



REPORT on the IMPLICATIONS for EUROPEAN SITES

Proposed Navitus Bay Wind Park



20 February 2015



CONTENTS

1.0 INTRODUCTION.....	1
Background	1
Documents Used to Inform the RIES.....	2
Structure of this Report.....	2
2.0 OVERVIEW.....	4
Potential impacts.....	4
European Sites considered.....	4
HRA matters discussed during the examination	9
Turbine Mitigation Area Option	10
3.0 LIKELY SIGNIFICANT EFFECTS	12
Applicant's Methodology	12
Summary of the applicant's HRA Screening exercise	13
Issues discussed during the examination relevant to the screening exercise	14
Conclusion of screening exercise	32
4.0 ADVERSE EFFECTS ON INTEGRITY	35
Conservation Objectives	35
Summary of the Integrity Test	35
Issues discussed during the examination relevant to the Integrity Test.....	35
5.0 SITE MATRICES	42



Key..... 42

6.0 APPENDICES:

APPENDIX 1: DOCUMENTS USED TO INFORM THIS RIES

**APPENDIX 2: EUROPEAN SITES CONSIDERED IN THE
APPLICANT'S HRA SCREENING REPORT (APP-059)**

APPENDIX 3: SUMMARY TABLE OF SCREENING EXERCISE

**APPENDIX 4: SUMMARY TABOF THE ASSESSMENT OF
EFFECTS ON THE INTEGRITY OF EUROPEAN SITES**



1.0 INTRODUCTION

Background

- 1.1 Navitus Bay Development Limited (the applicant) has applied to the Secretary of State for a development consent order (DCO) under Section 37 of the Planning Act 2008 (as amended) for the proposed Navitus Bay Wind Park (the application). The Secretary of State has appointed an Examining Authority (ExA) to conduct an examination of the application, to report its findings and conclusions, and to make a recommendation to the Secretary of State as to the decision to be made on the application.
- 1.2 The relevant Secretary of State is the competent authority for the purposes of the Habitats Directive¹ and the Habitats Regulations² and the Offshore Marine Regulations³ for applications submitted under the Planning Act 2008 regime (as amended). The findings and conclusions on nature conservation issues reported by the ExA will assist the Secretary of State in performing their duties under the Habitats Regulations and the Offshore Marine Regulations.
- 1.3 This report has been produced by the ExA, with support from the Environmental Services Team within the Planning Inspectorate. It compiles, documents and signposts information provided within the DCO application, and the information in relation to potential effects to European Sites⁴ submitted throughout the examination up to and including Deadline VIa (5 February 2015) by both the applicant and interested parties. It is not a standalone document and should be read in conjunction with the examination documents referred to in this report.
- 1.4 This RIES is issued to ensure that interested parties including the statutory nature conservation bodies in this case Natural England (NE)⁵ is consulted formally on Habitats Regulations matters. This

¹ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (as codified) (the 'Habitats Directive')

² The Conservation of Habitats and Species Regulations 2010 (as amended) (the Habitats Regulations).

³ The Offshore Marine Conservation (Natural Habitats, &c) Regulations 2007 (as amended) (the Offshore Marine Regulations) apply beyond UK territorial waters (12 nautical miles). These regulations are relevant when an application is submitted for an energy project in a renewable energy zone (except any part in relation to which the Scottish Ministers have functions).

⁴ The term European Sites in this context includes Special Areas of Conservation (SACs) and candidate SACs, Special Protection Areas (SPAs), potential SPAs, Sites of Community Importance (SCIs), Ramsar sites, and any sites identified as compensatory measures for adverse effects on any of the above. For a full description of the designations to which the Habitats Regulations apply, and/ or are applied as a matter of Government policy, see PINS Advice Note 10.

⁵ NE confirmed that it is authorised to exercise the JNCC's functions as a statutory consultee in respect of applications for offshore renewable energy installations in offshore



process may be relied on by the Secretary of State for the purposes of Regulation 61(3) of the Habitats Regulations and Regulation 25 of the Offshore Marine Regulations. Following consultation, responses to this RIES will be considered by the ExA in making their recommendation to the Secretary of State and made available to the Secretary of State along with this report. The RIES will not be revised following consultation.

- 1.5 The applicant considered a number of European sites in other EEA States⁶ (**APP-059** and **APP-060**)⁷, however no likely significant effects (LSE) were identified and all non-UK sites were screened out of the assessment. Only UK sites are considered in this report.

Documents Used to Inform the RIES

- 1.6 The applicant provided a HRA Screening Report (**APP-059**) and HRA Report (**APP-060**) with the DCO application.
- 1.7 In response to the ExA's questions and representations made by interested parties during the examination, the applicant submitted updated HRA Screening and Integrity Matrices (**REP-3326**) at Deadline IV of the examination.
- 1.8 All other documents used to inform this RIES are listed in Appendix 1 of this report.

Structure of this Report

- 1.9 The remainder of this report is in four parts as follows:

Section 2 identifies the European sites that have been considered within the DCO application and during the examination period, up to 20 February 2015. It provides an overview of the issues that have emerged during the examination.

Section 3 identifies the European sites and qualifying features screened by the applicant for potential LSEs, either alone or in combination with other projects and plans. The section also identifies where interested parties have disputed the

waters (0-200nm) adjacent to England and therefore NE will be providing statutory advice in respect of that delegated authority. However, NE note that JNCC retains responsibility as the statutory advisors for European Protected sites that are located outside the territorial sea and UK internal waters (i.e. more than 12 nautical miles offshore), in this instance the Wight Barfleur SCI, and as such continues to provide advice to NE on the significance of any potential impacts on interest features of the site (paragraph 1.4 of **REP-2461**).

⁶ European Economic Association (EEA) States.

⁷ The document references within the RIES refer to the Examination Library, an internal Planning Inspectorate document compiled to record all documents submitted with the application and throughout the examination. This document will be submitted to the Secretary of State with the Recommendation Report.



applicant's screening conclusions and provides an explanation of how these matters were addressed during the examination.

- Section 4 identifies the European sites and qualifying features which have been considered in terms of adverse effects on site integrity, either alone or in-combination with other projects and plans. The section identifies where interested parties have disputed the applicant's conclusions and provides an explanation of how these matters were addressed during the examination. It identifies where issues were unresolved at the time of issuing this RIES.
- Section 5 comprises matrices for those European sites and qualifying features for which NE did not agree to no adverse effect on integrity at the time of issuing this RIES. They summarise the evidence submitted by the applicant and interested parties up to Deadline VIa (5 February 2015).



2.0 OVERVIEW

Potential impacts

- 2.1 In Table 5.1 of the HRA Screening Report (**APP-059**), the applicant detailed the potential effects of the proposed development on European sites and provided details on the pathway of effect, potential causes and their geographic extent.
- 2.2 The potential effects were grouped into the following broad categories:
- loss, damage or degradation of habitats (coastal, marine, terrestrial and freshwater habitats)
 - disturbance / displacement of fauna (coastal, marine, terrestrial and freshwater habitats)
 - collisions of fauna with wind turbines and other infrastructure, and
 - the barrier effect.

European Sites considered

- 2.3 The project is not connected with or necessary to the management for nature conservation of any of the European sites considered within the applicant's assessment (paragraph 3.1.3 of **APP-059**).
- 2.4 The applicant's methodology for identifying European sites was detailed in section 2.2 of the HRA Screening Report (**APP-059**). It states that *'key to determining which European sites are included is an understanding of the potential impacts associated with the Project and the geographical scale over which these may be detectable'*. The parameters identified in Table 5.1 of the HRA Screening Report were used to define search areas for European sites (paragraph 5.1.3 of **APP-059**).
- 2.5 A total of 125 European sites were considered in the applicant's screening assessment (see Appendix 2 of this RIES for list of European sites or Table 5.2 of **APP-059** for full details of site names and features submitted with the DCO application) (Stage 1 of the assessment).
- 2.6 The applicant produced screening matrices for some individual European sites, but other European sites were grouped due to the large number of European sites identified and the overlap of designated features between European sites (paragraph 1.1.1 of Appendix J of **APP-059**). The remainder of this RIES has focussed on the individual European sites for which the UK is responsible and for which the applicant provided screening matrices (either as part of their application documents or during the examination). These include all European sites which NE identified as being



relevant to the project in their relevant representation (**REP-2461**) and their written representation (**REP-2900**), as detailed below.

2.7 The applicant provided screening matrices for the following European sites (**APP-059**) for which the UK is responsible with their application:

- River Avon SAC *
 - Avon Valley SPA *
 - Avon Valley Ramsar site *
 - Dorset Heaths SAC *
 - Dorset Heathlands SPA *
 - Dorset Heathlands Ramsar site *
 - Solent and Southampton Water SPA *
 - Solent and Southampton Water Ramsar site
 - Poole Harbour SPA *
 - Poole Harbour Ramsar site
 - River Itchen SAC *
 - Dungeness to Pett Level SPA
 - Isles of Scilly Complex SAC
- (* - see paragraph 2.9)

2.8 NE confirmed that the correct features have been identified in the applicant's HRA Screening Report for all relevant UK sites (**REP-3070**). NE did however note that little egret, *Egretta garzetta*, associated with Poole Harbour SPA and Ramsar site and Chichester and Langstone Harbours SPA and Ramsar site are only identified as a qualifying feature for both European sites in the SPA review (Stroud et al. 2001) and are therefore not legally a qualifying feature for either SPA. However, NE advised including this species in an HRA Assessment for both European sites and that the species is listed as being present in nationally important numbers for both the Ramsar sites⁸.

2.9 NE's relevant representation (**REP-2461**) identified European sites and features which they consider to be relevant to the application. This included the European sites in paragraph 2.7 above denoted with an * and the European sites and features detailed in Table 2a

⁸ Little egret was included in the applicant's screening matrix for Poole Harbour SPA (Stage 1 Matrix I of Appendix J of **APP-059**). In the applicant's updated screening matrices submitted at Deadline IV (**REP-3326**), little egret was also included for Chichester and Langstone Harbours SPA. The species was not included in the applicant's updated matrices for the Poole Harbour and Chichester and Langstone Harbour Ramsar sites.



which the applicant had not provided screening matrices for in Appendix J of **APP-059**.

Table 2a: Additional European sites identified by NE (REP-2461)

Site	Feature
Alde-Ore Estuary SPA	breeding - lesser black backed gull (<i>Larus fuscus</i>)
Flamborough and Filey Coast pSPA	breeding – black-legged kittiwake (<i>Rissa tridactyla</i>) breeding northern gannet (<i>Morus bassanus</i>)
Flamborough Head and Bempton Cliffs SPA	breeding – black-legged kittiwake (<i>Rissa tridactyla</i>)
Chichester and Langstone Harbours SPA	breeding – Sandwich tern (<i>Sterna sandvicensis</i>) breeding – little tern (<i>Sternula albifrons</i>) passage – little egret (<i>Egretta garzetta</i>)

2.10 In light of NE’s relevant representation, and of questions asked by the ExA during the examination, the applicant updated all of their original screening matrices at Deadline IV and provided additional screening matrices for the European sites and features listed in Table 2a above. In addition, the applicant provided a screening matrix for Chichester and Langstone Harbours Ramsar site. The applicant provided these matrices for both the application option (**REP-3326**) and the Turbine Area Mitigation Option (**REP-3431**) which was put forward by the applicant at Deadline III (see paragraphs 2.22 to 2.25 of this RIES for further explanation of these two options).

Likely significant effects

2.11 The applicant’s HRA report (**APP-060**) concluded the potential for a LSE on seven European sites and features for which the UK is responsible (see Table 2b). These were taken forward to Stage 2 of the assessment which considered the potential for adverse effects on the sites integrity.



Table 2b: European sites and features for which a LSE was identified in the applicant’s HRA report (APP-059)

Site	Feature
River Avon SAC	Atlantic salmon (<i>Salmo salar</i>)
Avon Valley SPA	Bewicks swan (<i>Cygnus columbianus bewickii</i>) gadwall (<i>Anas strepera</i>)
Avon Valley Ramsar site	gadwall (<i>Anas strepera</i>)
Dorset Heaths SAC	northern Atlantic wet heaths with <i>Erica tetralix</i> European dry heaths depressions on peat substrate of the Rhynchosporion
Dorset Heathlands SPA	Dartford warbler (<i>Sylvia undata</i>) nightjar (<i>Caprimulgus europaeus</i>) woodlark (<i>Lullula arborea</i>)
Dorset Heathlands Ramsar site	northern Atlantic wet heaths with <i>Erica tetralix</i> depressions on peat substrate of the Rhynchosporion
River Itchen SAC	Atlantic salmon (<i>Salmo salar</i>)

2.12 The applicant’s updated screening matrices submitted at Deadline IV (**REP-3326**) concluded LSE for the same European sites and features as the original screening matrices (i.e. those included in Table 2b) with the exception of Dorset Heathlands Ramsar site and Dorset Heaths SAC⁹.

2.13 In their relevant representation (paragraph 3.2 of **REP-2461**), NE stated that they could not be satisfied beyond all reasonable scientific doubt that the project would not have an adverse effect on the integrity of the following:

- Avon Valley Ramsar site
- Avon Valley SPA

⁹ The applicant’s original matrices screened in a LSE for Dorset Heathlands Ramsar site and Dorset Heaths SAC (Stage 1 Matrices D and F of Appendix J of **APP-059**), however a LSE was screened out of the updated matrices (Stage 1 Matrices D and F of **REP-3326**). This is explained in further detail in paragraphs 3.69 to 3.79 and Appendix 3 of this RIES.



- Dorset Heathlands Ramsar site
- Dorset Heaths SPA and SAC¹⁰
- River Avon SAC
- Flamborough Head and Bempton Cliffs SPA
- Flamborough and Filey Coast pSPA
- Alde-Ore Estuary SPA

2.14 Of these sites, the applicant’s updated matrices (**REP-3326**) did not identify a LSE for:

- Dorset Heaths SAC⁹
- Dorset Heathlands Ramsar site⁹
- Flamborough and Filey Coast pSPA¹¹
- Flamborough Head and Bempton Cliffs SPA¹¹
- Alde-Ore Estuary SPA¹²

2.15 The applicant’s updated matrices (**REP-3326**) identified a LSE for the European sites and features listed in Table 2c below and integrity matrices were provided. A LSE was not previously identified for these European sites and features in the original matrices (**APP-059**).

Table 2c: Sites screened into the applicant’s updated integrity matrices (APP-3326) (not screened in in the applicant’s original matrices (APP-059))

Site	Feature
Solent and Southampton Water SPA	common tern (<i>Sterna hirundo</i>) little tern (<i>Sternula albifrons</i>) Mediterranean gull (<i>Larus melanocephalus</i>) roseate tern (<i>Sterna dougalli</i>) Sandwich tern (<i>Sterna sandvicensis</i>)
Poole Harbour SPA	common tern (<i>Sterna hirundo</i>) Mediterranean gull (<i>Larus melanocephalus</i>)
Poole Harbour Ramsar site	common tern (<i>Sterna hirundo</i>) Mediterranean gull (<i>Larus melanocephalus</i>)

¹⁰ Note: this is considered to mean Dorset Heathlands SPA and Dorset Heaths SAC.

¹¹ See paragraphs 3.19 to 3.26 of this RIES for further details.

¹² See paragraphs 3.27 to 3.31 of this RIES for further details.



- 2.16 However, at Deadline VI the applicant and NE agreed to no LSE for the tern features of these European sites. See paragraphs 3.46 to 3.55 of this RIES for further details.
- 2.17 The applicant's screening exercise is explained in further detail in Section 3 and is summarised in Appendix 3 of this RIES.
- 2.18 In addition to the European sites considered above, NE raised concerns regarding potential sediment deposition on the Wight Barfleur SCI. The applicant did not provide a screening or integrity matrix for the site either with their application or in the updated matrices. See paragraphs 3.65 to 3.69 of this RIES for further details.
- 2.19 No other interested parties have identified other European sites or qualifying features for which the UK is responsible that they believe should have been considered by the applicant.

HRA matters discussed during the examination

- 2.20 A number of interested parties commented upon issues relating to the HRA during the examination, including the statutory bodies NE, the Environment Agency (EA), the Marine Management Organisation (MMO), Christchurch Borough Council, Dorset County Council, East Dorset District Council and New Forest District Council. A number of non-statutory organisations also made representations regarding HRA matters including the Royal Society for Protection of Birds (RSPB), local Wildlife Trusts and Christchurch Harbour Ornithological Group (CHOG). The matters raised are detailed in Sections 3 and 4 of this RIES.
- 2.21 The issues raised during the examination in relation to HRA which are further explored in Sections 3 and 4 of the RIES were:
- Queries over the collision risk calculations undertaken for
 - gannets and kittiwakes as features of Flamborough and Filey Coast pSPA and Flamborough Head and Bempton Cliffs SPA (specifically in-combination impacts)
 - lesser black-backed gull as a feature of the Alde-Ore Estuary SPA
 - Mediterranean gull, tern species and certain migrant species associated with a number of SPAs (specifically in-combination impacts), and
 - migratory nightjar as feature of Dorset Heathlands SPA.
 - Queries over the calculations undertaken for displacement of key bird species.
 - Potential disturbance impacts on black-tailed godwit from a number of European sites.



- Potential EMF impacts on sea lamprey from the River Avon SAC and Atlantic salmon of the River Itchen SAC.
- Potential impacts of sediment load/deposition to sensitive reef habitats and species within the Wight Barfleur SCI.
- Potential impacts on habitats within Dorset Heathlands SPA and Ramsar site, Dorset Heaths SAC and the feasibility of horizontal directional drilling (HDD).
- Potential in-combination effects of the project with St Leonard's Hospital residential development on the Dorset Heathlands SPA, Dorset Heaths SAC and Dorset Heathlands Ramsar site.
- Potential impacts of piling noise on adult salmon and smolt migrating to and from the River Avon SAC and River Itchen SAC and resulting indirect impacts on tern species which prey on the noise-sensitive fish species.
- Potential construction impacts on gadwall and Bewick's swan of Avon Valley SPA and Ramsar site.
- Potential impacts on nightjar, Dartford warbler and woodlark of Dorset Heathlands SPA.

Turbine Mitigation Area Option

- 2.22 At Deadline III (5 November 2014), the applicant submitted a 'Turbine Area Mitigation Option' under Appendix 43 of its submissions (**REP-3248**). Appendix 43 stated that; *"...in the event that the Secretary of State decides that the proposal does not strike the right balance between benefits and impacts, the applicant believes that it may assist the Secretary of State to at least have available the option to reduce the number of turbines, removing those closest to terrestrial viewpoints"*.
- 2.23 The key characteristics of the mitigation option were:
- a reduction in generating capacity of from 970MW to 630MW
 - a reduction in maximum turbine numbers from 194 to 105 (a range of turbines between 76 x 8MW and 105 x 6MW would be considered in the mitigation option)
 - a reduced turbine area of 153km² to 79km²
 - the full onshore 40m working width would still be required along the trenched onshore cable route but wherever possible would be reduced to 34m
 - reduced number of offshore platforms from 3 to 2
 - reduced number of offshore export cables from 6 to 4
 - reduced maximum length of inter-array cables from 296km to 211km, and



- no use of monopile foundations.
- 2.24 On 13 January 2015 the ExA issued a procedural decision (**PD-009**) determining that the Turbine Area Mitigation Option does not constitute a new application and can be considered within the existing application. Subsequently, the applicant submitted updated screening and integrity matrices for the Turbine Area Mitigation Option (**REP-3431**) at Deadline IV.
- 2.25 The outcomes of the applicant's screening and integrity matrices are the same for each European site and feature in the Turbine Area Mitigation Option matrices (**REP-3431**) and for updated application matrices (**REP-3326**). However, this RIES reports upon the findings and conclusions drawn for the application scheme as this represents the worst case scenario that has the potential to be granted development consent.



