unless and until the ExA has formed a view on the case for the development overall, and the consideration of the CA issues must be consistent with that view.
- 8.11.119. The ExA has shown in Chapter 7 of this Report that it has reached the view that development consent should not be granted for the Proposed Development without additional information and reassurance on the provision of a permanent water supply and in the light of our findings on the Habitats Regulations Assessment set out in Chapter 6. Should the SoS agree with those conclusions then the case for the CA powers sought in the dDCO falls away.
- 8.11.120. However, should the SoS take a different view on the application for development consent, the ExA has addressed the extent to which the case is made for CA powers necessary to enable the development to proceed.

The purpose for which the CA powers are sought

- 8.11.121. The CA Guidance, paragraph 11, considers the purpose for which CA is sought, in the light of s122 PA2008. The effect of subsections 122(1) and 122(2) PA2008 is to provide that the land to be subject to CA must be required for the development to which the development consent relates; effectively that the land needs to be acquired, or rights over, or under it acquired or impediments upon it removed, in order that the development can be carried out.
- 8.11.122. The SoR, sections 3, 4 and 6, explains the Applicant's need for the land, the location and proposed use of the Order Land and the purposes for which the powers of CA are sought [APP-062]. The Applicant is seeking powers in the dDCO to enable it to permanently acquire land and rights over, in and under the Order Land necessary for the construction, operation and maintenance of the Proposed Development, as well as rights to temporarily possess and use specific parts of the Order Land to facilitate its construction, operation and maintenance or to help mitigate its impact. The requirement for each site is summarised in section 4 and described further in the Planning Statement [APP-590], which explains how it would contribute to the construction or operation of the Proposed Development, or help to address its impacts, and why it is required development. The SoR section 6 explains why the proposed associated development would be consistent with the principles set out in the PA2008: Guidance on associated development applications for major infrastructure projects (the AD Guidance). The SoR, Appendix A Statement of Reasons Justification Tables [APP-063] sets out the need and justification for land take on a plot by plot basis.
- 8.11.123. The SoR Addendum [AS-149] identifies that some of the Applicant's proposed changes to the application would involve the compulsory acquisition of land (CA Additional Land). Section 2 explains why the CA Additional Land is required for the development of Sizewell C or is

required to facilitate it or is incidental to it. Section 3 sets out the case for CA of the CA Additional Land.

- 8.11.124. The Applicant has also provided further information in relation to the scope and purpose of the CA powers sought in response to the ExQ1 CA.1.0 to CA.110 [REP2-100] and ExQ2 CA.2.0 to CA.2.4 [REP7-052].
- 8.11.125. In response to ExQ1 CA.1.4, the Applicant explains why a degree of flexibility in Order Limits is required at this stage, prior to the final detailed design. Should less land prove to be required in a particular area following the detailed design stage, then the Applicant would only seek to acquire that part of the land that is required. The SoR [APP-062] paragraph 7.3.5 indicates that, where practicable, the Applicant will exercise the lesser powers of TP to construct the Proposed Development and then once it has been constructed, exercise the powers of CA to permanently acquire only the land on which the development has been sited.
- 8.11.126. The ExA agrees that the extent of flexibility sought is entirely appropriate and proportionate for a project of this type. We consider that the combination of the absence of any practical or other incentive to take more land than is ultimately required on a permanent basis, and the existence of a clear financial disincentive to doing so, is sufficient to ensure that the powers sought would be exercised in a proportionate manner and that ultimately no more land is acquired than is needed as a result.
- 8.11.127. At the CAH Part 1, the Applicant explained further why it considered the land proposed to be acquired to be no more than reasonably required for the purposes of the Proposed Development [REP7-064]. In response to the ExA's queries regarding SCC's position with respect to section 122(2) PA2008 and the SLR in particular, the Applicant submits that the land sought to be acquired, including that required for the SLR, meets these conditions because it is either land that is required for the development to which the development consent relates or, where the use proposed to be made of the land does not involve development it is land required to facilitate or is incidental to the development.
- 8.11.128. The ExA concurs with the Applicant that the SLR along with other land sought to facilitate the Proposed Development very clearly falls within the category of associated development. There is no doubt that the land sought to be acquired, including that required for the SLR meets the conditions of s122 PA2008 because it is either land that is required for the development to which the development consent relates, or it is land required to facilitate or is incidental to the development.
- 8.11.129. As regards the MHCHA at Westleton, the Applicant's position is that the provision of marsh harrier habitat on this land would not be required to mitigate or compensate for the effects of the Proposed Development [APP-590, section 5] but the land is included in case the SoS disagrees. The proposed MHCHA at Westleton is considered in the HRA Chapter 6 of this Report. The ExA concludes that the provision of additional dry

habitat for foraging marsh harrier on land at Westleton is not necessary to ensure the network of European sites is maintained for marsh harrier. In the light of our finding in Chapter 6, the ExA concludes that it is not necessary for this land to be used to facilitate the Proposed Development and that it should therefore be excluded from the scope of the CA powers sought. The rDCO reflects that position.

- 8.11.130. In relation to the TVB, we note in section 5.11 of Chapter 5 that the Applicant [REP3-043] submitted evidence of the relevant landowners' consent. Through the signing of Heads of Terms for the TVB, the Applicant has an option to call for the grant of Rights to Flood from the landowner to flood the area edged red. The EA in the signed SoCG [REP10-094] confirmed they were satisfied with this approach. However, notwithstanding that private agreement we consider that it is reasonable for the CA powers in respect of this land to be retained, and to rely upon the Applicant's stated intention only to exercise its powers of CA to the extent necessary, as it is not clear from the application documentation that the land would not be required for other purposes associated with the TVB. Should the SoS disagree with that approach then he may wish to consider seeking clarity from the Applicant as to the changes required to the DCO to reflect the updated position.
- 8.11.131. The ExA has examined the case which has been made for the grant of CA powers in respect of all plots included in the BoR; the justification for the inclusion of the plots in the SoR and the SoR Addendum; the type and extent of the interests sought; the stated use of the Order Land and whether there are clear and necessary proposals in relation to each plot sought; and the potential effects and consequences of taking the land proposed. The ExA is content that all associated development comprised in Schedule 1 of the rDCO is appropriately included and reflects the AD Guidance. The ExA concludes that the extent of the land over which powers are sought in the rDCO is no more than is reasonably required; it is proportionate to the needs of the Proposed Development.
- 8.11.132. The ExA is satisfied that in the event of the grant of development consent for the Proposed Development, there would be a need to acquire the rights and interests in the CA land and the CA powers sought in the dDCO would be required to implement the development.

Whether all reasonable alternatives to CA have been explored

- 8.11.133. The CA Guidance, paragraph 8, requires the Applicant to be able to demonstrate to the satisfaction of the SoS that all reasonable alternatives to CA (including modifications to the scheme) have been explored. The Applicant's position is that there is no alternative but to seek powers of CA in the dDCO. The SoR [APP-062] section 7.5, and the SoR Addendum [AS-149] explain how the Applicant has addressed the CA guidance in relation to the exploration of alternatives. This provides a summary of the main alternatives that have been considered for the Proposed Development. The Applicant has also provided a full description of the considered alternatives to the Proposed Development in the application documents [APP-062, section 7.5, APP-175, APP-190, APP-353, APP-383, APP-414, APP-450, APP-483, APP-514, APP-544 and APP-

591]. Together these describe the Applicant's approach to site selection and consideration of alternatives for the proposals - from initial conception, through the various consultation stages, to the final submitted proposals.

- 8.11.134. The ExA has given consideration to strategic alternatives together with alternatives to the location or design of the MDS and the different elements of the Associated Development in section 5.4 of Chapter 5 of this Report. The ExA concludes that there are no policy or legal requirements that would lead it to recommend that development consent be refused for the Proposed Development in favour of another alternative.
- 8.11.135. At the CAH Part 1 in relation to specific concerns raised by SCC, the Applicant submitted that the permanent retention of the SLR is proportionate and clearly justified. The benefits of retention of the SLR include that it would act as a bypass to the B1122 route which would provide relief to the B1122 communities and enable the B1122 to be a quiet rural road bringing forward the legacy benefits that the community have been seeking for a long time. The Applicant contends that the permanent retention of the SLR is proportionate to the nature and scale of the Proposed Development, and it goes no further than is needed to avoid the adverse effects that would otherwise occur.
- 8.11.136. At the CAH Part 1 the Applicant also responded to our request for details of the extent to which heritage issues had been taken into account in the selection of the route for the SLR. The Applicant explained why the SLR offers specific benefits over Route W in terms of effect on the historic environment. Further details are set out in the Applicant's subsequent written submission [REP7-066].
- 8.11.137. We have given consideration to route alternatives and whether the SLR should be retained on a permanent or temporary basis in section 5.4 of Chapter 5 of this Report. We conclude that the proposed SLR route represents the most satisfactory and least harmful option. Furthermore, we conclude that the SLR should be retained on a permanent basis following completion of the construction phase.
- 8.11.138. As set out above, the Applicant has sought and the ExA has accepted various changes to the Order Limits during the Examination which have resulted in the removal or reduction in various plots subject to CA powers with a view to minimising land use impact. The ExA considers that these changes to the Order Limits represent a positive response to engagement with APs and reflect the CA Guidance in relation to the exploration of modifications to the scheme.
- 8.11.139. In relation to acquisition by alternative means to CA, the Applicant has entered into negotiations with APs to seek to avoid the need to CA the relevant interests. The SoR section 8 states that the Applicant is committed to seeking to acquire all interests in land necessary for the Proposed Development through private agreement with landowners and is continuing to negotiate in pursuit of that objective. However, in the

event that negotiations with particular landowners or SUs are unsuccessful, the Applicant requires the power to CA the remaining interests. The latest version of the Appendix B to the SoR [REP10-017] shows the status of the Applicant's negotiations with landowners. In some instances, the negotiations have resulted in agreement and the withdrawal of the objections made. Whilst the ExA notes the concerns of certain APs as regards the lack of engagement, the documentary evidence does suggest that the Applicant has in fact made substantial efforts to engage with individuals.

- 8.11.140. In the light of the Applicant's response to oral and written questions on this topic, the ExA is satisfied that there is no alternative but to acquire third party land for the construction, and operation of the Proposed Development. The ExA has examined the extent of the land for which CA powers are sought and has taken into account the arguments made by Objectors. The ExA is content that the land that would be subject to the powers of CA sought is required in order to construct, operate, and maintain the Proposed Development or to facilitate its construction or operation, or to help mitigate its impact and there is no alternative to the use of CA powers. The ExA concludes that the Applicant has explored all reasonable alternatives to CA, including modifications to the scheme.

Availability and adequacy of funding

- 8.11.141. The CA Guidance, paragraph 9, requires the Applicant to be able to demonstrate that there is a reasonable prospect of the requisite funds for CA becoming available. Paragraph 18 requires the Applicant to be able to demonstrate that adequate funding is likely to be available to enable the CA within the statutory period following the DCO being made, and that the resource implications of a possible acquisition resulting from a blight notice have been taken into account.
- 8.11.142. The Funding Statement submitted with the application [APP-066], has been updated by the Funding Statement Addendum [AS-011] and the Second Funding Statement Addendum [AS-150] to take into account changes to the Proposed Development. The Second Funding Statement Addendum, paragraph 3.3.8, highlights factors which the Applicant submits increase confidence that it will be able to raise the funding required for the Proposed Development. In response to ExQ2 G.2.3 [REP7-050] the Applicant confirms that the most likely option for funding the Proposed Development is anticipated to be the RAB Model.
- 8.11.143. The Applicant's position on the funding is there are good prospects of the scheme being funded, most likely using the RAB model that the Government favours and which is a tried and tested approach to funding such infrastructure. As recently as 20 July 2021, the Minister for Energy, Clean Growth and Climate Change reaffirmed the Government's position that RAB is "*a credible model for financing large scale nuclear projects*" [REP7-064].
- 8.11.144. In section 5.19 of Chapter 5 of this Report, the ExA has considered the issues and concerns raised by IPs in relation to the funding arrangements for the Proposed Development including the prospect of the need for a

legislated RAB scheme and the Government's requirement, as expressed in policy documents, and referred to in the BEIS press release, for the Proposed Development to represent "*value for money*". We conclude that the advantages and disadvantages of the RAB model, and the '*value for money*' that the Proposed Development represents are issues for the Government to decide. The outcome of those negotiations was not known at the time of the close of the Examination. However, based on the available evidence, the ExA does not consider that the funding arrangements for the Proposed Development are likely to have any serious implications for its capability of meeting an urgent need for new generating capacity.

- 8.11.145. On the specific CA aspects of funding, in order to provide additional certainty on the availability of funding for that purpose, the Applicant included a new dDCO article during the Examination to provide security for CA costs before they are incurred [REP7-066, section 1.11]. This is now Article 86 of the Final dDCO [REP10-009]. The drafting specifies the sum of the security (£42m) which must be put in place before powers of TP or CA are exercised, being the estimate of all compensation likely to be payable through the exercise of powers under Part 5 provided by the Applicant's agents and confirmed in response to ExQ1 CA.1.31 [REP2-100]. The ExA considers that this new dDCO provision provides greater certainty on the availability of the requisite funds for the proposed CA and in relation to the timing of the availability of that funding.
- 8.11.146. In relation to the funding of the Proposed Development more widely, the CA Guidance, paragraph 17, indicates that the funding statement should provide as much information as possible about the resource implications implementing the project for which the land is required as well as acquiring that land. We have also considered this in the context of availability of funding being a potential impediment to implementation. However, as the Applicant points out, the CA Guidance does not require certainty on this matter. We are content with the evidence provided by the Applicant [REP7-064] to support the view that there is a reasonable prospect that there would be sufficient likelihood of funding being available. In reaching this view, we note the strong Government support for new nuclear projects, and that it is actively engaged in negotiating how best to fund the Proposed Development.
- 8.11.147. The ExA concludes that should development consent be granted, there is a reasonable prospect of the requisite funds for CA becoming available within the statutory period following the DCO being made. The financial resource necessary to accommodate possible acquisition resulting from a blight notice has also been satisfactorily secured. In reaching this conclusion, the ExA has borne in mind the submissions of APs including the criticism of the '*value for money*' that the Proposed Development represents.

The assessment of private loss and public benefit

- 8.11.148. The consideration of private loss in the context of public benefit was discussed at the CAH part 1. The Applicant's position is summarised in its Written Summaries of Oral Submissions made at CAH part 1 Appendix B

[REP7-066] which explains the way in which the effect on private interests has been taken into account in scheme selection and scheme refinement; confirms where private loss is referred to in the Applicant's submissions; and how the Applicant has balanced private interests in land against the public benefit of the Proposed Development.

