Date: 30 September 2020
Our ref: 306236
Your ref: EN010012

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BY EMAIL ONLY

Dear Sir/Madam

NSIP Reference Name / Code: The Sizewell C Project EN010012
Natural England's registration identification number: 20025411

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

RELEVANT REPRESENTATION

PART I: Summary and Conclusions of Natural England's advice. *In the context of our remit, a significant amount of further information is required before it can be determined as to whether or not the proposal will have significant impacts on a number of internationally designated sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar sites), nationally designated sites (Sites of Special Scientific Interest (SSSIs)), protected species, ancient woodland, a nationally protected landscape (Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB)) and the Aldeburgh to Hopton on Sea stretch of the England Coast Path (ECP). Natural England's advice is that, in relation to these issues, there are fundamental reasons of principle why the project should not be permitted in its current form. Some of these may not be possible to overcome as proposed. For others, the applicant has provided insufficient information to establish the significance of impacts or efficacy of avoidance, mitigation and/or compensation proposals but we consider these to be potentially resolvable with the submission of further information.*

PART II: Natural England's detailed advice (starting at page 24)

PART I: Summary and Conclusions of Natural England's advice

1. Introduction

1.1. Natural England's advice in these relevant representations is based on information submitted by EDF Energy[1] in support of its application for a Development Consent Order ('DCO') in relation to the Sizewell C Project (hereafter referred to as 'the project').

[1] NNB Generation Company (SZC) Limited

1.2. Natural England has provided a significant amount of advice and guidance to EDF Energy on the project proposals since 2013, including through the four rounds of statutory consultation under Section 42 of the Planning Act 2008. Our responses to these consultations are referred to throughout these representations and we would be happy to provide you with copies of these for your reference.

1.3. Throughout this time, Natural England has been working with the wider Defra Group bodies, including the Environment Agency (EA) and Marine Management Organisation (MMO), to coordinate advice wherever possible. In these instances, we aim to work together to provide complementary advice, based on sound science and evidence, whilst having regard to our respective remits. We have yet to receive any formal written feedback from EDF Energy on how our advice has been taken into account to influence the development as currently proposed. Whilst a small number of issues have either been progressed or resolved during the pre-application period, a large number remain unresolved at this time. Natural England made the Planning Inspectorate aware of this during our telephone call with them on the 20th January 2020 (meeting note here) to discuss Defra group engagement with EDF Energy and highlight key areas of environmental risk.

1.4. These relevant representations contain what Natural England consider to be the main nature conservation, landscape and related issues[2] in relation to the DCO application as well as the Deemed Marine Licence (DML) contained therein, and indicate the principal submissions that it wishes to make at this point. Natural England reserves the right to develop these points further as appropriate during the examination process. We may have further or additional points to make, particularly if further information about the project becomes available. In the interests of helpfulness and issue resolution, we have front-loaded our advice to provide adequate detail on all the issues as early as possible and allow more time for discussion and resolution.

1.5. We have engaged as fully as we can in reviewing the DCO application to provide detailed and comprehensive comments about the potential environmental risks of the project. This has been challenging during the Coronavirus pandemic which has affected internal resource and staff availability. This, along with the size and complexity of the application in addition to the volume of new information provided at this stage which we were not given the opportunity to review at pre-application, has constrained our review of the application. On this basis, Natural England reserves the right to make additional and/or different comments where this would be helpful later in the examination process.

1.6. We have recently been made aware by EDF Energy that they are intending to submit additional reports in support of their DCO application. Clearly, we have not yet been able to review and comment on them. At the time of writing, we are unsure of their content and when they will be submitted, and in light of this, we reserve the right to review them and to comment as and when appropriate. Natural England would be grateful if this could be borne in mind in the timetabling of the next stages of the current process.

1.7. Part I of these representations provides the summary and conclusions of Natural England's advice (Sections 2 and 3), with an overview of the key outstanding issues with regards the natural features relevant to this application. These are the main issues which Natural England advises should be addressed by EDF Energy and the Examining Authority as part of the examination process in order to ensure that the project can properly be consented. These are issues on which Natural England:

[2] PINS NSIP Advice Note 11 Annex C sets out Natural England's role in infrastructure planning. https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2015/10/PINS-Advice-Note-11_AnnexC_20150928.pdf

- Have fundamental concerns which it may not be possible to overcome in their current form ('**red**' issues in Sections 2.4 – 2.10);

- Advise that further information is required to determine the effects of the project and allow the Examining Authority to properly undertake its task ('**amber**' issues in Sections 2.4 – 2.10);

  and/or

- Advise that further information is required on mitigation/compensation proposals in order to provide a sufficient degree of confidence as to their efficacy ('**amber**' issues in Sections 2.4 – 2.10).

1.8. Part II of these representations expands upon the detail of all the significant issues ('**red**' and '**amber**' issues) which, in our view, remain outstanding and includes our advice on pathways to their resolution where possible. Part II also shows '**green**' issues which have recently been agreed but where mitigation/ compensation proposals still need securing.

1.9. Appendix I explains the various risk rating and colour coding given given by Natural England alongside each issue through Parts I and II.

1.10. Appendix II includes a glossary of terms used throughout this letter.

1.11. Appendix III includes Natural England's further detailed comments on the terrestrial aspects of the DCO application document review.

1.12. Appendix IV includes Natural England's further detailed comments on the marine aspects of the DCO application document review.

1.13. Natural England will continue discussions with EDF Energy to seek to resolve these concerns and agree outstanding matters in a statement of common ground (SoCG) which we have recently begun engaging on. Failing satisfactory agreement, Natural England advises that the matters set out in Part I ('**red**' and '**amber**' issues) will require consideration by the Examining Authority as part of the examination process.

1.14. The Examining Authority may wish to ensure that the matters set out in these relevant representations are addressed as part of the Examining Authority's first set of questions to ensure the provision of information early in the examination process.

2. The natural features potentially affected by this application and summary of Natural England's outstanding concerns for these

2.1. The main issue raised by this application in the context of our remit is that a significant amount of further information is required from the applicant before it can be determined whether or not the proposal will have legally significant impacts on internationally and nationally important habitats, species, landscapes and access routes. Natural England's advice is that, in relation to identified issues within its remit, there are fundamental reasons of principle why the project should not be permitted in its current form. In relation to certain internationally protected features Natural England does not believe that, as the proposals currently stand, it can be ascertained that they will not have an adverse effect on the integrity of the sites concerned. In relation to SSSIs, Natural England believes that the applicant's proposals, as they currently stand, will have a detrimental effect on the conservation of certain cited features of special interest. These

outstanding issues are summarised in Sections 2.4 – 2.10 below and detailed further in Part II of this letter.

2.2. **Cumulative and 'in combination' impacts:** Within the Habitat Regulations Assessment (HRA) process for internationally designated sites (SACs, SPAs and Ramsar sites), plans or projects must be considered both 'alone' and 'in combination' with other plans or projects. On the basis of the information submitted at this stage, we do not consider that a suitably robust assessment has been undertaken within the HRA of cumulative impacts from different aspects of the project, or of 'in combination' impacts between other projects which may impact on the same internationally designated sites and features. This is a crucial element of the HRA process and therefore needs to be agreed before the project is consented (see issue 19 in Part II for further detail). Similarly, we do not consider that a suitably robust assessment has been undertaken on cumulative impacts from all project elements on nationally designated sites (SSSIs) and their notified features. Again, this is a crucial element of the SSSI impact assessment process and therefore needs to be agreed before the project is consented (see issue 19 in Part II for further detail).

2.3. **Environmental permits:** Natural England cannot currently provide our final comments on any of the potential impacts to designated sites or features within the EIA or HRA from those aspects of the proposed development of Sizewell C Power Station that will be managed by, or impacts mitigated for, as part of the Water Discharge Activity Construction and Operational Permits (i.e. impacts from intake and outfall, fisheries impingement and entrainment, and WFD assessments). Under the Environmental Permitting (England and Wales) Regulations 2016 the Environment Agency will undertake a review of the application and consult the public. Natural England, along with other Statutory Nature Conservation Bodies (SNCBs), may provide advice to the Environment Agency on certain aspects of environmental permitting application at this stage, including HRA. The Environment Agency may then take account of advice so operators can avoid, reduce or compensate for any adverse impacts from permitting operations. As outlined in Planning Inspectorate Advice Note 11 Annex D Permitting and DCO submissions should be timed to allow consideration of the outcome of the permitting process within the DCO application. We understand that the SZC Co DCO application has been submitted at the same time as the permitting application to the Environment Agency, to allow for parallel tracking. Given the different timelines in assessing permitting (usually 12-18 months) and DCO applications (usually 6 months) the permitting determination may not be available within the DCO timeframes. Until the WDA permitting process is finalised Natural England will not be able to comment beyond scientific doubt that there will not be an environmental impact on designated sites or an Adverse Effect on Integrity on Natura 2000 sites or Annex II species, as we will not have full sight of the final design or any mitigation secured. Natural England will continue to liaise closely with DEFRA bodies in relation to the permitting process and provide evidence into the DCO examination as appropriate. We will not be able to provide our final advice any earlier as we cannot be seen to prejudge the outcome of the permitting process.