3.0 LIKELY SIGNIFICANT EFFECTS

Applicant's Methodology

- 3.1 The applicant included a description of the stages of the HRA process in their HRA reports submitted with the DCO application (**APP-059** and **APP-060**). Paragraph 1.2.4 of the Screening Report (**APP-059**) stated that the screening methodology and the baseline data used to inform the screening assessment was agreed prior to submission with NE, EA, MMO, Cefas and the RSPB through the Evidence Plan process.
- 3.2 The applicant described how they determined what would constitute a 'significant effect' within their HRA Screening Report (section 2.4 of **APP-059**). A significant effect is defined as '*any identified effect that retains the potential to result in a change in the conservation status of one or more designated feature of a European site after all aspects of the plan or project have been considered alone and in-combination with other plans and projects*'. This follows EC guidance on habitats assessment: 'Assessment of plans and projects significantly affecting Natura 2000 sites (2001)'.
- 3.3 The applicant considered potential in-combination effects within their assessment. The scope of the in-combination assessment is detailed in section 2.3 of the HRA Screening Report (**APP-059**) and is described as being the effects on European sites by a proposed development, alone and/or in conjunction with other plans or projects. The in-combination assessment was discussed with NE, RSPB and the MMO in a meeting on 10 May 2013 and between NE and RSPB in a conference call on 16 May 2013 (Table 2.1 of **APP-060**). A list of projects and plans assessed by the applicant is contained in Appendix A of the HRA Screening Report (**APP-059**).

Surveys

- 3.4 The assessment of impacts on ornithological features of European sites was supported by onshore and offshore ornithological surveys which were developed in consultation with a number of bodies including NE, RSPB, Dorset Wildlife Trust and Hampshire & Isle of Wight Wildlife Trusts (as detailed in **APP-078** and **APP-097**). The results of the surveys are presented in **APP-126** to **APP-134** and **APP-285** to **APP-288**.
- 3.5 CHOG raised concerns about the adequacy of the wintering bird survey in the Avon Valley (paragraph 3.18 of **REP-2871**) and provided their interpretation of survey data for a number of species within **REP-2871**. Of relevance to the HRA assessment, CHOG did not agree with the survey results for nightjar, Dartford



warbler and woodlark (paragraphs 4.35, 4.38 and 4.39 of **REP-2871** respectively).

- 3.6 The applicant provided further ecological survey data at Deadline II (**REP-3036** and **REP-3037**) for onshore areas that they were unable to access during the pre-application stage, however CHOG still considered the surveys inadequate (paragraph 2.13 of **REP-3384**).
- 3.7 The Statement of Common Ground (SoCG) between the applicant and NE agrees that the winter bird surveys undertaken provides an overview of the types and distribution of species commonly wintering within the Onshore Development Area and provides suitable baseline information, when used alongside the data gathered during the desk-study, to determine their nature conservation value. It agrees that the wintering bird survey programme provides suitable baseline data on which to base an assessment of the impacts of the project on wintering birds when within the terrestrial environment. (Paragraphs 10.15 to 10.16 of **REP-3696**).
- 3.8 Likewise, the SoCG between the applicant, Dorset Wildlife Trust and Hampshire & Isle of Wight Wildlife Trust agreed that the surveys undertaken to inform the assessment within the Onshore Ornithology chapter were suitable (Table 2 of **REP-3117**).
- 3.9 The RSPB did not enter into a SoCG with the developer (**REP-3161**) however they did not query the survey methodology in any of their representations.

Summary of the applicant's HRA Screening exercise

- 3.10 The applicant provided screening matrices for a total of 13 European sites in their application documents (Appendix J of **APP-059**) (see paragraph 2.7 of this RIES). Of these sites, the applicant concluded that there would be a LSE on seven European sites and their qualifying features (see Table 2b of this RIES).
- 3.11 In response to NE's Relevant Representation and examination questions, the applicant submitted updated screening matrices at Deadline IV (**REP-3326**) for an additional five European sites¹³, thus 18 European sites in total have been considered by the applicant during the examination.
- 3.12 The applicant's updated screening matrices (**REP-3326**) concluded a LSE for the following European sites (see Tables 2b and 2c of this RIES for the relevant features):
 - River Avon SAC

¹³ Alde-Ore Estuary SPA, Flamborough and Filey Coast pSPA, Flamborough Head and Bempton Cliffs SPA and Chichester and Langstone Harbours SPA and Ramsar site (see Table 2a and paragraph 2.6 of this RIES). The applicant concluded that there would be no LSE on these five additional European sites.



- Avon Valley SPA
 - Avon Valley Ramsar site
 - Dorset Heathlands SPA
 - Solent and Southampton Water SPA
 - Poole Harbour SPA
 - Poole Harbour Ramsar site, and
 - River Itchen SAC.
- 3.13 Appendix 3 of this RIES summarises the outcomes of the screening exercises and the level of agreement with interested parties (i) at time of submission and (ii) at Deadline VIa. This demonstrates how agreements over issues have progressed throughout the examination.
- 3.14 The European sites and qualifying features for which there was no dispute during the examination over the conclusions reached by the applicant have not been considered further in this RIES.

Issues discussed during the examination relevant to the screening exercise

- 3.15 A number of issues relevant to the screening exercise were discussed during the examination. These are detailed in the following sections of the RIES.

Collision risk

- 3.16 A LSE for collision risk for all species at all European sites was screened out in the applicant's HRA Screening Report (**APP-059**). NE confirmed that the applicant's Collision Risk Modelling (CRM) focussed on Option 1 of the Band model (but with these outputs augmented by those from Options 2 and 3 of the Band model); NE considered this to be an appropriate approach to assessing and presenting collision risk estimates (paragraph 2.1.3 of Appendix 2 of **REP-2461**). However, NE had a number of concerns over the applicant's CRM which they noted in their relevant representation (**REP-2461**).
- 3.17 NE confirmed at the Deadline II that the applicant had re-done the CRM assessments for all key seabird species using Band Option 1 (using site-specific percentage of birds at potential collision height (PCH)) or Option 2 (using generic percentage of birds at PCH from Cook et al. 2012), where appropriate, using densities for flying birds only (Annex D of **REP-2900**). This was provided by the applicant at Deadline II (**REP-3132**). The updated SoCG between the applicant and NE (submitted at Deadline VI) confirmed *'it is agreed that the approach to collision risk modelling used to inform the assessment is suitable following the provision of clarification. Use of Option 1 of the Band model (see Appendix 12.4 of the ES)*



is appropriate and precautionary for the key seabirds and migratory birds listed in Tables 12.31 and 12.41 and Option 2 for migratory seabirds (Appendix 5.1 and 5.8). It is also agreed that the range of avoidance rates presented are appropriate' (paragraph 8.19 of **REP-3696**).

- 3.18 Issues that were discussed in relation to collision risk for specific species are detailed below.
- Gannets and kittiwakes as features of Flamborough and Filey Coast pSPA and Flamborough Head and Bempton Cliffs SPA*
- 3.19 The applicant's HRA Screening Report (**APP-059**) acknowledged that gannet and kittiwake move through the English Channel whilst on migration and that Flamborough Head and Bempton Cliffs SPA was a key colony within the Biologically Defined Minimum Population Scale (BDMPS) for both species.
- 3.20 CRM was undertaken for gannet using Band model option 1, option 1 using SOSS 02 PCH data and option 3 (paragraph 10.1.17 and Table B2 of **APP-059**). One adult gannet from the Flamborough Head and Bempton Cliffs SPA was predicted to collide with the project per annum. This level of loss was considered by the applicant to make no material difference to the Flamborough Head and Bempton Cliffs SPA and the potential for an in-combination effect was considered negligible (paragraph 10.1.24 of **APP-059**).
- 3.21 CRM was undertaken for kittiwake using Band model option 1, option 1 using SOSS 02 PCH data and option 3 (paragraph 10.1.32 and Table B3 of **APP-059**). The losses predicted for the Flamborough and Bempton Cliffs SPA kittiwake colony would increase the mortality rate, relative to background, by 0.02% which was not considered by the applicant to represent a material difference to present conditions. The contribution of the project to any in-combination assessment was also considered negligible (Table B4 and paragraph 10.1.34 of **APP-059**).
- 3.22 A screening matrix was not provided for Flamborough Head and Bempton Cliffs SPA and the impacts on gannets and kittiwakes features of Flamborough and Filey Coast pSPA¹⁴ were not considered in the applicant's HRA Screening Report (**APP-059**).
- 3.23 NE requested further clarification regarding the contribution of Navitus Bay to in-combination impacts on gannet and kittiwake from the Flamborough and Filey Coast pSPA and Flamborough

¹⁴ NE confirmed that in July 2013 the Minister for the Department of Environment, Food and Rural Affairs (Defra) gave approval for NE to initiate formal consultation on the extension of the Flamborough and Bempton Cliff SPA. At that stage the extension became a pSPA and was renamed Flamborough and Filey Coast pSPA. The pSPA is based on a revised site boundary, revised interest features and new reference populations. As public consultation has been undertaken on this re-classification, NE considered the pSPA should be treated as if formally classified as a matter of policy and should be considered in assessments (footnote 8 of **REP-2461**).



Head and Bempton Cliffs SPA. It agreed that the contribution of Navitus Bay to the overall in-combination mortality would be insignificant, however advised presenting the Dogger Bank Creyke Beck total collisions for gannet and kittiwake from Flamborough at 98% avoidance rate and applying the Basic Band model (paragraph 8.1.13 of **REP-2461**). Further CRM outputs were provided by the applicant at Deadline II (Appendices 5.6 and 5.7 of **REP-3132** and Matrix S of **REP-3326**) confirming that the losses of gannets and kittiwakes to the colony within the SPA/pSPA that is attributable to Navitus Bay represents less than a 0.1% increase in baseline mortality.

- 3.24 NE expressed concerns regarding the methodology used to apportion mortalities to the relevant BDMPS; however it agreed that increases to baseline mortality at both SPAs would remain below 1% at a 98% and 99% avoidance rate¹⁵. It agreed this would likely be an insignificant contribution from Navitus Bay to the overall in-combination mortality for gannets and kittiwakes species (response to question 2.2.12 in **REP-3070**, paragraph 8.1.13 of **REP-2900**, paragraph 3.16.3 of **REP-3313**). Upon presentation of an assessment of overall in-combination mortality by the applicant at Deadline III (paragraphs 40.67 - 40.76 of **REP-3176**), NE confirmed at Deadline IV that Navitus Bay would make no material contribution to the in-combination assessment for gannet and kittiwake and no LSE (paragraph 3.16.1 of **REP-3357**).
- 3.25 The applicant screened out a LSE on kittiwake and gannet features of Flamborough and Filey Coast pSPA and Flamborough Head and Bempton Cliffs SPA in their updated matrices submitted at Deadline IV (Matrices R and S of **REP-3326**). In response, NE stated at Deadline VI that it considered a LSE for in-combination effects could not be excluded as the in-combination CRM totals with North Sea (Offshore Wind Farms) OWFs and Rampion were not negligible and LSE could not be excluded. However, NE noted that the Navitus Bay contribution to the overall in-combination mortality total was very small (response to question 1.10 of the ExA's second written questions in **REP-3715**) and agreed to no adverse effects on both European sites (paragraph 11.9 of **REP-3696**).
- 3.26 Revised matrices to reflect NE's preference for the in-combination collision risk to be considered at the integrity stage have not been produced in this RIES for the European site given the original agreement reached with NE at Deadline III and because the same

¹⁵ At Deadline IV, NE confirmed it accepts the Marine Scotland Report recommended avoidance rate of 98.9% for gannet with the basic Band model, but advises an avoidance rate of 98.9% for kittiwake with the basic Band model rather than the recommended 99.2% suggested in the Marine Scotland Report (paragraph 2.11.4 of **REP-3357**).



information would be presented; only it would be presented in integrity matrix as opposed to a screening matrix.

Lesser black-backed gull as a feature of the Alde-Ore Estuary SPA

- 3.27 The applicant's HRA Screening Report (**APP-059**) confirmed that tracking data showed lesser black-backed gull breeding in the Alde-Ore Estuary SPA could migrate through the turbine area of Navitus Bay Wind Park and that the colony has decreased in size substantially in recent years. It concluded that given the long distances of free flight recorded for the species over water, any deviation to avoid the turbine area would be minimal and that lesser black-backed gulls have also been shown to regularly enter offshore wind farms suggesting that no disturbance or displacement impact would be realised (paragraph 10.1.42 of **APP-059**).
- 3.28 CRM was undertaken for lesser black-backed gull using Band model option 1, option 1 using SOSS 02 PCH data and option 3 (paragraph 10.1.44 and Table B5 of **APP-059**). The applicant's CRM predicted less than 1 collision of lesser black-backed gull per annum being attributable to birds from the Alde-Ore Estuary SPA colony. In-combination with other plans and projects, the potential contribution to losses was considered small enough to ensure that no detectable additional effect would be apparent due to the Navitus Bay Wind Park (paragraphs 10.1.44-10.1.47 of **APP-059**). As such, the applicant did not provide a screening matrix for Alde-Ore Estuary SPA.
- 3.29 NE expressed concern over aspects of the applicant's CRM calculations for lesser-black backed gull (paragraph 4.2.2 of **REP-2461** and paragraph 2.3.2 of Appendix 2 of **REP-2461**). Further CRM outputs were provided by the applicant at Deadline II (Appendix 5.8 of **REP-3132**) and NE confirmed that the impact from Navitus Bay does not constitute either a LSE alone, or make any meaningful contribution to an in combination effect (response to question 2.2.12 in **REP-3070** and paragraph 8.1.27 of **REP-2900**)¹⁶.
- 3.30 The applicant provided a screening matrix for the Alde-Ore Estuary SPA in the updated matrices at Deadline IV (Matrix Q of **REP-3326**) which ruled out a LSE.
- 3.31 The updated SoCG between the applicant and NE submitted at Deadline VI agreed to no adverse effects on the Alde-Ore Estuary SPA (paragraph 11.9 of **REP-3696**). This implies that NE

¹⁶ NE also confirmed that in light of the published report on avoidance rates by Marine Scotland Science, NE accepts the avoidance rates of 99.5% in the case of herring gull, great and lesser black-backed gull for use with the Basic Band Model (i.e. Options 1 and 2 only, which the Applicants assessment is based on). It confirmed that these increased avoidance rates reduce the predicted collisions suggested by the applicant. (Paragraph 2.11.4 of **REP-3357**).



considers a LSE should be screened in for the feature. However, revised matrices have not been produced in this RIES to reflect this given the original agreement reached with NE at Deadline II and because the same information would be presented; only it would be presented in an integrity matrix as opposed to a screening matrix.

Tern species and certain migrant species associated with a number of SPAs

- 3.32 A LSE for collision risk for migrant species (including sandwich terns and common tern on migration) was screened out in the applicant's HRA Screening Report (paragraphs 10.1.93 to 10.1.98 and Table B8 of **APP-059**). The applicant predicted collision risk using MigroPath modelling; the collision rates being derived using option 1 of the Band model (Band, 2012) with generic PCH data as no site specific data on flight heights was available (paragraph 10.1.94 of **APP-059**). However, NE and RSPB identified methodological uncertainties regarding in-combination impacts for tern species and certain migrant species (e.g. little egret) that are associated with a number of SPAs, including the need for further consideration of the appropriate population scales and regarding the use of MigroPath modelling (paragraph 4.2.3 of **REP-2461**, Appendix 2 of **REP-2461** and paragraphs 4.1-4.2 of **REP-2961**¹⁷).
- 3.33 For tern migrant species, the applicant provided clarification on migrant apportionment and collision risk at Deadline II (Appendix 5.1 of **REP-3132**). This used the 'basic' Band model (Options 1 or 2) using PCH values from literature sources (section 2.1 of Appendix 5.1 of **REP-3132**). The updated SoCG between the applicant and NE submitted at Deadline VI confirmed that the apportionment exercise, with the MigroPath model outputs, adequately describes the baseline for migrating birds (paragraph 8.25 of **REP-3696**).
- 3.34 Although NE did not agree with some of the applicant's methodology, it agreed that all increases to baseline mortality for common tern and Sandwich tern would remain below 1% (paragraphs 8.1.14-8.1.17 of **REP-2900**).
- 3.35 At Deadline IV, the applicant updated the screening matrices (**REP-3326**) taking into account the information it had submitted at Deadline II. It screened out a LSE for collision risk for all tern species of all European sites and confirmed that:
- Common tern were recorded infrequently during the breeding season in site specific surveys and the potential losses at Poole Harbour SPA and Ramsar site and Solent and

¹⁷ NE raised these concerns in relation to EIA and the RSPB did not attribute these species to any particular European site.



Southampton Water SPA were estimated as a single bird per annum. Risks of collision to these species were considered by the applicant to be negligible both for the project alone and in-combination with other plans and projects (Stage 1 Matrices G, I and J of **REP-3326**).

- Sandwich tern were recorded infrequently during the breeding season in site specific surveys and the potential losses at Solent and Southampton Water SPA and Chichester and Langstone Harbours SPA were estimated as a single bird per annum. Risks of collision to these species were considered by the applicant to be negligible both for the project alone and in-combination with other plans and projects (Stage 1 Matrices G and L of **REP-3326**)¹⁸.
- No little or Roseate terns were recorded within the Turbine Area during the two year survey programme and therefore risks of collision to these species from Solent and Southampton Water SPA and Chichester and Langstone Harbours SPA and Ramsar site were considered by the applicant to be negligible both for the project alone and in-combination with other plans and projects (Stage 1 Matrices G, L and M of **REP-3326**).

- 3.36 NE did not comment on collision risk for these species further during the examination.
- 3.37 For little egret, NE requested up to date population data and an in-combination assessment with Rampion offshore wind farm (**REP-2900**). This was provided by the applicant at Deadline II (Appendix 5.2 of **REP-3132** and Stage 1 Matrices I and L of **REP-3326**) and concluded a change in baseline mortality rate of less than 1% at Poole Harbour SPA or the Chichester and Langstone Harbours SPA. NE agreed there would be no LSE on the little egret features of Poole Harbour SPA and Ramsar site and Chichester and Langstone Harbours SPA and Ramsar site¹⁹ (or if the Examination Panel were minded to recommend that an Appropriate Assessment should be undertaken, that the project would not have an adverse effect on the integrity of the little egret feature of those designated SPAs) (paragraph 8.1.18 of **REP-2900**).

¹⁸ Sandwich tern is not identified as a qualifying feature of Poole Harbour SPA on the JNCC website <http://jncc.defra.gov.uk/default.aspx?page=2031> (accessed 2 February 2015). However, the applicant's Tern Foraging and Underwater Noise HRA Technical Note (**REP-3688**) explains that NE announced in 2014 that they were developing recommendations to extend the boundary of the existing Poole Harbour SPA and to include Sandwich tern as a new feature. Collision risk on Sandwich tern at the Poole Harbour SPA was not considered by the applicant, nor was it raised as an issue by NE.

¹⁹ The applicant did not consider little egret for the Poole Harbour Ramsar site and Chichester and Langstone Harbours Ramsar site, however no LSE was concluded for the SPAs with which they overlap.



- 3.38 RSPB also confirmed that, despite some concerns over the BDMPS and reference populations used, they were content that all increases to baseline mortality due to collisions for offshore migrants would remain below 1% (paragraph 2.3 of **REP-3191**).
Migratory nightjar as a feature of Dorset Heathlands SPA
- 3.39 A LSE for collision risk for nightjar from Dorset Heathlands SPA was screened out in the applicant's HRA Screening Report (paragraphs 10.1.87 to 10.1.92 of **APP-059**). The CRM used Band Option 1, which was stated to have been agreed to be the most precautionary approach to the assessment at nightjar workshop²⁰ held during the pre-application stage (paragraph 10.1.89 of **APP-059**). NE noted that the applicant's CRM assumed all birds are flying at collision height and the birds' avoidance rate is 98%, which resulted in a 0.60-0.72% increase in annual mortality rates. However, NE suggested greater consideration should be given to an avoidance rate of 95% as there is little direct scientific evidence of the risk of collision or migratory behaviour (paragraph 2.1.7 of **REP-2461** and paragraph 2.1.7 of Appendix 2 of **REP-2461**).
- 3.40 The applicant provided further CRM outputs at Deadline II (Appendix 5.3 of **REP-3132**) which included an Absolute Worst Case Scenario (AWCS) where the entire national population flies through the Turbine Area on both spring and autumn passage with all birds flying at collision height and with an avoidance rate of 95%; this resulted in an increase of baseline mortality between 1.5 and 1.8% (depending on inclusion of juveniles). NE confirmed that the AWCS was a precautionary assessment which results in a very low increase in baseline mortality. As such, NE agreed that there would be no LSE on the nightjar feature of the European site, or, if the Examination Panel are minded to recommend that an Appropriate Assessment should be undertaken, that the project would not have an Adverse Effect on the integrity of the nightjar feature of the Dorset Heaths SPA (response to question 2.1.35 in **REP-3070**).
- 3.41 The applicant subsequently screened out a LSE for collision risk for nightjar in their updated matrices submitted at Deadline IV (Stage 1 Matrix E of **REP-3326**). At Deadline VI, stated that they NE did not agree to no LSE under the AWCS as the predicted mortality equated to more than 1% of baseline mortality. However, NE noted that the AWCS is very precautionary and when applying an avoidance rate of 98% (along with 100% of birds through the OWF and 100% at PCH), a conclusion of no LSE could be reached

²⁰ A nightjar workshop was held on 20 June 2013 to determine how to most effectively quantify the collision risk posed by the Project to nightjar. The organisations represented at the meeting included Natural England, RSBP, Dorset Bird Club and Biotrack Ltd (paragraph 10.1.8 of **APP-059**).