- 8.11.149. The Applicant's assessment of private loss is explained in its responses to ExQ1 [REP2-100] (in particular CA.1.11, CA.1.38 and CA.1.40). Also of relevance are the Site Selection Report [APP-591], SoR [APP-062] and SoR Addendum [AS-149]. The Applicant has sought to limit the amount of private land required for the Proposed Development. It has sought to reduce the effect on private property and to obtain all land and interests required privately, where reasonably possible. The extent of private loss has been considered and weighed appropriately in looking at alternatives, and in some instances has led to changes in the scheme design. Appendix A to Appendix B of [REP7-066] provides examples of where the Applicant has sought to minimise private loss through the alteration of the proposals including the SLR, TVB, NPR and SPR.
- 8.11.150. The ExA notes that aside from highway land (for highway improvement works), land for facilitating rail improvement works, and operational land within the EDF Energy estate, the vast majority of land required for the Proposed Development is agricultural land, most of which is only required on a temporary (albeit long-term) basis. The ES provides an assessment of the proposals on soils and agriculture. This considers impacts on the land take and the viability of individual agricultural businesses and thus the private interests of those with an interest in that land. Effects on residential properties and community facilities located on or adjacent to the land impacted by the Proposed Development have also been considered in the ES. Those generic effects have been considered by the ExA in the relevant sections of Chapter 5.
- 8.11.151. The ES considers the strategic effects of the proposals generally on receptors, including agriculture and agricultural land holdings. The Applicant acknowledges that there are also individual impacts on individual businesses, farm enterprises and individuals. However, we agree that it is not the role of the ES to assess the monetary or non-monetary impacts of particular land parcels being acquired, particularly having regard to the availability of compensation for CA. The ExA considers that this represents a proportionate approach and that the Applicant has made an adequate assessment of private loss that would be experienced by APs to weigh in the balance between public benefits and private losses.
- 8.11.152. The public benefits of the Proposed Development are as explained in the SoR [APP-062], the Planning Statement [APP-590] and the Planning Statement Update [REP2-043]. The ExA is satisfied that the public benefits of the Proposed Development could only be realised if the CA of the land required for it could be guaranteed in a timely manner, through the use of CA powers.

- 8.11.153. The Applicant submits that the public benefits this scheme would deliver would meet the national policy imperative for the urgent delivery of new nuclear generating capacity. In section 5.19 of Chapter 5 of this Report, we conclude that the Proposed Development responds directly to that urgent need, and national policy commitment to deliver a large scale new nuclear power station to meet that requirement. We conclude that the Proposed Development's "*actual contribution*" to satisfying the need for this type of infrastructure would be very substantial. We also identify benefits in various generic sections of Chapter 5 including that very substantial weight should be given to the significant benefits relating to employment and skills and to the benefits relating to local economy and business. However, for the reasons set out in Chapter 7 we conclude that the case for the grant of development consent cannot be made at present notwithstanding the public benefits identified.
- 8.11.154. In terms of determining where the balance of public interest lies, the SoS will need to weigh up the public benefits that the Proposed Development will bring against any private loss to those affected by CA. The ExA's conclusions in relation to this matter are set out below in our overall conclusions on the case for the grant of CA powers, and are predicated on the SoS reaching a different conclusion on the grant of development consent for the Proposed Development.

Human Rights Considerations

- 8.11.155. In assessing whether there is a compelling case in the public interest for the land to be acquired compulsorily, it is necessary to consider the interference with human rights which would occur, if CA powers were granted.
- 8.11.156. The European Convention on Human Rights (ECHR) was incorporated into domestic law by the Human Rights Act 1998. The relevant articles for the CA powers sought are:
- Article 1 of the First Protocol (the peaceful enjoyment of possessions and not to be deprived of possessions except in the public interest and subject to the conditions provided for by law and by the principles of international law);
 - Article 6 (fair and public hearing within a reasonable time by an independent and impartial tribunal); and
 - Article 8 (right to respect for private and family life, home and correspondence).
- 8.11.157. No public authority can interfere with these rights except if it is in accordance with the law and is necessary in the interests of national security, public safety, or the economic well-being of the country. In assessing whether the interference with the rights of individuals would be for a legitimate purpose, such a finding is predicated on the SoS reaching the conclusion that development consent should be granted.
- 8.11.158. The SoR [APP-062] section 7.9 sets out the Applicant's position on this topic. To the extent that the Proposed Development would affect individuals' rights, the Applicant submits that for the reasons summarised

in that section, the proposed interference with those rights would be in accordance with law, proportionate and justified in the public interest.

- 8.11.159. The Applicant acknowledges that the Proposed Development would affect the Article 1 rights of those whose property is to be the subject of CA or TP, and whose peaceful enjoyment of their property is proposed to be interfered with. However, it contends that there would be no violation of those rights where it has been demonstrated that the proposed interference is 'in the public interest' and lawful. Appropriate compensation will be available to those entitled to claim it under the relevant provisions of the national Compensation Code.
- 8.11.160. The powers of CA sought through the application would only engage Article 8 to the extent that homes are to be the subject of those powers. Article 8 is a qualified right, and interference can be justified in appropriate cases by reference to Article 8(2). The dDCO seeks powers of CA in respect of residential land, and as such the Article 8 rights of those individuals would be interfered with. However, there will be no violation of those rights where it has been demonstrated that the proposed interference is 'in the public interest' and lawful.
- 8.11.161. In response to ExQ1 CA.1.45 [REP2-100] the Applicant has provided specific details of the consideration given to the Human Rights of each owner/ occupant in relation to their residential garden areas and/ or properties. The Applicant provided further details in respect of such properties in response to ExQ2 CA.2.11 [REP7-052]. The ExA is content that the Applicant has provided a reasonable explanation for the need and justification for the CA of each of these residential gardens/ properties.
- 8.11.162. The Applicant's response to ExQ1 CA.1.46 explains the purpose of the proposed CA in relation to Upper Abbey Cottage and hence the justification for interfering with the human rights of the existing tenants of that property. The Applicant explains that for safety and security reasons the property would sit within the construction fence and access would be restricted during construction, and as such it is appropriate for it to acquire this interest. The AP [RR-1194] is a tenant occupying under an Assured Shorthold Tenancy with the usual termination provisions. This property forms part of the EDF Energy Nuclear Generation Limited Estate, acquired (historically) to support operational needs and any future power station developed at Sizewell. The ExA accepts that the CA powers sought in respect of this property would be justified and unavoidable.
- 8.11.163. At CAH1 [REP7-064] the Applicant reiterated the position as stated in the SoR that there would be no violation of the rights in question where it has been demonstrated that the proposed interference is in the public interest. The tests for lawful interference with the relevant rights in the ECHR mirror the tests for CA, namely, that there must be a compelling case in the public interest. For the reasons identified in the SoR [APP-062] and the updated SoR Appendix A [REP2-020], the Applicant submits that interference with ECHR rights is justified and lawful.

- 8.11.164. From the Applicant's response to oral and written questions, the ExA is content that the Applicant has taken a number of steps to ensure that its approach to CA is proportionate and would not give rise to interference with private rights beyond that which would be absolutely necessary. The Applicant has sought to ensure that the land affected has been kept to a minimum. There are only a few residential dwellings that are proposed to be acquired and we find that to be for legitimate reasons. The Applicant has also sought to reach voluntary agreements with all persons with an interest in the land affected.
- 8.11.165. The ExA is satisfied that the Applicant has endeavoured to minimise the impact that CA would have on those individuals who would be affected by the Proposed Development. In addition, compensation would be payable, to be assessed on an individual basis. As regards the powers sought to authorise TP of land, the interference with rights would be less and this power is intentionally used to minimise the extent of CA that would otherwise be required. Compensation would also be payable for temporary use to construct or maintain the Proposed Development.
- 8.11.166. The ExA has considered the individual rights interfered with and has borne in mind the best interests of the children of families affected by the Proposed Development. It is satisfied that, should the SoS disagree with our conclusion in relation to the grant of development consent, then for Article 1 of the First Protocol and Article 8, the proposed interference with those rights would be for legitimate purposes that would justify such interference in the public interest. The extent of that interference would be proportionate. In reaching this conclusion, the ExA has had regard to the compensation to which those individuals would be entitled.
- 8.11.167. In relation to Article 6, the Applicant has consulted the persons set out in the categories contained in s44 PA2008 which include owners of the land subject to CA. All APs had the opportunity to participate in the Examination process and to make Written Representations and attend the CAH. In the event that development consent is granted, persons aggrieved may also challenge the DCO in the High Court, if they consider that the grounds for doing so are made out pursuant to s118 PA2008. The ExA is satisfied that the requirements of Article 6 have been met.
- 8.11.168. We are content that the inclusion of CA and TP powers in the Order would not constitute any unlawful interference with ECHR Rights and that should the SoS disagree with our conclusions set out in Chapter 7 of this Report to the effect that we are unable to recommend that consent be granted, it would otherwise be appropriate and proportionate to make the rDCO including the grant of powers of CA and TP.

Public Sector Equality Duty

- 8.11.169. The Equality Statement [APP-158] Table 1.1 summarises potential differential and disproportionate equality effects that could arise during construction and operation of the Proposed Development. The Equality Statement highlights where there is potential for effects with equality implications, so that these can be considered, and where possible alleviated or minimised. The primary recommendation of the Equality

Statement is that particular consideration should be given to these effects when implementing the control documents that manage the process of development, and when overseeing the use of the funds allocated for broader mitigation, as set out in the mitigation section.

- 8.11.170. The Equality Statement Update [REP10-024] brings together information relevant to the consideration of equality, arising since submission of the application and resulting from changes to the scheme; additional mitigation details agreed during the course of the Examination; and additional information or assessment carried out during the course of the Examination.
- 8.11.171. Section 4.3 of the Equality Statement Update provides additional information relating to land acquisition. This explains why the Applicant's focus has been on ensuring that protected characteristics do not adversely affect an individual's ability to understand or engage with the process, and that they have proper opportunity to raise any personal circumstances. The nature of land acquisition negotiations is more direct and individual than wider consultation, which has enabled specific protected characteristics to be considered individually. In addition, APs are given support to engage in the process (including funding for professional advice), which ensures they have a full opportunity to highlight and explain the ways in which they personally may be affected by the acquisition process. By this means, no APs within the Order Limits have been identified for whom protected characteristics differentially affect their ability to understand or engage in the land acquisition process, or how they will be affected by it.
- 8.11.172. Further information relevant to equality has been provided by the Applicant and others during the course of the Examination, in response to the ExA's written questions and these responses are summarised in section 4.4 of the Equality Statement Update.
- 8.11.173. The ExA is satisfied that the Applicant has complied with its duties under s149 Equality Act 2010. In exercising our functions as an ExA, we have had due regard to the PSED contained in s149 Equality Act 2010, which sets out the need to eliminate unlawful discrimination, harassment, and victimisation, and to advance equality of opportunity and foster good relations between people who share a protected characteristic and people who do not share it. We conclude that there is no evidence that implementation of the Proposed Development would disproportionately affect persons who enjoy a protected characteristic, nor would there be any adverse effect on the relationship between such persons and persons who do not share a protected characteristic.

Temporary possession

- 8.11.174. As indicated above in section 8.6, for some land plots TP has been sought as an alternative to CA. The rDCO contains powers for TP which the ExA considers are appropriate for inclusion to support the delivery of the Proposed Development in respect of all plots noted for TP in the revised BoR.

- 8.11.175. As indicated above, these powers are not CA powers and accordingly the tests under s122 and s123 PA2008 are not applicable. However, the request for the power in order to enable the Proposed Development to be implemented and maintained must be justified. The inevitable interference with human rights must also be justified, and there must be adequate compensation provisions in place for those whose land is affected.
- 8.11.176. The ExA is satisfied that the relevant land is required for the purposes indicated by the Applicant and is necessary to implement the Proposed Development. The exercise of these rights of TP and use of land would infringe ECHR rights under the Human Rights Act 1998. However, the ExA considers that they are proportionate in relation to the Proposed Development, legitimate and in the public interest. We are also satisfied that adequate compensation provisions would be in place.
- 8.11.177. In the event that the SoS reaches a different view from the ExA on the grant of development consent, then it would be appropriate to grant the TP powers sought as part of the DCO.

THE EXA'S OVERALL CONCLUSIONS ON THE GRANT OF COMPULSORY ACQUISITION AND TEMPORARY POSSESSION POWERS

Section 122(2) - The purpose for which CA is sought

- 8.11.178. This section of the Act sets out the purposes for which CA may be authorised. In the light of the CA Guidance, it is necessary to consider whether the Applicant has justified its proposals for the CA of the land.
- 8.11.179. If the SoS concludes that the case for the grant of development consent is made, the ExA is satisfied that the legal interests in all the plots of land included in the revised BoR and shown on the Land Plans (as amended) would be required for the development to which the development consent relates or is required to facilitate or is incidental to that development. The purpose for each of the plots in the BoR is clearly defined and the need for the development in each of the plots has been demonstrated. The requirements of s122(2)(a) and (b) PA2008 would, therefore, be met.

Section 122(3) – Whether there is a compelling case in the public interest

- 8.11.180. The ExA's conclusions below are predicated on the SoS finding that the national and local need and benefits of the Proposed Development represents a substantial public interest argument in its favour and that the adverse impact of the development would not outweigh its benefits thus justifying the grant of development consent for the Proposed Development.
- 8.11.181. Turning to s122(3), in considering whether there is a compelling case in the public interest there are a number of issues to be considered in balancing the public interest against the private loss which would occur.

