



The Planning Inspectorate
Yr Arolygiaeth Gynllunio

REPORT on the IMPLICATIONS for EUROPEAN SITES

Proposed Thurrock Flexible Generation Plant

An Examining Authority report prepared with the
support of the Environmental Services Team

Planning Inspectorate Reference: EN010092

19 July 2021

[This page is intentionally left blank]

TABLE OF CONTENTS

1	INTRODUCTION	2
1.1	BACKGROUND	2
1.2	DOCUMENTS USED TO INFORM THIS RIES	3
1.3	STRUCTURE OF THIS RIES.....	4
2	OVERVIEW	6
2.1	EUROPEAN SITES CONSIDERED	6
2.2	SUMMARY OF DISPUTE BY INTERESTED PARTIES ON SCREENING AND AEOI	7
3	LIKELY SIGNIFICANT EFFECTS	9
3.1	SELECTED SITES FOR SCREENING	10
3.2	LSE FOR THE THAMES ESTUARY AND MARSHES SPA AND RAMSAR SITES.....	11
3.3	DISTURBANCE IMPACTS DURING OPERATION	12
3.4	DIRECT LOSS OF HABITATS.....	13
3.5	SUMMARY OF HRA SCREENING OUTCOMES DURING THE EXAMINATION	15
4	ADVERSE EFFECTS ON INTEGRITY	15
4.1	CONSERVATION OBJECTIVES.....	15
4.2	METHODOLOGY OF ASSESSMENT	16
4.3	METEOROLOGICAL AND SEASONAL DIFFERENCES.....	17
4.4	CAUSEWAY AS A PERMANENT FEATURE	18
4.5	SUMMARY	19
ANNEX 1	STAGE 1 SCREENING MATRICES	
ANNEX 2	STAGE 2 INTEGRITY MATRICES	

[This page is intentionally left blank]

1 INTRODUCTION

1.1 Background

- 1.1.1 Thurrock Power Limited (the Applicant) has applied to the Secretary of State for a development consent order (DCO) under section 37 of the Planning Act 2008 (PA2008) for the proposed Thurrock Flexible Generation Plant (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.
- 1.1.2 The relevant Secretary of State is the competent authority for the purposes of the Habitats Directive¹ and the Habitats Regulations² for applications submitted under the PA2008 regime. 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.
- 1.1.3 This report compiles, documents and signposts information provided within the DCO application, and the information submitted throughout the examination by both the Applicant and interested parties, up to additional submissions accepted into the examination on the 09 July 2021 in relation to potential effects to European Sites³. It is not a standalone document and should be read in conjunction with the examination documents referred to. Where document references are presented in square brackets [] in the text of this report, that reference can be found in the Examination library published on the National Infrastructure Planning website at the following link:
- <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010092/EN010092-000922-Thurrock%20FPG%20-%20EN010092%20-%20Examination%20Library%20PDF%20Version.pdf>
- 1.1.4 It is issued to ensure that interested parties including the statutory nature conservation body (SNCB), Natural England (NE), are consulted formally on Habitats Regulations matters. This process may be relied on by the Secretary of State for the purposes of Regulation 63(3) of the Habitats Regulations. Following consultation, the responses 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 Report on the Implications for European Sites (RIES) will not be revised following consultation.

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 2017 (the Habitats Regulations).

³ The term European Sites in this context includes Sites of Community Importance (SCIs), Special Areas of Conservation (SACs) and candidate SACs, Special Protection Areas (SPAs), possible SACs, potential SPAs, Ramsar sites, proposed 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.

- 1.1.5 The Applicant has not identified any potential impacts on European sites in other EEA States⁴ [**APP-085**]. Only UK European sites are addressed in this RIES.

1.2 Documents used to inform this RIES

Application

- 1.2.1 The Applicant provided a Habitats Regulations Assessment (HRA) report entitled 'Habitats Regulations Assessment Report' [**APP-040**] with the DCO application, together with screening and integrity matrices in Appendix B. This concluded that there is the potential for likely significant effects on two European site(s): Thames Estuary and Marshes Special Protection Area (SPA) and Ramsar.

Pre-Examination

- 1.2.2 In anticipation of a material change request received on 14 January 2021 and accepted by the ExA on 20 January 2021 to remove an area of proposed saltmarsh creation on the River Thames, the Applicant submitted an updated HRA report and screening and integrity matrix(ces) [**PDC-039**] so that the assessment reflected these changes to the Proposed Development at Procedural Deadline C on 14 December 2020.

Examination

- 1.2.3 In response to the ExA's questions and representations made by Interested Parties during the examination, the Applicant provided an updated HRA report/screening and integrity matrix(ces) [**REP2-022**] (submitted to the ExA on 23 March 2021) with a minor alteration to include a reference of where mitigation is secured in the footnotes of integrity matrices 9 and 10. This version of the HRA Report is the version that has been relied on throughout this RIES unless otherwise stated/referenced.
- 1.2.4 For those European sites and qualifying features where the Applicant's conclusions have been disputed or queried during the examination, the matrix(ces) has(ve) been updated by the ExA, with the support of the Environmental Services Team of the Planning Inspectorate using the documents listed below. The revised matrices are included as Annexes 1 and 2 to this RIES.