<u>Internationally designated sites</u>

2.4. Our advice on the internationally designated sites relevant to this application is as follows:

2.4.1. In relation to internationally designated sites (SACs, SPAs and Ramsar sites) the law[3] provides that consent may only be granted in relation to a plan or project if, following the process of "appropriate assessment", the decision-maker can ascertain that the matter(s) in question will not (either alone or in combination with other plans or projects) adversely affect the integrity of the site in question, having regard to the conservation objectives for

[3] Regulation 63 of the Conservation of Habitats and Species Regulations 2017.

that site. Natural England reserves the right to make further representations on the legal and policy protections afforded to internationally designated sites.

2.4.2. On the basis of the information submitted in relation to these sites, Natural England is satisfied ('**green**' issues in Part II) that:

2.4.2.1. The project is unlikely to result in hydrological impacts on Minsmere – Walberswick (SAC, SPA, Ramsar site), Alde-Ore and Butley Estuaries (SAC, SPA, Ramsar site) or Stour and Orwell Estuaries (SPA, Ramsar site), subject to the rigorous implementation of the mitigation measures specified within the Drainage Strategy and Code of Construction Practice.

2.4.2.2. The project is unlikely to result in foul water impacts on Minsmere – Walberswick (SAC, SPA, Ramsar site), subject to the rigorous implementation of the mitigation measures specified within the Drainage Strategy and Code of Construction Practice.

2.4.2.3. The criteria for derogating from the Habitats Regulations are fulfilled with respect to marsh harrier, with regards to Minsmere - Walberswick SPA and Ramsar site.

2.4.3. On the basis of the information submitted in relation to these sites, Natural England is not yet satisfied that it can be ascertained beyond reasonable scientific doubt that the project would not have an adverse effect on the integrity (AEoI) of the following internationally designated sites:

Site name with link to Conservation Objectives	Features for which Natural England has outstanding concerns	Potential impact pathway where further information/assessment is required	Risk rating (see Appendix I for definitions)
Alde-Ore and Butley Estuaries Special Area of Conservation (SAC)	All features	Damage to notified habitats from water use/abstraction for use during construction/operation (project-wide issue)	See issue 3 in Part II for further detailed advice
	All features	Damage to notified habitats from increased airborne pollution (dust and NO_X) (project-wide issue)	See issue 5 in Part II for further detailed advice
	All features	Damage to notified habitats from spread of invasive non-native species (INNS) (project-wide issue)	See issue 6 in Part II for further detailed advice
	Mudflats and sandflats not covered by seawater at low tide Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	Damage to notified habitats associated with increased recreational disturbance e.g. trampling (Main Development Site (MDS) issue)	See issue 29 in Part II for further detailed advice

Site name with link to Conservation Objectives	Features for which Natural England has outstanding concerns	Potential impact pathway where further information/assessment is required	Risk rating (see Appendix I for definitions)
Alde-Ore Estuary Special Protection Area (SPA)	All features	Damage to bird supporting habitats from water use/abstraction for use during construction/operation (project-wide issue)	See issue 3 in Part II for further detailed advice
	All features	Damage to bird supporting habitats from spread of INNS (project-wide issue)	See issue 6 in Part II for further detailed advice
	All features	Noise, light and visual disturbance of birds which utilise the MDS as functionally linked land (MDS issue)	See issue 27 in Part II for further detailed advice
	All features	Impacts on birds and their supporting habitats associated with increased recreational pressure from Sizewell C workers and displaced locals during construction e.g. trampling of nests/habitat, direct disturbance of birds by walkers, dogs, bikes etc. (MDS issue)	See issue 29 in Part II for further detailed advice
	Lesser black-backed gull (*Larus fuscus*) Little tern (*Sternula albifrons*) Sandwich tern (*Thalasseus sandvicensis*)	Impacts on prey species (fish) for marine foraging birds arising from impingement/ entrainment.	See issues 7 and 30 in Part II for further detailed advice
	Lesser black-backed gull (*Larus fuscus*) Little tern (*Sternula albifrons*) Sandwich tern (*Thalasseus sandvicensis*)	Direct exposure of foraging birds to changes in marine water quality, temperature and turbidity, arising from the intakes and outfalls, CDO and drilling chemical discharges.	See issues 30-36 in Part II for further detailed advice
Alde-Ore Estuary Ramsar site	All features	Damage to bird supporting habitats and species from water use/abstraction for use during construction/operation (project-wide issue)	See issue 3 in Part II for further detailed advice
	All features	Damage to notified plant species from increased airborne pollution (NO_X) (project-wide issue)	See issue 5 in Part II for further detailed advice

Site name with link to Conservation Objectives	Features for which Natural England has outstanding concerns	Potential impact pathway where further information/assessment is required	Risk rating (see Appendix I for definitions)
	All features	Damage to habitats, supporting habitats and species from spread of INNS (project-wide issue)	See issue 6 in Part II for further detailed advice
	Avocet (*Recurvirostra avosetta*) Lesser black-backed gull (*Larus fuscus graellsii*) Redshank (*Tringa tetanus*) Waterbird assemblage Wetland bird assemblage Invertebrate assemblage	Noise, light and visual disturbance of birds which utilise the MDS as functionally linked land (MDS issue)	See issue 27 in Part II for further detailed advice
	All features	Impacts on plants, birds and bird supporting habitats associated with increased recreational pressure from Sizewell C workers and displaced locals during construction e.g. trampling of nests/habitat, direct disturbance of birds by walkers, dogs, bikes etc. (MDS issue)	See issue 29 in Part II for further detailed advice
	Little tern (*Sterna albifrons*)	Direct exposure of foraging birds to changes in marine water quality, temperature and turbidity, arising from the intakes and outfalls, CDO and drilling chemical discharges.	See issues 30-36 in Part II for further detailed advice
Benacre to Easton Bavents SPA[4]	Bittern (*Botaurus stellaris*) Little tern (*Sterna albifrons*) Marsh Harrier (*Circus aeruginosus*)	Noise, light and visual disturbance of birds which utilise the MDS as functionally linked land (MDS issue)	See issue 27 in Part II for further detailed advice

[4] Benacre to Easton Bavents SPA Conservation Objectives supplementary advice: http://publications.naturalengland.org.uk/file/5503127986110464 (accessed 11:31 19/06/2020)

Site name with link to Conservation Objectives	Features for which Natural England has outstanding concerns	Potential impact pathway where further information/assessment is required	Risk rating (see Appendix I for definitions)
The Humber Estuary SAC	Grey seal	Noise, light and visual disturbance of seals which utilise the MDS as functionally linked land (MDS issue)	See issue 27 in Part II for further detailed advice
	Sea lamprey (*Petromyzon marinus*) River lamprey (*Lampetra fluviatilis*)	Impacts to lamprey from changes in marine water quality, temperature and turbidity, arising from the intakes and outfalls, CDO and drilling chemical discharges, may have on migratory paths.	See issues 30-36 in Part II for further detailed advice
Minsmere to Walberswick Heath and Marshes SAC[5]	European dry heaths	Damage to notified habitats from increased airborne pollution (dust and NO_X) (project-wide issue)	See issue 5 in Part II for further detailed advice
	All features	Damage to notified habitats from spread of INNS (project-wide issue)	See issue 6 in Part II for further detailed advice
	European dry heaths	Damage to notified habitats due to impediment to management practices required for designated site conservation (project-wide issue)	See issue 8 in Part II for further detailed advice
	Annual vegetation of drift lines Perennial vegetation of stony banks	Damage to/loss of habitats arising from changes in coastal processes/ geomorphology as a result of the project (MDS issue)	See issue 28 in Part II for further detailed advice
	All features	Impacts on habitats associated with increased recreational pressure from Sizewell C workers and displaced locals during construction e.g. trampling of vegetation (MDS issue)	See issue 29 in Part II for further detailed advice
Minsmere-Walberswick SPA	All features	Damage to bird supporting habitats from water use/abstraction for use during construction/operation (project-wide issue)	See issue 3 in Part II for further detailed advice
	All features	Damage to bird supporting habitats from waterborne pollution (project-wide issue)	See issue 4 in Part II for further detailed advice

[5] Minsmere to Walberswick Heath and Marshes SAC Conservation Objectives supplementary advice: http://publications.naturalengland.org.uk/file/5537398570352640 (accessed 11:39 19/06/2020)