- 8.11.182. In terms of determining where the balance of public interest lies, the ExA accepts that the Applicant has sought to reduce the effect on private property and to obtain all land and interests required privately by negotiation where possible. The extent of private loss has been considered and weighed appropriately in looking at alternatives, and in some instances has led to changes in the scheme design.
- 8.11.183. The ExA considers that the Applicant has made an adequate assessment of private loss that would be experienced by APs through the ES analysis of the impacts of the Proposed Development to weigh in the balance between public benefits and private losses. We are content that the Applicant has endeavoured to minimise the impact that CA would have on those individuals who would be affected by the Proposed Development and hence the extent of their private loss.
- 8.11.184. The private loss to those affected would be mitigated by limiting the use of CA powers to land necessary to deliver the Proposed Development and by the use of TP powers wherever possible to minimise both land-take and the extent of rights and interests to be acquired.
- 8.11.185. The ExA is satisfied that the Applicant has explored all reasonable alternatives to CA, including modifications to the Proposed Development and acquisition by negotiation and agreement. The ExA concludes that there are no alternatives to the CA powers sought which ought to be preferred.
- 8.11.186. The ExA concludes that the public benefits associated with the Proposed Development would strongly outweigh the private loss which would be suffered by those whose land would be affected by CA powers to enable the construction, operation, and maintenance of the Proposed Development.
- 8.11.187. The Applicant has demonstrated a clear idea of how it intends to use the land rights which it proposes to acquire. It has shown that there is a reasonable prospect of the requisite funds both for acquiring the land and implementing the Proposed Development becoming available. The resource implications of a blight notice have been taken into account.
- 8.11.188. For the reasons set out above, the ExA does not consider that it is necessary to acquire the marsh harrier habitat land at Westleton⁶⁷ in order to facilitate the Proposed Development. Our following conclusions therefore relate to the remainder of the land for which CA powers are sought.
- 8.11.189. If the SoS decides that the case for the Proposed Development is made out the ExA concludes that:
- The need to secure the land and rights required and to construct the Proposed Development within a reasonable timeframe, and to ensure

⁶⁷ See Land Plan sheet 14 of 28

that its operation and maintenance is not thereafter impeded, represents a significant public benefit to weigh in the balance;

- the private loss to those affected has been mitigated through site selection, scheme refinement, the Applicant's approach to CA powers and ultimately the extent of the rights and interests proposed to be acquired;
- the Applicant has explored all reasonable alternatives to the CA of the rights and interests sought and there are no alternatives which ought to be preferred;
- adequate and secure funding would be available to enable the CA within the statutory period following the Order being made;
- the resource implications of a possible acquisition resulting from a blight notice have been taken into account;
- the proposed interference with the human rights of individuals would be for legitimate purposes that would justify such interference in the public interest and to a proportionate extent; and
- the relevant duties under the Equality Act 2010 have been complied with.

8.11.190. Taking these various factors together, if the SoS is minded to grant an Order for development consent for the Proposed Development, there would be a compelling case in the public interest for the CA powers sought in respect of each and every plot of the CA land shown on the Land Plans (as amended). There would therefore be compliance with s122(3) PA2008 and the land-related powers in the rDCO would be necessary and justified for the Proposed Development to proceed.

Section 120(5)(a) PA2008 - the incorporation of other statutory powers

8.11.191. The rDCO seeks, in a number of instances, to apply s120(5)(a) and apply, modify or exclude a statutory provision. For example, Article 37 in relation to the Compulsory Purchase Act 1965. Since the DCO is in the form of a statutory instrument, it would comply with s117(4). Furthermore, no provision would contravene the provisions of s126 PA2008 which relates to the modification or exclusion of a compensation provision.

Section 127 and 138 PA2008

8.11.192. Section 127 PA2008 representations have been made and withdrawn. In the case of each s127 representation, adequate protection for the relevant SUs' assets is included in the Protective Provisions in the dDCO, Schedule 19 Parts 1 to 11 [REP10-009]. The ExA concludes that the SoS can be satisfied that there would be no serious detriment caused to the carrying on of the undertaking of the SU in question should the CA powers sought be granted. In the case of s138 PA2008, the ExA is satisfied that the extinguishment of the relevant rights, or the removal or relocation of the relevant apparatus, would be necessary for the purpose of carrying out the development to which the Order relates. Therefore, in the event that development consent is granted for the Proposed Development, the DCO could include the CA powers sought in relation to SUs' land.

Section 135 – Crown Land

- 8.11.193. The ExA considers that the SoS must provide s135 consent before making any Order authorising the CA of the interests in Crown land at the MDS as set out in the BoR, but excluding Plot MDS/06/02 on the seabed. If this consent is not forthcoming these plots should be excluded from the scope of CA sought by the rDCO. The ExA is satisfied that relevant consents are in place in relation to the CA of the third party interests in Plot MDS/06/02 on the seabed.

Temporary possession

- 8.11.194. The TP powers sought would be necessary both to facilitate implementation of the Proposed Development and to maintain it and adequate compensation provisions are in place in the rDCO.

Other consents and agreements

- 8.11.195. The ExA considers that before the making of any Order, the SoS should seek LONIs from NE together with confirmation that the extent of any such letters is considered to be sufficient for the purposes of the matters considered during the Examination. In addition, although the power station could be built, ONR has confirmed that it could not be licensed and could not operate without a secure and permanent water supply. That represents a potential impediment to the scheme in the event that the water supply issue is not satisfactorily resolved. These matters are both included within Appendix E of this Report as considerations for the SoS.

THE EXA'S RECOMMENDATIONS ON THE GRANTING OF COMPULSORY ACQUISITION AND TEMPORARY POSSESSION POWERS

- 8.11.196. In the event that the SoS disagrees with the ExA's main recommendation and is therefore minded to grant development consent for the Proposed Development, the ExA recommends that:
- the CA powers included in the rDCO be granted;
 - the TP powers included in the rDCO be granted;
 - the CA powers sought in respect of interests in Crown Land included in the rDCO should not be granted unless the SoS has provided the necessary s135 consent;
 - the powers authorising the CA of SUs' land and rights over land included in the rDCO be granted;
 - the powers authorising the extinguishment of rights, and removal of apparatus, of SUs included in the rDCO be granted; and
 - the powers included in the rDCO to apply, modify or exclude a statutory provision be granted.

9. DRAFT DEVELOPMENT CONSENT ORDER, THE DEED OF OBLIGATION AND RELATED MATTERS

9.1. INTRODUCTION

- 9.1.1. In this Chapter we report on the Applicant's draft Development Consent Order (dDCO) and the Deed of Obligation (DoO), both draft and executed. Together they also give effect to a set of controls in monitoring and mitigation plans. The Applicant explained and summarised during the Examination how this will work. The final iteration of the summary is to be found at Appendix B of the Final Planning Statement [REP10-068] at page 85.
- 9.1.2. In brief summary of the salient points, the DCO requires compliance with the Code of Construction Practice (CoCP) and the Terrestrial Ecology Monitoring and Mitigation Plan. It also requires the submission for approval by one of the Host Authorities of some plans such as the Fen Meadow Plan. There are similar provisions in the Deemed Marine Licence (DML) for plans such as the sabellaria spinulosa monitoring and mitigation plan. Compliance is obviously secured by the requirements. Monitoring reporting and governance is also provided for in the DoO through the establishment of working groups, review groups which can review mitigation and monitoring measures and where those measures are not being successful advise on recommended remedies to ensure that adequate mitigation is delivered. The Delivery Steering Group has oversight of this with dispute resolution by expert determination.
- 9.1.3. The Secretary of State (SoS) may wish to note that the "Main Development Site" as defined in the dDCO is different from the Main Development Site as defined in the Environmental Statement (ES). In simple terms the DCO description is "the land within which Work No.1 may be constructed as shown on the Works Plans" whereas in the ES it includes:
- The site of the proposed Sizewell C nuclear power station and construction areas which consist of;
 - The main platform;
 - The temporary construction area;
 - The Land to the East of the Eastlands Industrial Estate (LEEIE) (the Application changed how this was referred to during the Examination to the Ancillary Construction Area (ACA));
 - Offshore works area;
 - Sizewell B relocated facilities and National Grid works.
- 9.1.4. An obvious difference is that in the dDCO it does not include Work No.2 which is the cooling water intakes and outfalls and other tunnels and outfall – in the offshore works area. The ExA has been cognisant of this difference throughout and where we have referred to the MDS then unless specified to the contrary that is a reference to the works included in the scope as defined in the ES.

9.1.5. We mention this however to suggest that the SoS may wish to consider adopting a different name for the MDS in the DCO to avoid any confusion later.

Development Consent Order

9.1.6. The application dDCO [APP-059] and the Explanatory Memorandum (EM) [APP-060] were submitted as part of the application for development consent by the Applicant. The EM describes the purpose and effect of the provisions in the application dDCO.

9.1.7. This Chapter provides a summary of the main changes made to the dDCO during the Examination, between the application dDCO and a final dDCO submitted by the Applicant at DL10 [REP10-009]. The Applicant did submit a comparison tracked changes version of the dDCO [REP10-011] that compares the final dDCO [REP10-009] with the version submitted with the application [APP-059]. We do not report on every change made in the updated versions. This is because many amendments were made as a result of:

- Typographical or referencing errors;
- Slight revisions of the wording following either discussion between the Applicant and relevant IPs or from their WRs;
- As a result of minor changes following ExQ1 [PD-020], ExQ2 [PD-035], ExQ3 [PD-047], Issue Specific Hearing (ISH) 1 [EV-078 to EV-081] and ISH14 [EV-213 to EV-216]; and
- As a result of minor changes following our two commentaries on the dDCO [PD-038] and [PD-042].

9.1.8. The ExA did not issue a consultation dDCO but issued the two commentaries mentioned above.

9.1.9. During the Examination when new provisions were included in the dDCO, the numbering of the new draft provisions was added using suffix letters to the previous number. That is to say if there was a new provision between numbers 2 and 3 it would be numbered 2A. In the final dDCO [REP10-009], the Applicant removed all the suffix letters and used consecutive numbering.

9.1.10. Understanding that at the close of the Examination a number of Certified Documents may still have reference to superseded provision numbers the Applicant revised Article 80 of the final dDCO [REP10-009]. Article 80 now allows for all such documents to refer to the final dDCO. However, there is an error in Article 80 in the final dDCO. In paragraph 80(1) reference is made to Schedule 22 (Certified Documents). This should be Schedule 24 (Certified Documents). Consequently, we are recommending that this is corrected in our Recommended dDCO.

9.1.11. The Recommended DCO (rDCO) in Appendix D of this Report incorporates these minor changes. Table 9.1 below shows the updates to the dDCO [APP-059]. The submission draft is assumed to be revision 1.0 as the next revision is numbered 2.0.

Table 9.1 Iterations of the draft DCO

Deadline Number	Revision Number	Exam Library Reference	Notable Changes Made
N/A	2.0	[AS-055]	Changes relating to work numbers, plans and other corrections.
N/A	3.0	[AS-143]	Amendments required as a result of Changes 1 to 15 [AS-105]
2	4.0	[REP2-015]	Amendments to Articles, Requirements and Schedules as result of ExQ1 and ongoing stakeholder discussions. Schedule 18, protective provisions updated, including addition of those requested by NWL. Schedule 24, DoO added to certified document list
5	5.0	[REP5-029]	Amendments to Articles, Requirements and Schedules as a result of ExQ1 [PD-020], ISH1 and ongoing stakeholder discussions.
5	6.0	[REP5-027]	Amendments required as a result of Changes 16 to 18 [REP5-002]
6	7.0	[REP6-006]	Amendments to Articles 2 and 4. Amendments to Requirements in Schedule 2 following clarification requested by East Suffolk Council.
7	8.0	[REP7-007]	Amendments in response to ExA's: <ul style="list-style-type: none"> ▪ commentary on the dDCO [PD-038]; and ▪ ExQ2 [PD-038]. Amendments and corrections as a result of discussions with stakeholders.
7	9.0	[REP7-272]	Amendments as a result of Change 19 [REP7-286] to include temporary desalination plant.

Deadline Number	Revision Number	Exam Library Reference	Notable Changes Made
8	10.0	[REP8-035]	Amendments as a result of ISH14 and discussions with stakeholders.
10	11.0	[REP10- 009]	Final dDCO. Changes made to provision numbering to have consecutive numbers so as to remove inserted provision numbers ending with letters such as A, B ,etc. Alterations, changes and corrections following further discussion with stakeholders.

- 9.1.12. We and some IPs raised issues on the dDCO and we deal with the more major differences now.
- 9.1.13. A number of requirements specify that the development shall be "*in general accordance*" with details or other documents. We were concerned about the flexibility that appeared to give and raised it at ISH1. East Suffolk Council (ESC) had similar concerns [REP5-139] and the Applicant undertook to give the matter more consideration. It also explained at [REP5-113] (written submissions arising from ISH1) that the intention was that in practice this would mean that changes would be limited only to those which can be shown to be substantively the same or better would be agreed with ESC or Suffolk County Council (SCC).
- 9.1.14. The end result can be seen in the dDCO [REP10-009] at paragraph 1(4) where it is now made clear that the phrase means consistently with the document referred to where it is in the list of certified documents in Schedule 24. In some cases the word "general" has been omitted which of course tightens the obligation on the undertaker. The ExA has checked the requirements and all the occasions on which the phrase "general accordance" is used are references to Schedule 24 certified documents, except for Req 18 (which refers to the Proposed Site Plan Leiston Leisure Centre Phase (PDB17-033-06-02-P1)) and DML condition 40(2) (which refers to activity details approved by the Marine Management Organisation (MMO)). Accordingly, we have recommended an amendment to paragraph 1(4) to remove the need for the document to be listed in Schedule 24.
- 9.1.15. At ISH1 we raised other issues about imprecise language in the suite of control documents under the Construction Method Statement (CMS) and CoCP. Among our concerns was the use of words such as "would" or "could" which are conditional, when imperative language such as "must" or "shall" was needed. The second was as to the meaning of words such as "practicable". The Applicant has tightened up the wording of the suite of control documents (see [REP10-068] Planning Statement Final Update

Appendix B para 1.3.2). On the subject of the meaning of phrases such as “where practicable”, “where possible” or “as soon as possible” that document, in the following paragraph, clarifies the position.

“Where practicable’: means that the action should be done unless the degree of risk in a particular situation cannot be balanced against the time, trouble, cost and physical difficulty of taking measures to avoid the risk. In practice this means that something that would avoid a significant impact must be done in almost all circumstances. It would only be acceptable not to take the relevant step if there would not be a significant impact as a result, and therefore the risk would be low.

‘Where possible’ or ‘as soon as possible’: this is used to ensure that something happens in almost all instances, or as soon as it can be done.”