Application Documents

- 1.2.5 The Applicant submitted the following documents with the application relevant to the HRA process:
- Habitats Regulations Assessment Report [**APP-040**];
 - Screening and Integrity Matrices provided in Appendix B.
 - Environmental Statement (ES) Volume 3 Chapter 17: Marine Environment [**APP-066**];

⁴ European Economic Area (EEA) States.

- ES Volume 4 Chapter 18: Cumulative Effects Assessment Introduction and Screening [**APP-067**];
- ES Volume 5 Chapter 32: Summary of Cumulative Effects [**APP-081**];
- ES Volume 6 Appendix 4.1 Transboundary Impacts Screening Note [**APP-085**];
- ES Volume 6 Appendix 9.4 Foreshore Wintering Bird Surveys 2019-20 [**APP-094**];
- ES Volume 6 Appendix 12.1 Air Quality Impacts on Ecological Receptors [**APP-101**];
- Assessment of Causeway Decommissioning [**PDC-012**];
- ES Volume 3 Chapter 17: Updated Marine Environment [**PDC-019**];
- ES Volume 6 Appendix 9.4 Updated Foreshore Wintering Bird Surveys 2019-20 [**PDC-033**];
- Thurrock Power Ltd Habitats Regulations Assessment Report dated December 2020 [**PDC-039**];
- Thurrock Power Ltd Habitats Regulations Assessment Report dated March 2021 [**REP2-022**];
- Thurrock Power Ltd Additional Submission Response to Natural England's Response to Examining Authority's Further Written Questions (ExQ2) [**AS-047**]; and
- Thurrock Power Ltd Additional Submission on Bird Data [**AS-048**].

1.3 Structure of this RIES

1.3.1 The remainder of this RIES is as follows:

- **Section 2** identifies the European site(s) that have been considered within the DCO application and during the examination period, up to additional submissions accepted into the examination on 09 July 2021. It provides an overview of the issues that have emerged during the examination.
- **Section 3** identifies the European site(s) and qualifying feature(s) screened by the Applicant for potential likely significant effects, either alone or in-combination with other projects and plans. The section also identifies where Interested Parties have disputed the Applicant's screening conclusions, together with any additional European sites and qualifying features screened for potential likely significant effects during the examination.

- **Section 4** identifies the European site(s) and qualifying feature(s) 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, together with any additional European sites and qualifying features considered for adverse effects on integrity during the examination.
- **Annexes 1 and 2** comprise matrices for the/those European site(s) and qualifying feature(s) for which the Applicant's conclusions were disputed in relation to potential likely significant effects and adverse effects on the integrity of European site(s)

2 OVERVIEW

2.1 European Sites Considered

- 2.1.1 The project is not connected with or necessary to the management for nature conservation of any of the European site(s) considered within the Applicant's assessment and therefore is subject to the Habitats Regulations.
- 2.1.2 The Applicant identified European sites within a 15km of the DCO boundary based on the study area identified for atmospheric emissions drawn from Appendix 12.1 Air Quality Impacts on Ecological Receptors [**APP-101**].
- 2.1.3 The Applicant's HRA Report [**REP2-022**] identified the following European site(s) (and features), located on Figure 2.1 of the HRA Report, for which the UK is responsible for inclusion within the assessment:

Table 2.1: Sites Screened into the HRA by Applicant

Name of European Site	Features
Thames Estuary and Marshes SPA	Overwintering population of avocet
	Overwintering population of hen harrier
	Migratory population of ringed plover
	Migratory overwintering populations of grey plover, dunlin, knot, black-tailed godwit and redshank
	>20,000 overwintering waterfowl
Thames Estuary and Marshes Ramsar	Nationally rare and scarce plant species
	Red data book invertebrates
	Overwintering assemblage of waterbirds
	Overwintering populations of black-tailed godwit, ringed plover, knot, dunlin, grey plover
	Regularly occurring species of redshank
Medway Estuary and Marshes SPA	>1% of GB breeding populations of avocet and little tern
	Overwintering population of avocet
	Passage populations of common redshank and grey plover
	Migratory overwintering populations of dark-bellied brent goose, shelduck, pintail, ringed plover, knot and dunlin
	Assemblage of overwintering bird species

	Assemblage of migratory breeding waterfowl species
	>20,000 waterfowl
Medway Estuary and Marshes Ramsar	Nationally rare and scarce plant species
	Red data book invertebrates
	Overwintering assemblage of waterbirds
	Passage populations of grey plover and common redshank
	Overwintering populations of dark-bellied brent goose, shelduck, pintail, ringed plover, knot and dunlin
North Downs Woodland SAC	<i>Asperulo-Fagetum</i> beech forests
	<i>Taxus-baccata</i> woods of the British Isles
	Semi-natural dry grasslands and scrubland facies on calcareous substrates
Benfleet and Southend Marshes SPA	Migratory populations of ringed plover
	Migratory overwintering populations of dark-bellied brent goose, grey plover, dunlin and knot
	>20,000 overwintering waterfowl
Benfleet and Southend Marshes Ramsar	Overwintering assemblage of waterbirds
	Overwintering populations of dark-bellied brent goose
	Passage populations of grey plover and knot
Peter's Pit SAC	Great crested newt

2.2 Summary of Dispute by Interested Parties on Screening and AEOI

- 2.2.1 NE did not agree that there was no potential for a likely significant effect (LSE) from habitat loss due to the loss of functionally linked land (FLL) underpinning the Thames Estuary and Marshes SPA and Ramsar sites. It also did not agree there was no potential for a LSE from operational noise and visual disturbance of the causeway to features of the Thames Estuary and Marshes SPA and Ramsar sites. These are discussed in section 3 of this RIES. No interested parties contested the screening out of other sites listed in Table 2.1.
- 2.2.2 NE did not agree that there would be no adverse effects on integrity (AEOI) on the Thames Estuary and Marshes SPA and Ramsar sites from noise and

visual disturbance during construction and decommissioning of the causeway. This is discussed further in section 4 of this RIES.