Site name with link to Conservation Objectives	Features for which Natural England has outstanding concerns	Potential impact pathway where further information/assessment is required	Risk rating (see Appendix I for definitions)
	All features	Damage to bird supporting habitats from spread of INNS (project-wide issue)	See issue 6 in Part II for further detailed advice
	All features	Damage to bird supporting habitats due to impediment to management practices required for designated site conservation (project-wide issue)	See issue 8 in Part II for further detailed advice
	All features	Noise, light and visual disturbance of birds, including those which utilise the MDS as functionally linked land (MDS issue)	See issue 27 in Part II for further detailed advice
	All features	Damage to/loss of bird supporting habitats arising from changes in coastal processes/ geomorphology as a result of the project	See issue 28 in Part II for further detailed advice
	All features	Impacts on birds and their supporting habitats associated with increased recreational pressure from Sizewell C workers and displaced locals during construction e.g. trampling of nests/habitat, direct disturbance of birds by walkers, dogs, bikes etc. (MDS issue)	See issue 29 in Part II for further detailed advice
	Little tern (*Sterna albifrons*)	Direct exposure of foraging birds to changes in marine water quality, temperature and turbidity, arising from the intakes and outfalls, CDO and drilling chemical discharges.	See issues 30-36 in Part II for further detailed advice
	Little tern (*Sterna albifrons*)	Impacts on prey species for marine foraging birds arising from impingement/entrainment.	See issues 7 and 30 in Part II for further detailed advice
Minsmere-Walberswick Ramsar site	All features	Damage to habitats, species and supporting habitats from water use/abstraction for use during construction/operation (project-wide issue)	See issue 3 in Part II for further detailed advice
	All features	Damage to habitats, species and supporting habitats from waterborne pollution (project-wide issue)	See issue 4 in Part II for further detailed advice
	All features	Damage to habitats and species from increased airborne pollution (dust and NO_X) (project-wide issue)	See issue 5 in Part II for further

Site name with link to Conservation Objectives	Features for which Natural England has outstanding concerns	Potential impact pathway where further information/assessment is required	Risk rating (see Appendix I for definitions)
			detailed advice
	All features	Damage to habitats, species and supporting habitats from spread of INNS (project-wide issue)	See issue 6 in Part II for further detailed advice
	Little tern (*Sterna albifrons*)	Direct exposure of foraging birds to changes in marine water quality, temperature and turbidity, arising from the intakes and outfalls, CDO and drilling chemical discharges.	See issues 30-36 in Part II for further detailed advice
	All features	Damage to habitats, species and supporting habitats due to impediment to management practices required for designated site conservation (project-wide issue)	See issue 8 in Part II for further detailed advice
	Wetland bird assemblage - Breeding Wetland invertebrate assemblage	Noise, light and visual disturbance of birds, including those which utilise the MDS as functionally linked land (MDS issue)	See issue 27 in Part II for further detailed advice
	All features	Damage to/loss of habitats, species and supporting habitats arising from changes in coastal processes/ geomorphology as a result of the project	See issue 28 in Part II for further detailed advice
	All features	Impacts to habitats, species and supporting habitats associated with increased recreational pressure from Sizewell C workers and displaced locals during construction e.g. trampling of nests/habitat, direct disturbance of birds by walkers, dogs, bikes etc. (MDS issue)	See issue 29 in Part II for further detailed advice
Outer Thames Estuary SPA	All features	Noise, light and visual disturbance of birds (MDS issue)	See issue 27 in Part II for further detailed advice
	Little tern (*Sterna albifrons*)	Impacts on birds and their supporting habitats associated with increased recreational pressure from Sizewell C workers and displaced locals during construction e.g. trampling of nests/habitat, direct disturbance of birds by walkers, dogs, bikes etc. (MDS issue)	See issue 29 in Part II for further detailed advice
	Common tern (*Sterna hirundo*)	Impacts on prey species for marine foraging birds arising from impingement/entrainment.	See issues 7 and 30 in Part II for

Site name with link to Conservation Objectives	Features for which Natural England has outstanding concerns	Potential impact pathway where further information/assessment is required	Risk rating (see Appendix I for definitions)
			further detailed advice
	All features	Direct exposure of foraging birds to changes in marine water quality, temperature and turbidity, arising from the intakes and outfalls, CDO and drilling chemical discharges.	See issues 30-36 in Part II for further detailed advice
Sandlings SPA[6]	European nightjar (*Caprimulgus europaeus*) Woodlark (*Lullula arborea*)	Noise, light and visual disturbance of birds (MDS issue)	See issue 27 in Part II for further detailed advice
	European nightjar (*Caprimulgus europaeus*) Woodlark (*Lullula arborea*)	Impacts to birds and supporting habitats associated with increased recreational pressure from Sizewell C workers and displaced locals e.g. trampling of nests/habitat, direct disturbance of birds by walkers, dogs, bikes etc. (MDS issue)	See issue 29 in Part II for further detailed advice
Southern North Sea SAC	Harbour porpoise	Impacts from physical interaction between harbour porpoise and/or their prey species (fish) with project infrastructure (project-wide issue)	See issues 7 and 30 in Part II for further detailed advice
	Harbour porpoise	Noise, light and visual disturbance of harbour porpoise (MDS issue)	See issue 27 in Part II for further detailed advice
Staverton Park and the Thicks, Wantisden SAC[7]	Old acidophilous oak woods with *Quercus robur* on sandy plains	Damage to notified habitats and species from increased airborne pollution (NO_x) (project-wide issue)	See issue 5 in Part II for further detailed advice
The Wash and North Norfolk Coast SAC	Common seal	Impacts from physical interaction between common seals and/or their prey species (fish) with project infrastructure (project-wide issue)	See issue 7 in Part II for further detailed advice

[6] Sandlings SPA Conservation Objectives supplementary advice: http://publications.naturalengland.org.uk/file/5201677619822592 (accessed 11:44 19/06/2020)

[7] Staverton Park and the Thicks, Wantisden SAC Conservation Objectives supplementary advice: http://publications.naturalengland.org.uk/file/4783541078720512 (accessed 11:58 19/06/2020)

Site name with link to Conservation Objectives	Features for which Natural England has outstanding concerns	Potential impact pathway where further information/assessment is required	Risk rating (see Appendix I for definitions)
	Common seal	Noise, light and visual disturbance of common seals (MDS issue)	See issue 27 in Part II for further detailed advice

2.4.4. Part II of this letter provides further details of our concerns for each of these outstanding issues and includes our advice on possible pathways to their resolution.

Nationally designated sites

2.5. Our advice on the nationally designated sites relevant to this application is as follows:

2.5.1. In relation to Sites of Special Scientific Interest, the law[8] provides that the decision-maker in this case has a duty to take reasonable steps, consistent with the proper exercise of the decision-maker's functions, to further the conservation and enhancement of the flora, fauna, or geological or physiographical features by reason of which a site is of special scientific interest. Natural England reserves the right to make further representations on the legal and policy protections afforded to SSSIs and their cited features.

2.5.2. On the basis of the information submitted in relation to these sites, Natural England is satisfied ('**green**' issues in Part II) that:

2.5.2.1. The project is unlikely to result in foul water impacts on Minsmere – Walberswick SSSI, Leiston-Aldeburgh SSSI or Sizewell Marshes SSSI, subject to the rigorous implementation of the mitigation measures specified within the Drainage Strategy and Code of Construction Practice.

2.5.3. On the basis of the information submitted in relation to these sites, Natural England is not yet satisfied that the project is not likely to damage features of interest of the following nationally designated sites:

Site name with link to citation	Features for which Natural England has outstanding concerns	Potential impact pathway where further information/assessment is required	Risk rating (see Appendix I for definitions)
Alde-Ore Estuary Site of Special Scientific Interest (SSSI)	Reedbeds Lowland damp grassland Vascular plant assemblage	Damage to habitats, species and supporting habitats from water use/abstraction for use during construction/operation (project-wide issue)	See issue 13 in Part II for further detailed advice

[8] S. 28G of the Wildlife and Countryside Act 1981 (as amended).