(response to question 1.10 of the ExA's second written questions in **REP-3715**).

- 3.42 NE confirmed at Deadline VI that with regard to the terrestrial SAC/SPA/Ramsar features, they agree with the conclusions of the screening exercise presented in the applicant's updated matrices and the European sites taken forward to the Stage 2 integrity matrices (response to question 1.10 of the ExA's second written questions in **REP-3715**).

Displacement of key bird species

- 3.43 Although there are no SPAs for auk species (guillemots and razorbills) within breeding season foraging distance, the HRA Screening Report considered impacts on auk during the non-breeding season (paragraphs 10.1.64 and 10.1.73 of **APP-059**). Displacement matrices were provided in **APP-128** and a LSE for auk species of all European sites were screened out (paragraphs 10.1.64 to 10.1.78 of **APP-059**).
- 3.44 NE suggested a precautionary approach for auk species should be considered given the almost total uncertainty concerning realistic levels of mortality of displaced birds (paragraph 4.2.8 and Appendix 2 of **REP-2461**), although NE did not specifically attribute displacement to any particular European site(s). The applicant provided further clarification at Deadline II, including updating density figures, and concluded that there would be no significant impacts on auk species due to displacement when the appropriate population scale is considered (Appendix 5.9 of **REP-3132**), again not specifically attributing this to any particular European site(s). NE confirmed that whilst they have minor concerns regarding the methodology, they agreed that there is no significant impact on guillemot and razorbill populations due to displacement (Table 2 of **REP-2900**).
- 3.45 A LSE for displacement of gannets of all European sites was also screened out by the applicant in their HRA Screening Report (paragraphs 10.1.9 to 10.1.15 of **APP-059**). The applicant also discussed gannet displacement in Appendix 5.9 of **REP-3132**, again not specifically attributing this to any particular European site(s) but confirming no LSE on the species. The matter of displacement was not discussed further nor disputed during the examination.

Indirect impacts on tern species which prey on the noise-sensitive fish species

- 3.46 The applicant's HRA Screening Report acknowledged the potential for piling noise during the installation of wind turbine foundations to reduce prey availability for terns. Piling noise could potentially disturb fish and other prey items targeted by tern species, causing them to avoid the construction and adjacent areas and potentially affecting their physiology and behaviour (paragraph 10.1.60 of



APP-059). However, LSEs from reductions in foraging efficiency of designated features due to changes in prey distribution were screened out for all tern species in the applicant's HRA Screening Report (**APP-059**). This was on the basis that in the areas of most intense noise (>90 dBht) mobile species such as fish would show a strong avoidance action but in areas of lower intensity (75-90 dBht) there would be some avoidance action by the majority of individuals but habituation may occur or the context (e.g. levels of existing background noise are high) may result in a more limited effect. (Paragraphs 10.1.60 – 10.1.61 of **APP-059**).

- 3.47 NE considered that the applicant had provided insufficient information to assess the indirect effects of construction on prey availability of tern species alone and in-combination with Rampion Offshore Wind Farm. NE requested that the extent of the noise envelope for piling be presented in relation to the location of local breeding tern colonies, and more detailed discussion be provided in relation to the terns' prey and the foraging range (**REP-2461** and **REP-2900**).
- 3.48 Tern species and their associated European sites identified by NE as being potentially affected by the project were (Table 1 of **REP-2900**):
- Common tern (for the project alone) - associated with Poole Harbour SPA and Ramsar and Solent and Southampton Water SPA²¹,
 - Sandwich tern (for the project alone and in-combination with Rampion Offshore Wind Farm) - associated with Solent and Southampton Water SPA and Ramsar²² and Chichester and Langstone Harbours SPA,
 - Little tern (for the project alone) - associated with Solent and Southampton Water SPA and Chichester & Langstone Harbours SPA²³, and
 - Roseate tern (for the project alone) - associated with Solent and Southampton Water SPA.

²¹ Table 1 of NE's written representation (**REP-2900**) and NE's response to question 1.10 of the ExA's second written questions in **REP-3715** identified that common tern should also be listed as a site feature of Chichester and Langstone Harbours SPA. The common tern is not listed as a feature of this site on the JNCC website <http://jncc.defra.gov.uk/default.aspx?page=2034> (accessed 30 January 2015), however the applicant has considered the species as a feature of the site in **REP-3688**.

²² Sandwich tern was identified by NE as a feature of the Solent and Southampton Water Ramsar site in Table 1 of **REP-2900**. It is listed as 'noteworthy fauna' on the citation <http://jncc.defra.gov.uk/pdf/RIS/UK11063.pdf> (accessed 11 February 2015) and as such has not been included in Appendix 3 of this RIES.

²³ Little tern was identified by NE as a feature of Chichester & Langstone Harbours SPA in **REP-2461** but not in Table 1 of **REP-2900**. It is listed as a feature on the JNCC website <http://jncc.defra.gov.uk/default.aspx?page=2034> (accessed 11 February 2015) and has been considered by the applicant in their updated screening matrices (**REP-3326**).



- 3.49 At Deadline IV, the potential for terns nesting within the SPA to be disturbed by subsea noise created by piling through its potential to alter the distribution and availability of fish prey was subsequently screened in to the applicant's updated matrices²⁴ for tern species (with the exception of Chichester and Langstone SPA and Ramsar site²⁵) (**REP-3326**).
- 3.50 However, the applicant stated that the attenuation of noise within shallow waters in which terns usually feed²⁶ would reduce the potential for any impact to occur; and that the piling restriction in spring / early summer and the limited piling activity between mid-May and end of August (paragraph 40.77 of **REP-3176**) would further guard against impacts on these species. Alongside the habitat preferences of terns, the location of local colonies and the relatively small mean foraging ranges, a conclusion of no adverse effect was drawn by the applicant (Stage 2 Matrices E, F and G of **REP-3326**).
- 3.51 The applicant and NE continued to disagree over this conclusion until Deadline VI, when the applicant provided a Tern Foraging and Underwater Noise HRA Technical Note (**REP-3688**). This identified the predominant prey species of tern are species of sand eel (Ammodytidae); therefore modelling was completed for sand eel to create noise contours for this species in response to pile driving. In order to assess if noise would cause an impact on each individual tern species, the mean maximum and mean foraging ranges were compared with noise propagation contours to determine whether or not there was an overlap.
- 3.52 For common, roseate and little terns of all SPA colonies, the foraging ranges did not overlap with the noise propagation contours for either 75 or 90 dBht for sand eel. Based on this evidence and with consideration of the piling restrictions in place throughout the majority of the breeding period, the applicant concluded there would be no impact from piling on common, roseate or little tern, as sand eels within their foraging range would not be affected.
- 3.53 The mean maximum foraging range of Sandwich terns from Solent & Southampton Water SPA and Poole Harbour SPA²⁷ displayed

²⁴ Common tern, little tern, roseate tern and Sandwich tern of Solent and Southampton Water SPA and common tern of Poole Harbour SPA and Ramsar site (Stage 1 Matrices G, I and J of **REP-3326**)

²⁵ A LSE on tern species at Chichester and Langstone SPA and Ramsar site was screened out in the applicant's updated matrices (Stage 1 Matrices L and M of **REP-3326**) on the basis that the turbine area (where the piling noise associated with the project could be altering the distribution of prey) is outside of the typical foraging areas of these species (Stage 1 Matrices L and M of **REP-3326**).

²⁶ Identified in Appendix 3 of **REP-3134**.

²⁷ Sandwich tern is not identified as a qualifying feature of Poole Harbour SPA on the JNCC website <http://jncc.defra.gov.uk/default.aspx?page=2031> (accessed 2 February 2015). However, the applicant's Tern Foraging and Underwater Noise HRA Technical Note (**REP-3688**) explains that NE announced in 2014 that they were developing recommendations to



some overlap with the sand eel impact zone, however it constituted only a small fraction (less than one percent) of the overall foraging range for this species and there was no overlap of the mean foraging range. Based on this evidence, the limited use identified of the area by Sandwich terns during the boat surveys and with consideration of the piling restrictions in place throughout the majority of the breeding period, the applicant predicted there would not be any impact from piling on Sandwich tern, as sand eels within their foraging range would not be affected.

- 3.54 On this basis, the applicant concluded no significant impacts on all four tern species, alone and in-combination with other projects. At Deadline VI, NE subsequently agreed to:
- no LSE for common tern, roseate tern and little tern²⁸ at any European site (response to question 1.10 of the ExA's second written questions in **REP-3715**),
 - a LSE for Sandwich terns at Solent and Southampton Water SPA and Poole Harbour SPA given the overlap of the mean maximum foraging range with the sand eel impact zone (response to question 1.10 of the ExA's second written questions in **REP-3715**), and
 - no adverse effects on Solent and Southampton Water SPA and Poole Harbour SPA (paragraph 11.9 of **REP-3696**).
- 3.55 Revised matrices have not been produced in this RIES in light of NE's agreement as explained above.

Construction impacts on black-tailed godwit

- 3.56 The applicant screened out LSE for collision risk, barrier effects and in-combination effects on black-tailed godwit features of Poole Harbour SPA and Ramsar site, Solent & Southampton Water SPA and Ramsar site (Stage 1 Matrices G, H, I and J of Appendix J of **APP-059**) and Chichester and Langstone Harbours SPA and Ramsar site (Stage 1 Matrices L and M of **REP-3326**).
- 3.57 CHOG queried the numbers of individuals identified in the applicant's surveys. It also acknowledged that although black-tailed godwits are not a qualifying feature of the Avon Valley SPA, WeBS data strongly suggests that godwits move between Avon Valley and Poole Harbour and that colour ring data also suggests interaction with other sites on the Solent coast. CHOG considered

extend the boundary of the existing Poole Harbour SPA and to include Sandwich tern as a new feature. The species is not identified in the applicant's updated matrices for the European site; however the applicant considered potential impacts on Sandwich terns of Poole Harbour SPA in the Tern Foraging and Underwater Noise HRA Technical Note (paragraph 2.2 of **REP-3688**).

²⁸ In response to question 1.10 of the ExA's second written questions, NE confirmed no LSE for the little tern feature of Chichester and Langstone Harbours SPA however did not make any reference to little tern feature of Chichester and Langstone Harbour Ramsar site however there is a spatial overlap of the two European sites.



that the 'no work' period would have to extend from September to July to reduce the significant risk of harm from disturbance and vibration impacts, which would not provide a sufficient 'window of opportunity' for construction. As such, CHOG considered it would be inappropriate for the proposed cable route to pass through the Avon Valley, even with the proposed use of HDD techniques. (Paragraphs 3.57-3.77 and 3.152 of **REP-2871**). Their stance was reiterated in **REP-3384** and **REP-3564**.

- 3.58 The applicant responded to CHOG's concerns at Deadline VI (response to question 1.13 in **REP-3643**) and agreed that it may be assumed that large numbers of black-tailed godwit use the wet grasslands of the Avon Valley between September and March inclusive. However, the applicant also noted the proposed restriction on construction work taking place within 250m of the Avon Valley SPA between November and February inclusive (see paragraphs 4.13 to 4.16 of this RIES for further details). The applicant also noted that construction compounds would be outside of the Avon Valley SPA and screened by trees; therefore, any disturbance to black-tailed godwit would likely be due to aural stimuli only. The likely maximum distance of disturbance was considered by the applicant to be short (250m) and the potential to displace black-tailed godwit from large areas of feeding habitat was negligible, given the long distance movements made by these birds and the range of different feeding grounds they exploit in the area. The applicant concluded no LSE.
- 3.59 NE has not commented upon disturbance of black-tailed godwit at any point during the examination. However, NE confirmed at Deadline VI that with regard to the terrestrial SAC/SPA/Ramsar features, they agree with the conclusions of the screening exercise presented in the applicant's updated matrices and the European sites taken forward to the Stage 2 integrity matrices (response to question 1.10 of the ExA's second written questions in **REP-3715**).

Disturbance impacts of EMF on features of the River Avon and River Itchen SAC

Sea lamprey of the River Avon SAC

- 3.60 Table 5.2 of the applicant's HRA Screening Report (**APP-059**) identified that impacts on migratory fish from the River Avon SAC are possible as noise/EMF created in marine and freshwater environments could prevent individuals reaching/leaving the mouth of the River Avon. However, a LSE for these effects were screened out of the applicant's matrices (Stage 1 Matrix A of Appendix J of **APP-059**). This was queried by NE (paragraph 4.3.2 of **REP-2461**) who considered insufficient information had been provided by the applicant to conclude no LSE; specifically that the



effects of EMF on sea lamprey of the River Avon SAC had not been fully considered.

3.61 At Deadline II, the applicant provided clarification regarding the effect that EMF has on sea lamprey (Appendix 1 of **REP-3134**). It was noted that a stimulus between 2.5 and 100 mV/m has been reported to induce a 'cease swimming' response in migrating adults, but that this is much higher than the predicted level of induced electrical field emission from either inter-array or export cables proposed for Navitus Bay (stated to be up to 0.426mV/m for inter-array and 1.043mV/m for export cables in Appendix 1 of **REP-3135**). It referred to, but did not provide, a paper which identified a behavioural 'constant swim' response for parasitic lamprey at 10 μ V/m, and stated stimulus at this level would be unlikely to be considered as an interruption to migration, particularly given that any such effect would be predicted to be limited in spatial extent from the cable locations.

3.62 An agreement was reached between the applicant and NE at Deadline II that the clarification provided by the applicant was sufficient and that there would be no LSE on the River Avon SAC Sea Lamprey (paragraph 5.18 and Appendix 1 – table 1 of **REP-3134**).

Atlantic salmon of the River Itchen SAC

3.63 The applicant's HRA Screening Report did not consider disturbance of salmon populations of the River Itchen SAC resulting from EMF (**APP-059**). NE queried this omission given that consideration had been given to salmon populations of the River Avon SAC (section 3.2 of the Appendices to **REP-2461**). The potential for EMF produced by the transmission cables during operation and maintenance to disturb migrating Atlantic salmon was subsequently screened in to the applicant's updated matrices (Stage 1 Matrix K of **REP-3326**).

3.64 The applicant stated that the electric field produced by the electrical cables would be shielded through cable design (i.e. use of sheathing material) and that the magnetic fields produced would fall rapidly due to distance and covering depth (e.g. depth of burial). The applicant concluded that the levels of magnetic field produced that may be experienced by Atlantic salmon would be low and highly unlikely to result in a barrier to movement in the marine environment. Therefore, no effect on the integrity of the site was predicted (paragraphs 4.2.12 to 4.2.15 and Stage 2 Matrix H of **REP-3326**). NE agreed at Deadline VI that there will be no adverse effects on the site (paragraph 11.12 of **REP-3696**).



Sediment load/deposition to sensitive reef habitats and species within the Wight Barfleur SCI

- 3.65 The applicant's HRA Screening Report identified the potential for smothering of reef features of Wight-Barfleur Reef cSAC²⁹ during construction and decommissioning and potential habitat change during the operation phase (Table 5.2 of **APP-059**). However, it screened out a LSE on the basis that:
- (i) although the potential range over which sediment may be deposited could overlap with the designation, the level of sediment deposited would be very low and is unlikely to be detectable against background levels, and
 - (ii) because of the distance between the proposed wind farm and the designation, effects on coastal processes would be indistinguishable from natural variation in the system.
- 3.66 The applicant did not provide a screening matrix for the European site.
- 3.67 NE sought further clarification to better understand the potential impact of sediment load/deposition to sensitive reef habitats and species within the SCI (paragraph 5.1.3 of **REP-2461**).
- 3.68 The applicant provided a clarification note at Deadline II (Appendix 1 of **REP-3132**) illustrating that the SCI is approximately 2km south of the southernmost extent of the array and that the sediment plume is unlikely to reach such a distance. It also outlined that the Wight-Barfleur SCI would be outside the axis along which sediment plumes could extend i.e. east to west instead of north to south and the tidal ellipses are rectilinear and therefore not expanding southwards carrying sediment. NE acknowledged that the habitats and communities within the SCI are found in a high energy environment which would not promote sediment deposition and confirmed the clarification had helped allay their concerns (paragraph 6.10.9 of **REP-2900**).
- 3.69 NE did not explicitly state they agreed to no LSE for the site; however the issue was not discussed further during the examination.

Impacts on habitats within Dorset Heathlands SPA and Ramsar site, Dorset Heaths SAC and the feasibility of trenchless crossings

- 3.70 In the application documents, trenchless crossing techniques were proposed to be used to cross the majority of the Dorset Heaths; however some surface works within the cable corridor were proposed within the West Moors Ministry of Defence (MoD) site. A

²⁹ The applicant's HRA Screening Report identified the European site as a cSAC. However, NE's relevant representation and the JNCC website <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCODE=UK0030380> (accessed 26 January 2015) confirm the site to be a SCI.



LSE was initially screened in by the applicant for the Dorset Heaths SAC and Dorset Heathlands Ramsar site as works within the site boundaries could result in the loss, change or damage of the habitats for which the site is designated (Table 5.2 and Stage 1 Matrices D and F of Appendix J of **APP-059**). A LSE was also screened in by the applicant for the Dartford warbler, woodlark and nightjar of Dorset Heathlands SPA due to temporary habitat loss/change and potential disturbance during the breeding season (Table 5.2 and Stage 1 Matrix E of Appendix J of **APP-059**) (see paragraphs 4.17 to 4.34 of this RIES for further details).

- 3.71 NE requested further details on the proposed working methods which would ensure the integrity of Dorset Heathlands SPA and Ramsar site and Dorset Heaths SAC would not be compromised; specifically further detail on cable laying and re-instatement methods to ensure recovery of dry heath habitats within a reasonable timeframe and further certainty from the applicant that successful re-instatement of wet heath habitats could be achieved (paragraph 4.5.1 of **REP-2461**). This position was supported by East Dorset District Council (paragraph 4.11 of **REP-2679**) who identified concerns over potential habitat loss within the Dorset Heaths SAC, Dorset Heaths SPA and Ramsar (**REP-1494** and **REP-1768**).
- 3.72 The RSPB also queried the use of open cut methods and scrub clearance within the West Moors MoD site and considered that less damaging alternatives should be explored (**REP-2404** and section 5 of **REP-2961**).
- 3.73 As a result of submissions from interested parties, at Deadline II the applicant proposed to extend the trenchless crossing of the West Moors MoD site to ensure there were no surface works within the Dorset Heaths SAC and Dorset Heathlands SPA and Ramsar site (response to questions 2.2.3(b) and 2.2.15 in **REP-3018**) and to remove the need for scrub clearance (response to question 3.14 in **REP-3313**). The applicant confirmed there would be no temporary habitat loss or subsequent habitat creation within Dorset Heaths SAC or Dorset Heathlands SPA and Ramsar site (response to question 2.2.15 in **REP-3018**). This extension was shown on a revised Trenchless Crossing Plan³⁰ (**REP-3051**) and secured by Requirement 40 of the draft DCO (Version 5) (**REP-3644**).
- 3.74 At Deadline II, it was agreed with Dorset Wildlife Trust (Table 3 of **REP-3117**) that the use of trenchless methods was suitable for

³⁰ Dorset Heathlands SPA is annotated on page 11 of **REP-3051** and is shown to be within the area of the trenchless crossing. Dorset Heath SAC is not annotated. The applicant confirmed that the trenchless crossing of the Dorset Heathlands SPA includes Dorset Heath SAC and that these designations have a significant degree of overlap (paragraph 3.3.4 of **REP-3313**). The Dorset Heathlands Ramsar site also overlaps with the SPA (see Figure 10.2 of **APP-095**).



avoiding impacts on the habitats of the Dorset Heathlands Ramsar site and Dorset Heaths SAC and negated the potential for disturbance of hen harrier and merlin of the Dorset Heathlands SPA that winter in the area. It was also agreed with Christchurch Borough Council, East Dorset District Council and Dorset County Council that with the use of trenchless crossing techniques there would be no impacts on the Dorset Heathlands Ramsar site and Dorset Heaths SAC (Section 5 of **REP-3150**).