3 LIKELY SIGNIFICANT EFFECTS

- 3.0.1 The Applicant's methodology for determining significant effects on the National Site Network (referred to as Natura 2000 sites) is set out in section 3 of the HRA report [**REP2-022**]. The screening assessment is in section 5.1 of the HRA report.
- 3.0.2 A total of eight European sites were screened by the Applicant prior to examination (see Table 2.1). Of these sites, the Applicant concluded that the project would have no LSE, either alone or in-combination with other projects or plans, on the qualifying features of the six European site(s) listed below:
- Medway Estuary and Marshes SPA;
 - Medway Estuary and Marshes Ramsar;
 - North Downs Woodland SAC;
 - Benfleet and Southend Marshes SPA;
 - Benfleet and Southend Marshes Ramsar; and
 - Peter's Pit SAC
- 3.0.3 The Applicant concluded that LSE could not be excluded from the Thames Estuary and Marshes SPA and Ramsar sites and their qualifying features, either alone or in-combination with other projects or plans.
- 3.0.4 The scope of the in-combination assessment was agreed with Thurrock Council on 31 August 2018 who recommended the addition of the London Resort Nationally Significant Infrastructure Project (NSIP). Thurrock Council were re-consulted in August/September 2019 where a number of other projects were suggested and added to the long list presented in Table 1.1 of ES Chapter 18 [**APP-067**]. The list of projects was not disputed by any SNCBs.
- 3.0.5 The Applicant has addressed potential in-combination effects within their HRA report (section 7). The following NSIP projects have been included in the in-combination assessment carried out by the Applicant identified in ES Chapter 18 [**APP-067**]:
- Tilbury 2;
 - Tilbury Energy Centre;
 - Lower Thames Crossing;
 - The London Resort; and
 - Other developments short-listed in ES Chapter 18, Table 2.1 [**APP-067**].

3.1 Selected Sites for Screening

- 3.1.1 NE [**RR-022**] disputed that the following sites had not been included in the Applicant's screening assessment:
- Swanscombe Marine Conservation Zone (MCZ);
 - Upper Thames Estuary recommended MCZ (rMCZ); and
 - Mucking Flats and Marshes Site of Special Scientific Interest (SSSI) as Functionally Linked Land (FLL) to the Thames Estuary and Marshes SPA and Ramsar site.
- 3.1.2 NE [**RR-022**] was not satisfied with the lack of assessment of features of interest of the Swanscombe MCZ and Upper Thames Estuary rMCZ and that impacts had not been assessed to interest features of the Mucking Flats and Marshes Site of Special Scientific Interest (SSSI).
- 3.1.3 The ExA [**PD-006**] postponed the Preliminary Meeting Part 2, in order to allow the Applicant's HRA to be updated to include an assessment of effects on MCZs and all FLL to identified sites (including Mucking Flats and Marshes SSSI as a component of the Thames Estuary and Marshes SPA/Ramsar).
- 3.1.4 The Applicant did not consider that either SSSIs or MCZs should be included in the HRA screening assessment as separate sites to be assessed and highlighted at Procedural Deadline C [**PDC-001**] that both SSSI and MCZ designations are not defined in the Regulations⁵ as designations that are required to be assessed. A screening of potential impacts to Swanscombe MCZ was included in an update to ES Chapter 17: Marine Environment (section 4.4 of [**PDC-019**]). NE subsequently confirmed there was no potential for impacts to the Swanscombe MCZ and it did not need to be included in the HRA assessment and that since the Upper Thames Estuary rMCZ did not progress to notification it is no longer relevant to the examination [**REP2-097**].
- 3.1.5 The Applicant confirmed [**AS-047**] that the mudflats in Zone G (causeway construction zone) are functionally linked to the Thames Estuary and Marshes SPA/Ramsar and have been assessed as such in the HRA Report. Additionally, the Applicant provided an assessment [**AS-048**] of impacts to Zone G in the context of the SSSI as a component of the SPA/Ramsar sites to support the conclusions of the HRA report that there would be no LSE on interest features from habitat loss of FLL. The ExA is awaiting a response from NE on this assessment.

⁵ Regulation 8 of The Conservation of Habitats and Species Regulations (2017) and Regulation 27 of The Conservation of Offshore Marine Habitats and Species Regulations (2017)

3.2 LSE for the Thames Estuary and Marshes SPA and Ramsar Sites

3.2.1 The HRA discussion in section 6 [**APP-040**] screened in the following impact pathways to features of the Thames Estuary and Marshes SPA / Ramsar sites:

- Water Quality;
- Hydrological Changes; and
- Disturbance (noise and visual) from use of the Zone G causeway during construction on Avocet features. This was inconsistent with the screening matrix for the sites, which screened this impact out and included decommissioning.