Site name with link to citation	Features for which Natural England has outstanding concerns	Potential impact pathway where further information/assessment is required	Risk rating (see Appendix I for definitions)
	Breeding and overwinter bird species Invertebrates		
	All biological features	Damage to notified habitats and species from increased airborne pollution (NO_X) (project-wide issue)	See issue 15 in Part II for further detailed advice
	All biological features	Damage to notified habitats and species from spread of INNS (project-wide issue)	See issue 16 in Part II for further detailed advice
	Common tern (*Sterna hirundo*) Arctic tern (*Sterna paradisaea*) Sandwich tern (*Sterna sandvicensis*) Little tern (*Sterna albifrons*) Common gull (*Larus canus*)	Impacts on prey species (fish) for marine foraging birds arising from impingement/entrainment.	See issues 17 and 41 in Part II for further detailed advice
	All notified bird species	Noise, light and visual disturbance of birds which utilise the MDS as functionally linked land (MDS issue)	See issue 38 in Part II for further detailed advice
	All biological features	Impacts on habitats, species and supporting habitats associated with increased recreational pressure from Sizewell C workers and displaced locals during construction e.g. trampling of nests/habitat, direct disturbance of birds by walkers, dogs, bikes etc. (MDS issue)	See issue 40 in Part II for further detailed advice
	Common tern (*Sterna hirundo*) Arctic tern (*Sterna paradisaea*) Sandwich tern (*Sterna sandvicensis*)	Direct exposure of foraging birds to changes in marine water quality, temperature and turbidity, arising from the intakes and outfalls, CDO and drilling chemical discharges.	See issues 41-47 in Part II for further detailed advice

Site name with link to citation	Features for which Natural England has outstanding concerns	Potential impact pathway where further information/assessment is required	Risk rating (see Appendix I for definitions)
	Little tern (*Sterna albifrons*) Common gull (*Larus canus*) Black-headed gull (*Larus ridibundus*) Lesser-black-backed gull (*Larus fuscus*) Lerring gull (*Larus argentatus*)		
Leiston-Aldeburgh SSSI	All features	Damage to habitats, species and supporting habitats from water use/abstraction for use during construction/operation (project-wide issue)	See issue 13 in Part II for further detailed advice
	All features	Damage to habitats, species and supporting habitats from waterborne pollution (project-wide issue)	See issue 14 in Part II for further detailed advice
	Acid grassland Broadleaved mixed woodland and yew woodland	Damage to notified habitats and species from increased airborne pollution (dust and NO_X) (project-wide issue)	See issue 15 in Part II for further detailed advice
	All features	Damage to notified habitats and species from spread of INNS (project-wide issue)	See issue 16 in Part II for further detailed advice
	Nightjar Woodlark Turtle dove Tree pipit Bullfinch Nightingale	Noise, light and visual disturbance of birds, including those which utilise the MDS as functionally linked land (MDS issue)	See issue 38 in Part II for further detailed advice
	All features	Impacts on habitats, species and supporting habitats associated with increased recreational pressure from Sizewell C workers and displaced locals during construction e.g.	See issue 40 in Part II for further detailed advice

Site name with link to citation	Features for which Natural England has outstanding concerns	Potential impact pathway where further information/assessment is required	Risk rating (see Appendix I for definitions)
		trampling of nests/habitat, direct disturbance of birds by walkers, dogs, bikes etc. (MDS issue)	
Minsmere – Walberswick Heath and Marshes SSSI	Reedbeds and grazing marsh Shallow lagoons Ditch systems Associated breeding and overwintering birds Invertebrates Rare vegetation	Damage to habitats, species and supporting habitats from water use/abstraction for use during construction/operation (project-wide issue)	See issue 13 in Part II for further detailed advice
	All features	Damage to habitats, species and supporting habitats from waterborne pollution (project-wide issue)	See issue 14 in Part II for further detailed advice
	Lowland heath Acid grassland	Damage to notified habitats and species from increased airborne pollution (dust and NO_X) (project-wide issue)	See issue 15 in Part II for further detailed advice
	All features	Damage to notified habitats and species from spread of INNS (project-wide issue)	See issue 16 in Part II for further detailed advice
	All features	Damage to notified habitats due to impediment to management practices required for designated site conservation (project-wide issue)	See issue 18 in Part II for further detailed advice
	All notified bird species	Noise, light and visual disturbance of birds, including those which utilise the MDS as functionally linked land (MDS issue)	See issue 38 in Part II for further detailed advice
	All features	Damage to/loss of habitats, species and supporting habitats arising from changes in coastal processes/ geomorphology as a result of the project (MDS issue)	See issue 39 in Part II for further detailed advice
	All features	Impacts on habitats, species and supporting habitats associated with increased recreational pressure from Sizewell C workers and displaced	See issue 40 in Part II for further

Site name with link to citation	Features for which Natural England has outstanding concerns	Potential impact pathway where further information/assessment is required	Risk rating (see Appendix I for definitions)
		locals during construction e.g. trampling of nests/habitat, direct disturbance of birds by walkers, dogs, bikes etc. (MDS issue)	detailed advice
Sizewell Marshes SSSI	Tall herb fen (reedbed)	Permanent loss of SSSI habitat to the main platform and SSSI crossing for which a satisfactory compensation approach has been identified but where a less damaging alternative design option may be available	See issue 48 in Part II for further detailed advice
	Lowland ditch systems	Permanent loss of SSSI habitat to the main platform and SSSI crossing for which a satisfactory compensation approach has been identified but where a less damaging alternative design option may be available	See issue 48 in Part II for further detailed advice
	Fen meadow	Permanent loss of SSSI habitat to the main platform and SSSI crossing for which a satisfactory compensation approach has not been identified and may not be possible and where a less damaging alternative design option may be available	See issue 49 in Part II for further detailed advice
	Invertebrate assemblage	Permanent loss of wet woodland (supporting habitat) to the main platform and SSSI crossing for which a satisfactory compensation approach has not been identified and where a less damaging alternative design option may be available	See issue 50 in Part II for further detailed advice
	All features	Damage to habitats, species and supporting habitats from hydrological changes in ground and surface water (project-wide issue)	See issue 11 in Part II for further detailed advice
	All features	Damage to habitats, species and supporting habitats from water use/abstraction for use during construction/operation (project-wide issue)	See issue 13 in Part II for further detailed advice
	All features	Damage to habitats, species and supporting habitats from waterborne pollution (project-wide issue)	See issue 14 in Part II for further detailed advice
	All features	Damage to notified habitats and species from increased airborne pollution (dust and NO_X) (project-wide issue)	See issue 15 in Part II for further detailed advice
	All features	Damage to notified habitats and species from spread of INNS (project-wide issue)	See issue 16 in Part II for further

Site name with link to citation	Features for which Natural England has outstanding concerns	Potential impact pathway where further information/assessment is required	Risk rating (see Appendix I for definitions)
			detailed advice
	All features	Damage to habitats and species due to impediment to management practices required for designated site conservation (project-wide issue)	See issue 18 in Part II for further detailed advice
	All features	Damage to/loss of habitats, species and supporting habitats arising from changes in coastal processes/ geomorphology as a result of the project (MDS issue)	See issue 39 in Part II for further detailed advice

2.5.4. Part II of this letter provides further details of our concerns for each of these outstanding issues and includes our advice on possible pathways to their resolution.

Nationally designated landscapes

2.6. Our advice on the internationally designated landscapes relevant to this application is as follows:

2.6.1. On the basis of the information submitted, Natural England considers that the project as proposed would be detrimental to the conservation of the wildlife and beauty of the following nationally designated landscapes:

Site name and link to further information	Site summary	Summary of Natural England concerns	Risk rating (see Appendix I for definitions)
Suffolk Coast and Heaths AONB	• 34% of the AONB has a wildlife designation, including 11,487 hectares of Sites of Special Scientific Interest. • BAP Priority Habitats are widespread, with 35.2% of the AONB (14,251 hectares) identified as being a priority habitat. • Suffolk Coast & Heaths AONB	• The scheme, both by itself but especially cumulatively with the existing power stations and other energy infrastructure, may significantly compromise the ability of this part of the AONB to contribute to the designated area's statutory purpose. • The concentration of energy infrastructure in this narrow neck of the AONB may so alter the local landscape character that it functionally severs the AONB. • The scale of construction and length of the construction phase may permanently change how this part of the AONB is viewed and used by those seeking to enjoy the AONB. • The design of the power station buildings will not mitigate for the massing of development in close and some long	See issue 20 in Part II for further detailed advice

Site name and link to further information	Site summary	Summary of Natural England concerns	Risk rating (see Appendix I for definitions)
	supports 8.7% of all lowland heathland in AONBs, despite only 2% of the AONB area being this habitat type. • The AONB has c. 20% of Britain's resource of Vegetated Shingle. • In annual terms, in 2017, tourism in the AONB was estimated to be worth £210,068,409, a 6.4% increase since 2015. • There are a total of 660 kilometres of public rights of way and 4,168 hectares of open access land within the AONB.	distant views, especially in longshore coastal views from the north. The use of clean lines and simple forms for the main buildings will be marred by the need for pylons and overhead cables rather than the cables being undergrounded. • The careful and well-regarded design mitigation provided for the Sizewell B station will be largely if not entirely overwhelmed and negated by the new power station, particularly in sensitive views along the coast from the north. • The SSSI crossing may affect the visible quality of the wetland habitat so undermining its role as a landscape feature within this part of the AONB. • The beach frontage will be significantly altered. Our main landscape concern is the prospect of rock armour being regularly exposed by storms and tidal storm surges, and eventually being left permanently exposed. • The permanent link road could constitute a suburbanising influence in this rural setting if standard kerbing and signage and other 'road furniture' is used. • Significant affects on the statutory purpose of the AONB can be anticipated to remain when all the proposed mitigation measures have been applied. The oLEMP could however deliver greater landscape enhancements to provide a degree of counterbalance to the impact of the development. We don't think that this potential has been fully explored. It is therefore vital that the detail of the management plan and its current and further mitigation potential is addressed through the DCO, not post consent. • The scheme, by itself but especially in combination with the existing power stations, is not compatible with the Heritage Coast status which recognises and seeks to protect the best of our undeveloped coastlines. This part of the coast will present as fully developed and accommodating major infrastructure.	
Suffolk Heritage Coast	• The entire length of the coastline within the AONB is defined as Heritage Coast. • Heriatge Coasts were established to conserve the best stretches of undeveloped coast in England.		