- 9.1.16. The ExA is pleased to see this. However it does not appear in the suite of control documents. The ExA suggests it might helpfully be placed in the CoCP [REP10-072]. The language is not really suited to the definition section of the requirements (Req 1) and the ExA suggests that the SoS may wish to consult with the Applicant and Host Authorities with a view to placing the statements in an appropriate document.
- 9.1.17. We raised questions in ExQ1 about tailpieces – that is to say requirements which include wording such as “unless otherwise agreed by the discharging authority” - and their relation to environmental assessment- See ExQ1.DCO.1.73 and 1.74. It was also related to questions of parameters plans and the limits of deviation. This was discussed at ISH1 [EV-069] and also at ISH14 [EV-142f].
- 9.1.18. The tailpieces were from the outset controlled by para 1(3) of Schedule 2 under which agreement of approval was not to be given unless it would not give rise to “any materially new or materially different environmental effects to those assessed in the environmental information”. We questioned whether the comparison should be with assessed effects given that effects will have been before mitigation. We were reassured by the Applicant’s explanation in response to ExQ1 DCO1.73 [REP2-100] and drafting note 5 [REP2-111] that by comparing with the environmental information the process and outcomes of EIA is recognised rather than raw effects before mitigation.
- 9.1.19. It is convenient to note here that the MMO raised a concern about the use of the phrase “materially new / different” and the word “material” in this context, at their final submission, [REP10-195] para 2.1.20. We disagree with their view. The word “material” is explaining that the difference would need to be such as to make a difference to the assessment. They also take issue in their Statement of Common Ground (SoCG) [REP10-107] item MDS_ML3 with a change introduced by the Applicant to their wording of a reporting obligation. The MMO’s preferred wording is
- *“should the undertaker become aware that any of the information on which the granting of the licence was base was false or misleading in any material particular the undertaker must explain in writing ...”.*

- 9.1.20. The Applicant has changed this to
- *“should the undertaker become aware that any of the information on which the granting of the licence was based was materially false or misleading the undertaker must ...”*
- 9.1.21. On this point we accept the MMO’s point – the wording which they suggest is tried and tested. We also agree with the MMO’s second point on this condition, that it should be split so that the duty to report oil, fuel or chemical spills forms a separate condition and we have recommended accordingly.
- 9.1.22. We also suggested in ExQ1 DCO.1.74 that the procedure set out in the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017/572 for subsequent applications might be adopted. However the Applicant pointed out to us that those provisions are intended to cater for circumstances in which either the applicant or the discharging authority have decided that the original ES is not adequate to assess the environmental effects of the development for which approval is sought in the subsequent application. The limitations in paragraph 1(3) would prevent development being approved which went beyond the scope of what had already been assessed. In addition we note that paragraph 1(3) obliges the Undertaker to demonstrate to the discharging authority’s satisfaction that the subject matter of the approval does not give rise to materially new or significant effects.
- 9.1.23. The outcome of this is that the ExA is satisfied with paragraph 1(3).
- 9.1.24. We turn to the related issue of parameters plans and limits of deviation. The former are what is assessed by the EIA process (and we note that the Rochdale Envelope of what is to be assessed can be set by verbal descriptions as well as by plans or by both). We asked questions about it at ISH1 and it was discussed again at ISH14 [EV-213 to 216].
- 9.1.25. Essentially the issue which concerned us was the relationship between the Approved Plans, the Parameters Plans and the limits of deviation in Art 4 of the DCO. The Applicant confirmed to us at ISH14 that all the Approved Plans were within the Parameters Plans. At the time of ISH14 the dDCO was at Revision 8. The comparison with Revision 7 is at [REP7-006]. From that it can be seen that Art 4, the vertical limits of deviation had been substantially amended to make it vertical and horizontal limits and for the limits of deviation for all of the Works except for three to be limited to the Parameter Plans and the Approved Plans, or as may be otherwise approved pursuant to Schedule 2 – the requirements. In the case of the Green Rail Route (Work No. 4B) the Two Village Bypass (TVB) (Work No 11) and the Sizewell Link Road (SLR) (Work No 12) the limits of deviation were given as 1 metre up or down and laterally to the extent shown on the Parameters Plans or as otherwise approved pursuant to Sch 2.
- 9.1.26. There was no change to Art 4 in Revision 9 (see [REP7-271]). In Revision 10 the track changes version [REP8-036] shows that references to the Parameter Plans were removed and for the Works 4B, 11 and 12 the

lateral limits of deviation became governed by the Approved Plans rather than the Parameter Plans. In the case of ancillary structures within the other works the limits became defined by any authorisation under Req 13 (as it then was, now 22). That requirement uses the Parameter Plans to limit the ancillary structures. Finally Revision 11 adds Work No 17 (which had been accidentally omitted) to the list of Works governed solely by Approved Plans and approvals pursuant to requirements.

- 9.1.27. Remembering that the Approved Plans are within the limits on the Parameter Plans the net result is that the limits of deviation are confined to what has been subject to EIA and that any variations must pass the test in paragraph 1 of Schedule 2 of not giving rise to any materially new or different significant environmental effects to those assessed in the environmental information. The ExA is satisfied with this position.
- 9.1.28. The MMO has concerns about time limits being imposed on their DML decision making and the creation of an appeals process against their decision or failure to decide. In their [RR-0744] they sought instead that disputes over approvals pursuant to the DML should be dealt with by way of judicial review. We observed in ExQ1 DCO.1.124 that the norm in the case of regulatory approvals is for there to be an appeal process on the merits before a right to review on the law is available. Whilst the PA2008 does not contain such a process for approvals pursuant to requirements it is now common for an appeal process for those to be included in DCOs. From an early stage the dDCO has had a process for DML appeals which is separate from the requirements appeals process. They are, in Revision 11 of the dDCO, Schedules 22 and 25 respectively.
- 9.1.29. All submissions on this matter concentrated on the principle rather than on the detail of Schedule 22.
- 9.1.30. The MMO's case [REP3-070a], [REP6-039], [EV-142i],[REP8-164] is that appeals are already available in the form of an escalated internal procedure and judicial review. The appeal process the Applicant proposes would be inconsistent with the statutory scheme and would be unique to this Applicant. The MMO is open and transparent. The scale and complexity of NSIPs does not create an exception and the discharge of conditions on over 130 DCOs has been handled without a special appeal process; the MMO was not aware of any disputes in relation to those. In addition, the decisions on the DCOs for Norfolk Vanguard, Hornsea Three have upheld the MMO's position. The Norfolk Vanguard ExA observed that *"There is no substantive evidence of any potential delays to support an adaptation to existing procedures to address such perceived deficiencies"*. The Hornsea Three ExA commented that the scale and complexity of matters approved under DMLs is a strong indicator that they should be determined by the appropriate statutory body.
- 9.1.31. In its post-ISH1 written submissions [REP6-039] the MMO added that it disagreed with determination dates for its decision making. At [EV-142i] it added that it understood the Applicant's wish for certainty around the timing of decisions it stressed that it does not delay determining applications unnecessarily.

- 9.1.32. The Applicant put its case at ISH1 [REP5-106] and also in response [REP8-128] to the MMO's written submission to ISH14 [EV-421i] that the norm is to have an appeal mechanism for regulatory approvals before a review on the law becomes available. The purpose of the appeal process it suggested is to address non-decision, delay and the risk of impediment to delivery for an interminable length of time. Judicial review is not an adequate remedy on a merits issue. The DCO is a single statutory authorisation bringing together the permissions needed and Parliament has decided that NSIPs do not have to be authorised pursuant to a different regime outside the Planning Act 2008. There is no difference between the DML and the rest of the DCO in terms of the public interest and the subject matter of the conditions in the DML and requirements in the DCO is not intrinsically different – indeed in the case of the Coastal Processes Monitoring and Mitigation Plan (CPMMP) they are the same.
- 9.1.33. On the point of the Norfolk Vanguard and Hornsea Three cases the Applicant drew attention to the fact the SoS is not bound by precedent and each case must be decided on its own facts. There is no need to evidence any potential delays because the potential is obvious – there is no ability to break a deadlock. The MMO resists any time limit on its decision making, but undue delay is not a ground for judicial review. The Applicant rejected the relevance of the decision in Hornsea Three as it said the ExA in that case did not appear to have grappled with the case being made for the Applicant in this case.
- 9.1.34. It also drew attention to the fact that Parliament had not provided a mechanism for appeals of requirements under DCOs yet such a mechanism is now added as standard. The whole project relies on a defined programme and construction schedule. The potential knock-on delays to other elements of the SZC project from a delay to an offshore element would be very significant. Aside from potential delays to the construction and delivery of an operational Sizewell C, the costs associated with such delays could be very significant given the need to pre-book very large vessels of limited availability or progress other inter-related elements on the MDS (10s to 100s millions of pounds). The MMO had acknowledged the problems of delay but simply asserted that it does not delay unnecessarily.
- 9.1.35. In the ExA's view, there should be determination periods in the DML. The Applicant needs to know by when it can expect a decision. We recommend amendments to provide three or six months, having regard to complexity. In relation to the bigger question of the appeal mechanism in Sch 22 we hear the Applicant's plea and we recognise that neither we nor the SoS are bound by precedent. However we note the observations of the ExAs in Norfolk Vanguard and Hornsea Three, particularly the latter's comments about scale and complexity. In our view the MMO is the body with the necessary skills and expertise. We have therefore deleted Sch 22 and Art 75.
- 9.1.36. That leaves the question of what is to happen at the end of the determination periods. The dDCO says that a right of appeal arises under the now deleted Sch 22. We suggest instead that the definition should

state that it is the date by when the MMO is expected to have determined the application. We did not canvass this during the Examination and the SoS may wish to satisfy themselves as to what should occur. We have left the definition of "determination date" in para 1 of the licence (in Sch 21) and the references to it in that schedule.

- 9.1.37. On 11 October 2021, the day before DL10 and three days before the end of the Examination, the Applicant's solicitors wrote to the County and District Councils' solicitors and informed them that they intended to remove paragraph (3) from Article 9B. Paragraph (3) says: "*An application under paragraph (2) for the modification of an obligation in the Deed of Obligation may not specify a modification imposing an obligation on any other person against whom the Deed of Obligation is enforceable.*" This is modelled on the equivalent provisions for planning obligations in the Town and Country Planning Act 1990.
- 9.1.38. The rationale for the proposal in the letter is set out in Drafting Note 16 annexed to the Applicant's explanation of proposed changes to the dDCO [REP10-012]. Essentially the concern is that changes to the DoO may require either Council to take on new obligations.
- 9.1.39. ESC requested the removal. SCC oppose it.
- 9.1.40. We quote from SCC's final submission [REP10-210] which summarises the position. "*The effect of its removal would be to remove a limitation on the types of application that could be made for modification of the DoO. Without the paragraph, applications could be made so as to specify a modification imposing an obligation on any other person against whom the Deed of Obligation is enforceable. It was explained that the removal of the paragraph addressed a concern that its retention may be unduly restrictive given the nature of the Deed of Obligation, which features many governance arrangements, collaborations and commitments by various parties in the Deed and the deeds of covenant under it. It was explained that in circumstances where the Applicant were seeking to go to the Secretary of State to seek a variation, the sort of variation needed could require modifications of existing arrangements which could be said to constitute the imposition of new/varied arrangements on parties other than SZC Co. It seemed important that the Secretary of State has that ability otherwise art 9B(2) may be of little value in practice. It was said that the TCPA drafting works for most standard s106 agreements – where a developer just wants to remove a payment or move trigger date, but the Deed of Obligation is obviously more complex.*"
- 9.1.41. We agree with SCC. The removal of the paragraph would allow any obligation, administrative or financial, to be imposed on either SCC or ESC without their consent. Accordingly we have reinstated the provision in the rDCO.

9.2. THE EXA'S DCO INCLUDING PROVISIONS RECOMMENDED TO BE CHANGED

9.2.1. The final version dDCO as recommended by the ExA (the Recommended DCO) is set out in Appendix D. This is the dDCO the ExA would recommend, should the SoS decide to grant development consent for the application.

9.2.2. The rDCO is structured as follows:

- Part 1, Articles 1 and 2 contains the preliminary provisions providing for citation, commencement, and interpretation;
- Part 2, Articles 3 to 12 provide the principal powers granting development consent for the Proposed Development. Article 4 sets out the Limits of Deviation. Article 5 sets out the effect of the Order on the Sizewell B relocated facilities permission. Articles 8 and 9 set out who has the benefit of the powers of the Order and how those powers can be transferred. Articles 10 and 11 relate to the enforcement and modification of the DoO. Article 12 relates to defence to proceedings in respect of statutory nuisance;
- Part 3, Articles 13 to 24 provide for the Undertaker to be able to carry out works to and within streets, alter layouts, to create or improve accesses, to permanently close streets, and to undertake agreements with street authorities;
- Part 4, Articles 25 to 27 concern supplemental powers relating to discharge of water, protective works to buildings and authority to survey land;
- Part 5, Articles 28 to 48 provide for the Undertaker to be able to compulsorily acquire the Order land and rights over/ within it, and to be able to temporarily use parts of the Order land for the construction or maintenance of the Proposed Development. The provisions provide for compensation to be payable to Affected Persons in respect of these powers, where that is not already secured elsewhere. These articles also provide for powers in relation to land and equipment of Statutory Undertakers;
- Part 6, Articles 49 to 73 are concerned with harbour powers. These define the harbour limits and define the Undertaker as the competent harbour authority. They also allow the creation of byelaws and the power to make directions for shipping within the limits of the harbour. They control the use and timing of both the marine bulk import facility and the beach landing facility.
- Part 7, Articles 74 allows the granting of the Deemed Marine Licence (DML) as set out in Schedule 21.
- Part 8, Articles 76 to 86 are concerned with miscellaneous and other general matters including the removal of human remains; operational land in respect of the TCPA1990; service of notices; the provision of powers in relation to trees which need to be removed or lopped in relation to the Proposed Development and any protective works to buildings; arbitration; and other legislative provisions.