3.2.2 NE [**RR-022**] stated that whilst it agreed with the impacts taken forward to an assessment of AEOI, it did not consider that the list of impacts was sufficiently comprehensive. NE did not expand on this point stating that it would be undertaking further review of the application and submitting further responses at the Written Representation stage.

3.2.3 The Applicant submitted an updated HRA [**PDC-039**] to reflect changes relating to a change request [**AS-012**] and to address the highlighted discrepancies by the ExA and concerns of NE. This included an update of the screening and integrity matrices to address inconsistencies so that the following impacts were screened in/out for further assessment:

Table 3.1 Agreement with SNCBs on Impacts Screened in for further assessment and AEOI conclusions

Sites:	Thames Estuary and Marshes SPA and Ramsar				
Receptors	Hydrological Changes	Water Quality	Disturbance during construction and decommissioning	Disturbance during operation	Direct Loss or Damage of Habitats Used by Interest Species
All features	Yes ¹	Yes ¹	No ²	No ⁴	No ⁵
Ringed Plover, Avocet (SPA only), Redshank and Dunlin	Yes ¹	Yes ¹	Yes ³	No ⁴	No ⁵

1. NE [RR-022] agreed this impact should be taken forward for further assessment and agreed with the conclusion of no AEOI
2. No SNCBs contested this, only specific features
3. NE [PDD-012] agreed this should be taken forward for further assessment but did not agree there would be no AEOI
4. NE [PDD-012] disagreed disturbance during operation should be screened out; see section 3.3 below
5. NE [RR-022 and PDD-012] disagreed that direct habitat loss should be screened out; see section 3.4 below

3.3 Disturbance Impacts during Operation

- 3.3.1 Impacts from the use and presence of the causeway during operation are screened out in paragraphs 5.1.79 to 5.1.82 of the HRA Report [REP2-022] on the basis that the causeway would only be used in exceptional circumstances where large plant items would need to be replaced and there are low peak counts recorded in the foreshore wintering bird surveys [PDC-033].
- 3.3.2 NE expressed [RR-022] that the causeway may cause disturbance / displacement during operation through its presence and requested that this should not be discounted.
- 3.3.3 In support of its assessment the Applicant referenced the Waterbird Disturbance Mitigation Toolkit (WDMT) at Deadline 2 [REP2-056] as evidence that Ringed Plover, Dunlin and Redshank would forage <50m from plant during construction. The Applicant [REP2-056] argued that disturbance would be less during operation than during construction (due to use only in exceptional circumstances for maintenance) and that disturbance would be minimal given the low number of birds recorded in the vicinity of the causeway and on this basis, this impact is not likely to cause a significant effect during operation on these features and is therefore screened out. This was also the conclusion reached for Avocet as the Applicant [REP2-056] referenced conservation objective 4 which is to *'Maintain the size of the non-breeding population at a level which is above 283'* and reiterated that the assessment in the HRA (paragraphs 6.4.16 to 6.4.30) states that the SPA population will be maintained above this number in the medium-long term despite the construction impacts of the Proposed Development. Therefore, as disturbance during construction will be less than that at operation, operational disturbance impacts can be screened out.
- 3.3.4 NE [REP2-097, REP4-012, REP5-026] proceeded to contest and discuss with the Applicant the methodology for assessing the number of birds affected which underpins the conclusion to screen out operational disturbance impacts. It considered that the assessment was not proportionate in assessing the number of 'bird days'⁶ lost in the context of

⁶ 'Bird Days' is calculated (paragraphs 6.4.12 to 6.4.14) [REP2-022] by multiplying the peak count of birds from surveys of the relevant sites by the number of days in the respective month to maintain a precautionary

the whole SPA/Ramsar sites and that a more localised assessment should be undertaken to assess the number of bird days lost in the context of the Mucking Flats and Marshes SSSI as a component of the SPA/Ramsar.

- 3.3.5 Whilst the Applicant disagreed with NE's proposed methodology highlighting that this was not in line with the Habitats Regulations, it submitted [**AS-048**] an assessment of 'bird days' lost in the context of the Mucking Flats and Marshes SSSI as a component of the Thames Estuary and Marshes SPA/Ramsar sites and concluded that whether the bird days lost are assessed in the context of the SSSI or the whole SPA/Ramsar, the impact is not likely to cause a significant effect and is therefore screened out. A response is awaited from NE on this document.