2.6.1. Part II of this letter provides further details of our concerns for each of these outstanding issues and includes our advice on possible pathways to their resolution.

2.6.2. Natural England reserves the right to make further representations on the legal and policy protections afforded to AONBs and Heritage Coasts.

European protected species (EPS)

2.7. Our advice on the EPS relevant to this application is as follows:

2.7.1. On the basis of the information submitted, Natural England is not yet satisfied that the project will not adversely affect the following EPS:

Species name	Summary of outstanding issues	Risk rating (see Appendix I for definitions)
Bats	Habitat loss including unmitigated roost loss from as a result of the MDS, TVB, Yoxford Roundabout, SLR/Theberton Bypass, Wickham Market Park and Ride, Darsham Park and Ride, Green Rail Route and Freight Management Facility	See issues 10, 37, 52 and 54 – 62 in Part II for further detailed advice
	Habitat fragmentation affecting key foraging and commuting routes as a result of the MDS, TVB, SLR/Theberton Bypass and Green Rail Route	
	insufficient method statement for the Green Rail Route	
	insufficient surveys for Wickham Market Park and Ride and Other Rail Improvements	
Great crested newts (GCN)	Habitat loss from the SLR/Theberton Bypass	
	Direct disturbance from the Darsham Park and Ride, Other Highway Improvements and Green Rail Route	
	Insufficient surveys for the Green Rail Route and Other Rail Improvements	
Natterjack toads	Habitat loss from the MDS	
	Habitat fragmentation from the MDS	
Otters	Direct disturbance from the MDS works	
	Habitat loss from the MDS and TVB	
	Habitat fragmentation from the MDS and TVB	
	Impacts from changes in water quality and quantity from the MDS works	

2.7.1. It is an offence[9] to deliberately capture, injure or kill EPS or to deliberately disturb them, take or destroy their eggs or to damage or destroy a breeding or resting site of such species, without a licence[10]. Natural England reserves the right to make further representations on the legal and policy protections afforded to EPS.

2.7.2. Part II of this letter provides further details of our concerns for each of these outstanding issues and includes our advice on possible pathways to their resolution.

[9] Regulation 43 of the Conservation of Habitats and Species Regulations 2017. See also Part I of the Wildlife and Countryside Act 1981 (as amended).

[10] Regulation 55 of the Conservation of Habitats and Species Regulations 2017. See also Part I of the Wildlife and Countryside Act 1981 (as amended).

Nationally protected species[11]

2.8. Our advice on the nationally protected species relevant to this application is as follows:

2.8.1. On the basis of the information submitted, Natural England is not yet satisfied that the project will not adversely affect the following nationally protected species issues:

Species name	Summary of outstanding issues	Risk rating (see Appendix I for definitions)
Badgers	Direct disturbance from the MDS and TVB	See issues 10, 37, 52 and 54 – 62 in Part II for further detailed advice
	Habitat loss/disturbance for the MDS, TVB and Wickham Market Park and Ride	
	Habitat fragmentation from the TVB	
	Insufficient surveys for the MDS and Other Rail Improvements	
Deptford Pink	Direct loss from the MDS	
Reptiles	Habitat loss from the MDS and Wickham Market Park and Ride	
	Habitat fragmentation from the MDS	
Water voles	Insufficient surveys for the MDS	
	Insufficient method statement for the TVB	
	Habitat loss from the MDS, TVB and SLR/Theberton Bypass	
	Habitat fragmentation from the MDS and TVB	
	Impacts from changes in water quality and quantity at the MDS	
	Direct disturbance from the TVB	
Breeding birds	Habitat loss from the MDS	
	Direct disturbance from the MDS	
	Insufficient surveys for the Yoxford Roundabout, Wickham Market Park and Ride, Other Rail Improvements and FMF	

2.8.2. Part II of this letter provides further details of our concerns for each of these outstanding issues and includes our advice on possible pathways to their resolution.

2.8.3. Natural England reserves the right to make further observations on the legal and policy protections afforded to nationally protected species.

Ancient woodland and ancient/veteran trees

2.9. Our advice on the ancient woodland and ancient/veteran trees relevant to this application is as follows:

2.9.1. As set out in NPS EN – 1, "*Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost it cannot be recreated. The IPC should not grant development consent for any development that would result in its loss or deterioration unless the benefits (including need) of the development, in that location outweigh the loss of the woodland habitat*" (paragraph 5.3.1). Natural England reserves the right to make further representations on the legal and policy protections afforded to ancient woodland and ancient/veteran trees.

[11] Protection of Badgers Act 1992. Wildlife and Countryside Act 1981 (as amended).

2.9.2. On the basis of the information submitted, Natural England is not yet satisfied that the project will not lead to the loss of/damage to ancient woodland and ancient or veteran trees through the following impact pathways:

Ancient woodland and ancient/veteran tree receptor	Summary of outstanding issues	Risk rating (see Appendix I for definitions)
All within the project red line boundary	Lack of general approach to their identification within the appliation	See issue 21 in Part II for further detailed advice
Foxburrow Wood, Palant's Grove and Pond Wood ancient woodland	Inadequate assessment on the potential damage to these ancient woodlands from the TVB for which a satisfactory mitigation/ compensation approach has not been identified and where a less damaging alternative design option may be available	See issue 53 in Part II for further detailed advice

2.9.3. Part II of this letter provides further details of our concerns for each of these outstanding issues and includes our advice on possible pathways to their resolution.

National trails

2.10. Our advice on the national trails relevant to this application is as follows:

2.10.1. On the basis of the information submitted, Natural England considers that the project could be detrimental to the purpose of the following national trail in its current form through due to the following outstanding issues:

National trail	Futher information	Summary of outstanding issues	Risk rating (see Appendix I for definitions)
Aldeburgh to Hopton on Sea stretch of the England Coast Path (ECP)	The proposals for this stretch of the ECP have been submitted to the Secretary of State for determination. Further up-to-date information on timescales for its adoption is given on our website: https://www.gov.uk/government/collections/england-coast-path-aldeburgh-to-hopton-on-sea	Inadequate mitigation for impacts from the project on the route of the ECP from the MDS works	See issue 25 in Part II for further detailed advice

2.10.1. Part II of this letter provides further details of our concerns for each of these outstanding issues and includes our advice on possible pathways to their resolution.

2.10.2. Natural England reserves the right to make further representations on the legal and policy protections afforded to the ECP.

Other valuable and sensitive habitats and species

2.11. It should be noted that a significant amount of other valuable and sensitive habitats and species are likely to be affected by the project, including priority habitats and species and County Wildlife Sites (CWS) (see our advice under issue 22 in Part II).

2.11.1. The decision-maker in this case is an authority to which the 'duty to conserve biodiversity'[12] applies. Natural England can supply a list of the organisms and types of habitat that have been listed by the Secretary of State[13] as being of principal importance for the conservation of biodiversity and which are or may be affected by this application. Natural England reserves the right to make further representations on the legal and policy effect of the biodiversity duty**.** In relation to these habitats and species, both within designated sites and in the wider environment, we advise the decision-maker to consider whether the applicant has adequately followed the avoid-mitigate-compensate hierarchy.

2.11.2. Natural England is not confident that the project as a whole will represent biodiversity net gain (BNG) as stated in the application douments and contribute to creating a true landscape-scale environmental legacy within more of the red line boundary. Firstly, it is imperative that the project as a whole avoids, mitigates and/or compensates for impacts internationally designated sites (SACs, SPAs, Ramsar sites), nationally designated sites (SSSIs) and that the necessary measures are agreed and secured through the relevant statutory requirements (e.g. Habitats Regulations, Wildlife and Countryside Act etc. Delivery of BNG is therefore dependent on all relevant parties, including Natural England, agreeing that the project represents no 'biodiversity net loss' in these regards; this necessarily requires all designated site issues within this table be classified as '**green**' before the project is consented. While the inclusion of the BNG calculations themselves are very welcome, we had also discussed with EDF Energy, at pre-application stage, the potential for the project to contribute to creating a true legacy landscape within more of the red line boundary given its position witin the Suffolk Coast and Heaths AONB surrounded by multiple designated wildlife sites. This would give EDF Energy the opportunity to contribute and showcase habitat creation, potential re-wilding and nature recovery ambitions within the government's 25 year environment plan. It would make a major contribution to 'bigger, better and more joined up' habitats in the area in line with the Lawton principles[14]. It could and should be something exemplary that properly reflects a development of this magnitude and projected lifespan within the AONB, as part of a wider potential Suffolk Coast Nature Recovery Area. As it stands we cannot see any reference to this in the DCO and it appears that the BNG requirement as calculated is planned to be met almost entirely within existing commitments i.e. Aldhurst Farm. We advise that EDF Energy should recognise the magnitude of the proposal and its location, and properly reflect this in their ambitions to use their wider landholding to contribute to BNG. See our advice under issue 23 of Part II for further details.