- 3.75 However, NE cautioned that the use of trenchless crossings under Dorset Heathlands SPA and Ramsar site, Dorset Heaths SAC had not been shown to be deliverable with a level of certainty appropriate to the strict tests of the Habitats Regulations 2010 (paragraph 6.9.3 of **REP-2900**). This concern over the feasibility of HDD was also noted by Christchurch Borough Council (section 5.2 of **REP-2677**) and the RSPB (paragraph 6.3 of **REP-3191**).
- 3.76 The applicant's HRA Screening Report had also confirmed that HDD would be used to install cables underneath the River Avon to avoid the need for surface works within the River Avon SAC and Avon Valley SPA and Ramsar site (Table 5.2 of **APP-059**) and hence avoid habitat damage. This would also ensure that impacts on sea lamprey, brook lamprey and bullhead of the River Avon SAC were unlikely (Stage 1 Matrix A of Appendix J of **APP-059**). New Forest District Council expressed confidence that impacts on the Avon Valley SAC, Avon Valley Ramsar, and Avon Valley SPA would be appropriately managed through the non-trenchless crossing techniques (paragraphs 5.8.3 to 5.8.4 of **REP-2681**). However, as with the trenchless crossing of the heathlands, NE also requested that the proposed directional drilling methodology should be confirmed as achievable through local borehole evidence in order to conclude no LSE on River Avon SAC, Avon Valley SPA and Ramsar site (paragraph 6.9.1 of **REP-2900**).
- 3.77 At Deadline IV, NE confirmed they had received geological site investigations from the applicant and that they believed enough information was available for the applicant to consider trenchless crossing as a viable methodology. NE also noted that other trenchless techniques are available and appropriate to use (e.g. micro tunnelling, auger boring, pipe ramming and HDD) and that the assessment performed by the applicant is appropriate for any trenchless method. However, NE explained that should it be found that trenchless crossing is not possible in any part of a designated site then additional assessments of other open trenching techniques and their impacts on designated sites would be required. (Section 3.3 of **REP-3357**).
- 3.78 The EA confirmed that they were content with the information that has been provided with regard to the proposals and environmental protection for trenchless crossings at Deadline VI (response to question 1.6 in Part 2 of **REP-3634**).



- 3.79 The applicant's updated matrices submitted at Deadline IV (**REP-3326**) subsequently screened out a LSE for habitat damage/degradation at the following European sites³¹ on the basis that HDD would avoid habitat degradation and loss and as all workings (including in the decommissioning phase) would be set back from the designation boundary providing adequate opportunity to control potential pollutants:
- River Avon SAC
 - Avon Valley SPA
 - Avon Valley Ramsar site
 - Dorset Heaths SAC
 - Dorset Heathlands Ramsar site
- 3.80 The updated SoCG between the applicant and NE submitted at Deadline VI (paragraphs 11.9, 11.11 and 11.13 of **REP-3696**) agreed that there would be no adverse effects on integrity on all of the above sites with the exception of River Avon SAC³². The SoCG therefore implied that NE considered a LSE should also be screened in for the Dorset Heaths SAC and Dorset Heathlands Ramsar site³³. However, NE also confirmed at Deadline VI that with regard to the terrestrial SAC/SPA/Ramsar features, they agreed with the conclusions of the screening exercise presented in the applicant's updated matrices and the European sites taken forward to the Stage 2 integrity matrices (response to question 1.10 of the ExA's second written questions in **REP-3715**). Given this agreement, integrity matrices have not been revised in this RIES to reflect this.

In-combination effects with St Leonard's Hospital residential development on the Dorset Heathlands SPA, Dorset Heaths SAC and Dorset Heathlands Ramsar site

- 3.81 The applicant's HRA Report (**APP-060**) discounted the redevelopment of the St Leonards hospital site from the in-combination assessment as they considered that the hospital site redevelopment is due to be completed prior to the onshore works for the project beginning, and even with a delay, the potential for a temporal overlap with the installation of the onshore transmission cable are low. However, in their relevant

³¹ A LSE was screened in for Dorset Heathlands SPA (Stage 1 Matrix E) as habitat suitable for nightjar, Dartford warbler and woodlark would be temporarily lost in areas within close proximity to the SPA boundary (see paragraphs 4.17 to 4.34 of this RIES for further details).

³² It is understood that agreement to no adverse effect on integrity has not been reached for the River Avon SAC due to the potential piling impacts on the Atlantic salmon feature only. The potential for habitat loss/degradation at the site was not raised further by NE during the examination.

³³ The applicant's updated screening matrices for Avon Valley SPA and Ramsar site screened in a LSE for disturbance and displacement and in-combination effects



- representation, NE raised a concern that there was inadequate consideration of the potential for cumulative effects on the Dorset Heathlands SPA, Dorset Heaths SAC and Dorset Heathlands Ramsar site arising from the St Leonards hospital residential development planning application (paragraph 5.3.1 of **REP-2461**).
- 3.82 **REP-2461** did not explicitly define what NE's concerns were regarding in-combination impacts with the St Leonards hospital residential development. However, the applicant submitted a Hurn Forest Visitor Survey at Deadline II which concluded that given the relatively low level of visitor pressure experienced in the forest, in the event of visitor displacement, impacts to surrounding/alternative sites would likely be minimal (**REP-3032**). NE confirmed that this survey resolved some basic information and set out a number of avoidance measures appropriate to the requirement to avoid displacement of visitors; and that subject to specific visitor management measures NE concluded no LSE alone or in combination with the St Leonards Hospital residential development on the Dorset Heathlands SPA, Ramsar and Dorset Heaths SAC (paragraph 6.9.5 of **REP-2900**).
- 3.83 The updated SoCG between the applicant and NE submitted at Deadline VI (paragraph 9.34 of **REP-3696**) subsequently agreed that the mitigation measures outlined within the draft LEMP (Appendix 1 of **REP-3692**), to be secured through Requirement 18 of the DCO (Version 5) (**REP-3644**), provide the necessary management tools to ensure that displacement of recreational users would not result in increased impacts on habitats and species in Hurn Forest or surrounding areas (**REP-3033** shows that Hurn Forest is adjacent to Dorset Heathlands SPA).
- 3.84 The applicant's updated integrity matrix for the Dorset Heathlands SPA submitted at Deadline IV (Stage 2 Matrix E of **REP-3326**) considers in-combination effects from the St Leonards Hospital re-development. The applicant's updated matrices for the Dorset Heathlands Ramsar site and Dorset Heaths SAC (Stage 1 Matrices D and F of **REP-3326**) screen out a LSE and do not consider in-combination effects from the St Leonards Hospital re-development. However, there is spatial overlap of the three European sites.
- 3.85 The updated SoCG between the applicant and NE submitted at Deadline VI agrees to no adverse effect on integrity for these European sites (paragraphs 11.9, 11.11 and 11.13 of **REP-3696**). This implies that NE considers a LSE should be screened in for Dorset Heathlands Ramsar site and Dorset Heaths SAC. However, NE also confirmed that with regard to the terrestrial SAC/SPA/Ramsar features, they agree with the conclusions of the screening exercise presented in the applicant's updated matrices and the European sites taken forward to the Stage 2 integrity matrices (response to question 1.10 of the ExA's second written



questions in **REP-3715**). As such, the matrices have not been revised in this RIES.

Conclusion of screening exercise

- 3.86 As detailed above, agreement was reached during the examination on the screening exercise presented by the applicant for the majority of European sites. However, a difference of opinion between the applicant and NE is identified in the SoCG (**REP-3696**) as to which European sites should be taken to the integrity stage of the assessment. Both parties agree that the threshold for determining whether or not a potential impact is judged to be a LSE differs between the two parties, however NE would have preferred detailed assessments (e.g. consideration of mathematical modelling outputs and other analytical processes) to be undertaken at the integrity stage (paragraphs 11.8-11.13 of **REP-3696**).
- 3.87 As such, the updated SoCG between the applicant and NE submitted at Deadline VI (**REP-3696**) refers to agreement of no adverse effects on integrity on the following European sites. Those for which a LSE was ruled out in the applicant's updated matrices are denoted with an *³⁴ (paragraphs 11.9-11.13 of **REP-3696**):
- Avon Valley SPA
 - Dorset Heathlands SPA
 - Alde-Ore Estuary SPA*
 - Flamborough and Filey Coast pSPA*
 - Flamborough and Bempton Cliffs SPA*
 - Poole Harbour SPA
 - Solent and Southampton Water SPA
 - Chichester and Langstone Harbours SPA*
 - Dorset Heaths SAC*
 - Avon Valley Ramsar site
 - Dorset Heathlands Ramsar site*
 - Poole Harbour Ramsar site
 - Solent and Southampton Water Ramsar site*
 - Chichester and Langstone Harbour Ramsar site*
- 3.88 As noted in Section 3 and Appendix 3 of this RIES, NE had previously agreed to no LSE for the majority of the above

³⁴ Note: The updated SoCG between the applicant and NE (submitted at Deadline VI) (**REP-3696**) did not identify which features of these sites should be considered at the integrity stage.



European sites during the course of the examination and prior to the updated matrices being submitted at Deadline IV. As such, revised screening and integrity matrices have not been produced in this RIES for any of the above European sites to reflect NE's preference for them to be considered at the integrity stage.

- 3.89 The exceptions to the above i.e. where agreement to no LSE with NE was not reached prior to Deadline IV, are:
- Solent and Southampton Water Ramsar site - no specific agreement to screen out the European site was stated prior to Deadline IV; however the features of the European site are not those which have been subject of discussion during the examination.
 - Dorset Heaths SAC and Dorset Heathlands Ramsar site – no specific agreement to screen out the European site was stated prior to Deadline IV. A LSE for Dorset Heathlands Ramsar site and Dorset Heaths SAC (Stage 1 Matrices D and F of Appendix J of **APP-059**) was originally screened in by the applicant for potential degradation of habitats through losses of pollutants from the working area or by changes in the hydrology of the area and potential in-combination effects. Adverse effects on integrity were ruled out on the basis that standard pollution prevention measures would be implemented (paragraph 4.4.6 to 4.4.9 and Stage 2 Matrix C of **APP-060**). A LSE was screened out by the applicant in the updated matrices given the proposal during the examination to extend the use of HDD to install cables underneath the designated sites (see paragraph 3.73 of this RIES for further details), with all workings set back from the designation boundary providing adequate opportunity to control potential pollutants. In addition, the cable would be deeper using HDD compared to the open trenching previously proposed, therefore the potential for hydrological impacts were discounted. (Matrices D and F of **REP-3326**). NE confirmed that with regard to the terrestrial SAC/SPA/Ramsar features, they agreed with the conclusions of the screening exercise presented in the applicant's updated matrices and the European sites taken forward to the Stage 2 integrity matrices (response to question 1.10 of the ExA's second written questions in **REP-3715**).
 - Chichester and Langstone Harbours Ramsar site; no specific agreement to screen out the site was stated prior to Deadline IV. However NE agreed to no LSE for little tern species at Chichester and Langstone Harbours SPA at Deadline VI (response to question 1.10 of the ExA's second written questions in **REP-3715**) and there is a spatial overlap of the two European sites (see paragraphs 3.46 to 3.55 of this RIES for further details).



- 3.90 Given the level of agreement reached at the time the RIES was issued, the screening matrices have not been revised in this RIES to reflect NE's preference for them to be considered at the integrity stage.



4.0 ADVERSE EFFECTS ON INTEGRITY

Conservation Objectives

- 4.1 The conservation objectives for the European sites assessed by the applicant for adverse effects on integrity (Stage 2 of the assessment) were included within the applicant's HRA report (**APP-060**). Further European sites were considered in Stage 2 of the assessment during the examination period as a result of the comments of interested parties (see Section 3 to this report). The conservation objectives for these additional European sites were provided in response to question 1.12 in **REP-3643**.

Summary of the Integrity Test

- 4.2 The applicant's HRA Report (**APP-060**) and updated matrices (**REP-3326**) concluded that the project would not adversely affect the integrity of any European site.
- 4.3 Appendix 4 of this RIES summarises the outcomes of the applicant's assessment of impacts on the integrity of European sites and the level of agreement with interested parties (i) at time of submission and (ii) in the updated screening matrices. This demonstrates how agreements over issues have progressed throughout the examination.

Issues discussed during the examination relevant to the Integrity Test

- 4.4 At the time of issuing the RIES, the applicant and NE had agreed to no adverse effect on integrity at all European sites with the exception of on Atlantic salmon features of the River Avon SAC and River Itchen SAC (paragraph 11.12 of **REP-3696**) as a result of piling impacts. The EA also did not agree to no adverse effect on integrity for these two European sites (Part 2 of **REP-3634**). The integrity matrices for these two European sites have been revised in this RIES (see Section 5).
- 4.5 In reaching agreement of no adverse effects for all European sites except the River Avon SAC and River Itchen SAC, a number of matters were discussed during the examination. These are detailed below.

Collision risk – Mediterranean gull as a feature of Solent and Southampton Water SPA and Poole Harbour SPA and Ramsar site

- 4.6 CRM was not initially undertaken for Mediterranean gull from any of the European sites as the numbers of individuals observed during surveys were low and as the European sites are located on



the edge of the species mean maximum foraging distance. The potential impacts upon the SPA population were considered to be low and as such a LSE was screened out by the applicant (paragraphs 10.1.36-10.1.39 of **APP-059** and Appendix H and Stage 1 Matrices G, I and J of Appendix J of **APP-059**).

- 4.7 However, NE identified methodological uncertainties regarding in-combination impacts for Mediterranean gull (with a suggestion to consider breeding season effects in-combination with Rampion Offshore Wind Farm), the need for an appropriate population scale to be considered and a request for CRM to be undertaken to demonstrate de minimis effects (paragraph 4.2.3 and paragraph 2.1.8 of the appendices of **REP-2461** and paragraphs 8.1.33 – 8.1.35 of **REP-2900**).
- 4.8 The applicant provided a Revised Additional Analysis of Mediterranean Gull note at Deadline II which reported upon CRM conducted using Band Option 1 with site-specific data on percentage of birds at PCH and a 98% avoidance rate (Appendix 5.10 of **REP-3132**).
- 4.9 NE noted a number of concerns over the assessment, including: concerns over the use of site-specific data and the BDMPS used; the need to include WeBS count data for breeding season months; and the need to use an avoidance rate of 99.2% (paragraphs 8.1.28 to 8.1.35 of **REP-2900**). Nevertheless, NE agreed that from Navitus Bay alone there is no LSE on Mediterranean gull or, if the Examination Panel are minded to recommend that an Appropriate Assessment should be undertaken, that the project will not have an Adverse Effect on the integrity of the Mediterranean gull feature (paragraphs 8.1.33 to 8.1.34 of **REP-2900**). NE considered further work was required to reach a conclusion on the in-combination impact of collision risk to Mediterranean gulls from the Poole Harbour SPA and the Solent and Southampton Water SPA the Applicant; including adding the extra mortality contribution from Rampion in winter to the year round total at Navitus Bay and apportioning this to the SPAs accordingly; and revisiting the in-combination CRM at 99.2% AR and using generic data for percentage of birds at PCH (paragraph 8.1.35 of **REP-2900**).
- 4.10 At Deadline III, the applicant confirmed it had undertaken the further analytical steps suggested in NE's written representation. The CRM resulted in between 2 and 4 collisions per annum for the project alone and a further 0.1 to 0.3 collisions attributed to the Rampion Offshore Wind Farm (paragraph 40.74 of **REP-3176**).
- 4.11 In the applicant's updated matrices submitted at Deadline IV, Mediterranean gulls at Solent and Southampton Water SPA, Poole Harbour SPA and Poole Harbour Ramsar site were screened in to Stage 2 of the assessment on the basis that the designated populations of this species (restricted to the south coast of



England) are small and as collisions were also predicted for the Rampion Offshore Wind Farm (Stage 1 Matrices G, I and J of **REP-3326**). However, no adverse effects on the integrity of the Solent and Southampton Water SPA, Poole Harbour SPA and Poole Harbour Ramsar site were predicted as losses through collision were considered to be small in the context of the Mediterranean gull population of the south coast of England (Stage 2 Matrices E, F and G of **REP-3326**).

- 4.12 At Deadline IV, NE confirmed that the applicant's revised CRM calculations had used the black-headed gull flight height data from Johnston et al. (2014) as a proxy and a revised avoidance rate of 99.2% and that the applicant had completed an updated in-combination assessment with Rampion for the respective south coast SPAs. NE noted some disagreement with the methodology used in the in-combination assessment, however concluded that from Navitus in-combination with Rampion there is no LSE on the Mediterranean gull feature of the Poole Harbour SPA or the Solent and Southampton SPA. Or, if the Examination Panel are minded to recommend that an Appropriate Assessment should be undertaken, that the project will not have an adverse effect on the integrity of the Mediterranean gull feature of the Poole Harbour SPA or the Solent and Southampton Water SPA. (Paragraph 3.16.4 of **REP-3357**)³⁵. The updated SoCG between the applicant and NE agreed to no adverse effects on integrity for Solent and Southampton Water SPA, Poole Harbour SPA and Poole Harbour Ramsar site (paragraphs 11.9 and 11.13 of **REP-3696**).

Construction impacts on Avon Valley SPA and Ramsar site

- 4.13 The applicant's HRA Report relied upon a commitment to avoid both construction and decommissioning works between November and February inclusive within 250m of the Avon Valley SPA and Ramsar site boundary to reach a conclusion of no adverse effect on the integrity of their gadwall and Bewick's swan features (paragraph 4.5.10 and Stage 2 Matrix D of **APP-060**). Christchurch Borough Council requested that this commitment be secured within the DCO (paragraph 4.64 of **REP-2677**). The restriction was subsequently included in the draft LEMP (paragraph 7.3.10 of Appendix 1 of **REP-3692**), to be secured through Requirement 18 of the DCO (Version 5) (**REP-3644**).
- 4.14 The applicant also stated that no vehicle access within the Avon Valley SPA would be required during the construction of the River Avon crossing (i.e. forward of the trees screening the construction compounds) (section 3.18 of **REP-3313**) which would minimise potential disturbance of breeding waders at the crossing. Following questions from the ExA regarding how this would be ensured, the

³⁵ NE's response (**REP-3357**) does not reference Mediterranean gull as a feature of the Poole Harbour Ramsar site, however there is spatial overlap with the Poole Harbour SPA.



measure was included in the draft LEMP (paragraph 7.3.10 of Appendix 1 of **REP-3692**).

- 4.15 The updated SoCG between the applicant and NE submitted at Deadline VI agreed that there would be no adverse effects on integrity on the Avon Valley SPA and Ramsar site (paragraphs 11.9 and 11.13 of **REP-3696**).
- 4.16 CHOG agreed that Bewick's swan would not be harmed by proposals to place the cable route under this part of the Avon Valley using HDD at Deadline II (paragraph 3.32 of **REP-2871**).

Impacts on nightjar, Dartford warbler and woodlark of Dorset Heathlands SPA

- 4.17 The applicant's HRA Report acknowledged that construction works may result in the loss of nesting and foraging habitat for Dartford warbler, nightjar and woodlark features of the Dorset Heathlands SPA during the construction phase (paragraph 5.2.7 of **APP-060**) and a LSE was screened in (Stage 1 Matrix E of Appendix J of **APP-059**). However, the applicant considered that the birds present have the potential to adapt to a changing environment. To rule out an adverse effect on site integrity, the applicant proposed mitigation in the form of 31.5ha of suitable habitat to be created, 28.5ha of which would be managed as suitable habitat in the medium to long term. The amount of suitable habitat provided at construction would be greater than that to be temporarily lost and in the medium to long term the amount of suitable habitat created would be more than double that to be temporarily lost (including restored habitat). (See section 4.6a, paragraphs 4.6.3, 4.6.6, 4.6.8 and 5.2.7 of **APP-060**).
- 4.18 Adverse effects on the bird features of Dorset Heathlands SPA resulting from disturbance were ruled out by the applicant on the basis that techniques would be implemented to manage both construction activity and recreational users (through information delivery and provision of suitable diversion routes) (paragraphs 4.6.9 and 4.6.13 and Stage 2 Matrix E of **APP-060**).
- 4.19 However, NE requested further information on the proposed working methods, habitat re-instatement, habitat creation and management of recreational disturbance during the construction (paragraph 4.2.4 of **REP-2461**) to be able to determine the likelihood of a LSE on nightjar, Dartford warbler and woodlark features of the Dorset Heathlands SPA. This was supported by Dorset County Council (paragraph 5.4.7 of **REP-2678**). The RSPB also raised concerns over the displacement of recreational disturbance on the Dorset Heathlands SPA and Ramsar site and Dorset Heaths SAC (paragraphs 5.4-5.7 of **REP-2961**).
- 4.20 Dorset County Council also expressed concerns that the habitat management offered outside of the designations on land owned by the MOD and the Forestry Commission is habitat compensation



and could not be considered within Habitats Regulation 61 in an appropriate assessment of effects on site integrity. Further, it noted that the cable-laying operation would involve the temporary closure of two car parks and a significant length of footway in Hurn Forest and was concerned that this could lead to temporary or even permanent displacement for recreational activities such as dog walking to other places including nearby European sites. (Section 5.4 of **REP-2678**).