3.4 Direct Loss of Habitats

- 3.4.1 The Applicant [**APP-040**] concluded in paragraphs 5.1.5, 5.1.21 and 7.2.4 there would be no direct habitat loss impact pathway to features of the Thames Estuary and Marshes SPA and Ramsar sites on the basis that surveys of FLL found no evidence that SPA features were present on land to be lost as a result of the Proposed Development.
- 3.4.2 NE [**RR-022**] disputed screening out this impact as the assessment of impacts to FLL had only been undertaken for onshore habitats whereas it considered that the intertidal area between Coalhouse Fort and Tilbury Fort where the proposed causeway is located (Zone G) is also FLL. NE highlighted that the Applicant's Foreshore Wintering Birds Surveys (2019-2020) [**APP-094**] recorded Dunlin, Redshank and Ringed Plover features, and in particular, high numbers of Avocets, within the causeway area (Zone G) between November and March and therefore, the conclusion that these features are not present on FLL is not supported. NE anticipate that habitat loss would arise due to direct loss of mudflats from the causeway structure and from accretion influenced by the causeway [**RR-022**].
- 3.4.3 The Applicant submitted an updated HRA Report [**REP2-022**] to acknowledge this area as FLL (paragraphs 5.1.6 to 5.1.20). The HRA Report screened out direct loss of habitats as an impact pathway for the Thames Estuary and Marshes sites features in paragraph 5.1.20 on the basis that the mudflat is located outside of the SPA and is only a small proportion of the available habitat resource in the context of the SPA/Ramsar site (1.5% temporary loss of FLL during construction and 0.37% long-term loss during operation over 35 years). It considers that losses of mudflat from sediment accretion would be reversed once the causeway is decommissioned.
- 3.4.4 NE [**PDD-012**] does not agree this impact should be screened out of the assessment and argues that this has potential to undermine the objective to maintain and restore '*The extent and distribution of the habitats of the qualifying features*' as the Proposed Development does not provide

estimate. A comparison was made between the foreshore surveys [**PDC-033**] and WeBS data of monthly 5year peak counts across the Thames Estuary and Marshes SPA/Ramsar sites.

mitigation to achieve 'no net loss'. It references the NECR205⁷ and NECR206⁸ research reports and their principles to support the significance of these impacts.

- 3.4.5 NE expressed concern that the assessment used to screen out direct loss of habitat impacts made a comparison of the effects of the Proposed Development against the baseline of the whole SPA/Ramsar site and that whilst this is technically correct, it is disproportionate and easily demonstrates the number of birds and habitat affected are very small. It considers a more localised assessment i.e. in the context of bird numbers within the Mucking Flats and Marshes SSSI as a component of the SPA) would be appropriate.
- 3.4.6 NE confirms that whilst the area of FLL to be lost is not expected to be >1% of the available FLL, it does not agree that the long-term loss of FLL would not cause a LSE on features of the Thames Estuary and Marshes SPA and Ramsar sites [**REP5-026**] but states that progress is being made towards a Statement of Common Ground.
- 3.4.7 The ExA [**PD-015**] requested that the Applicant update the impact of habitat loss in the HRA screening assessment to include consideration of how and to what extent the mudflats support features of the Thames Estuary and Marshes SPA/Ramsar referencing the RSPB and Lydd Airport v. SSCLG and SST (2014) case which cites the importance of FLL⁹. The ExA highlighted that the fact the mudflat is located outwith the SPA is not sufficient reasoning to exclude an effect and would not be consistent with caselaw.
- 3.4.8 The Applicant [**REP2-056 and REP5-007**] challenged the need for a more localised assessment stating that it was not a legal requirement and maintained that its approach and conclusions in relation to the conservation objectives and scale of assessment was correct and that the impact of direct habitat loss should be screened out. It drew on NECR205 [**REP3-009**] to support its position that effects on FLL do not by definition constitute LSE and therefore it does not automatically require impacts on FLL to be taken forward for appropriate assessment.
- 3.4.9 The Applicant [**AS-048**] in support of the HRA [**REP2-022**] screening assessment undertook a further assessment to demonstrate that direct habitat loss as a result of the causeway is <1% of the available mudflat resource both for the whole SPA/Ramsar sites and at a local scale (in the context of Mucking Flats SSSI only) and therefore no likely to cause a significant effect on SPA/Ramsar features. A response is awaited from NE on this document.

⁷ NECR205 'Small-scale effects: How the scale of effects has been considered in respect of plans and projects affecting European sites – a review of authoritative decisions'

⁸ NECR206 'Temporary Effects: How the longevity of effects has been considered in respect of plans and projects affecting European site – a review of authoritative decisions'

⁹ "There is no authority on the significance of the non-statutory status of the FLL. However, the fact that the FLL was not within a protected site does not mean that the effect which a deterioration in its quality or function could have on a protected site is to be ignored. The indirect effect was still protected...the indirectly adverse effects on a protected site, produced by effects on FLL are scrutinised in the same legal framework just as are the direct effects of acts carried out on the protected site itself."

3.5 Summary of HRA Screening outcomes during the examination

- 3.5.1 NE contested that screening had omitted MCZs and impacts to FLL in the intertidal area; the ExA requested these were included in the HRA assessment. The Applicant provided evidence as to why these did not need to be screened as separate sites but updated the ES Marine Environment Chapter to include information supporting that MCZs would not be impacted by the Proposed Development. The Applicant also updated the HRA screening assessment to include FLL and determined that there would be no LSE from habitat loss of FLL.
- 3.5.2 NE contested that the methodology underpinning the outcome of the screening assessment was not proportionate and requested a more 'localised' assessment to support the HRA screening conclusions that operational disturbance from the causeway and habitat loss of FLL would not lead to a LSE.
- 3.5.3 The ExA referenced the RSPB and Lydd Airport v. SSCLG and SST (2014) case which cites the importance of FLL and requested an updated assessment of habitat loss to support the conclusion it should be screened out as the reasoning presented in the HRA report, including that the mudflat is located outwith the SPA, is not sufficient and inconsistent with caselaw.
- 3.5.4 Whilst the Applicant disagreed with NEs proposed methodology and stated that this was not a requirement of the Habitats Regulations, it provided an assessment of habitat loss and the number of features disturbed on FLL (at Zone G causeway area) in the context of the SSSI as a component of the SPA/Ramsar sites. This supported the conclusion to screen out direct habitat loss and operational impacts on the basis that the area of land loss/number of features displaced were negligible. A response is awaited from NE on this assessment.