[12] Section 40 of the Natural Environment and Rural Communities Act 2006.

[13] Section 41 of the Natural Environment and Rural Communities Act 2006.

[14] Making Space for Nature: A review of England's Wildlife Sites and Ecological Network

Other valuable and sensitive landscapes

2.12. It should be noted that a significant amount of other valuable and sensitive landscapes are likely to be affected by the project (see our advice under issue 24 in Part II for further details).

Other valuable and sensitive access routes

2.13. It should be noted that a significant amount of other valuable and sensitive access routes are likely to be affected by the project (see our advice under issue 26 in Part II for further details).

3. Natural England's overall conclusion

3.1. **Natural England's advice is that there are therefore a number of matters which have not been resolved satisfactorily through the pre-application process that must be addressed by EDF Energy and the Examining Authority as part of the examination and consenting process before development consent can be granted, as summarised in Section 2 above and outlined in further detail in Part II below.**

3.2. **On the basis of currently available information, Natural England believes that one of these issues may not be capable of being overcome as proposed ('red' issue in Sections 2.4 – 2.10 and Part II).**

3.3. **For others, the applicant has provided insufficient information to establish the significance of impacts or efficacy of avoidance, mitigation and/or compensation proposals. Based on the information submitted at this stage, these are also major concerns with regards internationally and nationally important sites, species, landscapes and access routes but we consider that they could potentially be overcome with the provision of further information or assessment ('amber' issues in Sections 2.4 – 2.10 and Part II). However, it should be noted that there is considerable risk that given their complexity, some of these issues might not be overcome within the necessary timescales, in which case they might become 'red' issues.**

3.4. **Some of these matters are important enough to mean that if they are not satisfactorily addressed it would not be lawful to permit the project due to its impacts on SAC, SPA, Ramsar and SSSI interests or protected species. Natural England advises that, if approved, the project must be subject to all necessary and appropriate requirements which ensure that unacceptable environmental impacts either do not occur or are sufficiently mitigated.**

Natural England
30 September 2020

Part II: Natural England's further detailed advice on the key outstanding issues within our statutory remit

Natural England key issue reference	Topic	Issue summary (C) Impacts during construction (O) Impacts during operation	Natural England commentary and advice on the further information required to enable assessment	Natural England comment on the mechanism for securing mitigation/ compensation measures in the DCO	Risk
Overarching issues for the project as a whole (MDS and AD sites)					
1	**ECOLOGY:** Project-wide impacts on internationally designated sites ▪ Alde-Ore and Butley Estuaries SAC ▪ Alde-Ore Estuary SPA ▪ Alde-Ore Estuary Ramsar site ▪ Minsmere to Walberswick Heath and Marshes SAC	Groundwater and surface water impacts from a number of project elements, and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	**<u>Context and background</u>** Eco-hydrological modelling (groundwater modelling and hydro-ecological conceptual modelling (HCM)) is needed to inform the impact assessment to these sites through this pathway. It is essential in properly assessing the risk of any changes to water levels from the proposals to the habitats and species for which these sites are notified, and to inform any necessary mitigation/ compensation. This should incorporate the AD sites as well as the MDS to properly assess these impacts from the project as a whole at the catchment level; wetland habitat biodiversity, functionality and sustainability is dependent not just on the hydrology within, for example, protected site boundaries, but the hydrology of the catchment that the wetland is sited within. **<u>Comments on the DCO application</u>** <u>MDS impacts:</u> We advise that there is unlikely to be significant hydrological impacts on the following sites: ▪ Minsmere to Walberswick Heath and Marshes SAC ▪ Minsmere- Walberswick SPA	The Drainage Strategy and Code of Construction Practice must be rigorously implemented. We recommend that these mitigation measures are secured in the requirements of the DCO.	

	▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site ▪ Stour and Orwell Estuaries SPA ▪ Stour and Orwell Estuaries Ramsar site		▪ Minsmere- Walberswick Ramsar site Drawdown during the construction phase is limited to the very southern edge of the site adjacent to the platform and is temporary in nature. The drainage strategy and code of construction practice will mitigate against issues of increased discharge or run-off from the MDS during construction and operation. This also applies to the Sizewell Link Road. However, there is an important assumption here that the Drainage Strategy and Code of Construction Practice will be rigorously implemented. We recommend that these mitigation measures are secured in the requirements of the DCO. The SSSI crossing option proposed is the least desirable in term of land take, habitat loss and fragmentation. However, provided the culvert and channel are appropriately designed, this will not result in significant hydrological impacts on Minsmere-Walberswick Changes in flows to the Leiston Drain could potentially be altered by construction and operation phases (dewatering and groundwater movement impediment respectively) and by manipulations of water level within Sizewell Marshes. However, impacts on water levels in the Leiston Drain (determined largely by the Minsmere Sluice) are unlikely to be significant. Changes in flows in Leiston Drain will not be of an order that could challenge the receiving capacity of the Minsmere Sluice South Chamber. Consequently, knock on effects for other parts of the Minsmere drainage system would be very unlikely. <u>AD site impacts:</u> We advise that there is unlikely to be significant hydrological impacts on the following sites: ▪ Alde-Ore and Butley Estuaries SAC ▪ Alde-Ore Estuary SPA ▪ Alde-Ore Estuary Ramsar site ▪ Stour and Orwell Estuaries SPA ▪ Stour and Orwell Estuaries Ramsar site		

			No significant impacts hydrological impacts are anticipated for the International Sites listed above from the associated development Northern Park and Ride, Two Village Bypass, Sizewell Link Road, Yoxford Roundabout, Freight Handling Facility or rail works. These risks can be adequately mitigated through the provisions of Outline Drainage Strategy and Code of Construction Practice. However, **there is clearly a dependency that mitigation set out in the Outline Drainage Strategy and Code of Construction Practice will be rigorously implemented and maintained.** <u>Sustainable drainage systems</u> We welcome the commitment of providing Sustainable Drainage Systems (SuDS) into the development proposals, including through the water management zones (WMZs) to ensure that surface water run-off can be attenuated and, if required, treated prior to discharge to either watercourses or to the ground. It is important that these are adequately designed so that they do not overtop and take water and sediment down into the ditch/drain system of Sizewell Marshes and Minsmere. They should also be designed such that the hydrological functioning of any adjacent water-dependant habitats are maintained or enhanced.		
2	**ECOLOGY:** Project-wide impacts on internationally designated sites ▪ Minsmere to Walberswick Heath and Marshes SAC ▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site	Foul water impacts from a number of project elements, and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	**<u>Context and background</u>** We understand that the development will need a new foul water drainage network served by a dedicated sewage treatment plant in order to treat foul water arising from a number of sources (including the accommodation campus) before it is discharged to sea via a combined drainage outfall. Inadequate foul drainage arrangements could impact on these designated sites through waterborne pollution which could impact on habitats and species. **<u>Comments on the DCO: foul water impacts</u>** Foul water impacts from a number of project elements, and subsequent ecological effects on the SACs, SPAs and Ramsar sites and their notified features. Risks can be adequately mitigated through the provisions of the Outline Drainage Strategy and Code of Construction Practice. **There is clearly a dependency that mitigation set out in the Outline Drainage Strategy and Code of Construction Practice will be rigorously implemented and maintained.**	The Drainage Strategy and Code of Construction Practice must be rigorously implemented. We recommend that these mitigation measures are secured in the requirements of the DCO.	