Trenchless crossings

- 4.21 As detailed in paragraph 3.70 to 3.80 of this RIES, the applicant extended trenchless crossings to avoid surface works and potential disturbance within the Dorset Heathlands SPA and Ramsar site.
- 4.22 At Deadline II, NE noted that the effects on Dartford warblers (confined to open heathland areas) would be significantly reduced by this proposal (response to question 2.2.16 in **REP-3070**).

Habitat reinstatement/creation

- 4.23 The applicant confirmed at Deadline II that it had been in discussion with NE, Dorset County Council, New Forest District Council, New Forest National Park Authority, Dorset Wildlife Trust and the Hampshire and Isle of Wight Wildlife Trust (response to question 2.2.15 in **REP-3018**) and provided a draft LEMP which proposed that 28.5ha of land within the Forestry Commission estate would be targeted for heathland restoration/creation in areas outside of the Onshore Development Area (Section 2.3 of Appendix 1 of **REP-3692**). This would comprise:
- 12.5ha 'wooded heath' habitat within Hurn Forest
 - 5ha 'wooded heath' habitat within West Moors Plantation.
 - 11ha of Ringwood Forest North targeted for management
- 4.24 The LEMP also confirmed that approximately 6ha of the conifer plantation would not be re-planted (paragraph 5.6.2 of Appendix 1 of **REP-3692**).
- 4.25 NE welcomed the proposed heathland restoration methodology and confirmed that the provisions provide further levels of certainty that the nightjar and woodlark which may be displaced would have adequate habitat during the construction phase. NE stated that if secured at a suitable time and location, the two areas of habitat (12.5ha and 5ha) would ensure that there is not an adverse effect on the integrity of the Dorset Heathlands SPA (paragraph 6.9.4 of **REP-2900** and response to question 2.2.16 in **REP-3070**).
- 4.26 Christchurch Borough Council noted that ES Volume C, Chapter 11 Onshore Ornithology (**APP-097**) proposes mitigation to avoid potential impacts on breeding nightjar, woodlark and Dartford



warbler through the identification of nest locations and exclusion zones around these and requested this be included in the DCO (paragraph 4.69 of **REP-2677**). The restriction was subsequently secured in the draft LEMP (paragraph 7.3.4 of Appendix 1 of **REP-3692**).

- 4.27 The LEMP is to be secured through Requirement 18 (Landscape and ecological management plan) of the draft DCO (Version 5) (**REP-3644**).

Recreational disturbance

- 4.28 The applicant provided a clarification note regarding Recreational Disturbance at Deadline II (**REP-3033**) which considered whether recreational visitors to Hurn Forest during the bird breeding season could be displaced by construction activity from the main forestry track into other areas of Hurn Forest that support nightjar, woodlark and Dartford warbler. The note was informed by the Visitor Survey (**REP-3032**). It determined that the risk of disturbance was relatively low as the majority of habitat used by the public in this area does not provide suitable nesting areas and as within the Dorset Heathlands SPA the tendency is to walk along existing footpaths which would be likely to ensure that the impact of a small increase in visitors would make little or no difference to breeding success.

- 4.29 Provisions for controlling potential increases in recreational disturbance included a warden (employed by the Forestry Commission and funded by the applicant) to be responsible for suitable direct liaison and signage to direct recreational users from the temporarily closed car park to the one that remains open (or to a car park for another nearby area that is not part of the Dorset Heathlands SPA) (paragraph 7.3.7 of Appendix 1 of **REP-3692**)³⁶. These measures are contained within the draft LEMP, to be secured through Requirement 18 of the DCO (Version 5) (**REP-3644**).

Conclusion of impact on Dorset Heathlands SPA

- 4.30 The applicant's updated matrices submitted at Deadline IV (**REP-3326**) screened in a LSE for temporary habitat loss, disturbance and displacement and in-combination effects (Stage 1 Matrix E). An adverse effect on integrity on the site was ruled out in Stage 2 Matrix D.

³⁶ Christchurch Borough Council and East Dorset District Council joint response to Deadline VI notes that 'Further detail should be provided in addition to measures set out in the 'Public Rights of Way Strategy' in relation to how the management of users away from sensitive habitats (Including heathland habitats)' (page 7 of **REP-3640**). However, provisions for recreational management are contained within the draft LEMP as detailed in this paragraph of the RIES.



- 4.31 At Deadline IV, NE confirmed that the trenchless crossings, in combination with the Section 106 agreement and other works such as visitor management are sufficient to conclude no adverse effect on the integrity of the Dorset Heathlands SPA (response to question 3.14 in **REP-3357**).
- 4.32 A draft of the Section 106 agreement was submitted by the applicant at Deadline V (**REP-3497**) which contained provision for a £200,000 biodiversity fund. It is noted that Section 106 agreement has not yet been finalised, however at Deadline VI the applicant confirmed the biodiversity fund is not required as mitigation (response to question 1.11 in **REP-3643**). NE also confirmed that the biodiversity fund does not affect conclusions reached in the HRA as the standalone avoidance and mitigation measures are secured through the DCO and associated documents (response to question 1.11 in **REP-3715**).
- 4.33 The updated SoCG between the applicant and NE submitted at Deadline VI also agreed that there would be no adverse effects on integrity of Dorset Heathlands SPA (paragraph 11.9 of **REP-3696**).
- 4.34 The RSPB also accepted a conclusion of no adverse effect alone or in combination on the Dorset Heathlands SPA as a result of the cabling works in Hurn Forest in light of the findings of the visitor survey, the clarification note on recreational disturbance and the proposed mitigation measures (paragraph 6.4 of **REP-3191**).



5.0 SITE MATRICES

- 5.1 As detailed in paragraphs 3.86 to 3.90 of this RIES, Stage 1 Matrices have not been revised in this RIES for any European site.
- 5.2 Stage 2 Matrices have been revised in this RIES for the European sites, features and potential impacts that remained in contention at the time the RIES was issued. These are identified in Table 5a below.

Table 5a: European sites and features for which stage 2 matrices have been revised in this RIES

Site	Feature	Impact
River Avon SAC	Atlantic salmon	Noise and vibration impacts
River Itchen SAC		EMF impacts

- 5.3 The revised matrices are based on the updated matrices provided by the applicant at Deadline IV (**REP-3326**). They summarise the relevant information submitted in the application documents and the relevant information submitted by the applicant and interested parties during the examination to date (up to Deadline VIa) in relation to the Atlantic salmon feature of the River Avon SAC and River Itchen SAC.

Key

- ? = Adverse effect on integrity cannot be excluded
- ✘ = Adverse effect on integrity can be excluded
- C= construction
- O = operation
- D = decommissioning

- 5.1 Information supporting the conclusions is detailed in the footnotes for each table with reference to relevant supporting documentation.
- 5.2 Where an impact is not considered relevant for a feature of a European site, the cell in the matrix is formatted as follows:



Stage 2 Matrix A: River Avon SAC

Site Code: UK0013016

Distance to project: 0 km (the Onshore Development Area crosses the SAC boundary)

European site feature	Adverse Effects on Integrity		
	Disturbance (noise and vibration)		
	C	O	D
Atlantic Salmon	? a, b, c		X d

Notes

- a. A LSE resulting from disturbance of Atlantic salmon adults, smolts or eggs due to noise and vibration in the construction phase of the project was screened in to the applicant's assessment (Stage 1 Matrix A of Appendix J of **APP-059**). At the time of issuing the RIES, the potential effects of disturbance from piling during construction remained unresolved.
- b. **Disturbance offshore** (Note this footnote also applies to the Atlantic salmon feature of the River Itchen SAC therefore to avoid duplication in the subsequent matrix, references to both European sites are included below):

The applicant acknowledged that noise levels within the marine environment that are associated with piling of foundations during the construction period have the potential to prevent adult Atlantic salmon reaching the mouth of the river or smolts leaving the river into the English Channel. However, the applicant concluded no adverse effect on the integrity of the site (paragraphs 4.2.3 to 4.2.11 and Stage 2 Matrix A (River Avon) and K (River Itchen) of **APP-060**) on the basis that:

- (i) the area of ensonified sea would not prevent free movement of salmon in areas to the north and west of the Isle of Wight (i.e. noise will not create a complete barrier to movement),

- (ii) the piling works would only take place for approximately 388 hours across the 4.5 year construction period, and
- (iii) no piling would occur for 4 weeks at the peak of the smolt run (15th April to 15th May).

NE, the EA and the MMO raised concerns over potential impacts of piling noise on Atlantic salmon adults and smolts in their relevant representations (paragraph 4.3.1 of **REP-2461**, **REP-2407** and Section 1 of **REP-1581**) and considered the proposed piling restriction gave insufficient protection for the species given that piling could take place for consecutive multiple years; as there are uncertainties on coastal migratory behaviour; and due to the vulnerable status of the populations (paragraph 6.7.1 of **REP-2900**). The RSPB also noted concerns over impacts on Atlantic salmon however deferred to the EA and NE on the matter (paragraphs 6.1-6.3 of **REP-2961**).

The EA stated that it was appropriate to consider the behavioural impact of piling activities on Atlantic salmon at two points in their life cycle; their emigration to marine feeding grounds as juveniles (smolts) and during their return to their natal rivers as adults as these different life stages exhibit differing behaviours and the risks to them are different (Appendix 1 of **REP-3135**).

Smolts: At Deadline II, the applicant extended the temporal restriction for pin piles and monopiles to 7th April to 15th May following discussions with NE and the EA in order to ensure that smolt are not prevented from leaving the mouth of the river. At the same time, the applicant removed a provision of a maximum piling period of 8 hours in 24 hours between 1st April and 14th April that had been included within their DCO submitted with the application (Condition 18 of **APP-040**). This provision was not however explicitly referred to within the HRA report.

The revised piling restrictions for smolts were agreed in Statements of Common Ground (SoCGs) with the MMO (paragraph 5.25 of **REP-3112**), NE (paragraph 5.26 of **REP-3134**) and EA (paragraph 5.25 and Appendix 1 of **REP-3135**). They are included as Condition 18 of both Deemed Marine Licences (DMLs) in version 5 of the draft DCO (**REP-3644**).

Adults: Discussions regarding piling restrictions for adult Atlantic salmon continued between the applicant, NE and the EA throughout the examination. The MMO deferred to NE and the EA on the matter, however wished to be consulted on the wording of any mitigation to be applied to the DML to ensure it is enforceable (questions 2.1.14-2.1.16 of **REP-2992**).

At *Deadline II*, the applicant proposed a piling restriction for the period 16 May to 15 August inclusive, to restrict the number of piling hours in these months (736 hour period) to ensure a notional exposure risk for adult salmon transiting the area (question 2.1.14 of **REP-3018**). The EA did not consider that sufficient evidence had been presented to support the applicant's assertion that adult Atlantic salmon are less sensitive to noise than Atlantic salmon smolts, or that the salmon's migratory drive would overcome a behavioural response to noise levels above 75 dBht (*Salmo salar*), or that the area of sea ensonified below this level would provide a sufficient corridor to allow adult salmon to migrate unhindered (paragraph 2.2.1 of **REP-2922**). The EA produced the note 'Adult salmon spatial and temporal risk assessment' (Appendix 1 of **REP-2922**) and developed their own model based on the applicants realistic worst case scenario to determine an acceptable level of exposure risk to migrating adult salmon to noise levels of 75 dBht (*Salmo salar*) (as detailed in paragraphs Section 2 and Appendix 1 of **REP-2922**). The EA suggested criteria to be included in the DML (paragraph 2.2.9 of **REP-2922**). NE confirmed that they supported the EA's adult salmon temporal and spatial risk assessment (paragraph 6.7.3 of **REP-2900**) and noted that the EA's proposed piling cap (i.e. maximum number of piling days in any 30 day period rather than maximum permitted daily duration) during the key sensitive period (mid May to mid August) would limit the risk of salmon exposure to underwater noise while maintaining a flexible construction envelope (questions 2.1.14-2.1.15 of **REP-3070**).

At *Deadline III*, the applicant stated they did not agree with all of the EA's modelling approach, specifically the adult swimming speed assumptions; the use of the first hammer strike to define the start of piling; and the potential behavioural response (i.e. impacts and effects) arising from exposure to noise levels at >75 dBht (Paragraph 34.87 of **REP-3176**).

The applicant also provided a clarification note on 'matters relating to migrating adult salmon' (**REP-3241**) to facilitate continued discussion on potential mitigation requirements and to demonstrate that the worst case scenario set out in the ES for monopile installation at 98 locations represents a precautionary case in relation to what is likely, and provided more detail on the realistic piling scenario. The note concluded that only a minor proportion of migrating salmon, even during peak periods, could be exposed to noise levels >75dBht. The applicant offered to limit the maximum separation distance between piling vessels, thus reducing the maximum extent of the two ensonified areas (paragraph 1.5.1 of **REP-3241**). The EA considered the applicant's clarification note was helpful but that the applicant relied heavily on the intermittency of the piling regime to support this conclusion and that the transit time of fish entering the area that would be ensonified during piling activity needs to be considered (Appendix 1 of **REP-3135**).

Although the piling restrictions were not agreed, framework text for a condition was proposed in Condition 19 of the DMLs in version 3 of the DCO (**REP-3224**).

At *Deadline IV*, the applicant confirmed the sensitive period for adult salmon migrating to home rivers from their marine phase had been divided into three parts, specifically 16 May to 15 June; 16 June to 15 July; and 16 July to 15 August inclusive. The applicant detailed their reservations that a number of the assumptions used in the EA's model were overly precautionary, specifically with regards to noise as a migration barrier; the assumption of maximum hammer energy; and consideration of a threshold for hammer energy at which a meaningful risk of exposure commences (question 2.6 of **REP-3313**).

At *Deadline V*, the EA provided a written response which had been prepared in consultation with NE, to Deadline III submissions by the applicant and a summary of subsequent discussions (Part 2 of **REP-3568**). This stated:

- (i) the swimming speed was agreed with the applicant
- (ii) that a conclusion of no adverse effect cannot be reached when hammer energies below a given threshold are not included (i.e. all piling should be counted within the piling quote; there should not be a hammer energy below which it would not count towards the piling quota).
- (iii) there are insufficient certainties within these assessments to be able to conclude no adverse effect; therefore, the EA approach is appropriate
- (iv) the applicant had requested for the quota hours generated by the adult salmon exposure risk model to be converted into numbers of piles and the MMO confirmed that an approach based on a cap on the number of piles (rather than hours) would be simpler to comply with and enforce
- (v) the EA's model was updated to take account of differing foundation installation methods (Drive only and Drive-Drill-Drive installation; the latter being an additional method of installing foundations proposed by the applicant as a result of new geotechnical information).

The applicant maintained their position that the EA's modelling and interpretation of outputs were overly precautionary and disagreed with the EA's proposal for a variable number of hours of 'quiet time' following each installation. The

applicant also explained that they had not received the EA's model for review and that they had concerns generic data had been directly adopted as input parameters to the model. To simplify the DML conditions, the applicant proposed wording for a condition to translate allowable hours of activity into a maximum numbers of piles that may be installed in any of the relevant periods. (**REP-3491** and paragraphs 24 to 43 of **REP-3490**).

At *Deadline VI* the applicant confirmed a number of key agreements had been reached with the EA and NE. these were that:

- (i) there is a level of uncertainty associated with the effect on adult salmon migration from percussive piling therefore some form of mitigation is required
- (ii) mitigation can be secured in the DMLs via a condition that restricts the level of piling activity within the agreed sensitive period and that the MMO is supportive of this approach
- (iii) the risk of exposure to noise involves consideration of both the spatial and temporal risk of the piling activity undertaken, and
- (iv) a conclusion of no adverse effect on integrity can safely be reached if appropriate mitigation is put in place. (Section 3 of **REP-3643**)

However, the level of noise exposure risk and drafting of the DML conditions remained in dispute, as detailed below.

The applicant stated that the EA's spatial and temporal risk calculations can be agreed (although it caveated that they are yet to verify the EA's model; the EA has since agreed to share the model (question 1.1 of **REP-3643**)). The applicant set out the hours of 'allowable activity' at a range of exposure risk levels within the mitigation period (16 May and 15 August) (Tables 3.2 to 3.4 of **REP-3681**); the EA considered the level should be 25% and the applicant considered the level should be 40% (paragraph 3.1.11 of **REP-3681**).

The EA and NE set out their justification for the 25% piling noise exposure threshold in Part 2 of **REP-3634**. This included an explanatory note on the current state of chalk stream salmon populations and concluded that due to the current performance of these stocks, their unique genetic composition and small population size, they are considered

to be especially vulnerable to additional impacts that could reduce the number of returning adult spawners further (Appendix 1) and an update on Adult Salmon Piling Mitigation Options (Appendix 2).

EA and NE provided an overview of the discussions that have taken place with the applicant throughout the examination and detailed their latest model iteration (Appendix 2 of Part 2 of **REP-3634**). They stated this addressed many of the issues raised in the applicant's Deadline V response by reducing the precaution at which the model makes its assessment of risk to an appropriate level of risk. It also allowed flexibility for contractors by limiting the number of piling risk hours but not restricting to prescribed installation methods. EA and NE confirmed that should mitigation be secured to limit the risk of piling noise exposure to $\leq 25\%$, a conclusion of no adverse effect on the integrity of the River Avon and River Itchen SACs salmon populations can be reached.

The applicant considered the 25% threshold to be over precautionary as the assessments have assumed that the maximum hammer energy is used for the entirety of each and every pile installation, and as there are inbuilt controls on the amount of time any single pile can be driven given that each pile is designed to withstand a finite number of blows to maintain its structural integrity (which is also valid for installation using drill/drive techniques_ (Section 2 of **REP-3681**). The applicant also explained the differences in opinions between the applicant and the EA in defining the level of response in adult salmon when encountering noise at $>75\text{dBht}$ (and $<90\text{dBht}$) and considered that adopting an exposure risk approach affords an additional layer of precaution to an already precautionary assessment. The applicant stated that the EA's assessment is based on a maximum potential risk of fish from the migrating population encountering noise at a level at which some of the population may react and does not give consideration to what the consequence of exposure might be (Section 3 of **REP-3681**). The applicant also highlighted that the level of precaution suggested by the EA is considerably higher than for other projects e.g. Burbo Bank Extension (3.1.6 – 3.1.9 of **REP-3681**). NE and EA cautioned that the comparison with Burbo Bank Extension should not be interpreted on face value and should be assessed in the context of risks to the migratory population and the scale of the development (Part 2 of **REP-3634**).

With regards to drafting of the DML conditions, the applicant considered it should be unambiguous, easily understood and allows clarity for demonstrating compliance and can be readily enforceable without the need for complex calculation or interpretation of piling records. The applicant proposed to translate allowable hours of activity into setting a maximum number of foundations that may be installed in any of the relevant periods (Section 4 of **REP-3681**). The applicant revised the draft DCO (version 5) (**REP-3644**) to reflect this. On the other hand, the EA and NE

considered the mitigation should be expressed in the form of limits on noise risk piling hours; they set out allowable noise risk hours in Table 1 of Part 2 of **REP-3634**.

The issue remained unresolved at the time this RIES was published, with the updated SoCG with the applicant, NE, the EA and MMO (**REP-3679**) confirming that '*there remains outstanding disagreement with regard to the appropriate means to define the level of mitigation, in terms of the level of exposure risk applied that provides for a maximum level of piling activity.*'

c. Disturbance onshore:

The applicant acknowledged that noise and vibration created by the installation of onshore transmission cables underneath the River Avon SAC using HDD could prevent adult and juvenile Atlantic salmon moving up or down stream and damage eggs laid in the substrate (Stage 2 Matrix A of **REP-3326**). The applicant considered that predicted levels of noise and vibration would not be great enough to result in an effect on the integrity of the site due to the type of equipment used and the depth of the drill head as it passes underneath the River Avon (see paragraph 4.2.9 of **APP-060**).