There are 26 Schedules to the Order. These are:

- Schedule 1 is the description of the Authorised Development, and it is in two parts:
 - Part 1, Main Development site (MDS); and

- Part 2, Other associated development;
- Schedule 2 lists the Requirements;
- Schedule 3 lists the Land Plans;
- Schedule 4 lists the Works Plans;
- Schedule 5 lists the Rights of Way Plans;
- Schedule 6 lists the Parameter Plans;
- Schedule 7 lists the Approved Plans and is in nine parts:
 - Part 1, MDS and marine works;
 - Part 2, Rail infrastructure;
 - Part 3, Sports facilities;
 - Part 4, Northern Park and Ride;
 - Part 5, Southern Park and Ride;
 - Part 6, Two Village Bypass;
 - Part 7, Sizewell Link Road;
 - Part 8, Freight Management Facility; and
 - Part 9, Yoxford roundabout and other highway works;
- Schedule 8, this sets out the deemed approval of requirements relating to Sizewell B relocated facilities permission 1 and 2 and is in two parts:
 - Part 1, Sizewell B relocated facilities permission 1; and
 - Part 2, Sizewell B relocated facilities permission 2;
- Schedule 9 lists the streets subject to street works;
- Schedule 10 lists the streets to be permanently stopped up, changed in status or private means of access extinguished and is in three parts:
 - Part 1, Streets where substitute is provided;
 - Part 2, Private means of access to be extinguished where no substitute is provided; and
 - Part 3, Streets subject to a change in status;
- Schedule 11 lists the status of public rights of way created or improved;
- Schedule 12 sets out the benefit of permanent private means of access and private rights of way created;
- Schedule 13 lists the streets and private means of access to be temporarily closed and is in two parts:
 - Part 1, Streets where no substitute specified; and
 - Part 2, Streets and private means of access where a substitute is specified;
- Schedule 14 sets out both the permanent and temporary traffic regulation measures;
- Schedule 15 sets out the land where only rights, etc may be acquired;
- Schedule 16 sets out the modification of compensation and compulsory purchase enactments for creation of new rights and imposition of restrictive covenants;
- Schedule 17 sets out the land of which only temporary possession may be taken;

- Schedule 18 sets out the acquisition of wayleaves, easements and other right and is in four parts:
 - Part 1, relates to licence holders;
 - Part 2, relates to code operators;
 - Part 3, relates to water and sewerage undertakers; and
 - Part 4, relates to gas transporters;
- Schedule 19 sets out the protective provisions and is in ten parts:
 - Part 1, electricity, gas, water, and sewerage undertakers;
 - Part 2, operators of electronic communications networks;
 - Part 3, Network Rail;
 - Part 4, Anglian Water;
 - Part 5; National Grid as electricity undertakers;
 - Part 6; Essex and Suffolk Water;
 - Part 7, EDF Energy Nuclear Generation Limited;
 - Part 8, Nuclear Decommissioning Authority and Magnox;
 - Part 9, not used
 - Part 10, East Anglia One North Limited; and
 - Part 11, East Anglia Two Limited;
- Schedule 20 specifies the limits of the harbour;
- Schedule 21 is the DML and is in four parts:
 - Part 1, Introduction;
 - Part 2, General licensed activities;
 - Part 3, Conditions; and
 - Part 4, Coordinates;
- Schedule 22, not used;
- Schedule 23 lists the removal of important hedgerows;
- Schedule 24 list the Certified Documents;
- Schedule 25 sets out the procedure for approvals, consents and appeals; and
- Schedule 26 sets out miscellaneous controls.

9.2.3. The rDCO is based on the Applicant’s final submitted dDCO (Revision 11.0) [REP10-009]. It also contains drafting changes which the ExA considers to be necessary to accommodate matters explored during the Examination. These further changes are set out in Table 9.4 and discussed below.

9.2.4. The ExA sets out in Table 9.3 various instances where drafting objections have been raised, but not resolved by the close of the Examination, where it does not consider further amendment to be necessary. In so doing, the ExA has not sought to reference or provide details of every representation made in relation to the drafting of the DCO but has identified the representative issues that are pertinent to its consideration of outstanding matters.

9.2.5. This section of the Report addresses all outstanding matters in respect of which there was discussion at ISHs and in respect of which written submissions have been made about potential changes to the dDCO, in a tabulated format:

- Table 9.3 sets out the provisions in respect of which the ExA has accepted the Applicant’s detailed oral and written submissions and has decided that no changes are required, for reasons; and
- Table 9.4 sets out the provisions in respect of which the ExA has recommended changes to the final dDCO [REP10-009] in the rDCO (Appendix D), for reasons.

Table 9.3: DCO Provisions Not Recommended to be Changed

Provision	Examination Issue	ExA Reasoning
Article 2 – definition of commencement	NE [REP8-298f] queried the exception of removal of hedges from the definition of hedges, concerned that the protection for important hedges in Art 79(4) would be lost.	Art 79 gives the power to fell or lop trees and shrubs. Art 79(4) is to protect hedges which would otherwise be protected by the Hedgerow Regulations 1997 (see Art 79(5)). If the hedge is removed otherwise than pursuant to Art 79 the Hedgerow Regulations will apply.
Art 11 – modification and discharge of the DoO	NE wish to be added as a consultee on an application to the SoS to modify the DoO, noting that it includes natural environment and that MMO may wish to become an enforcing authority in view of the measures for eels and migratory fish.	As NE note, the Councils are consultees. They can consult others and the SoS is likely to want to know the views of their statutory advisers
Article 14 Schedules 1, 2, 10, 14, 17, and Rights of Way and Land Plans	SCC [REP9-034] requested amendments to the dDCO to allow the SLR to only be temporary during construction and not to be retained permanently.	For reasons set out in section 5.22 the ExA considers that there is a legacy benefit to keeping the Sizewell Link Road permanently and consequently we do not recommend such a revision.

Provision	Examination Issue	ExA Reasoning
Article 23(2)	SCC [REP10-210] requested a change to allow them to recover additional costs for routine and cyclic maintenance works done outside of normal working hours as a consequence of the carrying out of the authorised development.	This Article relates to a variety of agreements with street authorities. The ExA understands that there will be some circumstances where works will need to be done 'out of hours' but considers that this is something that needs to form part of any agreement reached with the undertakers on a case-by-case basis rather than it needing to be required in the DCO.
Article 24(2)	SCC [REP10-210] requested an amendment to Article 24 (22 in their representation) to delete mention of unreasonably withheld consent.	The ExA consider this paragraph as drafted in the dDCO is necessary to ensure there is a criterion for decision.
Requirements	Marlesford PC [REP10-334] requested that the adjacent Parish Councils are consulted by the Applicant prior to any submissions to the discharging authorities on matters relating to the Southern Park and Ride.	The ExA does not agree that the DCO should be amended as Marlesford PC suggest. The ExA considers that such an amendment would provide additional unnecessary delay in the discharging of Requirements and there is also no precedent for such additional consultation in the discharging process.
Requirement	Heveningham Hall (HHE) [REP5-277]. requested a new Requirement to	The ExA does not agree with HHE on this point. We are satisfied with the

Provision	Examination Issue	ExA Reasoning
	request that an operational management plan for the NPR is submitted and approved by the LPA	Applicant's approach and note neither ESC or SCC have raised the need for such a new Requirement. HHE cite similar conditions placed on the planning permission for a park and ride site by Wokingham Borough Council. The ExA considers this is not applicable as this would have been for a public park and ride site and not a sole user private facility. We are content that the Applicant has provided adequate controls over the operation of the NPR.
Requirement	HHE [REP5-277]. requested a new Requirement that would mean that the A12/ B1122 Yoxford Roundabout would be reduced in size after completion of construction.	The size of this roundabout is discussed in Section 5.22. No such representations have been made by ESC or SCC. This roundabout is also on National Highway's Heavy Load Route 100. For these reasons we do not agree that the roundabout should be reduced in size after completion of construction.
Requirement	HHE requested a new Requirement for detailed landscaping in respect of the NPR and Yoxford roundabout.	The ExA does not agree with HHE on this point. We are content with the provisions secured by Requirements 33, 35 and 37 of the rDCO are sufficient to adequately control landscaping.

Provision	Examination Issue	ExA Reasoning
Requirement 8	TASC [REP10-421] suggested that any DCO granted should be on the basis of a Requirement only allowing commencement if the water company can guarantee water supply throughout operation and decommissioning.	In Section 5.11 of this report the ExA is recommending due to the lack of certainty of water supply the DCO should not be granted until permanent supply is resolved. This suggested amendment to Requirement 8 is unnecessary.
Requirements 33, 35 and 38	HHE [REP5-277] requested amendments to Requirement 33, 35 and 38 (20 ,23 and 24 in their representation)	For reasons set out in sections 5.13, 5.14 and 5.18 we are satisfied that adequate detail is provided in Requirements 33, 35 and 38 to ensure that the relevant developments are delivered within the defined scale and design parameters as stated within the dDCO and ADDP. In respect of Requirement 38, the ExA is content that adequate control is provide by the CoCP, which would be secured by Requirement 2, in respect of removal and reinstatement. Consequently, we do not recommend any revision of the dDCO relating to these matters.
Schedule 1	HHE [REP5-277] requested amendments to provide a distinction between hard and soft landscaping works in	For reasons set out in section 5.14 we are satisfied that adequate detail is provided in Requirements 33 and

Provision	Examination Issue	ExA Reasoning
	the description of Work No. 9.	37 (20 and 23 in their representation) in respect of landscape works. Consequently, we do not recommend any revision of the dDCO relating to this matter.
Schedule 1	SCC [REP9-034] requested amendments to the dDCO to remove the second outage car park of 600 spaces from Part 1 Work No. 1A(r)	For reasons set out in Sections 5.4 and 5.14 we consider that the Applicant has provided satisfactory justification for the need for the second outage car park proposed. Consequently, we do not recommend any revision of the dDCO relating to this matter.
Schedule 1	SCC [REP9-034] requested amendments to the dDCO to allow replacement of 4 pylons with gas insulated lines underground. They suggested two options for amending work numbers in Part 1 of the Schedule and also required changes to associated plans.	For reasons set out in Sections 5.4 and 5.14 we consider that the Applicant has provided satisfactory justification for the use of pylons. Consequently, we do not recommend any revision of the dDCO relating to this matter.
Schedule 2	ESC sought the inclusion of a Requirement in the dDCO for a Maintenance Activity Plan (MAP) that would be similar to Condition 31 (formerly 34) of the DML.	For the reasons set out in Section 5.8 we consider that the Applicant has fully explained why it is not necessary for the same commitment as is made in the DML to be made by way of a Requirement.

Provision	Examination Issue	ExA Reasoning
Schedule 2	A number of IPs sought the inclusion of a Requirement in the dDCO to secure the removal of the Hard Coastal Defence Feature (HCDF) after decommissioning.	For the reasons set out in Section 5.8 we consider that the Applicant has provided an appropriate means of addressing this issue through the CPMMP recording the default position to be the removal of the HCDF and that no separate Requirement is therefore necessary.
Schedule 6	The MMO queried the absence of a penalty clause for non-compliance with the Harbour Order.	For the reasons set out in Section 5.17, we consider an additional penalty clause is not necessary.
Schedule 6 Article 61	The MMO queried whether byelaws should be charged for. [REP10-107, MMO-37 epage 141].	For the reasons set out in Section 5.17, we consider it is reasonable for copies of byelaws to be subject to charge.
Schedule 6 Article 67	The MMO considers that an alternative form of drafting which it provides would give better clarity regarding the use of emergency powers under article 67 [REP10-107 page 59 to 60].	For the reasons set out in Section 5.17 we have not amended the wording because we consider the meaning is sufficiently established in the Applicant's final dDCO drafting.
Schedule 6 Article 71	The MMO queried why the prescriptive dates are 28 days following removal of the MBIF. [REP10-107, MDS_HO2 page 56].	For the reasons set out in Section 5.17 we have left drafting of the Order as set out in the Applicant's final dDCO.
Schedule 21 Condition 25	The MMO requested submission and determination timeframe to be six	For the reasons set out in Section 5.17 we have left drafting of the Order as set out

Provision	Examination Issue	ExA Reasoning
	months not three, to align with other approval periods for the MMO [REP10-195, para 3.2.23].	in the Applicant's final dDCO.
Schedule 21, Part 2 Art 4(1)(b), DML	The MMO in their SoCG [REP10-107] seek the deletion of the word "material"	For the reasons given in this chapter the ExA considers this is unnecessary. The word "material" was included in similar provisions elsewhere in the dDCO and is included in the rDCO.
Schedule 21, Part 3, Condition 14	The MMO requested in their SoCG [REP10-107] that a condition be added in relation to the CPMMP that pre-construction, construction and post-construction monitoring must be undertaken in accordance with the CPMMP unless otherwise agreed in writing with the MMO	Given that the MMO are the approving authority for the CPMMP and can therefore impose this in the plan there is no need for this.
Schedule 25 Appeals 4.(5)	SCC [REP10-210] requested a change to the number of working days from 10 to 20	In Planning Inspectorate Advice Note 15, Appendix 1, the standard drafting for the procedure for discharge of certain approvals, the number of working days for further information to be provided to other parties is 10 working days. Given this is the standard drafting and SCC have not provided a specific reason for their request, the ExA

Provision	Examination Issue	ExA Reasoning
		recommends that this is not changed

Table 9.4 DCO Provisions Recommended to be Changed

Provision	Examination Issue	Recommendations
Article 4(1)	The Westleton site is not necessary to ensure the network of European sites is maintained for marsh harrier. The ExA concludes this in HRA Chapter 6 of the Report. The ExA recommend the reference to Work No.8 is removed from this Article.	Article 4(1) after the words 'Work No.7,' delete the following: "[Work No.8],"
Article 9	Square brackets around article 9(4); the Applicant states this para is not legally necessary and has included it as the Councils state that it is helpful. In the ExA's view it would be prudent to take these matters into account on a partial transfer and the paragraph makes it clear that the SoS would be entitled to do so.	Remove square brackets
Article 11	The definition of "Deed of Obligation" has been extended at DL10 to include the Deed of the deed of covenant made between the NNB Generation	Articles 11(2), (3), and (4) delete the words "East Suffolk Council and Suffolk County Council" wherever they appear and insert "East Suffolk Council, Suffolk County Council and the Environment Agency".