3	**ECOLOGY:** Project-wide impacts on internationally designated sites ▪ Alde-Ore and Butley Estuaries SAC ▪ Alde-Ore Estuary SPA ▪ Alde-Ore Estuary Ramsar site ▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site	Water use impacts from a number of project elements, (including potable and non potable freshwater supply) and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	**<u>Context and background</u>** We understand that during the main construction phase, water demand is predicted to peak between 2.5Ml/d and 3.5Ml/d for a period of 20 months during tunnelling works and 2.5Ml/d and 3.5Ml/d for a period of 20 months during tunnelling works. Once the tunnelling works are complete forecast demand falls below 1.8Ml/d and then gradually decreases through the remainder of the construction period to around 0.5Ml/d. The demand during operation is expected to be significantly lower than that during construction, at approximately 0.5Ml/d. This needs be assessed in detail within the HRA (both from individual project elements, cumulatively with other project elements, cumulatively with other impact pathways (ground and surface water impacts (see issue ref 4), foul water impacts (see issue ref 5) and waterborne pollution impacts (see issue ref 7)) to properly assess such risks and inform any necessary mitigation or compensation measures. . An abstraction/ water use strategy, covering both the MDS and AD sites, which integrates any such measures is required. We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008, working with the Environment Agency to provide complementary advice: • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraph 3.12); • Natural England's response to the Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019 (our ref: 272181, dated 29th March 2019, paragraph 4.5.35); We have further reiterated this advice through a number of pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. shadow HRA incomplete, abstraction/ water use strategy omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019).	TBC	

			We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA. **<u>Comments on the DCO application – further information required</u>** It is not clear that the concerns raised previously by Natural England have been addressed, in particular the sourcing of supply. This is pertinent given that the local Crag groundwater body is already at 'Poor Quantitative Status' i.e. is already over-abstracted. It is likely this is already having an impact e.g. on the discharge of groundwater from the Crag to headwater streams in the west of Sizewell Marshes SSSI. Natural England has previously requested an abstraction/ water use strategy. This does not appear to have been addressed within the DCO documents as submitted and reviewed at this stage.		
4	**ECOLOGY:** Project-wide impacts on internationally designated sites ▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site	Waterborne pollution impacts from a number of project elements, and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	**<u>Context and background</u>** Bearing in mind the close proximity of the proposed development to highly sensitive designated sites, a robust schedule of waterborne pollution prevention measures are required (oil separators and filters remove hydrocarbons etc.) to ensure that proposals to not lead to adverse effects in this regard. This should include all elements of the proposals but in particular the construction of the main power station platform, SSSI crossing, drain realignment, insertion of sheet piling and cut-off wall, de-watering operations, electricity supply cable route and wider built MDS and AD elements. It should also include the potential for acidic leachate reaching the designated sites as a result of backfilling any borrow pits. This needs be assessed in detail within the HRA (both from individual project elements, cumulatively with other project elements, cumulatively with other impact pathways (ground and surface water impacts (see issue ref 1), foul water impacts (see issue ref 2) and water use impacts (see issue ref 3)) to properly assess such risks and inform any necessary mitigation or compensation measures. A waterborne pollution prevention strategy, covering both the MDS and AD sites during construction and operation, which integrates any such measures is also required.	TBC	

			We have advised EDF Energy on this issue hroughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008, working with the Environment Agency to provide complementary advice: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraph 3.5); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraph 3.10); • Natural England's response to the Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019 (our ref: 272181, dated 29th March 2019, paragraphs 4.5.31 and 4.5.38 – 4.5.39, 4.6.2.16, 4.6.2.19, 4.6.7.3, 4.6.11.4 (MDS) and 4.7.1.3 (SLR), 4.8.1.3 (green rail route) and 4.8.3.2 (Theberton Bypass)); We have further reiterated this advice through a number of pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. shadow HRA incomplete, CoCP omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA. **<u>Comments on the DCO – further information required</u>** Whilst there are clearly pollution risks associated with a number of the project elements, it is reasonable to expect that these risks can be adequately mitigated		

			through the provisions of the Outline Drainage Strategy and Code of Construction Practice. However we would expect more detail to be included in relation to pollution prevention measures. In particular we would welcome more specifics in relation to the CDO. Natural England cannot comment on the potential water quality issues and mitigation until the discharge permitting process has been completed and the impacts to WFD waterbodies assessed, and considered within the HRA. We would expect all mitigation within the permit to be secured in the DCO. Borrow pits should be filled with material in line with Contaminated Land: Applications in Real Environments (CL:AIRE) and this recommendation should be included in the Code of Construction Practice and secured in the DCO		
5	**ECOLOGY:** Project-wide impacts on internationally designated sites ▪ Alde-Ore and Butley Estuaries SAC ▪ Alde-Ore Estuary Ramsar site ▪ Minsmere to Walberswick Heath and Marshes SAC ▪ Minsmere-Walberswick Ramsar site	Airborne pollution impacts from a number of project elements and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	**<u>Context and background</u>** Bearing in mind the very close proximity of the MDS to these highly sensitive designated sites, there is the potential for particulate (dust) emissions generated by the development during construction and operation to impact on the air quality sensitive features of those nearby sites. For those sites listed which are further from the MDS, there could potential impacts from increased nitrogen oxide (NOx) emissions generated during construction and operation both from MDS and AD site elements. In particular, road traffic is a source of NOx emissions, meaning that increases in traffic can represent a risk to designated site features where there is exceedance of critical levels (CLe) for sensitive vegetation. This can result in changes in the species composition of designated site features, reduction in the species richness of designated habitat, damage or loss of sensitive lichens and bryophytes and increases in nitrate leaching and changes in soil nutrient status which may affect the structure and function of a designated or supporting habitat. Impacts from these impact pathways must be considered for the project alone and cumulatively (i.e. across MDS and AD sites project elements) and in combination with other plans and projects, MDS and AD sites to properly assess such risks and inform any necessary mitigation or compensation measures. Consistency with HRA case law (e.g. Wealden Judgement, Dutch Nitrogen case etc.) also needs to be ensured.	TBC	

	▪ Staverton Park and the Thicks, Wantisden SAC		We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008, working with the Environment Agency to provide complementary advice: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, in Annex 2 (see comments under 4.7.15); • Natural England's response to the Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019 (our ref: 272181, dated 29th March 2019, paragraphs 4.5.52 – 4.5.54); We have further reiterated this advice through a number of pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. shadow HRA incomplete, Dust Management Plan, ES Chapter 12: Air quality and CoCP omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA. **<u>Comments on the DCO application – further information required</u>** <u>Dust and Particulates</u> Dust and particulate matter falling onto plants can physically smother leaves affecting photosynthesis, respiration, transpiration and leaf temperature. There may be toxicity issues and potential changes in pH. We recommend that mitigation is in place that prevents significant change of baseline levels at designated sites. We note that baseline data has been gathered and established by monitoring in sensitive locations. This monitoring should continue to ensure that there is no significant change in dust levels at sensitive ecological receptors.		

			To minimise and control dust we recommend the following mitigation measures; locate machinery and dust causing activities away from sensitive receptors, erect physical barriers such as screening around the site boundary, vehicle wheel washing, covering vehicle loads skips and stock piles using enclosed chutes and water is a dust suppressant. We welcome the commitment to producing and implementing an Air quality Management Plan. Required monitoring and mitigation should be included in this plan and secured through DCO requirements. <u>Combustion</u> Further information is required to determine the impact of increased acid deposition, particularly at Minsmere - Walberswick (and Sizewell Marshes SSSI). Whilst we understand that background levels have been identified as in exceedance of critical load at both sites we suggest that the impact of additional increase in terms of species composition and impacts to interest features are considered in more detail. We understand that the modelling of combustion emission from diesel generators has predicted a likely significant effect to the interest features of Minsmere-Walberswick and Sizewell Marshes. It is explained that any potential change in nutrient nitrogen has the potential to impact 3% of the designated site resulting in a low magnitude of impact. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and causing the loss of sensitive typical species associated with it. We recommend that further consideration is given to the potential impacts to interest features and how nitrogen deposition may impact species composition and features of interest.		
6	**ECOLOGY:** Project-wide impacts on internationally designated sites ▪ Alde-Ore and Butley Estuaries SAC	Unintentional introduction or spread of invasive non-native species (INNS) from a number of project elements and subsequent ecological effects on internationally	**<u>Context and background</u>** The proposals present a risk of unintentionally spreading INNS (via marine and terrestrial sources) to these sites which could have a detrimental effect their features through, for example, increased competition with habitats and species. This needs be assessed in detail within the HRA to properly assess such risks and inform any necessary mitigation or compensation measures. Biosecurity control measures (e.g. within the CoCP) covering both the MDS and AD sites during construction and operation, are also required.	TBC	