To eliminate the potential impact of vibration on the viability of Atlantic salmon eggs, the applicant confirmed that all construction activity within 250m of the River Avon would be suspended between November and February inclusive (paragraph 4.2.10 of **APP-060**). The applicant included this restriction in paragraph 6.3.1 of the draft LEMP (Appendix 1 of **REP-3692**) (secured through Requirement 18 of version 5 of the DCO (**REP-3644**)) and the EA confirmed this date range would protect salmon eggs during their early stages of development from vibration caused by HDD crossing under the River Avon (question 2.2.14 of **REP-3093**).

The EA also noted that in-channel works must take place between the 1st May and 31st October in any year to avoid the period when salmonids are migrating to spawning areas, spawning and with the resulting progeny residing within gravel bed substrate; the EA requested that this should be included as a requirement or similar in the DCO (Section 2.3 of **REP-2922**). This was included in paragraph 6.3.11 of the draft LEMP (Appendix 1 of **REP-3692**) which also confirms that '*in channels that may hold migratory fish, or may be upstream of a watercourse supporting migratory fish, no in-channel works will be carried out between the 7th April and 15th May unless it can be demonstrated that working methods will not result in the impact on Atlantic salmon smolt or other salmonid species*'.

The applicant considered that the predicted levels of noise and vibration would not be great enough to result in an effect on the integrity of the site (paragraphs 4.2.3 to 4.2.11 and Stage 2 Matrix A of **APP-060**).

This was not discussed further during the examination.

d. Decommissioning:

No decommissioning impacts were predicted onshore as cables underneath the River Avon would be left in situ and therefore no works within or beneath the river would be required (paragraph 4.2.3 of **APP-060**). Any noise created offshore during decommissioning activity would be reduced in comparison to the construction phase as no piling would be required (Stage 2 Matrix A of **REP-3326**). This was not disputed during the examination.

Stage 2 Matrix B: River Itchen SAC

Site Code: UK0012599

Distance to project: 29.1 km

European site feature	Adverse Effects on Integrity		
	Disturbance (noise and vibration)		
	C	O	D
Atlantic Salmon	? a		X b

Notes

- a. A LSE resulting from disturbance of Atlantic salmon adults and smolts within the marine environment due to construction noise was screened in to the applicant's assessment (Stage 1 Matrix K of Appendix J of **APP-059**). See footnotes 'a' and 'b' of Stage 2 Matrix A of this RIES for details of discussions undertaken throughout the examination, which apply equally to the salmon population of the River Itchen SAC.
- b. Any noise created offshore during decommissioning activity would be reduced in comparison to the construction phase as no piling would be required (Stage 2 Matrix H of **REP-3326**). This was not disputed during the examination.



6.0 APPENDICES

APPENDIX 1: Documents used to inform this RIES

Navitus Bay Development Limited Application Documents

- Draft Development Consent Order (**APP-040**)
- Habitats Regulations Screening Report, April 2014 (**APP-059**) including:
 - Appendix J – Planning inspectorate Screening Matrices
- Habitat Regulations Assessment Report (the Applicant's HRA Report April 2014) (**APP-060**)
- Environmental Statement (ES):
 - Volume B Chapter: 12 Offshore Ornithology (**APP-078**)
 - Volume C Chapter: 10 Terrestrial and Freshwater Ecology (**APP-095**)
 - Volume C Chapter 11: Onshore Ornithology (**APP-097**)
 - Volume B Appendix 12.1: Offshore Ornithology Appendix 12.1 (**APP-126**)
 - Volume B Appendix 12.2: Offshore Ornithology Appendix 12.2 (**APP-127**)
 - Volume B Appendix 12.3: Offshore Ornithology Appendix 12.3 (**APP-128**)
 - Volume B Appendix 12.4: Offshore Ornithology Appendix 12.4 (**APP-129**)
 - Volume B Appendix 12.5: Offshore Ornithology Appendix 12.5 (**APP-130**)
 - Volume B Appendix 12.6: Offshore Ornithology Appendix 12.6 (**APP-131**)
 - Volume B Appendix 12.7: Offshore Ornithology Appendix 12.7 (**APP-132**)
 - Volume B Appendix 12.8: Offshore Ornithology Appendix 12.8 (**APP-133**)
 - Volume B Appendix 12.9: Offshore Ornithology Appendix 12.9 (**APP-134**)
 - Volume C Appendix 11.1: Onshore Ornithology Appendix 11.1 (**APP-285**)
 - Volume C Appendix 11.2: Onshore Ornithology Appendix 11.2 (**APP-286**)
 - Volume C Appendix 11.3: Onshore Ornithology Appendix 11.3 (**APP-287**)
 - Volume C Appendix 11.4: Onshore Ornithology Appendix 11.4 (**APP-288**)

Relevant Representations

- Dorset County Council (**REP-1494**)

- Marine Management Organisation (**REP-1581**)
- East Dorset District Council (**REP-1768**)
- Royal Society for the Protection of Birds (**REP-2404**)
- Environment Agency (**REP-2407**)
- Natural England (**REP-2461**)

Deadline I Documents (6 October 2014)

- Local Impact Reports:
 - Christchurch Borough Council (**REP-2677**)
 - Dorset County Council (**REP-2678**)
 - East Dorset District Council (**REP-2679**)
 - New Forest District Council (**REP-2681**)

Deadline II Documents (20 October 2014)

- Written representations:
 - Christchurch Harbour Ornithological Group (**REP-2871**)
 - Natural England (**REP-2900**)
 - Environment Agency (**REP-2922**)
 - Royal Society for the Protection of Birds (**REP-2961**)
 - Marine Management Organisation - Late written representation and responses to ExA's first round of written questions (**REP-2992**)
 - Navitus Bay Development Limited
 - Written Response to Deadline II (**REP-3018**)
 - Appendix 17 - Hurn Forest Visitor Survey Report 2014 (**REP-3032**)
 - Appendix 18 - Recreational Disturbance Assessment Clarification (**REP-3033**)
 - Appendix 20 – Draft Landscape and Ecological Management Plan (**REP-3035**)
 - Appendix 22 - Ornithology Survey Report Oct 2014 (**REP-3037**)
 - Appendix 23 – Section 106 Planning Obligations Schedule (**REP-3038**)
 - Appendix 25 - Joint Agreement between Navitus Bay and Rampion Offshore Wind Farms (**REP-3040**)
 - Appendix 36 – Trenchless Crossing Plan (**REP-3051**)
 - Appendix 38 - Code of Construction Practise (**REP-3053**)
- Responses to ExA's first questions:

- Natural England (**REP-3070**)
- Environment Agency (**REP-3093**)
- Statements of Common Ground:
 - Navitus Bay Development Limited
 - Appendix 44 - Statement of Common Ground with Marine Management Organisation (Fish and shellfish ecology) (**REP-3112**)
 - Appendix 49 - Statement of Common Ground with Dorset Wildlife Trust and Hampshire & Isle of Wight Wildlife Trust (**REP-3117**)
 - Appendix 64 - Statement of Common Ground with Natural England (all matters excluding Fish and Shellfish) (**REP-3132**)
 - Appendix 66 - Statement of Common Ground with Natural England (Fish and shellfish ecology) (**REP-3134**)
 - Appendix 67 - Statement of Common Ground with Environment Agency (Fish and shellfish ecology) (**REP-3135**)
 - Appendix 80 - Statement of Common Ground with Local Authorities matters relating to Onshore Biodiversity and Ecology (**REP-3150**)
 - Appendix 89 - Statement of Common Ground not required with RSPB (**REP-3161**)

Deadline III Documents (5 November 2014)

- Comments on Representations:
 - Navitus Bay Development Limited
 - Written Response to Deadline III (**REP-3176**)
 - Royal Society for the Protection of Birds (**REP-3191**)
- Comments on Local Impact Reports:
 - Navitus Bay Development Limited
 - Appendix 2 - Draft Development Consent Order (Version 3 - November 2014) (**REP-3224**)
- Other documents received for Deadline III:
 - Navitus Bay Development Limited
 - Appendix 34 Matters Relating to Migrating Adult Salmon clarification note (**REP-3241**)
 - Appendix 43 Turbine Area Mitigation Option (**REP-3248**)

Deadline IV Documents (11 December 2014)

- Written representations:

- Navitus Bay Development Limited - Response to Deadline IV (Part 2) (**REP-3313**)
 - Appendix 3 – Draft Marine Mammal Monitoring Plan (**REP-3316**)
 - Appendix 7 Updated Natural England SoCG - ecology excluding fish and shellfish (**REP-3320**)
 - Appendix 13 HRA Matrices for Application Scheme (**REP-3326**)
- Natural England - Summary of Natural England's representations at issue specific hearings (**REP-3357**)
- Christchurch Harbour Ornithological Group (**REP-3384**)
- Documents received in response to Rule 17 request regarding Appendix 43:
 - Navitus Bay Development Limited
 - Appendix 2 – HRA Matrices for Mitigation Option in relation to Appendix 43 (**REP-3431**)

Deadline V Documents (7 January 2015)

- Documents received in response to Rule 17 request regarding Appendix 43:
 - Navitus Bay Development Limited
 - Deadline V Response Document (**REP-3490**)
 - Appendix 1 - Revised draft Development Consent Order and Deemed Marine Licences (Version 4 – January 2015) (**REP-3491**)
 - Appendix 7 - Draft Section 106 agreement (**REP-3497**)
 - Christchurch Harbour Ornithological Group (**REP-3564**)
 - Environment Agency (**REP-3568**)

Deadline VI Documents (29 January 2015)

- Responses to ExA's second written questions, Post hearing documents and comments on the applicant's revised DCO
 - Navitus Bay Development Limited
 - Response to Deadline VI (**REP-3643**)
 - Appendix 1: Revised draft Development Consent Order (Version 5) (**REP-3644**)
 - Appendix 12: Update to the SoCG with Natural England, the Environment Agency and the MMO (**REP-3679**)
 - Appendix 14: Update on proposals for adult salmon mitigation (**REP-3681**)
 - Appendix 21: Tern Foraging and Underwater Noise HRA Technical Note (**REP-3688**)
 - Appendix 25: Code of Construction Practice v3 (**REP-3692**)

- Appendix 29: Natural England SoCG - ecology excluding fish and shellfish (**REP-3696**)
- Christchurch Borough Council and East Dorset District Council Comments on DCO Version 4 (**REP-3640**)
- Environment Agency (**REP-3634**), comprising:
 - Part 2 Written response to questions
 - Joint response from Natural England and the Environment Agency on adult salmon piling mitigation
- Natural England (**REP-3715**)

APPENDIX 2: European sites considered in the applicant's
HRA Screening Report (APP-059)

Special Areas of Conservation

River Avon SAC
Dorset Heaths SAC
South Wight Maritime SAC
Wight-Barfleur Reef cSAC
Solent Maritime SAC
Solent and Isle of Wight Lagoons SAC
Studland to Portland cSAC
Isle of Portland to Studland Cliffs SAC
St Albans Head to Durlston Head SAC
Dorset Heaths (Purbeck to Wareham) and Studland Dunes SAC
River Itchen SAC
Isles of Scilly Complex SAC

Special Protection Areas – Sites in Dorset/Hampshire

Avon Valley SPA
Dorset Heathlands SPA
Solent and Southampton Water SPA
Poole Harbour SPA

Other UK SPA's

Dungeness to Pett Level SPA
Alde-Ore Estuary
Skomer and Skokholm SPA
Grassholm SPA
Isles of Scilly SPA
Glannau Aberaron and Ynys Enlli/Aberdaron Coast and Bardsey Island SPA
Ribble and Alt Estuaries SPA
Morecambe Bay SPA
Bowland Fells SPA
Flamborough Head and Bempton Cliffs
Coquet Island SPA
Lough Neagh and Lough Beg SPA
Farne Islands SPA
Ailsa Craig SPA
St Abb's Head to Fast Castle SPA
Raithlin Island SPA
Firth of Forth Islands SPA
Fowlseugh SPA
Buchan Ness to Collieston Coast SPA
Canna and Sanday SPA
Migulay and Berneray SPA
Troup, Pennan and Lions Head SPA
East Caithness Cliffs SPA
Shiant Isles SPA

Handa SPA
North Caithness Cliffs SPA
St Kilda SPA
Cape Wrath SPA
Hoy SPA
Copinsay SPA
Flannan Isles SPA
Marwick Head SPA
Sule Skerry and Sule Stack SPA
Rousay SPA
Calf of Eday SPA
West Westray SPA
Pepa Westray (North Hill and Holm) SPA
North Rona and Sula Sgeir SPA
Fair Isle SPA
Sumburgh Head SPA
Foula SPA
Noss SPA
Ronas Hill – North Roe and Tingon SPA
Fetlar SPA
Hermaness, Saxa Vord and Valla Field SPA

Irish Sites

Saltee Islands SPA
Wicklow Head SPA
Howth Head Coast SPA
Helvick Head to Ballyquin SPA
Irelands Eye SPA
Lambay Island SPA
Old Head of Kinsale SPA
Galley Head to Duneen Point SPA
Sheeps Head to Toe Head SPA
Beara Peninsula SPA
Kerry Head SPA
Cliffs of Moher SPA
Inveragh Peninsula SPA
Dingle Peninsula SPA
Deenish Island and Scariff Island SPA
The Bull and The Cow Rocks SPA
Loop Head SPA
Inishmore SPA
Puffin Island SPA
Skelligs SPA
Blasket Islands SPA
Aughris Head SPA

West Donegal Coast SPA
Horn Head to Fadan Head SPA
High Island, Inishshark and Davillaun SPA
Clare Island SPA
Inishbofin, Inishdooey and Inishbeg SPA
Tory Island SPA
Illanmaster SPA
Bills Rocks SPA
Stags of Broadhaven SPA
Duvillaun Islands SPA

French Sites

Baie de Seine occidentale SPA
Falaise du Bessin Occidental SPA
Littoral Seino-Marin SPA
Chausey SPA
Littoral Augeron SPA
Estuaire et marais de la basse seine SPA
Cap d'Erquy-Cap Frehel SPA
Baie du Mont Saint Michel SPA
Tregor Goelo SPA
Cote de Granit Rose-Sept Iles SPA
Baie de Saint-Brieuc – Est SPA
Iles de la Colombiere, de la Nelliere et des Haches SPA
Cap Gris-Nez SPA
Baie de Morlaix SPA
Bancs des Flandres SPA
Ouessant – Molene SPA
Camaret SPA
Cap Sizun SPA
Baie de Vilaine SPA

German Sites

Niedersächsisches Wattenmeer und angrenzendes Küstenmeer SPA
Borkum- Riffgrund SPA
Dogger Bank SPA
Sylter Aussenriff SPA
Seevogelschutzgebiet Hegoiland SPA
Östliche Deutsche Bucht SPA

Danish Sites

Sydilge Nordso SPA

Ramsar Sites in Hampshire and Dorset

Avon Valley Ramsar Site

Dorset Heathlands Ramsar Site
Solent and Southampton Water Ramsar Site
Poole Harbour Ramsar Site

Channel Islands Ramsar Sites

Alderney West Coast and the Burhou Islands Ramsar Site

APPENDIX 3: Summary table of the screening exercise

Notes:

- 1) Cells shaded purple identify features taken forward to the integrity stage of the assessment by the applicant.
- 2) Cells shaded orange identify features for which interested parties disagree with the outcome of the screening exercise.
- 3) Where cells within the applicant's screening matrices for certain features are blank or greyed out, no LSE has been assumed.

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VIa?	
River Avon SAC	Watercourses of plain to montane levels	No	Yes ¹	No	Yes. NE – response to question 2.2.12 in REP-3070 (Deadline II) and response to question 1.10 of the ExA's second written questions in REP-3715 (Deadline VI)	n/a
	Desmoulin's whorl snail	No	Yes ¹	No	Yes ^{1, 2}	n/a
	Sea lamprey	No	No. NE identified the features of the European site as potentially being affected by the proposed project (paragraph 2.2.2 of Part I of REP-2461) and considered there was insufficient information regarding potential impacts of EMF on sea lamprey to conclude no LSE (paragraph 4.3.2 of REP-2461).	No	Yes NE – paragraph 5.18 and Appendix 1 – table 1 of REP-3134 (Deadline II)	See paragraphs 3.60 to 3.62 of the RIES for further details.
	Brook lamprey	No	Yes ¹	No	Yes ^{1, 2}	n/a
	Atlantic salmon	Yes – temporary habitat loss, pollution of River Avon, disturbance (noise, vibration and EMF), in-combination effects	Yes. NE noted concerns relating to potential impacts of piling noise on adult salmon and smolt migrating to and from the River Avon and River Itchen (paragraph 4.3.1 of REP-2461). The Environment Agency (EA) agreed with the applicant's conclusion to screen in the feature (REP-2407) The Marine Management Organisation	Yes - disturbance, in-combination effects	Yes. NE – response to question 2.2.12 in REP-3070 (Deadline II) and paragraph 11.12 of REP-3696 (Deadline VI)	Note: The potential impacts of temporary habitat loss and pollution of River Avon were not considered in the updated matrices however this was not discussed further during the examination therefore it is assumed all parties are in agreement with the applicant's conclusion of no significant effects arising

¹ It is assumed that all interested parties are in agreement with the applicant's conclusion with respect to this qualifying feature as no dispute or objection was raised. The EA's relevant representation (**REP-2407**) confirmed that, with the exception of potential piling impacts on Atlantic salmon features of the River Avon SAC and River Itchen SAC, they 'agree with NBDL conclusions, provided that the mitigation activities they have stated are undertaken and the relevant points raised in this document are incorporated' (specific sites and features have not been explicitly referred to).

² NE confirmed that with regard to the terrestrial SAC/SPA/Ramsar features, they agree with the conclusions of the screening exercise presented in the applicant's updated matrices (response to question 1.10 in **REP-3715**).

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
			(MMO) identified the need to extend piling restrictions however did not directly attribute this to protection for this species or European site (Section 1 of REP-1581)			from these impacts. See Section 5 of the RIES for further details.
	Bullhead	No	Yes ¹	No	Yes ^{1,2}	n/a
Avon Valley SPA	Bewick's swan	Yes – disturbance and displacement, in-combination effects	Yes. NE noted concerns relating to disturbance of SPA birds should HDD not prove to be feasible (paragraph 4.5.3 of REP-2461). Christchurch Borough Council identified concerns over potential habitat loss (REP-1769)	Yes – disturbance and displacement, in-combination effects	Yes. NE - paragraph 2.4 of Appendix 2 of REP-2461 , response to question 2.2.12 in REP-3070 (Deadline II) and response to question 1.10 in REP-3715 (Deadline VI).	See paragraphs 4.13 to 4.16 of the RIES for further details.
	Gadwall					
Avon Valley Ramsar Site	Diverse habitats	No	Yes ¹	No	Yes ^{1,2}	n/a
	Diverse flora and fauna	No	Yes ¹	No	Yes. NE - paragraph 2.4 of Appendix 2 of REP-2461 and response to question 2.2.12 in REP-3070 (Deadline II) and response to question 1.10 of the ExA's second written questions in REP-3715 (Deadline VI)	n/a
	Gadwall	Yes – disturbance and displacement, in-combination effects	Yes. NE noted concerns relating to disturbance of SPA birds should HDD not prove to be feasible (paragraph 4.5.3 of REP-2461).	Yes – disturbance and displacement, in-combination effects	Yes. NE – paragraph 2.4 of Appendix 2 of REP-2461 , response to question 2.2.12 in REP-3070 (Deadline II) and response to question 1.10 of the ExA's second written questions in REP-3715 (Deadline VI)	See paragraphs 4.13 to 4.16 of the RIES for further details.
Dorset Heaths SAC	Northern Atlantic wet heaths with <i>Erica tetralix</i>	Yes - habitat degradation, in-combination effects	Yes. NE noted concerns relating to impacts on habitats from HDD operations, the success of reinstatement measures and in-combination impacts (paragraphs 4.5.1 and 5.3.1 of REP-2461).	No	Yes. NE - response to question 2.2.12 in REP-3070 (Deadline II) and response to question 1.10 of the ExA's second written questions in REP-3715 (Deadline VI). (However NE also agreed to no	See paragraphs 3.70 to 3.85 of the RIES for further details.
	European dry heaths			No		
	Depressions on			No		

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
	peat substrate of the Rhynchosporion		RSPB identified concerns over potential habitat damage/loss (REP-2404). Dorset County Council and East Dorset District Council identified concerns over potential habitat loss (REP-1494 and REP-1768).		adverse effect on the European site (paragraph 11.11 of REP-3696). Dorset Wildlife Trust (Table 3 of REP-3117) and Christchurch Borough Council, East Dorset District Council and Dorset County Council (section 5 of REP-3150) agreed there would be no impacts on the site (note however that these bodies did not identify whether the site should be screened out at stage 1 or whether adverse effects on integrity should be considered).	
	Southern damselfly	No	Yes ¹	No	Yes ^{1, 2}	n/a
	Molinia meadows	No	Yes ¹	No	Yes ^{1, 2}	n/a
	Calcareous fens	No	Yes ¹	No	Yes ^{1, 2}	n/a
	Alkaline fens	No	Yes ¹	No	Yes ^{1, 2}	n/a
	Old acidiophilous oak woods	No	Yes ¹	No	Yes ^{1, 2}	n/a
Dorset Heathlands SPA	Nightjar Dartford warbler Woodlark	Yes – temporary habitat loss, disturbance, in-combination effects	Yes. NE noted concerns over habitat reinstatement, creation and management of recreational disturbance during the construction phase and appropriate provision for nesting SPA birds and in-combination impacts (paragraphs 4.2.4, 4.5.1 and 5.3.1 of REP-2461); concerns over the CRM undertaken for migratory nightjar (paragraphs 2.1.7 of REP-2461). RSPB identified concerns over potential habitat damage/loss (REP-2404).	Yes – temporary habitat loss, disturbance, in-combination effects	Yes At Deadlines II and VI, NE agreed there would be no LSE on nightjar from collision risk (response to question 2.1.35 in REP-3070 and response to question 1.10 of the ExA's second written questions in REP-3715). The applicant chose to screen in a LSE for all of the features as habitat suitable for these species will be temporarily lost in areas within close proximity to the SPA	See paragraphs 3.39 to 3.42, 3.70 to 3.85 and 4.17 to 4.34 of the RIES for further details.