Provision	Examination Issue	Recommendations
	<p>Company (SZC) Limited and the Environment Agency on 8 October 2021 under section 37 of the Environment Act 1995 and section 30 of the Anglian Water Authority Act 1977. Accordingly that deed is now within the ambit of Article 11. Obligations there to notify and consult with the Councils as counterparties to the DoO should therefore be extended to the Environment Agency as counterparty to the 8 October 2021 deed.</p>	<p>In Article 11(8) after 'Where it is proposed that', delete "either"; delete the words "East Suffolk Council or Suffolk County Council" and insert "East Suffolk Council, Suffolk County Council or the Environment Agency"; after "paragraph (1)(a)," delete "the council" and insert "the body".</p>
<p>Article 11(2)</p>	<p>SCC [REP10 -210] requested that a five year relevant period for applications for modification / discharge of the DoO to the Secretary of State be included. They reference the approach adopted in the TCPA 1990 Section 106 and 106A, which also include development obligations made within the development consent order regime of the</p>	<p>Article 11(2), after the words 'The undertaker may' insert the following;</p> <p>"at any time after the expiry of the period of five years beginning with the date on which the Deed of Obligation was entered into,"</p>

Provision	Examination Issue	Recommendations
	<p>PA2008. We recommend that the dDCO be amended to accept this change.</p>	
<p>Article 11</p>	<p>At DL10 the Applicant deleted the prohibition on imposing obligations on "<i>other persons against whom the DoO is enforceable</i>" when an application is made to the SoS to vary the DoO. The explanation was given in the Appendix, drafting note 16, to [REP10-012] as explained above.</p> <p>Such applications are generally only made when the parties cannot agree a variation.</p> <p>This provision which is taken from s.106A of the TCPA 1990 (on which [REP10-012] explains the DoO provisions are framed) ensures that a party – usually the planning authority – does not have obligations imposed upon it against its will. The application will have been made by the undertaker in this case.</p> <p>The provision was in the drafting until immediately before the final deadline of</p>	<p>After Article 11(2) insert</p> <p>"(3) An application under paragraph (2) for the modification of an obligation in the Deed of Obligation may not specify a modification imposing an obligation on any other person against whom the Deed of Obligation is enforceable"</p> <p>and renumber subsequent paragraphs of Art 11.</p>

Provision	Examination Issue	Recommendations
	<p>the Examination as explained above.</p> <p>Without it there is no limitation on what can be imposed on the Councils. The ExA agrees with SCC that it should be reinstated.</p>	
Article 13(3)	<p>SCC [REP10-210] requested an amendment to Article 13 (11 in their representation) to delete unnecessary text due to the presence of a deeming provision in paragraph (4) of the Article. The ExA agree with this deletion.</p>	<p>Article 13(3) after the words 'the street authority' delete the following:</p> <p>"which may not be unreasonably withheld or delayed"</p>
Article 14(2) and (3)	<p>SCC [REP10-210] requested an amendment to Article 14 (12 in their representation) to remove unnecessary wording in (2) and to delete the deemed consent in (3). They cite precedents in a previous DCO.</p>	<p>Article 14(2) after the words 'unreasonably withheld' delete the following:</p> <p>"or delayed"</p> <p>And delete all of (3) and renumber the following paragraphs (4) and (5) to:</p> <p>"(3)" and "(4)"</p>
Article 19(5)(b)	<p>SCC [REP10-210] requested an amendment to Article 19 (17 in their representation) to delete unnecessary text due to the presence of a</p>	<p>Article 19(5)(b) after the words 'unreasonably withheld' delete the following:</p> <p>"or delayed"</p>

Provision	Examination Issue	Recommendations
	deeming provision in paragraph (10) of the Article. The ExA agree with this deletion.	
Article 24	SCC [REP10-210] requested that the power to alter speed limits is subject to the consent of the traffic authority in whose area the road concerned is situated. We agree that given the traffic authorities statutory duties that this is a reasonable request and recommend that Article 24 should be amended accordingly.	Insert after (1): "Subject to the consent of the traffic authority in whose area the road concerned is situated" And in (7) after the word 'paragraph' insert: "(1) or"
Article 75	The MMO in their SoCG [REP10-107] requested this was added to ensure they are not bound by any appeals processes imposed by the DCO. This is discussed in section 9.1 above	Delete the following: "Appeals procedure in relation to deemed marine licence 75. Schedule 22 shall have effect."
Article 83	The MMO in their SoCG [REP10-107] requested this was added to ensure they are not bound by any appeals processes imposed by the DCO. This is discussed in section 9.1 above	After the end of (2), insert the following: "(3) Any matter for which the consent or approval of the Marine Management Organisation is required under any provision of this Order shall not be subject to this procedure."
Article 87 (New)	The Applicant deleted an article (58) at the time it included a DML	After the end of Article 86, insert the following: "Part 6a

Provision	Examination Issue	Recommendations
	<p>condition. The MMO disagrees because with its removal it would cause a lacuna in responsibilities for monitoring and enforcing harbour powers.</p> <p>We agree the DCO should be amended accordingly (see Section 5.17).</p>	<p>Lights on marine works etc. during construction</p> <p>87. The undertaker must at or near—</p> <p>(a) any marine work, including any temporary work; or</p> <p>(b) any plant, equipment or other obstruction placed, in connection with any authorised development, within the area of seaward construction activity, during the whole time of the construction, reconstruction, extension, enlargement, replacement or relaying of such work or development, exhibit every night from sunset to sunrise such lights and take such other steps for the prevention of danger to navigation as Trinity House may from time to time direct.</p>
<p>Article 88 (New)</p>	<p>The Applicant deleted an article (59) at the time it included a DML condition. The MMO disagrees because with its removal it would cause a lacuna in responsibilities for monitoring and enforcing harbour powers.</p> <p>We agree the DCO should be amended accordingly (see Section 5.17).</p>	<p>After the end of Article 87, insert the following:</p> <p>“Provision against danger to navigation</p> <p>88. In case of damage to, or destruction or decay of, a marine work or any part of it, the undertaker must as soon as reasonably practicable notify Trinity House and must lay down such buoys, exhibit such lights, and take such other steps for preventing danger to navigation, as Trinity House may from time to time direct.”</p>
<p>Article 89 (New)</p>	<p>The Applicant deleted an article (60) at the time it included a DML condition. The MMO disagrees because with its removal it</p>	<p>After the end of Article 88, insert the following:</p> <p>“Permanent lights on marine works</p> <p>89. After the completion of a marine work the undertaker</p>

Provision	Examination Issue	Recommendations
	<p>would cause a lacuna in responsibilities for monitoring and enforcing harbour powers.</p> <p>We agree the DCO should be amended accordingly (see Section 5.17).</p>	<p>must, at the outer extremity of it exhibit every night from sunset to sunrise such lights and take such other steps for the prevention of danger to navigation, as Trinity House may from time to time direct.”</p>
SCHEDULE 1 PART 1		
Work No. 8	<p>The Westleton site is not necessary to ensure the network of European sites is maintained for marsh harrier. The ExA concludes this in HRA Chapter 6 of the Report.</p>	<p>Delete the following:</p> <p>“[Work No. 8] [(Marsh harrier habitat, Westleton): Landscape and ecological works including earthworks, drainage and associated water control structures. The location of the above works is shown at sheet no. 14 of the Works Plans.]”</p>
SCHEDULE 2 - Requirements		
Requirement 1	<p>Paragraph 1(4) is to limit the effect of the phrase “generally in accordance” where used in other requirements. The limitation to documents which are certified is unnecessary and incorrect as all the instances where the phrase is used except two are to certified documents and there is no reason to exclude the other two instances.</p>	<p>Delete the words “that is listed in Schedule 24 and certified under article 80 (Certification of plans, etc)”</p>
Requirement 5	<p>At the close of the Examination SCC and the Applicant had not agreed a final Drainage</p>	<p>Replace all of the text with the following:</p> <p>“(1) No part of the authorised development (save for Work No.</p>

Provision	Examination Issue	Recommendations
	<p>Strategy. We therefore recommend that the SoS needs to be satisfied whether they have agreed a replacement Drainage Strategy.</p> <p>In addition, in Section 5.11, we recommend that SCC as Lead Local Flood Authority should be the discharging authority for surface water drainage systems.</p> <p>Taking both of these factors together, we recommend that the current Requirement 5 is replaced by the text opposite.</p>	<p>1B, 1C, 4A(c), 9(b), 10(b), 11, 12, 13(b), 14, 15, 16 or 17) may be commenced until details of the foul water drainage system for that part (including projected volume and flow rates, management and maintenance arrangements, means of pollution control, sewage treatment works and a programme of construction and implementation) have been submitted to and approved by East Suffolk Council, following consultation with the Environment Agency, the relevant Statutory Nature Conservation Body, the East Suffolk Internal Drainage Board and the sewerage undertaker. (2) No part of the authorised development (save for Work No. 1B, 1C, 4A(c), 9(b), 10(b), 11, 12, 13(b), 14, 15, 16 or 17) may be commenced until details of the surface water drainage system for that part (including management and maintenance arrangements, means of pollution control, and a programme of construction and implementation) have been submitted to and approved by Suffolk County Council in its capacity as the Lead Local Flood Authority and the drainage authority, following consultation with the Environment Agency, the relevant Statutory Nature Conservation Body, the relevant Internal Drainage Board and the sewerage undertaker. (3) The details of the foul water drainage system and the surface water drainage system must be based on sustainable drainage principles and must be in accordance with the Drainage Strategy. (4) Any approved foul water drainage system or</p>

Provision	Examination Issue	Recommendations
		surface water drainage system must be constructed and maintained in accordance with the approved details.”
Requirement 6	We recommend a change to the wording of this Requirement to take account of what we understand was agreed by the ONR for EA1N and EA2; and it also addresses SCC concern that the NSL will not cover emergency planning sufficiently as works proposed here go significantly beyond the site which would be covered by the NSL. This is explained in Section 5.20.	<p>Replace all of the text of Requirement 6 with the following:</p> <p>“6 Project wide: Emergency planning</p> <p>(1) No part of the relevant works may be commenced until the Suffolk Resilience Forum Radiation Emergency Plan (“the Plan”) has been reviewed to account for the relevant works, or any part of them, and reissued in accordance with the Regulations.</p> <p>(2) Emergency planning arrangements specified in the Plan in respect of the relevant works must be implemented in accordance with the Plan, unless otherwise agreed with Suffolk County Council following consultation with the Sizewell Emergency Planning Consultative Committee or Suffolk Resilience Forum as appropriate.</p> <p>(3) For the purposes of this requirement –</p> <p>(a) “relevant works” means permanent works related to site preparation and construction; and</p> <p>(b) “the Regulations” means the Radiation (Emergency Preparedness and Public Information) Regulations 2019.”</p>
Requirement 6 (Alternative)	In the event the SoS does not agree with the ExA recommendation for the change to all of	In Requirement 6 (1), after the words ‘submitted to’ delete the words : “and agreed by”

Provision	Examination Issue	Recommendations
	<p>Requirement 6 above, we recommend that some changes are made to the text of the final dDCO to clarify its meaning. This is also explained in Section 5.20.</p>	<p>and after the word 'Council' add the words:</p> <p>"for approval"</p> <p>In Requirement 6(2), after the word 'agreement', delete the words:</p> <p>"is not"</p>
<p>Requirement 10</p>	<p>The dDCO does not include the suggestion from the Right of Way Access Strategy [REP10-037] that NE be consulted on the final route for the England Coast Path. The ExA consider that this should be added to the DCO and would recommend amendment of the dDCO.</p>	<p>Requirement 10(2) after the words "Suffolk County Council." Insert the following:</p> <p>"In respect of the route for the England Coast Path this should also be subject to consultation with Natural England."</p>
<p>Requirement 13</p>	<p>A limitation on the operation of the diesel generators for the desalination plant is required. The Applicant provided a revised air quality assessment [REP10-153] this limited time desalination plant would be run on diesel generators to two years. A limitation needs to be added to make sure this is controlled. This is explained in Section 5.3.</p>	<p>Requirement 13, after the end of 13(2)(b), add the following:</p> <p>"(3) The Applicant must notify East Suffolk Council and the Environment Agency of the date the desalination plant is first commissioned, and subsequently the date it has been transferred to operate from mains power. The desalination plant must be installed and operated in accordance with the Revised Desalination Plant Air Impact Assessment and cease to be powered from diesel generators beyond the two years specified in the revised Air Quality Impact Assessment unless otherwise approved by East Suffolk Council following consultation</p>

Provision	Examination Issue	Recommendations
		with Natural England and the Environment Agency.”
Requirement 20	Changes to this Requirement were agreed with the EA so as to include specific plans on the construction of the SSSI crossing. At the time the changes were agreed the words we recommend should be reinstated were present in requirement 20(1). There is no reference to their removal and we consider that the EA will have been working on the basis that compliance with Ch 5 of the DAS was secured. See further detail and discussion of this in Chapter 6.	In Requirement 20(1) after the word 'built', insert the following: “in general accordance with Chapter 5 of the Design and Access Statement and”
Requirement 22	The Applicant in its amendments to create Revision 11 of the dDCO [[REP10-009] has without explanation excluded Work No 1A (h)(i) from the list of works to be carried out in accordance with the documents and plans referred to in the requirement. This is an error in our view.	In Requirement 22(1) after “(h)” where it first appears delete (ii)
Requirement 27	The ExA is not recommending the Westleton Marsh	Delete the words “Westleton Marsh Harrier Compensatory Habitat Strategy”

Provision	Examination Issue	Recommendations
	Harrier Site. Therefore the reference to the Westleton Marsh Harrier Compensatory Habitat Strategy should be removed	
Requirement 35	The Applicant responded to ExQ1 NV.1.76 identifying that vibration effects from construction traffic may have adverse effects and indicated surveys would be carried out where necessary. This was not followed through within the DCO as a requirement. Further explanation is in Section 5.18	After the end of paragraph (5) insert the following: “(6) Prior to the commencement of work, the Applicant must submit a scheme in writing to Suffolk County Council for approval in writing identifying those properties along the B1122 where a pre construction survey will be necessary. The scheme shall include details of the provision to be made for monitoring those properties in accordance with the Code of Construction Practice including the duration of any monitoring; the carrying out of any remedial works found to be required as a result of that monitoring and a timetable for implementation. The scheme must be carried out in accordance with the approved details and timetable.”
SCHEDULE 3 – Land Plans		
Fen meadows and marsh harriers habitat	As result of deletion of Work No.8 in Part 1 of SCHEDULE 1	Delete the row in table containing the following: “SZC/LP/14 03 Marsh harrier habitat: Land Plan – Sheet 14 of 28 1:2,500 A1”
SCHEDULE 4 – Work Plans		
Fen meadows and marsh harriers habitat	As result of deletion of Work No.8 in Part 1 of SCHEDULE 1	Delete the row in table containing the following: “SZ/WP/17 02 Marsh harrier habitat: Works Plan - Sheet 14 of 28 1:1000 A0”
SCHEDULE 5 – Rights of Way Plans		

Provision	Examination Issue	Recommendations
Fen meadows and marsh harriers habitat	As result of deletion of Work No.8 in Part 1 of SCHEDULE 1	Delete the row in table containing the following: "SZC-SZ0204-XX-000- DRW-100419 03 Marsh harrier habitat: Rights of Way Plan - Sheet 14 of 28 1:2500 A1"
SCHEDULE 14 – Traffic Regulation Measures		
Temporary traffic regulation measures	SCC [REP10-210] requested an additional note be added under the heading "Temporary traffic regulation measures", an explanatory note explaining that if a speed limit is temporarily amended that the undertaker would be responsible for works associated with returning to the previous speed limit. They consider it would not be reasonable for such works to be left to SCC to undertake. The ExA agree with this position and recommend adding an explanatory note to Schedule 14.	Under the heading Temporary traffic regulation measures add the following: "Note: Where the undertaker has exercised the power to impose a temporary traffic regulation order (TTRO) relating to speed limits on any of the specific sections of road identified below, the undertaker must change that speed limit back to the speed limit which applied immediately before the TTRO came into force after the relevant work associated with the TTRO has been decommissioned."
SCHEDULE 17 – Land of which only temporary possession may be taken		
Marsh Harrier Habitat	The Westleton site is not necessary to ensure the network of European sites is maintained for marsh harrier. The ExA concludes this in HRA Chapter 6 of the Report. The ExA recommend	Schedule 17, delete the following row from the table: "Marsh Harrier Habitat MH/14/01, MH/14/01a, MH/14/01b, MH/14/02, MH/14/03, MH/14/04 Construction of Work No. 8"