4 ADVERSE EFFECTS ON INTEGRITY

4.1 Conservation Objectives

- 4.1.1 The conservation objectives for all of the European sites taken forward to an assessment of AEOI and discussed in this section of the RIES were provided by the Applicant with their DCO application (section 4 of [**REP2-022**]). The sites, features and impacts taken forward for the AEOI assessment are listed in Table 3.1 in section 3 of this RIES. NE dispute the conclusion of the HRA in that there would be no AEOI on features of the Thames Estuary and Marshes SPA and Ramsar sites as a result of noise and visual disturbance during construction and decommissioning.
- 4.1.2 NE agreed [**RR-022 and REP4-012**] with the conclusion that with appropriate surface water features and pollution control safeguards in place, there will be no adverse effects on the integrity of the Thames Estuary and Marshes SPA and Ramsar on water quality and from

hydrodynamics subject to the mitigation being agreed through an appropriate strategy and delivery secured through the DCO.

- 4.1.3 It is important to note that the Marine Management Organisation deferred comments relating to HRA matters to NE [**REP2-085**].

4.2 Methodology of Assessment

- 4.2.1 The HRA Report [**APP-040**] section 6.4 concludes no AEOI on Avocets during construction on the basis that causeway construction would occur outside sensitive months (November – March inclusive) and use of the causeway during construction would dock and depart barges during high tide when mudflats are covered and Avocets are not present. Additionally, Avocets disturbed during low tide have a large availability of mudflat habitat in the surrounding area and the number of birds with potential to be displaced is small.
- 4.2.2 NE [**RR-022**] disagreed with this conclusion as Avocets had high peak counts in Zone G in the foreshore wintering bird surveys [**APP-094**]. It stated that discussions were ongoing and part of the application was yet to be reviewed so some comments were withheld.
- 4.2.3 The ExA requested an update to the HRA [**APP-040**] to address inconsistencies between the discussion and the matrices and footnotes. The Applicant provided updated HRA reports [**PDC-039; REP2-022**] to address these issues.
- 4.2.4 The Applicant's updated assessment [**REP2-022**] of noise and visual disturbance effects on wintering birds using the intertidal zone (zone G) during construction (section 6.4) and decommissioning (section 7.4) includes Dunlin, Redshank and Ringed Plover as affected features and concludes that there would be no AEOI. This is based on the number of 'bird days' lost due to disturbance in the context of the whole SPA/Ramsar sites and the sensitivity of the birds to disturbance.
- 4.2.5 NE [**PDD-012**] states that construction will take approximately six months, which combined with barge deliveries to the causeway means that the Proposed Development cannot entirely avoid months where SPA features are present in peak counts. As this is likely to affect a proportion of the SPA's bird population, it recommends that a commitment is included in Register of Environmental Actions and Commitments (REAC) to preferentially avoiding the most sensitive months.
- 4.2.6 NE disputes the threshold used for assessment of noise disturbance and the assessment methodology underpinning the AEOI assessment by comparing the loss of bird days in the context of the whole of the SPA/Ramsar sites and states that whilst this is technically correct, it is disproportionate and easily demonstrates the number of birds and habitat affected are very small. It considers a more localised assessment i.e. bird days in the context of the Mucking Flats and Marshes SSSI as a component of the SPA would be appropriate. NE [**REP5-026**] is seeking internal specialist advice on noise thresholds and will respond in due course.

- 4.2.7 The Applicant [**REP2-056 and REP5-007**] challenged that a more localised assessment is not a legal requirement of the Habitats Regulations and maintained that its approach and conclusions were correct. Based on the conclusion of no AEOI, the Applicant considers a commitment to specific mitigation measures is not required in the REAC [**REP2-056**].
- 4.2.8 The Applicant [**AS-048**] in support of the HRA [**REP2-022**] conclusions of no AEOI undertook a further assessment to demonstrate the number of bird days lost in the context of Mucking Flats SSSI only as a result of disturbance during construction and decommissioning. The number of bird days lost as a percentage of the SSSI are reported as follows using peak counts to assess a worst-case scenario:
- Ringed Plover – 3.69% (2.13% of whole SPA/Ramsar);
 - Redshank – 1.03% (0.11% of whole SPA/Ramsar);
 - Dunlin – 0.36% (0.29% of whole SPA/Ramsar); and
 - Avocet – 2.58% (1.87% of whole SPA/Ramsar).
- 4.2.9 Based on this assessment, the Applicant reiterated that it considered the conclusions of the HRA [**REP2-022**] to be sound and that there would be no AEOI as a result of disturbance during construction or decommissioning due to such a small number of features being affected. A response is awaited from NE on this assessment and conclusion.