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
			Dorset County Council and East Dorset District Council identified concerns over potential habitat loss (REP-1494 and REP-1768).		boundary (Stage 1 Matrix E of REP-3326). NE agreed to the outcomes of the screening exercise for terrestrial SAC/SPA/Ramsar features (response to question 1.10 of the ExA's second written questions in REP-3715).	
	Hen harrier	No	Yes ¹	No	Yes ^{1,2}	n/a
	Merlin	No	Yes ¹	No	Yes ^{1,2}	n/a
Dorset Heathlands Ramsar site	Northern Atlantic wet heaths with <i>Erica tetralix</i>	Yes - habitat degradation, in-combination effects	Yes. Yes. NE noted concerns relating to impacts on habitats from HDD operations, the success of reinstatement measures and in-combination impacts (paragraphs 4.5.1 and 5.3.1 of REP-2461).	No	Yes. NE agreed to the outcomes of the screening exercise for terrestrial SAC/SPA/Ramsar features (response to question 1.10 of the ExA's second written questions in REP-3715) (Deadline VI). (However NE also agreed to no adverse effect on the European site (paragraph 11.11 of REP-3696)). Dorset Wildlife Trust (Table 3 of REP-3117) and Christchurch Borough Council, East Dorset District Council and Dorset County Council (section 5 of REP-3150) agreed there would be no impacts on the site (note these bodies did not identify whether the site should have been screened out at stage 1 or whether adverse effects on integrity should have been considered).	See paragraphs 3.70 to 3.85 of the RIES for further details.
	Depressions on peat substrate of the Rhynchosporion		RSPB identified concerns over potential habitat damage/loss (REP-2404). Dorset County Council and East Dorset District Council identified concerns over potential habitat loss (REP-1494 and REP-1768).	No		
		Southern Atlantic wet heaths with <i>Erica ciliaris</i>	No	Yes ¹	No	Yes ^{1,2}

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
	Diverse and rare flora and fauna	No	Yes ¹	No	Yes ^{1, 2}	n/a
	Diverse and rich habitats	No	Yes ¹	No	Yes ^{1, 2}	n/a
Solent and Southampton Water SPA	Common tern	No	No. NE identified the features of the European site as potentially being affected by the proposed project (paragraph 2.2.1 of Part I of REP-2461) as well as methodological uncertainties regarding in-combination impacts for Mediterranean gull and tern species and indirect effects of construction on prey availability for tern species (paragraph 4.2.3 and paragraph 2.1.8 of the appendices to REP-2461).	Yes – disturbance and displacement, in-combination effects	No. NE - response to question 1.10 of the ExA's second written questions in REP-3715 (Deadline VI) agreed to no LSE for construction disturbance and in-combination construction effects for common tern, roseate tern and little tern. NE also agreed that all increases to baseline mortality for common tern would remain below 1% (i.e. no LSE) (paragraphs 8.1.14-8.1.17 of REP-2900).	See paragraphs 3.46 to 3.55 of the RIES for further details.
	Little tern	No				
	Mediterranean gull	No				
	Roseate tern	No		Yes – disturbance and displacement, in-combination effects	No. NE - response to question 1.10 of the ExA's second written questions in REP-3715 (Deadline VI) agreed	See paragraphs 3.46 to 3.55 of the RIES for further details.

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
					to no LSE for construction disturbance and in-combination construction effects for common tern, roseate tern and little tern.	
	Sandwich tern	No			Yes NE - response to question 1.10 of the ExA's second written questions in REP-3715 . However, NE also agreed that all increases to baseline mortality for Sandwich tern would remain below 1% (i.e. no LSE) (paragraphs 8.1.14-8.1.17 of REP-2900).	
	Black-tailed godwit	No	Yes ¹	No	No issues were raised by NE regarding the conclusion reached by the applicant. CHOG raised concerns over disturbance of black-tailed godwit (REP-2871 , REP-3384 and REP-3564) (Deadlines II, IV and V).	See paragraphs 3.56 to 3.59 of the RIES for further details.
	Dark-bellied brent goose	No	Yes ¹	No	Yes ¹	n/a
	Ringed plover	No	Yes ¹	No	Yes ¹	n/a
	Teal	No	Yes ¹	No	Yes ¹	n/a
	Gadwall	No	Yes ¹	No	Yes ¹	n/a
	Little grebe	No	Yes ¹	No	Yes ¹	n/a
	Great crested grebe	No	Yes ¹	No	Yes ¹	n/a
	Cormorant	No	Yes ¹	No	Yes ¹	n/a
	Wigeon	No	Yes ¹	No	Yes ¹	n/a
	Redshank	No	Yes ¹	No	Yes ¹	n/a

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
	Pintail	No	Yes ¹	No	Yes ¹	n/a
	Shoveler	No	Yes ¹	No	Yes ¹	n/a
	Red-breasted merganser	No	Yes ¹	No	Yes ¹	n/a
	Grey plover	No	Yes ¹	No	Yes ¹	n/a
	Lapwing	No	Yes ¹	No	Yes ¹	n/a
	Dunlin	No	Yes ¹	No	Yes ¹	n/a
	Curlew	No	Yes ¹	No	Yes ¹	n/a
	Shelduck	No	Yes ¹	No	Yes ¹	n/a
Solent and Southampton Water Ramsar Site	Sheltered major channel with diverse habitats	No	Yes ¹	No	NE agreed at Deadline VI that there will be no adverse effects on the site (paragraph 11.13 of REP-3696) therefore implying a LSE for the site should have been screened in; however NE did not identify for which feature(s). No concerns were raised by NE regarding these features during the examination.	n/a
	Nationally rare flora and fauna	No	Yes ¹	No		n/a
	Dark-bellied brent goose	No	Yes ¹	No		n/a
	Teal	No	Yes ¹	No		n/a
	Black-tailed godwit	No	Yes ¹	No	CHOG raised concerns over disturbance of black-tailed godwit (REP-2871 , REP-3384 and REP-3564) (Deadlines II, IV and V). No issues were raised by NE regarding the conclusion reached by the applicant although NE agreed at Deadline VI that there will be no adverse effects on the site (paragraph 11.13 of REP-3696) therefore implying a LSE for the site should have been screened in (although NE did not identify for which feature(s)).	See paragraphs 3.56 to 3.59 of the RIES for further details.

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
Poole Harbour SPA	Common tern	No	No. NE identified the features of the European site as potentially being affected by the proposed project (paragraph 2.2.1 of Part I of REP-2461) and identified methodological uncertainties regarding in-combination impacts for Mediterranean gull and tern species and indirect effects of construction on prey availability for tern species (paragraph 4.2.3 and paragraph 2.1.8 of the appendices to REP-2461)	Yes – disturbance and displacement, in-combination effects	No. NE - response to question 1.10 of the ExA's second written questions in REP-3715 (Deadline VI) agreed to no LSE for construction disturbance and in-combination construction effects for common tern, roseate tern and little tern. NE also agreed that all increases to baseline mortality for common tern would remain below 1% (i.e. no LSE) (paragraphs 8.1.14-8.1.17 of REP-2900).	See paragraphs 3.46 to 3.55 of the RIES for further details.
	Sandwich tern	Feature not identified in the original screening matrix.		Feature not identified in the updated matrix ³ . A conclusion of no significant impacts was drawn by the applicant in REP-3688 however does not specifically state which stage of the assessment this conclusion has been drawn. On the basis of NE's response to question 1.10 in REP-3715 , a LSE has been assumed for the purpose of this appendix.	Yes. NE - response to question 1.10 in REP-3715 notes the need to revise the applicant's updated matrices (REP-3326) with Sandwich tern taken forward and no adverse effect marked for construction displacement and construction in-combination effects. However, NE also agreed that all increases to baseline mortality for Sandwich tern would remain below 1% (i.e. no LSE) (paragraphs 8.1.14-8.1.17 of REP-2900).	See paragraphs 3.32 to 3.38 and 3.46 to 3.55 of the RIES for further details.
	Mediterranean	No		Yes – collision risk,	Yes.	See paragraphs 4.6 to 4.12

³ NE announced in 2014 that they were developing recommendations to extend the boundary of the existing Poole Harbour SPA and to include Sandwich tern as a new feature. Therefore at the request of NE, the applicant has considered potential impacts on the species at Poole Harbour SPA in the Tern Foraging and underwater noise HRA Technical Note (paragraph 2.2 of **REP-3688**). This was submitted after the applicant's updated matrices.

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
	gull			in-combination effects	The applicant had screened the feature in because the designated populations of this species (restricted to the south coast of England) are small and collisions were also predicted for the Rampion Offshore Wind Farm (east of the Isle of Wight) (Stage 1 Matrix I of REP-3326). At Deadline IV, NE agreed there would be no LSE on the feature, or no adverse effect on integrity if the examination panel are minded to recommend that an Appropriate Assessment should be undertaken (paragraph 3.16.4 of REP-3357).	of the RIES for further details.
	Aquatic warbler	No	Yes ¹	No	Yes ¹	n/a
	Little egret ⁴	No	Yes ¹	No	Yes. At Deadline II, NE agreed there would be no LSE, or no adverse effect on integrity if the examination panel are minded to recommend that an Appropriate Assessment should be undertaken (paragraph 8.1.18 of REP-2900).	n/a
	Avocet	No	Yes ¹	No	Yes ¹	n/a

⁴ Natural England's relevant representation noted that Little egret, *Egretta garzetta*, associated with Poole Harbour SPA/Ramsar and Chichester and Langstone Harbours SPA/Ramsar are only identified as a qualifying feature for both sites in the SPA review (Stroud et al. 2001) and are therefore not legally a qualifying feature for either SPA. However, Natural England advised including this species in an HRA Assessment for both sites and that the species is listed as being in nationally important numbers for the both Ramsar sites.

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
	Black-tailed godwit	No	Yes ¹	No	CHOG raised concerns over disturbance of black-tailed godwit (REP-2871 , REP-3384 and REP-3564) (Deadlines II, IV and V). No issues were raised by NE regarding the conclusion reached by the applicant.	See paragraphs 3.56 to 3.59 of the RIES for further details.
	Shelduck	No	Yes ¹	No	Yes ¹	n/a
	Redshank	No	Yes ¹	No	Yes ¹	n/a
	Curlew	No	Yes ¹	No	Yes ¹	n/a
	Lapwing	No	Yes ¹	No	Yes ¹	n/a
	Dunlin	No	Yes ¹	No	Yes ¹	n/a
	Red-breasted merganser	No	Yes ¹	No	Yes ¹	n/a
	Goldeneye	No	Yes ¹	No	Yes ¹	n/a
	Pochard	No	Yes ¹	No	Yes ¹	n/a
	Shoveler	No	Yes ¹	No	Yes ¹	n/a
	Dark-bellied brent goose	No	Yes ¹	No	Yes ¹	n/a
	Cormorant	No	Yes ¹	No	Yes ¹	n/a
Poole Harbour Ramsar Site	Bar built estuary with lagoon	No	Yes ¹	No	NE agreed at Deadline VI that there will be no adverse effects on the site (paragraph 11.13 of REP-3696) therefore implying a LSE for the site should have been screened in; however NE did not identify for which feature(s). It is assumed that all interested parties are in agreement with the applicant's conclusion with respect to this qualifying feature as no	n/a
	Nationally rare flora and fauna	No	Yes ¹	No		n/a
	Natural habitats of community interest	No	Yes ¹	No		n/a

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
					dispute or objection was raised during the examination.	
	Common tern	No	No. NE identified the features of the European site as potentially being affected by the proposed project (paragraph 2.2.3 of Part I of REP-2461) and identified methodological uncertainties regarding in-combination impacts for Mediterranean gull and tern species and indirect effects of construction on prey availability for tern species (paragraph 4.2.3 and paragraph 2.1.8 of the appendices to REP-2461)	Yes – disturbance and displacement, in-combination effects	Yes. At Deadline VI, NE agreed to no LSE (response to question 1.10 of the ExA's second written questions in REP-3715). NE also agreed that all increases to baseline mortality for common tern would remain below 1% (i.e. no LSE) (paragraphs 8.1.14-8.1.17 of REP-2900).	See paragraphs 3.46 to 3.55 of the RIES for further details.
	Mediterranean gull	No		Yes – collision risk, in-combination effects	Yes. At Deadline IV, NE agreed there would be no LSE, or no adverse effect on integrity if the examination panel are minded to recommend that an Appropriate Assessment should be undertaken for Mediterranean gull from the Poole Harbour SPA but did not explicitly refer to the Poole Harbour Ramsar site (paragraph 3.16.4 of REP-3357). Nevertheless, the applicant screened the feature in because the designated populations of this species (restricted to the south coast of England) are small and collisions were also predicted for the Rampion Offshore Wind Farm (east of the Isle of Wight) (Stage 1 Matrix J of REP-3326).	See paragraphs 4.6 to 4.12 of the RIES for further details.
	Avocet	No		Yes ¹	No	Yes ¹
	Shelduck	No	Yes ¹	No	Yes ¹	n/a
	Black-tailed godwit	No	Yes ¹	No	CHOG raised concerns over disturbance of black-tailed godwit (REP-2871 , REP-3384 and REP-	See paragraphs 3.56 to 3.59 of the RIES for further details.

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
					3564) (Deadlines II, IV and V). No issues were raised by NE regarding the conclusion reached by the applicant.	
River Itchen SAC	Watercourses of plain to montane levels	No	Yes ¹	No	Yes ¹	n/a
	Southern damselfly	No	Yes ¹	No	Yes. NE - response to question 1.10 of the ExA's second written questions in REP-3715	n/a
	Bullhead	No	Yes ¹	No	Yes ¹	n/a
	White-clawed crayfish	No	Yes ¹	No	Yes ¹	n/a
	Brook lamprey	No	Yes ¹	No	Yes ¹	n/a
	Atlantic salmon	Yes – disturbance (noise and vibration) and in-combination effects	Yes. NE noted concerns relating to potential impacts of piling noise on adult salmon and smolt migrating to and from the River Avon and River Itchen (paragraph 4.3.1 of REP-2461). NE also noted the need to consider EMF effects (section 3.2 of the Appendices to REP-2461). The EA agreed with the applicant's conclusion (REP-2407). MMO identified the need to extend piling restrictions however did not directly attribute this to protection for this species or European site (Section 1 of REP-1581).	Yes – disturbance (noise, vibration and EMF) and in-combination effects	Yes. NE agreed at Deadline VI that there will be no adverse effects on the site (paragraph 11.12 of REP-3696) therefore implying agreement to screen in the feature.	See paragraphs 3.63 to 3.64 and Section 5 of the RIES for further details.
	Otter	No	Yes ¹	No	Yes ¹	n/a
Dungeness to Pett Level SPA	Common tern	Feature not identified		No	Yes ¹	n/a
	Little tern	Feature not		No	Yes ¹	n/a

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
		identified				
	Mediterranean gull	No	Yes. Although NE identified methodological uncertainties regarding in-combination impacts of Mediterranean gull (paragraph 4.2.3 and paragraph 2.1.8 of the appendices to REP-2461), they did not identify this European site as of relevance to the application.	No	Yes ¹ Impacts on Mediterranean gull from a number of European sites were considered throughout the examination; however NE did not at any point identify this European site as of relevance to the application.	n/a
	Aquatic warbler	Feature not identified	Yes ¹	No	Yes ¹	n/a
	Bewick's swan	Feature not identified	Yes ¹	No	Yes ¹	n/a
	Shoveler	Feature not identified	Yes ¹	No	Yes ¹	n/a
Isles of Scilly Complex SAC	Sandbanks which are slightly covered by seawater all the time	No	Yes ¹	No	Yes ¹	n/a
	Mudflats and sandflats not covered by seawater at low tide	No	Yes ¹	No	Yes ¹	n/a
	Reefs	No	Yes ¹	No	Yes ¹	n/a
	Shore dock	No	Yes ¹	No	Yes ¹	n/a
	Grey seal	No	Yes ¹	No	Yes ¹	n/a
Chichester and Langstone Harbours SPA	Sandwich tern	Screening matrix not provided with original application	No. NE identified the features of the European site as potentially being affected by the proposed development (paragraph 2.2.1 of Part I of REP-2461). NE identified methodological uncertainties regarding in-combination impacts for tern species and little egret and indirect effects of	No	Yes. Response to question 1.10 of the ExA's second written questions in REP-3715 (Deadline VI). NE also agreed that all increases to baseline mortality for Sandwich tern would remain below 1% (i.e. no LSE) (paragraphs 8.1.14-	See paragraphs 3.46 to 3.55 of the RIES for further details.
	Little tern			No		

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
	Little egret ⁴		construction on prey availability for tern species (paragraph 4.2.3 and paragraph 2.1.8 of the appendices to REP-2461)	No	8.1.17 of REP-2900 . Yes. At Deadline II, NE agreed there would be no LSE, or no adverse effect on integrity if the examination panel are minded to recommend that an Appropriate Assessment should be undertaken (paragraph 8.1.18 of REP-2900).	n/a
	Common Tern		Yes ¹	Not identified in the applicant's updated matrices, however a significant impact was ruled out by the applicant in REP-3688 .	Yes. NE - response to question 1.10 of the ExA's second written questions in REP-3715 (Deadline VI). NE also agreed that all increases to baseline mortality for common tern would remain below 1% (i.e. no LSE) (paragraphs 8.1.14-8.1.17 of REP-2900).	NE's response to question 1.10 of the ExA's second written questions in REP-3715 stated that common tern should also be listed as a site feature of Chichester and Langstone Harbours SPA. The common tern is not listed as a feature of this site on the JNCC website http://jncc.defra.gov.uk/default.aspx?page=2034 (accessed 30 January 2015) however the applicant has considered the species as a feature of the site in REP-3688 . See paragraphs 3.46 to 3.55 of the RIES for further details.
	Bar-tailed godwit		Yes ¹	No	Yes ¹	n/a
	Black-tailed godwit		Yes ¹	No	CHOG raised concerns over disturbance of black-tailed godwit (REP-2871 , REP-3384 and REP-3564) (Deadlines II, IV and V). No issues were raised by NE regarding the conclusion reached	See paragraphs 3.56 to 3.59 of the RIES for further details.