Provision	Examination Issue	Recommendations
	removing the land from this Schedule.	
SCHEDULE 21 – DEEMED MARINE LICENCE		
Condition 6	As requested by the MMO in its SoCG with the Applicant [REP10-107] alteration to the text of this Condition to improve clarity	<p>In Condition 6(1) delete the words 'was materially false or misleading, the undertaker must notify' and replace with the following:</p> <p>"was false or misleading in any material particular the undertaker must explain in writing to"</p> <p>Also move the following words and make it into a new paragraph (3) after the end of (2)</p> <p>"Any oil, fuel or chemical spill within the marine environment must be reported to the MMO Marine Pollution Response Team as soon as reasonably practicable, but in any event within 12 hours of being identified in accordance with the following, unless otherwise advised in writing by the MMO—</p> <p>(a) within business hours on any business days: 0300 200 2024;</p> <p>(b) any other time: 07770 977 825; or</p> <p>(c) at all times if other numbers are unavailable: 0845 051 8486 or dispersants@marinemanagement.org.uk."</p>
Condition 8(4)	As requested by the MMO in its SoCG with the Applicant [REP10-107, MDS_MWQ3] and for consistency with all other places in the DML which refer	<p>In Condition 8(4) after the word 'agreed' insert the following:</p> <p>"in writing"</p>

Provision	Examination Issue	Recommendations
	to agreement with the MMO.	
Condition 15(3)	As requested by the MMO [REP10-107, MDS_MWQ3] and to align with the complexity of the plan to be submitted for approval. We recommend that the MMO approval period is extended from 3 to 6 months.	In Condition 15(3) after the word 'least' change the number 3 to: "6"
Condition 15(4)	As requested by the MMO [REP10-107, MDS_MWQ3] and to align with the complexity of the plan to be submitted for approval. We recommend that the MMO approval period is extended from 3 to 6 months.	In Condition 15(4) after the word 'is' change the number 3 to: "6"
Condition 36 (2)	There is a numbering error in dDCO that has not been amended following changes to Works numbers. This is an outstanding matter in the SoCG with the MMO [REP10-107]. We recommend that the dDCO is amended to remove the error.	In Condition 36(2) after the words 'Work No.1A' change '(bb)' to: "(aa)"
Condition 39 (1)	To accord the condition with the statements in the draft Sabellaria Reef Monitoring and Mitigation Plan (SRMMP) that	Condition 39(1), after the words 'and approved by the MMO in writing' the second time they appear in the sentence insert the following: "after consultation with Natural England"

Provision	Examination Issue	Recommendations
	<p>approval would be after consultation with Natural England. We recommend an amendment to the dDCO.</p> <p>See Section 5.15 of this Report.</p>	<p>After sub-paragraph (2) insert “(3) Pre-construction, construction and post-construction monitoring must be undertaken in accordance with the SRMMP unless otherwise agreed in writing with the MMO” and renumber following sub-paragraphs</p>
<p>Condition 44(1)</p>	<p>The first change is required to allow for consideration of the views of Natural England on the Fish Impingement and Entrainment Monitoring Plan (FIEMP). Not all their comments were accepted by the Applicant. As a consequence, we recommend that the dDCO is amended.</p> <p>The second is to ensure that the full data is available to the Marine Technical Forum (MTF) as requested by NE and consistently with the MMO’s practice as an open and transparent organisation. See Section 5.15 of this Report.</p>	<p>Condition 44(1), after the words ‘in consultation with the Environment Agency’ insert the following:</p> <p>“and Natural England”</p> <p>After the end of paragraph (d) insert the following:</p> <p>“(e) an obligation to make the impingement and entrainment data publicly available with the reports required by the FIEMP”.</p>
<p>Condition 45</p>	<p>As requested by the MMO in the SoCG [REP10-107] MDS_MEF4 and to allow for future</p>	<p>Condition 45 After sub-paragraph (2) insert “(3) Pre-construction, construction and post-construction monitoring must be undertaken in</p>

Provision	Examination Issue	Recommendations
	monitoring of impingement and entrainment. The ExA recognises that the purpose of the FIEMP is to compare impingement and entrapment with the same at Sizewell C. This provision will allow the MMO to impose monitoring for other proper planning purposes.	accordance with the FIEMP unless otherwise agreed in writing with the MMO" and renumber following sub-paragraphs.
SCHEDULE 22 - Appeals procedure in relation to deemed marine licence		
Schedule 22	The MMO in their SoCG [REP10-107] requested this was deleted to ensure they are not bound by any appeals processes imposed by the DCO. This is discussed in Section 9.1 above.	Delete whole Schedule
SCHEDULE 25 - Procedure for approvals, consents and appeals		
Appeals (4)	The MMO in their SoCG [REP10-107] requested this was added to ensure they are not bound by any appeals processes imposed by the DCO. This is discussed in Section 9.1 above.	After the end of (14) insert the following: “(15) Any matter for which the consent or approval of the Marine Management Organisation is required shall not be subject to the appeals procedure in this Schedule.”

9.3. DEED OF OBLIGATION

- 9.3.1. The Deed of Obligation (DoO) is between the Applicant, ESC and SCC. The Applicant initially submitted the Heads of Terms of the Section 106 [APP-600] but the first draft of the Section 106 agreement was not received until December 2020 in response to requests from the ExA [AS-040]. The ExA [PD-009] issued a number of observations concerning the first draft of a Section 106 agreement. The ExA requested a response by way of an Explanatory Memorandum (EM) to accompany any revised Section 106 agreement. The Applicant responded at Procedural Deadline

B with a revised Section 106 agreement [PDB-004] and an EM [PDB-009].

- 9.3.2. Following this the ExA [PD-025] issued further questions of clarification about the draft Section 106. The Applicant responded to these questions at the end of their responses to ExQ1 [REP2-100] in the section with the prefix SA (Section agreement).
- 9.3.3. Section 106 of the Town and Country Planning Act 1990 is a mechanism to make promises which meet its tests "run with the land". That is, they bind persons deriving title from the person who originally entered into the s.106 agreement, but only so far as the land of that person is concerned. Section 106 is applied with appropriate modifications to the NSIP regime by the Planning Act 2008. But the basic qualifications of s.106 – that it binds only the land of the person who originally enters into it, runs with that land, and that only the promises which meet the tests in s.106 will run – all apply.
- 9.3.4. Our initial examination and questions described above showed that the Applicant owned very little land, certainly not the main platform, and that the promises to be given were wider than the tests of s.106 allowed.
- 9.3.5. The Applicant was not unaware of the issues and its advisers had begun to address them. Ultimately a new legal mechanism to give effect to the agreement emerged, which the Applicant called "the evolving approach". It does not rely on s.106 though the Applicant has sought to follow the characteristics of the s.106 system, for example by providing for modification of the DoO by agreement or by application to the SoS.
- 9.3.6. The result is the DoO. The deed – from its inception as an attempted s.106 agreement to its final execution – went through ten iterations and grew from 31 pages in length to 729 pages, plus annexures [REP10-076-REP10-084]. The main deed and schedules are contained in [REP10-076] and REP10-077]. More conveniently there is a final engrossment version the text of the deed and schedules at [REP10-075].
- 9.3.7. It is appropriate now to describe the legal mechanism under which the deed is enforceable and how and with what it "runs". The Councils have negotiated the deed and have confirmed that they are content with it – see their final SoCG [REP10-102].
- 9.3.8. The DoO is first of all enforceable against the Applicant because it entered into the DoO and executed it. Art 10 of the DCO gives the Councils powers to enforce the DoO by injunction and additional powers of entry. That is modelled on s.106.
- 9.3.9. By Art 9(7) of the DCO the DoO is enforceable against transferees of the powers to construct or operate the main platform works (i.e. Work no 1A (a) to (h), essentially the nuclear and conventional islands). In this way the DoO is enforceable as the Applicant explained against the person holding the nuclear site licence. Nuclear site licences are non-transferable and a new owner of the main platform works would need to have a licence specifically in respect of the nuclear power station. This was

discussed at ISH14 and the Applicant's Counsel's explanation is at [REP8-124] paragraph 1.3.3 -1.3.15.

9.3.10. We also obtained an opinion letter from the Applicant's solicitors, Herbert Smith Freehills, addressed to the SoS and Councils confirming that the DoO has been properly executed and is binding on the Applicant (NNB Generation Company (SZC) Ltd) and that it is enforceable against a person to whom the power to construct and use the main platform works has been transferred. The letter which is [REP10-087] contains fuller details.

9.3.11. The executed DoO was accompanied by an EM [REP10-086] which describes what the DoO does. We therefore do not propose to duplicate that. In summary the substance of the obligations are set out in the schedules. Clause 4 contains the covenants by the Applicant and the Councils to perform their respective obligations. Where the Applicant is to make payments by a certain event or activity the Applicant is not to commence that event or activity without making the payment. Similarly where an action is to be taken before Commencement the Applicant is not to covenants to Commence the Project without performing the action. There are some obligations which are applicable before Commencement.

9.3.12. The subject matter of the Schedules is as follows:

- vi. Sch 1 Councils' General Obligations
- vii. Sch 2 Councils' resourcing
- viii. Sch 3 Accommodation and Housing
- ix. Sch 4 Emergency Services
- x. Sch 5 Public services and community safety
- xi. Sch 6 Health and well being
- xii. Sch 7 Employment, skills education and supply chain
- xiii. Sch 8 Heritage
- xiv. Sch 9 Implementation plan
- xv. Sch 10 Leisure and amenity
- xvi. Sch 11 Natural environment
- xvii. Sch 12 Noise
- xviii. Sch 13 Third party resilience funds
- xix. Sch 14 Sizewell C Community Fund
- xx. Sch 15 Tourism
- xxi. Sch 16 Transport and Public Rights of Way
- xxii. Sch 17 Governance

9.3.13. There is an obligation to use reasonable endeavours to deliver the Key Environmental Mitigation (Sch 9) in accordance with the Implementation Plan. This includes

- the Temporary Desalination Plant, the Branch Line /LEEIE rail spur, and GRR, the SLR, the TVB, the Temporary Marine Bulk Import Facility (sometimes known as the temporary Beach Landing Facility,
- the Project Accommodation
- the Fen Meadow Works (sometimes known as Fen Meadow compensation areas), and Marsh Harrier habitat improvement area (if the SoS requires it) and

- the permanent Beach landing facility, Park and Rides, Yoxford Roundabout, the Freight Management Facility and Works Nos 15, 16 and 17.

- 9.3.14. They were discussed at ISH1 and at ISH14. Part of the initial concern arose also because the Implementation plan was originally “indicative”.
- 9.3.15. At ISH1 the Applicant explained that part of the reason for putting the obligation in terms of reasonable endeavours was that the project was complex with changing circumstances and risks of criminal liability for breach of the DCO; the emphasis should instead be on the other controls proposed by the Applicant [REP5-106] and [REP5-113]. A system of Grampian conditions would cede control of the Proposed Development to the Councils. *“The principle that the construction process would need to regularly pause and seek consent from two separate local authorities is neither reasonable nor something with SZC. Co could properly accept”* [REP5-113] Appendix B. However, the Applicant did say it would reflect on the matters we had raised.
- 9.3.16. At ISH14 the matter was still live and we wrote in our Commentary on the DoO and DCO [PD-042] shortly before ISH14 that *“An obligation to use reasonable endeavours to deliver an indicative scheme seems to amount to a loose obligation squared, which is very loose”*.
- 9.3.17. At ISH14 the Applicant explained its proposals to deal with our concerns, concerns which the Councils shared. It pointed out that one of its concerns was that there may well be circumstances beyond the Applicant’s control which prevent it from achieving the phasing in the Implementation Plan even though it had acted reasonably. It was the Applicant’s submission that the flexibility in reasonable endeavours is suited to this whilst other controls ensured the effects are no worse than assessed. (Those controls – the framework of “strategies” and “plans” relied on in the application - had been explained in the Applicant’s response [REP7-058] at Appendix C to our first commentary on the DCO [PD-038].)
- 9.3.18. However it had decided to supplement those controls with long-stops for delivery of relevant Associated Development. The Applicant also pointed out to us that the obligation to use reasonable endeavours is a continuing obligation so that the Applicant must use reasonable endeavours in preparation for the due date. In addition, the obligations in Sch 9 include a duty to keep the Councils informed of progress, and to notify the Planning Group promptly of any material anticipated delay. That in turn would lead to action in response to the delay [EV-213-216]. The Councils would thereby have information to show whether or not the undertaker was using reasonable endeavours.
- 9.3.19. The result is as follows:
- the Phasing Schedule is set out in the DoO at Annex H and is no longer indicative

- the temporary desalination plant and other items of Key Environmental Mitigation in (i) above are to be provided in accordance with the longstop events set out in the CMS [REP10-025] para. 2.1.6.
- the Project accommodation (ii) above is given longstops in Sch 3 paras 4.1.1 and 4.2.1 of the DoO.
- there were already requirements in place dealing with the Fen Meadow Works and Marsh Harrier habitat improvement area (iii) above. In their final form they are now Reqs 25, 26 (for wet woodland) and 27 which are Grampian type requirements preventing part of the proposed development until plans are submitted and approved, with obligations then to implement the approved plans.

9.3.20. In the case of the group (iv) matters the ExA is satisfied that there is no need for long stops. They are matters which the Applicant simply must put in place in its own interests (The Freight Management Facility regulates the arrival and processing of road freight going to the site; the Yoxford Roundabout is needed for the SLR freight access from the north; the BLF is needed to handle Abnormal Indivisible Loads rather than road transport; the Park and Rides are needed because there are parking controls and without the Park and Rides the workforce will be unable to reach the site; and the other works are relatively minor). The reasonable endeavours obligation and rest of Schedule 9 is adequate in those cases. We note that SCC who are the Highway Authority are content on these matters.