4.3 Meteorological and Seasonal Differences

- 4.3.1 NE [**PDD-012**] asked that the HRA recognises the varying importance of habitats during periods of severe weather and all areas should not be assessed as having equal value to SPA birds. The Applicant [**REP2-056**] requested NE provide evidence to support this.
- 4.3.2 NE responded [**REP2-096**] stating that whilst it could not provide formal evidence, this property of the habitats should be self-evident for estuary systems at a landscape scale due to the open nature and exposure of the habitat to various weather conditions and anecdotal evidence should support features seeking more favourable conditions available.
- 4.3.3 The Applicant [**REP3-009**] reiterated that whilst the estuary may provide various habitats for wintering birds at different times depending on weather conditions, it does not make it possible to quantify the importance of FLL in absence of evidence that it is favoured by birds in harsh conditions.
- 4.3.4 NE [**REP5-026**] states that the importance of the inner estuary areas during severe weather means a precautionary approach should be applied to the winter surveys as recent winters have been average / milder and therefore figures may not be fully representative. The Applicant responded [**AS-047; AS-048**] stating that bird surveys were undertaken based on standard accepted methodologies and reiterated the point made previously that it is not possible to quantify the importance of FLL in the absence of evidence that it is favoured by birds in harsh conditions. It notes that the species that are features of the designated sites are

recorded in low numbers and are increasingly tolerant of passive disturbance. No agreement has been reached on this matter.

4.4 Causeway as a Permanent Feature

- 4.4.1 NE confirms [**PDD-012**] that it considers a conclusion of no AEOI can be reached so long as the causeway is not permitted as a permanent structure. However, as the causeway has potential to remain for up to 35 years (the lifetime of the Proposed Development), it is arguable this is beyond the limit of what could be considered 'temporary'.
- 4.4.2 NE [**RR-022**] and EA [**RR-013**] believe that the causeway should not be a permanent feature beyond the lifetime of the Proposed Development and that there was not enough information to justify its permanence in relation to potential accretion rates, prolonged effects on hydrodynamics, use of the structure by birds and control mechanisms of the causeway beyond the lifetime of the Proposed Development.
- 4.4.3 The Applicant [**PDC-001**] explained the causeway was the only means of access for Abnormal Indivisible Loads (AIL) deliveries of the largest construction components and therefore it is essential to the viability of the Proposed Development during its lifetime (although not beyond) should any repair or replacement of the largest components be needed.
- 4.4.4 In response, the Applicant submitted a change request [**AS-012**] on 20 April 2021 which included a material amendment to the submitted DCO to the access arrangements of AILs via the causeway. The Applicant updated the DCO [**PDC-009**] to commit to decommissioning the causeway (with production and submission of a decommissioning plan) at the end of the project lifetime (35 years) or sooner should alternative road options be identified. Requirements 17 and 18 of the revised DCO secure a 5-yearly review of a permanent, feasible and economic alternative to the causeway for AIL deliveries.
- 4.4.5 In light of this change to the DCO, the Applicant submitted an updated HRA [**PDC-039**; **REP2-022**] to include an assessment of decommissioning impacts on European features, a revised ES Chapter 17 Marine Environment [**APP-066**] to include an assessment of effects from decommissioning the causeway and an assessment of causeway decommissioning [**PDC-012**]; impacts were anticipated to be similar to those at construction. NE [**PCC-012**] welcomed these submissions and the EA stated its satisfaction with the wording of Requirements 17 and 18. NE [**REP5-026**] suggest that decommissioning impacts may not be similar to those during construction noting the debate surrounding the ease of causeway decommissioning at Issue Specific Hearing 1. The Applicant offered to expand on this in due course; a response is awaited [**EV-013**; **EV-014**].
- 4.4.6 The Applicant [**EV-013**] expressed a preference for an on-land access as an alternative to the causeway and this is still being actively pursued [**AS-048**] but none had been identified as feasible at the time of publishing this RIES. NE [**REP5-026**] are in support of a less harmful alternative access.

4.5 Summary

- 4.5.1 NE continue to dispute no AEOI on features of the Thames Estuary and Marshes SPA/Ramsar as a result of noise and visual disturbance impacts during construction and decommissioning on the basis that it disagreed with the methodology of assessment, specifically, noise thresholds and bird days/scale of assessment and use of FLL dependent on meteorological conditions. The Applicant provided an updated assessment of bird days in the context of the Mucking Flats and Marshes SSSI [**AS-048**] which is pending review and comment from Interested Parties.

A.1 ANNEX 1: Screening Matrices

Evidence for likely significant effects on their qualifying features is detailed within the footnotes to the screening matrices below.

Matrix Key:

× = Applicant and Interested Parties do not agree that an AEOI can be excluded

C = construction

O = operation

D = decommissioning

Matrix 1 – Screening of Likely Significant Effects: The Thames Estuary and Marshes SPA and Ramsar