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
					by the applicant.	
	Dark-bellied brent goose		Yes ¹	No	Yes ¹	n/a
	Ringed plover		Yes ¹	No	Yes ¹	n/a
	Teal		Yes ¹	No	Yes ¹	n/a
	Little grebe		Yes ¹	No	Yes ¹	n/a
	Cormorant		Yes ¹	No	Yes ¹	n/a
	Wigeon		Yes ¹	No	Yes ¹	n/a
	Redshank		Yes ¹	No	Yes ¹	n/a
	Pintail		Yes ¹	No	Yes ¹	n/a
	Shoveler		Yes ¹	No	Yes ¹	n/a
	Red-breasted merganser		Yes ¹	No	Yes ¹	n/a
	Grey plover		Yes ¹	No	Yes ¹	n/a
	Lapwing		Yes ¹	No	Yes ¹	n/a
	Dunlin		Yes ¹	No	Yes ¹	n/a
	Knot		Yes ¹	No	Yes ¹	n/a
	Sanderling		Yes ¹	No	Yes ¹	n/a
	Whimbrel		Yes ¹	No	Yes ¹	n/a
	Shelduck		Yes ¹	No	Yes ¹	n/a
Chichester and Langstone Harbours Ramsar site	Estuarine basins	Screening matrix not provided with original application	European site not identified by NE as of relevance to the application (REP-2461).	No	Yes. Although NE agreed at Deadline VI that there will be no adverse effects on the site (paragraph 11.13 of REP-3696) therefore implying a LSE for the site should have been screened in, this was in relation to tern species. It is assumed that all interested parties are in agreement with the	n/a

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments	
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?		
					applicant's conclusion with respect to this qualifying feature as no dispute or objection was raised during the examination.		
	Little tern			No	Yes. NE agreed at Deadline VI that there will be no adverse effects on the site (paragraph 11.13 of REP-3696) therefore implying the site should have been screened in. However, NE agreed to no LSE for little tern at Chichester and Langstone Harbours SPA and there is a spatial overlap with the Ramsar site.	n/a	
	Ringed plover			No	Yes.	n/a	
	Black-tailed godwit			No	Although NE agreed at Deadline VI that there will be no adverse effects on the site (paragraph 11.13 of REP-3696) therefore implying a LSE for the site should have been screened in, this was in relation to tern species. It is assumed that all interested parties are in agreement with the applicant's conclusion with respect to this qualifying feature as no dispute or objection was raised during the examination.	n/a	
	Redshank			No		n/a	
	Dark-bellied brent goose			No		n/a	
	Shelduck			No		n/a	
	Grey plover			No		n/a	
	Dunlin			No		n/a	
Alde-Ore Estuary SPA	Avocet	Screening matrix not provided with original application	Yes ¹	Not stated ⁵		Yes ¹	n/a
	Little tern		Yes ¹	Not stated ⁵		Yes ¹	n/a
	Marsh harrier		Yes ¹	Not stated ⁵	Yes ¹	n/a	
	Sandwich tern		Yes ¹	Not stated ⁵	Yes ¹	n/a	
	Lesser black-backed gull		No. NE identified lesser black backed gull (breeding) as a feature of the European site	No	No.	NE agreed at Deadline II that there would be no LSE on the	See paragraphs 3.27 to 3.31 of the RIES for further details.

⁵ The updated Screening Matrix only contains footnotes for lesser-black backed gulls. This is assumed to be because Natural England's relevant representation identified this as the only species of relevance to the application from the European site (**REP-2461**).

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
			that could potentially be affected by the proposed project and required clarifications over CRM calculations to agree to no LSE (paragraph 2.2.1 of Part I of REP-2461)		feature (paragraph 8.1.27 of REP-2900 and response to question 2.2.12 in REP-3070) (Deadline II). However, NE subsequently agreed at Deadline VI that there will be no adverse effects on the site (paragraph 11.9 of REP-3696) therefore implying a LSE for the site should have been screened in.	
	Redshank		Yes ¹	Not stated ⁵	Yes ¹	n/a
	Herring gull		Yes ¹	Not stated ⁵	Yes ¹	n/a
	Black-headed gull		Yes ¹	Not stated ⁵	Yes ¹	n/a
	Black tailed godwit		Yes ¹	Not stated ⁵	Yes ¹	n/a
	Dunlin		Yes ¹	Not stated ⁵	Yes ¹	n/a
	Lapwing		Yes ¹	Not stated ⁵	Yes ¹	n/a
	Shoveler		Yes ¹	Not stated ⁵	Yes ¹	n/a
	Teal		Yes ¹	Not stated ⁵	Yes ¹	n/a
	Wigeon		Yes ¹	Not stated ⁵	Yes ¹	n/a
	Shelduck		Yes ¹	Not stated ⁵	Yes ¹	n/a
	White-fronted goose		Yes ¹	Not stated ⁵	Yes ¹	n/a
Flamborough Head and Bempton Cliffs SPA	Kittiwake	Screening matrix not provided with original application	No.	No	No.	See paragraphs 3.19 to 3.26 of the RIES for further details.
	Gannet		NE identified gannets (breeding) and kittiwake (breeding) as features of the European site that could potentially be affected by the proposed project (paragraph 2.2.1 of Part I of REP-2461).	No	NE agreed at Deadline IV that there would be no LSE on the feature (paragraph 3.16.1 of REP-3357). However, NE subsequently considered a LSE should have been screened in for in-combination effects (response to question 1.10 of the ExA's second written questions in REP-3715).	

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
	Puffin		Yes ¹	Not stated ⁶	Yes ¹	n/a
	Razorbill		Yes.	Not stated ⁶	Yes.	See paragraphs 3.43 to 3.44 of the RIES for further details.
	Guillemot		NE raised concerns over displaced birds (paragraph 4.2.8 and Appendix 2 of REP-2461) however did not specifically identify individuals from this European site as of relevance to the application.	Not stated ⁶	NE - Table 1 of REP-2900 (Deadline II); this table provides NE's advice on HRA matters but refers to auk species in general and not specifically to this European site. No information has been received to date suggesting concerns over these features of this European site.	
	Herring gull		Yes ¹	Not stated ⁶	Yes ¹	n/a
Flamborough and Filey Coast pSPA	Kittiwake	Screening matrix not provided with original application	No.	No	No.	See paragraphs 3.19 to 3.26 of the RIES for further details.
	Gannet		NE identified gannets (breeding) and kittiwake (breeding) as a feature of the European site that could potentially be affected by the proposed project (paragraph 2.2.1 of Part I of REP-2461).	No	NE agreed at Deadline IV that there would be no LSE on the feature (paragraph 3.16.1 of REP-3357). However, NE subsequently considered a LSE should have been screened in for in-combination effects (response to question 1.10 of the ExA's second written questions in REP-3715).	
	Fulmar		Yes ¹	Not stated ⁶	Yes ¹	n/a
	Razorbill		Yes.	Not stated ⁶	Yes.	See paragraphs 3.43 to 3.44 of the RIES for further details.
	Guillemot		NE raised concerns over displaced birds (paragraph 4.2.8 and Appendix 2 of REP-2461) however did not specifically identify individuals from this European site as of relevance to the application.	Not stated ⁶	NE - Table 1 of REP-2900 (Deadline II); this table provides NE's advice on HRA matters but refers to auk species in general and not specifically to this European site. No information has been received to date suggesting concerns over these features of this European site.	
Wight-Barfleur Reef cSAC	Reefs	Screening matrix not provided with original application	No NE sought clarification on the impacts sensitive reef habitats and species within	Screening matrix not provided. Appendix 1 of REP-3132	Yes NE confirmed their concerns had been allayed (paragraph 6.10.9 of REP-2900) however did not	See paragraphs 3.65 to 3.69 of the RIES for further details.

⁶ The updated Screening Matrix only contains footnotes for gannets and kittiwakes. This is assumed to be because Natural England's relevant representation identified these as the only species of relevance to the application from the European site (**REP-2461**).

European site	Feature	Application documents (APP-059 and APP-060)		Updated matrices (REP-3326)		Comments
		Screening result: LSE alone or in-combination?	Agreed with SNCB and interested parties at relevant representation stage?	Screening result: LSE alone or in-combination?	Agreed with SNCB and other interested parties by Deadline VI a?	
			the SCI (paragraph 5.1.3 of REP-2461)	confirmed that a sediment plume from the proposed development would not extend to the European site.	explicitly state they agreed to no LSE for the site.	

APPENDIX 4: Summary table of the assessment of effects on the integrity of European sites

Notes:

- 1) Cells shaded orange identify features for which there is disagreement between the applicant and interested parties as to whether or not there will be an adverse effect on the feature.
- 2) For the columns headed 'Potential impact(s) screened in': C = Construction, O = Operation, D = Decommissioning

European site	Feature	Application documents (APP-059 and APP-060)			Updated matrices (REP-3326)			Comments
		Potential impact(s) screened in	AEOI ¹ ?	Agreed with SCNB and other relevant parties at relevant representation stage?	Potential impact(s) screened in	AEOI?	Agreed with SNCB and other relevant parties during examination?	
River Avon SAC	Atlantic salmon	<ul style="list-style-type: none"> Disturbance owing to noise and vibration (C). Disturbance owing to EMF (O). In-combination effects (C, O, D). 	No	No. NE noted concerns relating to potential impacts of piling noise on adult salmon and smolt migrating to and from the River Avon and River Itchen (paragraph 4.3.1 of REP-2461).	<ul style="list-style-type: none"> Disturbance owing to noise and vibration (C,D). Disturbance owing to EMF (O). In-combination effects (C, O, D). 	No	No. Agreement not reached by the time the RIES was issued (REP-3643 and REP-3634).	See Stage 2 Matrices A and B of the RIES for further details.
Avon Valley SPA	Bewick's swan	<ul style="list-style-type: none"> Disturbance (C and D) In-combination effects (C, D) 	No	No. NE noted concerns relating to disturbance of SPA birds should HDD not prove to be feasible (paragraph 4.5.3 of REP-2461).	<ul style="list-style-type: none"> Disturbance (C, D) In-combination effects (C, D) 	No	Yes. NE- paragraph 11.9 of REP-3696 . CHOG - paragraph 3.32 of REP-2871 .	See paragraphs 4.13 to 4.16 of the RIES for further details.
	Gadwall	<ul style="list-style-type: none"> In-combination effects (C, D) 	No			No		
Avon Valley Ramsar Site	Gadwall	<ul style="list-style-type: none"> Disturbance (C and D) In-combination effects (C, D) 	No	No. NE noted concerns relating to disturbance of SPA birds should HDD not prove to be feasible (paragraph 4.5.3 of REP-2461).	<ul style="list-style-type: none"> Disturbance (C, D) In-combination effects (C, D) 	No	Yes. NE – paragraph 11.13 of REP-3696 .	See paragraphs 4.13 to 4.16 of the RIES for further details.
Dorset Heaths SAC	Northern Atlantic wet heaths with Erica tetralix	<ul style="list-style-type: none"> Temporary habitat loss (C, D). Pollution effects (C, O, D). In-combination effects (C, O, D) 	No	No. NE noted concerns relating to impacts on habitats from HDD operations and the success of reinstatement measures (paragraph 4.5.1 of REP-2461). RSPB identified concerns over potential habitat loss (REP-2404). Dorset County Council and East Dorset District Council	Integrity matrix not produced	n/a	NE agreed to no adverse effect on the European site (paragraph 11.11 of REP-3696) however also agreed to the outcomes of the screening exercise for terrestrial SAC/SPA/Ramsar features (response to question 1.10 in REP-3715) (Deadline VI). Dorset Wildlife Trust (Table 3 of REP-3117) and Christchurch Borough Council,	See paragraphs 3.70 to 3.80 of the RIES for further details.
	European dry heaths		No					
	Depressions on peat substrate of the Rhynchosporion		No					

¹ Adverse effect on integrity

European site	Feature	Application documents (APP-059 and APP-060)			Updated matrices (REP-3326)			Comments
		Potential impact(s) screened in	AEOI ¹ ?	Agreed with SCNB and other relevant parties at relevant representation stage?	Potential impact(s) screened in	AEOI?	Agreed with SNCB and other relevant parties during examination?	
				identified concerns over potential habitat loss (REP-1494 and REP-1768).			East Dorset District Council and Dorset County Council (section 5 of REP-3150) agreed there would be no impacts on the site (note however that these bodies did not identify whether the site should be screened out at stage 1 or whether adverse effects on integrity should be considered).	
Dorset Heathlands SPA	Nightjar	<ul style="list-style-type: none"> • Temporary habitat loss (C). • Disturbance (C, D). • In-combination effects (C, D) 	No	<p>No. NE noted concerns over habitat reinstatement, creation and management of recreational disturbance during the construction phase and appropriate provision for nesting SPA birds (paragraphs 4.2.4 and 4.5.1 of REP-2461).</p> <p>RSPB identified concerns over potential habitat loss (REP-2404).</p> <p>Dorset County Council and East Dorset District Council identified concerns over potential habitat loss (REP-1494 and REP-1768).</p>	<ul style="list-style-type: none"> • Temporary habitat loss (C and D). • Disturbance and displacement (C, O, D). • In-combination effects (C, O, D) 	No	<p>Yes.</p> <p>NE – REP-3357 and paragraph 11.9 of REP-3696.</p> <p>Dorset Wildlife Trust - Table 3 of REP-3117.</p> <p>RSPB - paragraph 6.4 of REP-3191</p>	<p>See paragraphs 3.39 to 3.42 of this RIES in relation to collision risk for nightjar, and paragraphs 4.17 to 4.34 of the RIES in relation to disturbance impacts on all three species.</p>
	Dartford warbler		No			No		
	Woodlark		No			No		
Dorset Heathlands Ramsar site	Northern Atlantic wet heaths with <i>Erica tetralix</i>	<ul style="list-style-type: none"> • Temporary habitat loss (C, D). • Pollution effects (C, O, D). • In-combination effects (C, O, D) 	No	<p>No. NE noted concerns relating to impacts on habitats from HDD operations and the success of reinstatement measures (paragraph 4.5.1 of REP-2461).</p> <p>RSPB identified concerns over</p>	Integrity matrix not produced	n/a	<p>NE agreed to no adverse effect on the European site (paragraph 11.11 of REP-3696) however also agreed to the outcomes of the screening exercise for terrestrial SAC/SPA/Ramsar features (response to question 1.10 in</p>	<p>See paragraphs 3.70 to 3.80 of the RIES for further details.</p>
	Depressions on peat substrate of the Rhynchosporion		No					

European site	Feature	Application documents (APP-059 and APP-060)			Updated matrices (REP-3326)			Comments
		Potential impact(s) screened in	AEOI ¹ ?	Agreed with SCNB and other relevant parties at relevant representation stage?	Potential impact(s) screened in	AEOI?	Agreed with SNCB and other relevant parties during examination?	
				potential habitat loss (REP-2404). Dorset County Council and East Dorset District Council identified concerns over potential habitat loss (REP-1494 and REP-1768).			REP-3715 (Deadline VI). Dorset Wildlife Trust (Table 3 of REP-3117) and Christchurch Borough Council, East Dorset District Council and Dorset County Council (section 5 of REP-3150) agreed there would be no impacts on the site (note however that these bodies did not identify whether the site should be screened out at stage 1 or whether adverse effects on integrity should be considered).	
River Itchen SAC	Atlantic salmon	<ul style="list-style-type: none"> Disturbance owing to noise and vibration (C). In-combination effects (C, O, D) 	No	No. NE noted concerns relating to potential impacts of piling noise on adult salmon and smolt migrating to and from the River Avon and River Itchen (paragraph 4.3.1 of REP-2461).	<ul style="list-style-type: none"> Disturbance owing to noise and EMF (C, O). In-combination effects (C, O). 	No	No. Agreement not reached by the time the RIES was issued (REP-3643 and REP-3634).	See Stage 2 Matrices A and B of the RIES for further details.
Solent and Southampton Water SPA	Common tern	Integrity matrix not produced	n/a		<ul style="list-style-type: none"> Disturbance and displacement (C). In-combination effects (C) 	No	N/a NE - response to question 1.10 in REP-3715 confirms no LSE for the feature.	See paragraphs 3.46 to 3.55 of the RIES for further details.
	Little tern					No	N/a NE - response to question 1.10 in REP-3715 confirms no LSE for the feature.	
	Mediterranean gull					No	Yes. The updated SoCG with NE confirmed agreement of no adverse effect on integrity for the site (REP-3696).	See paragraphs 4.6 to 4.12 of the RIES for further details.
	Roseate tern					No	N/a NE - response to question 1.10 in REP-3715 confirms no LSE	See paragraphs 3.46 to 3.55 of the RIES for

European site	Feature	Application documents (APP-059 and APP-060)			Updated matrices (REP-3326)			Comments
		Potential impact(s) screened in	AEOI ¹ ?	Agreed with SCNB and other relevant parties at relevant representation stage?	Potential impact(s) screened in	AEOI?	Agreed with SNCB and other relevant parties during examination?	
	Sandwich tern				effects (C)		for the feature.	further details.
Poole Harbour SPA	Common tern	Integrity matrix not produced	n/a		<ul style="list-style-type: none"> Disturbance and displacement (C). In-combination effects (C) 	No	N/a NE - response to question 1.10 in REP-3715 confirms no LSE for the feature.	See paragraphs 3.46 to 3.55 of the RIES for further details.
	Sandwich tern				Feature not identified in the updated matrix ² however a conclusion of no significant impacts was drawn by the applicant in REP-3688 .		Yes. NE - response to question 1.10 in REP-3715 notes the need to revise the applicant's updated matrices (REP-3326) with Sandwich tern taken forward and no adverse effect marked for construction displacement and construction in-combination effects.	
	Mediterranean gull				<ul style="list-style-type: none"> Collision risk (O) In-combination effects (O) 	No	Yes. The updated SoCG with NE confirmed agreement of no adverse effect on integrity for the site (REP-3696).	
Poole Harbour Ramsar Site	Common tern	Integrity matrix not produced – LSE screened out by the applicant (see Appendix 3)	n/a		<ul style="list-style-type: none"> Disturbance and displacement (C). In-combination 	No	N/a NE - response to question 1.10 in REP-3715 confirms no LSE	See paragraphs 3.46 to 3.55 of the RIES for

² NE announced in 2014 that they were developing recommendations to extend the boundary of the existing Poole Harbour SPA and to include Sandwich tern as a new feature. Therefore at the request of NE, the applicant has considered potential impacts on the species at Poole Harbour SPA in the Tern Foraging and underwater noise HRA Technical Note (paragraph 2.2 of **REP-3688**). This was submitted after the applicant's updated matrices.

European site	Feature	Application documents (APP-059 and APP-060)			Updated matrices (REP-3326)			Comments
		Potential impact(s) screened in	AEOI ¹ ?	Agreed with SCNB and other relevant parties at relevant representation stage?	Potential impact(s) screened in	AEOI?	Agreed with SNCB and other relevant parties during examination?	
					effects (C)		for the feature.	further details.
	Mediterranean gull				<ul style="list-style-type: none"> • Collision risk (O) • In-combination effects (O) 	No	Yes. The updated SoCG with NE confirmed agreement of no adverse effect on integrity for the site (REP-3696).	See paragraphs 4.6 to 4.12 of the RIES for further details.
Flamborough Head and Bempton Cliffs SPA	Kittiwake	Screening and/or integrity matrices not produced	n/a	Integrity matrix not produced – LSE screened out by the applicant (see Appendix 3)	n/a	The updated SoCG with NE confirmed agreement of no adverse effect on integrity for the site (REP-3696).	See paragraphs 3.19 to 3.26 of the RIES for further details.	
	Gannet							
Flamborough and Filey Coast pCliffs SPA	Kittiwake	Screening and/or integrity matrices not produced	n/a	Integrity matrix not produced – LSE screened out by the applicant (see Appendix 3)	n/a	The updated SoCG with NE confirmed agreement of no adverse effect on integrity for the site (REP-3696).	See paragraphs 3.19 to 3.26 of the RIES for further details.	
	Gannet							
Alde-Ore Estuary	Lesser black-backed gull	Screening and/or integrity matrices not produced	n/a	Integrity matrix not produced – LSE screened out by the applicant (see Appendix 3)	n/a	The updated SoCG with NE confirmed agreement of no adverse effect on integrity for the site (REP-3696).	See paragraphs 3.27 to 3.31 of the RIES for further details.	
Chichester and Langstone Harbours SPA	Unclear	Screening and/or integrity matrices not produced	n/a	Integrity matrix not produced – LSE screened out by the applicant (see Appendix 3)	n/a	The updated SoCG between the applicant and NE confirmed agreement of no adverse effect on integrity for the sites (REP-3696). The SoCG does not state for which features a LSE should have been screened in.	n/a	
Chichester and Langstone Harbours Ramsar site								
Solent and Southampton Water Ramsar site		Integrity matrix not produced – LSE screened out by the applicant (see Appendix 3)						