9.3.21. Governance of the various groups established under the DoO is addressed in Schedule 11. To take an example, the FIEMP provides that the results of monitoring are to be reported to the MTF. Then, by Para 9.4 of Sch 11 of the DoO the MTF is to review the reports of the monitoring and to determine further mitigation if needed and the money needed for it. By para 9.6, the Applicant is to pay the requisite amount from the identified funds. The Environment Review Group (ERG) receives reports from the MTF (and other groups) and decides any disagreements within the MTF (para 15). If the ERG cannot agree the matter then the Delivery Steering Group decides (Sch 17 para 3.6) and if that group cannot decide the matter goes to expert determination under Clause 8 of the DoO.

9.3.22. NE made comments [REP8-298f] about the DoO. In our view the DoO satisfactorily addresses the concerns they raise.

9.3.23. Table 9.2 below shows the iterations of the DoO.

Table 9.2 Iterations of the Deed of Obligation

Deadline Number	Rev. No.	Exam Library Reference	Notable Changes Made
N/A		[AS-012]	First draft of parts of the Section 106
N/A	1.0	[AS-040]	First draft of full Section 106

Deadline Number	Rev. No.	Exam Library Reference	Notable Changes Made
PDB	2.0	[PDB-004]	In response to ExA [PD-009] and ongoing engagement with ESC, SCC and other stakeholders.
1	3.0	[REP1-008]	Changes to Schedule 11 – Natural Environment.
2	4.0	[REP2-060]	Change from Section 106 Agreement to Deed of Obligation. Changes as a result of ongoing discussion with ESC and SCC.
3	5.0	[REP3-024]	Amendments as a result of ongoing engagement with stakeholders. Including addition of Supply Chain Work Plan.
5	6.0	[REP5-082]	Amendments as a result of ongoing engagement with stakeholders. Including addition of: <ul style="list-style-type: none"> ▪ Health – key performance indicators ; and ▪ Marine Technical Forum – terms of reference.
7	7.0	[REP7-040]	Amendments as a result of ongoing engagement with stakeholders. Including further details of: <ul style="list-style-type: none"> • Governance arrangements, including Delivery Steering Group , Review and Working Groups; and • Levels of funding to be secured for some of the initiatives.
8	8.0	[REP8-088] Part 1 [REP8-087] Part 2	Amendments as result of ongoing engagement with stakeholders. Including details of: <ul style="list-style-type: none"> ▪ Review of contributions clause added; and ▪ More details on governance.

Deadline Number	Rev. No.	Exam Library Reference	Notable Changes Made
10	9.0	[REP10-075]	Engrossment Version. Final Version (No annexures)
10	9.0	[REP10-076] [REP10-077] [REP10-078] [REP10-079] [REP10-080] [REP10-081] [REP10-082] [REP10-083] [REP10-084]	Scanned Final Signed Version Part 1 Part 2 Part 3 Part 4 Part 5 Part 6 Annexures Part 1 Annexures Part 2 Annexures Part 3

9.4. OTHER CONSENTS AND AGREEMENTS

- 9.4.1. The rDCO, if made, would require a number of other consents and licences to be granted. The position on other consents is set out in Chapter 8.

9.5. CONCLUSIONS ON THE RECOMMENDED DCO

- 9.5.1. The ExA concludes that for the reasons set out in Chapter 7 of this Report, the Proposed Development should not be granted development consent. However, should the SoS take a different view, the ExA considers that any DCO granted should incorporate the changes to the Applicant's final version of the dDCO [REP10-009] that are contained in the rDCO in Appendix D.

10. SUMMARY OF FINDINGS AND CONCLUSIONS

10.1. INTRODUCTION

- 10.1.1. This section of the Report provides a summary of the findings and conclusions that the ExA has made that have led to our overall conclusion and recommendation for this application for development consent.
- 10.1.2. As set out in Chapter 2 of this Report, the application is for a DCO to construct and operate a nuclear power station comprising two United Kingdom European Pressurised Reactors (UK EPR) each having a net electrical power output of 1,670 megawatts (MW) and giving the power station a nominal capacity of 3.34 MW together with associated development. The power station, with other on-site developments and marine works would be located at Sizewell in East Suffolk, adjacent to the existing power station (Sizewell B).
- 10.1.3. We explain in Chapter 2 the differences between the application as originally made and that which was examined following the Applicant's requests for changes to the application. The ExA's Procedural Decisions relating to the acceptance of a total of 22 material and non-material changes to the application are set out. We confirm in those Procedural Decisions, and in Chapter 7, that those changes are not considered to be so material when taken individually or as a whole as to constitute a new application, and the development now proposed is in substance that which was originally applied for.

10.2. CONSIDERATION OF FINDINGS AND CONCLUSIONS

- 10.2.1. The legal and policy context that the ExA considers applies to this application is set out in Chapter 3. This includes the Planning Act 2008 (PA2008), the National Policy Statements (NPS), the Marine and Coastal Access Act 2009, those aspects of EU law which have been converted into UK law and which remain in force such as the Water Framework Directive and the Air Quality Directive, the Habitats Regulations, the Offshore Marine Habitats and Species Regulations, the Ramsar Convention, and the EIA Directive. We also refer to the Paris Agreement, and the Aarhus Convention. Other relevant legal provisions and policy statements include the Equality Act 2010, the Climate Change Act 2008, the Development Plan, and the National Planning Policy Framework (NPPF).
- 10.2.2. The main issues have been identified in Chapter 4, sections 4.1 to 4.3 of this Report. This includes in section 4.3 issues arising in the Joint Local Impact Report (LIR) which was submitted by both East Suffolk Council (ESC) and Suffolk County Council. A Joint LIR Review was also provided at Deadline (DL) 10 [REP10-183].
- 10.2.3. The ExA's findings and conclusions in relation to policy and need are set out in section 5.19 of Chapter 5, and generic planning issues are

considered in the remaining sections of Chapter 5. Those conclusions and findings are summarised in Chapter 7.

- 10.2.4. Chapter 4, section 4.4, sets out the position in relation to the NPSs and the appraisal of the application under the PA2008. NPS EN-1 and NPS EN-6 provide the framework for development consent decisions on applications for new nuclear power stations which are capable of deployment by the end of 2025. The Proposed Development would be deployed post 2025.
- 10.2.5. The Written Ministerial Statement (WMS)⁶⁸ of December 2017 states that in the absence of a post-2025 nuclear NPS, nuclear power station projects yet to apply for development consent and due to be deployed beyond 2025 should be considered under s105 PA 2008 until such time as a new nuclear NPS is adopted.
- 10.2.6. The Applicant therefore accepts and we agree that s104 PA2008 does not apply and the application must be assessed under s105.
- 10.2.7. Under s105, the Secretary of State (SoS) in deciding the application must have regard to:
- any LIR submitted by local authorities;
 - relevant prescribed matters; and
 - other matters that the SoS thinks are both important and relevant to the SoS's decision.
- 10.2.8. The ExA has taken account of the Joint LIR and the Joint LIR Review in its examination of the application and in different sections of Chapter 5 of the Report we have addressed relevant comments made in the LIRs. The ExA has therefore had regard to the Joint LIR as updated at DL10 in this Report.
- 10.2.9. The relevant prescribed matters as set out in the Infrastructure Planning (Decisions) Regulations 2010 are those relating to listed buildings, conservation areas and scheduled monuments, biological diversity, navigation and hazardous substances. In relation to the latter, we note that the Hazardous Substances Consent under the Planning (Hazardous Substances) Act 1990 to be obtained from ESC for the holding of substances to be sought prior to construction is an outstanding consent that will need to be obtained. The ExA has had regard to all these prescribed matters where relevant in its consideration of the application, as set out in the relevant sections of Chapter 5.
- 10.2.10. The Energy White Paper '*Powering our net zero future*' confirms that whilst the NPS review is undertaken, the current suite of NPS remain Government policy and continue to provide a proper basis on which the SoS can make decisions on applications for development consent. The draft NPS EN-1 consultation states that for applications accepted for

⁶⁸ <https://questions-statements.parliament.uk/written-statements/detail/2017-12-07/HCWS321#skipToContent>

Examination before the designation of the 2021 amendments, the 2011 suite of NPS should have effect in accordance with the terms of those NPSs.

- 10.2.11. In section 5.19 of Chapter 5 of this Report the ExA concludes that EN-1, and EN-6 are important and relevant considerations to which the SoS should have regard in reaching his decision in accordance with s105(2)(c) PA2008. Since EN-1 and EN-6 have neither been suspended nor revoked, the WMS requires the SoS to have regard to their content in reaching his decision on the application. The WMS states that: *"For projects yet to apply for development consent and due to deploy beyond 2025, Government continues to give its strong in principle support to project proposals at those sites currently listed in EN-6."*
- 10.2.12. The ExA finds that in relation to the WMS and the weight to be attached to EN-1, and EN-6, there have been no relevant change of circumstances that reduce the weight to be afforded to the policies in those NPSs, and that significant weight should therefore be attached to them as required by the WMS.
- 10.2.13. The ExA has also had regard to all relevant policies in the NPPF, and local plan policies as important and relevant considerations as noted in the Report. However, we believe that the nuclear specific policies in the NPSs should form the primary means of assessing the acceptability in planning policy terms of the Proposed Development.
- 10.2.14. In section 5.19 of this Report, the ExA concludes that having regard to EN-1, and EN-6, as supported by more recent developments in national policy including the Energy White Paper, that there is an urgent need for new nuclear energy generating infrastructure of the type comprised by the Proposed Development which would respond directly to that urgent need, and national policy commitment to deliver a large scale new nuclear power station to meet that requirement.
- 10.2.15. Chapter 6 of this Report sets out the ExA's analysis and conclusions relevant to the Habitats Regulations Assessment. Overall, the ExA considers that there is insufficient information before the SoS to enable him to undertake an appropriate assessment and to apply the derogation tests of the Habitats Regulations of alternative solutions, IROPI, and compensation in order to fulfil the duty under the requirements of the Habitat Regulations. The ExA therefore has no alternative other than to recommend to the SoS as the competent authority that the DCO should not be made pursuant to the Habitats Regulations.
- 10.2.16. The ExA's overall conclusion on the case for development consent is set out in Chapter 7. In reaching its overall conclusion the ExA has had regard to the NPSs, the Joint LIR submitted during the Examination, matters prescribed in relation to the development and other matters that are both important and relevant to the decision including the NPPF and local planning policies, as required by section 105(2) PA2008.

- 10.2.17. The ExA has assessed the potential adverse impacts, including any long-term and cumulative adverse impacts. In so doing, it has taken into account the mitigation proposed to avoid, reduce, or compensate for any such impacts which would be secured by the draft Development Consent Order. Likewise, the benefits of the Proposed Development have been assessed including any long-term or wider benefits. The harms and benefits identified are set out in Chapter 5 and summarised in Chapter 7 of this Report.
- 10.2.18. The ExA has also had regard to human rights under the Human Rights Act 1998 and equality considerations under the Equality Act 2010. We have also taken into account the objective of contributing to the achievement of sustainable development, as required by s10 PA2008. In that respect, we have considered the Government's wider objectives for energy infrastructure, as explained in EN-1 paragraph 2.2.7, which include contributing to sustainable development and ensuring that our energy infrastructure is safe.
- 10.2.19. The ExA has considered all these various factors together in the light of s105 PA2008 and EN-1. With the exception of the permanent sustainable water supply issue, the ExA finds that the potential benefits of the Proposed Development including the contribution that the Proposed Development would make to satisfying the urgent need for low-carbon electricity generating infrastructure of this type would strongly outweigh the potential adverse impacts. However, the ExA concludes in relation to the water supply strategy that in the light of the issues which remained unresolved at the close of the Examination, we cannot recommend that the application as it stands should be granted development consent.
- 10.2.20. Having regard to all the matters referred to in this Report as summarised in Chapter 7, and in the light of issues which remained unresolved at the close of the Examination, the conclusion reached by the ExA is that the case for the grant of development consent for the Proposed Development is not yet made out. We recommend accordingly.
- 10.2.21. Should the SoS disagree with the ExA's recommendation for the application, including our conclusions in relation to the Habitats Regulations, we have also considered the request for Compulsory Acquisition powers in Chapter 8. The ExA concludes that, in that eventuality, there would be a compelling case in the public interest for the grant of the Compulsory Acquisition powers sought by the Applicant. The ExA's recommendation in respect of the grant of Compulsory Acquisition powers, including the s127, and s138 representations and Crown land, is set out in Chapter 8.
- 10.2.22. Likewise, should the SoS disagree with our main recommendation on the application, the ExA concludes that any development consent granted should take the form of the Recommended DCO attached as Appendix D to this Report. The changes we have recommended are explained in Chapter 9.

- 10.2.23. The ExA has also set out in Appendix E to this Report a number of additional points which the SoS may wish to consider in assisting him reach the final decision on the application for development consent. These matters include the permanent water supply solution, and unresolved HRA issues.
- 10.2.24. The other consents that are required to construct, operate, and maintain the Proposed Development are listed in Chapter 1 of this Report, and the ExA comments on them again in Chapter 8. Natural England's (NE) position at the end of the Examination is that it is not yet possible to ascertain that the Proposed Development would have no adverse effects on European and/ or nationally protected species and therefore letters of no impediment (LONI) cannot currently be provided. NE also have other outstanding concerns relevant to licensing and consents. In addition, although the power station could be built, the Office for Nuclear Regulation has confirmed that it could not be licensed and operate without a secure and permanent water supply.
- 10.2.25. In respect of the other consents and licences identified by the Applicant, the ExA finds that the Applicant has demonstrated that, notwithstanding the outstanding matters identified, potential risks or impediments to implementation have been properly managed and that the need for operational or other consents has been taken into account. However, the ExA suggests that the SoS may wish to consider seeking LONIs from NE together with confirmation that the extent of any such letters is considered to be sufficient for the purposes of the matters considered during the Examination.

10.3. RECOMMENDATION

- 10.3.1. For all the above reasons and in the light of the ExA's findings and conclusions on important and relevant matters set out in this Report and based on the evidence and information before us at the close of the Examination, the ExA recommends that unless the outstanding water supply strategy can be resolved and sufficient information provided to enable the Secretary of State carry out his obligations under the Habitats Regulations, the case for an Order granting development consent for the application is not made out.
- 10.3.2. Should the SoS disagree with the ExA's recommendation for the application, then the Order for the grant of development consent should be in the form of the Recommended DCO set out in Appendix D to this Report.
- 10.3.3. If the SoS is minded to grant an Order for development consent, then in relation to the application for Compulsory Acquisition within the Order, the ExA recommends the grant of Compulsory Acquisition powers as set out in Chapter 8.

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