Name of European Site	The Thames Estuary and Marshes Special Protection Area			
EU Code	UK9012021			
Distance to Proposal site	1.02 km			
European site features	Likely effects of NSIP			
	Direct loss or damage of habitats used by interest species			Disturbance – noise and visual
	C	O	D	O
Annex 1 Species Regularly Wintering in Numbers of European Importance - Avocet	× _a	× _a	× _a	× _b
Migratory species regularly occurring on passage – Ringed plover	× _a	× _a	× _a	× _c
Migratory Wintering species regularly occurring in internationally-important numbers over winter – Dunlin	× _a	× _a	× _a	× _c
Migratory Wintering species regularly occurring in internationally-important numbers over winter – Redshank	× _a	× _a	× _a	× _c

a. The foreshore wintering bird surveys [PDC-033] identified these features were present at Zone G (causeway) of the Proposed Development. The Applicant screened out any potential LSE on the basis that the loss of FLL was too small and the number of features using FLL were negligible in the context of the SPA/Ramsar [REP2-022] and also the Mucking Flats and Marshes SSSI as a component of the SPA/Ramsar [AS-048]. NE [RR-022 and PDD-012] disagreed that direct habitat loss should be screened out and are yet to comment on the Applicant’s assessment of bird days in the context of the Mucking Flats and Marshes SSSI which concludes that direct loss of habitats would not have a LSE [AS-047; AS-048] – please see section 3.4 of this RIES for further detail.

b. The Applicant [REP2-022; AS-048] states in the AEOI assessment that the maintain objective for Avocets ‘*Maintain the size of the non-breeding population at a level which is above 283*’ is not undermined by disturbance during construction and therefore, as impacts are expected to be less during operation, no LSE will occur. NE [RR-022; REP2-097, REP4-012, REP5-026] disputed operational disturbance should be screened out as it considered the methodology for assessing disturbance impacts during construction was insufficient but are yet to comment on the most recent assessment which concludes no AEOI and therefore supports that operation would not have a LSE [AS-048] – please see section 3.3 of this RIES for further detail

c. The Applicant [REP2-022] screened out disturbance during operation on the basis that features were not sensitive to disturbance and impacts from the presence of the causeway and its infrequent use (only in exceptional circumstances) would be less than that at construction; the HRA concluded no AEOI from disturbance impacts during construction. NE [RR-022] disputed operational disturbance should be screened out as it considered the methodology for assessing disturbance impacts during construction was insufficient [REP2-097, REP4-012, REP5-026] but are yet to comment on the most recent assessment which concludes no AEOI and therefore supports that operation would not have a LSE [AS-048] – please see section 3.3 of this RIES for further detail

A.2 ANNEX 2: Integrity Matrices

Evidence for likely significant effects on their qualifying features is detailed within the footnotes to the screening matrices below.

Matrix Key:

× = Applicant and Interested Parties do not agree that an AEOL can be excluded

C = construction

O = operation

D = decommissioning

Where effects are not applicable to a particular feature they are greyed out. Note that decommissioning effects are only likely if the functionally linked land supports birds from the Thames Estuary and Marshes SPA, which is not considered to be the case.

Integrity Matrix 1: The Thames Estuary and Marshes SPA and Ramsar

Name of European Site	The Thames Estuary and Marshes Special Protection Area			
EU Code	UK9012021			
Distance to Proposal site	1.02 km			
	Adverse effect on integrity			
European site features	Disturbance – noise and visual		In-combination effects (noise and visual disturbance)	
	C	D	C	D
Annex 1 Species Regularly Wintering in Numbers of European Importance - Avocet	× _a	× _b	× _c	× _b
Migratory species regularly occurring on passage – Ringed plover	× _a	× _b	× _c	× _b
Migratory Wintering species regularly occurring in internationally-important numbers over winter – Dunlin	× _a	× _b	× _c	× _b
Migratory Wintering species regularly occurring in internationally-important numbers over winter – Redshank	× _a	× _b	× _c	× _b

a. NE [PDD-012] dispute the methodology of the assessment of disturbance on SPA/Ramsar features during construction stating that noise thresholds applied were not appropriate, the HRA does not take into account meteorological conditions affecting features use of FLL and that the assessment [REP2-022] is not proportionate in comparing ‘bird days’ of features lost in the context of the whole SPA/Ramsar site. The Applicant provided a more localised assessment of bird days lost during construction in the context of the Mucking Flats and Marshes SSSI as a component of the SPA/Ramsar [AS-048]. Both assessments [REP2-022; AS-048] conclude that construction and use of the causeway would not have an AEOI on the SPA or Ramsar. NE is consulting on

appropriate noise thresholds, no agreement has been reached on the impact of meteorological conditions and NE and other interested parties are yet to comment on the localised assessment of bird days lost [AS-048] – please see section 4.2 and 4.3 of this RIES for further detail.

b. The Applicant states that decommissioning effects for the causeway would be of similar magnitude as for construction and therefore as per the assessment of construction effects (Sections 6.4 and 6.5 of [REP2-022; PDC-012]), a conclusion on no adverse effect on integrity can be reached. NE dispute the methodology of assessment for effects during construction (please see **a.** above) [PDD-012] and therefore dispute the reasoning for concluding no AEOI during decommissioning. It also contests that decommissioning may not reflect impacts during construction in that ease of decommissioning the causeway may be more complex than anticipated – please see section 4.4 of this RIES for further detail.

c. The Applicant concluded [REP2-022] that the assessment of noise levels indicate that even in the maximum design scenario of percussive piling for TFGP construction, noise levels from this activity would not give rise to significantly elevated noise levels at the Thames Estuary and Marshes SPA or at the area of functionally linked foreshore habitat (5.1.62 to 5.1.69). An assessment of in-combination effects has concluded that no significant additional effects would occur (7.2). NE dispute [PDD-012] the noise thresholds applied in the assessment – please see section 4.2 and 4.3 of this RIES for further detail