	▪ Alde-Ore Estuary SPA ▪ Alde-Ore Estuary Ramsar site ▪ Minsmere to Walberswick Heath and Marshes SAC ▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site	designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008, working with the Environment Agency to provide complementary advice: • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, in Annex 3 (see comments under 4.5.2); • Natural England's response to the Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019 (our ref: 272181, dated 29th March 2019, paragraph 4.5.55); We have further reiterated this advice through a number of pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. shadow HRA incomplete, CoCP omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA. **<u>Comment of the DCO application – further information required</u>** We advise that a non-native species management plan is created and submitted for Natural England for review. There are risks of introductions from non-native species with the development of the main site and associated infrastructure. The main development site is within close proximity to a number of protected sites and there is a risk of the introduction of non-native species and the potential to impact designated features of the sites. Further information would be required on the protocols in case the introduction of a non-native species is discovered, a full assessment of the potential impacts to any designated sites and a copy of the biosecurity risk assessments. Natural England would expect to be notified in the		

			event of a non-native species being discovered within close proximity for a protected site, the applicant should also consider contacting other relevant parties such as the Environment Agency and the MMO dependant on what the non-native species is.		
7	**ECOLOGY:** Project-wide impacts on internationally designated sites ▪ Alde-Ore Estuary SPA ▪ Minsmere-Walberswick SPA ▪ Outer Thames Estuary SPA ▪ Southern North Sea SAC ▪ The Wash and North Norfolk Coast SAC	Physical interaction between species and project infrastructure from a number of project elements and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	**<u>Context and background</u>** Some of the built elements of the proposals present a physical interaction (i.e. collision) risk to mobile species for which these sites are in part notified, in particular birds and marine mammals. Specific elements which may present particular risks include marine vessel activity, capital dredging, piling and drilling works and pylons and associated over ground cables. This needs be assessed in detail within the HRA to properly assess such risks and inform any necessary mitigation measures. Collision avoidance measures covering both the MDS and AD sites during construction and operation, may be required. We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008, working with the Environment Agency to provide complementary advice: • Natural England's response to the Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019 (our ref: 272181, dated 29th March 2019, paragraph 4.5.56); We have further reiterated this advice through a number of pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. shadow HRA incomplete) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the	TBC	

			advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA. **<u>Comments on the DCO application – further information required</u>** This should be assessed for all notified species and prey species for these sites. Harbour porpoise prey species would be lost in close proximity to intake tunnels and across the Greater Sizewell Bay, and harbour porpoise would have to move out of the area to feed. Conservation objectives for the sites include that the condition of supporting habitats and processes, and the availability of prey is maintained. As this will be a long term/permanent loss of foraging area within the SAC for the operational phase of the development Natural England advise that this would constitute an AEOI of this area of the SAC. NE advises that compensation for this loss of area be proposed. During construction and decommission prey species may be displaced due to works to the project infrastructure (e.g. dredging, vessels, CDO, FRR, hCDF, sCDF) and therefore red-throated diver may become displaced. As such, we advise that a LSE cannot be ruled out at this stage during construction, operation or decommissioning.		
8	**ECOLOGY:** Project-wide impacts on internationally designated sites ▪ Minsmere to Walberswick Heath and Marshes SAC ▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site	Impediment to the management practices required for conservation of any designated site from a number of project elements and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	**<u>Context and background</u>** Works in and around the MDS which is directly adjacent to Minsmere have the potential to impede the management practices required for its conservation (e.g. access for grazing animals etc.). There may also be similar risks to the wider sites listed as a result of the AD site proposals, in particular the proposed road and rail alterations This needs be assessed in detail within the HRA to properly assess such risks and inform any necessary mitigation or compensation measures. We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008, working with the Environment Agency to provide complementary advice:	TBC	

			• Natural England's response to the Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019 (our ref: 272181, dated 29th March 2019, paragraphs 4.7.3.2 and 4.8.2.2); We have further reiterated this advice through a number of pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA. **<u>Comments on the DCO application – further information required</u>** Natural England reiterate the advice presented above and recommend that any aspects of the project that are likely to impede the management practises of designated sites should be assessed in detail within the HRA.		
9	**ECOLOGY:** Project-wide impacts on internationally designated sites ▪ Alde-Ore and Butley Estuaries SAC ▪ Alde-Ore Estuary SPA ▪ Alde-Ore Estuary Ramsar site	Cumulative and in-combination assessment of impacts and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. Includes assessment between different elements of the	**<u>Context and background</u>** Natural England as a key SNCB on this issue has not been given the opportunity to review and provide advice on the applicant's final shadow HRA ahead of submission to ensure that, for those impact pathways to sites which have been correctly identified and included in the assessment, the conclusions are robust. This is in terms of impacts from the project alone (including consideration of different project elements and impact pathways cumulatively) and in combination with other plans and projects. Some individual HRA topic areas have been discussed with Natural England through the applicant's pre-application engagement programme (e.g. hydrological impacts, recreational disturbance impacts, marsh harrier impacts etc.) in relation to specific elements of the project proposals but this has been far from exhaustive. Furthermore, none of these have specifically focussed on the cumulative or in combination assessment which is a crucial element of the HRA process.	TBC	

	▪ Benacre to Easton Bavents SPA ▪ The Humber Estuary SAC ▪ Minsmere to Walberswick Heath and Marshes SAC ▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site ▪ Outer Thames Estuary SPA ▪ Sandlings SPA ▪ Southern North Sea SAC ▪ Staverton Park and the Thicks, Wantisden SAC ▪ The Wash and North Norfolk Coast SAC	project/impact pathways and other plans/ projects. **(C) and (O)**	We consider these to be significant omissions which we have flagged a number of times throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.2, 4.12, 4.16); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.5 and 4.9); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, e.g. paragraphs 3.5 and 3.9.12); • Natural England's response to the *Sizewell C – Stage 4 Consultation: 18th July 2019 to 27th September 2019* (our ref: 289446, dated 26th September 2019, comment 6); We have further reiterated this advice throughout pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. shadow HRA incomplete) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA. **<u>Comments on the DCO application – further information required</u>** On the basis of the information submitted at this stage, we do not consider that a suitably robust assessment has been undertaken within the HRA of cumulative impacts from different aspects of the project, or of in combination impacts between		

			other projects which may impact on the same internationally designated sites and features. This is a crucial element of the HRA process and therefore needs to be agreed before the project is consented. • Within a Habitat Regulations Assessment (HRA), the plan or project must be considered both alone and in combination with other plans or projects. Whilst some of the potential effects associated with the whole Sizewell C development might not impact upon designated / classified Natura interest features (ecological receptors might be protected species or undesignated populations found within the wider environment), and are thus considered from the perspective of an Environment Impact Assessment rather than HRA, splitting the assessment of the project into the Main Development Site and multiple Associated Developments conducted in separate volumes, fails to satisfactorily complete the alone test. The failure to complete a proper alone test dilutes the potential impact of the development by simply dividing it up into separate components. The scale of predicted effects for each Associated Development is not necessarily deemed to reach a threshold of significance, such that impact associated with the overall development is overlooked. • The application for Sizewell B has been revised and resubmitted to the Local Planning Authority. Natural England have not yet had the opportunity to provide detailed comment on the revised application. We would expect the DCO to be updated with the details of the new application and any potential impacts considered. • As fisheries assessments are being undertaken at the North Sea SSB area level, Natural England question whether other plans or projects that may impact upon fisheries, such as other power stations are also being considered at this Zone of Influence scale?		
10	**ECOLOGY:** Project-wide impacts on protected species ▪ Bats ▪ GCN	Protected species' mitigation, compensation and licencing approach for the project as a whole	**<u>Context and background</u>** Natural England was not given the opportunity to review the complete up-to-date survey information for each of these species at the pre-application stage alongside the respective mitigation strategies. It has not therefore been possible for us to provide extensive comments on protected species mitigation to date.	TBC	

	▪ Natterjack toads ▪ Otters ▪ Reptiles ▪ Water voles ▪ Badgers ▪ Deptford Pink ▪ Breeding birds	**(C) and (O)**	Protected species licences from Natural England are required for any development activity which carries the risk of significant disturbance or injury to these species which have long been known to be potentially impacted by the development proposals. We therefore consider these to be significant omissions which we have flagged a number of times throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.8, 4.3 (iii) and 4.4 (iii and iv)); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.19 and throughout Annex 2 (see comments under 4.3, 4.4 and Annex 3 (see comments under 7.4.78, 7.4.84, 7.5.3, 7.5.58 – 7.5.60, 7.5.65, 7.8.6, 7.9.6, Table 9.3 and Table 10.3); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, paragraphs 3.9.16 – 3.9.20, 4.5.18 – 4.5.26, 4.5.44, 4.5.48 – 4.5.51 and 4.6.2.21 – 4.6.2.27 (MDS), 4.6.16.3 (Two Village Bypass), 4.6.19.3 – 4.6.19.4 (Park and Rides), 4.6.20.2 (Highway improvements), 4.7.1.5 (SLR), 4.7.2.4 (FMF), 4.8.1.4 – 4.8.1.6 (green rail route), 4.8.2.3 (rail improvements), 4.8.3.4 (Theberton Bypass); We have further reiterated this advice through a number of pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. Natterjack Mitigation Strategy, Reptile Mitigation Strategy, Water Vole Mitigation Strategy, Appendix: Amphibians, Appendix: Reptiles, Appendix: Ornithology, Appendix: Bats, Appendix: Terrestrial Mammals within ES Chapter 14: Terrestrial Ecology Ornithology omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019).		

			We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** At pre-application, we strongly advised EDF Energy that, for each necessary species, they obtain additional pre-licensing species advice from Natural England prior to the application submission to further reduce uncertainty and risk of delay at the formal application stage. The ideal situation would be for Natural England to review draft/ghost protected species licence applications and (if agreed) provide Letters of No Impediment (LoNI) ideally with or shortly after (which is sometimes the case) the application is made to ensure the ExA has the required certainty. Indeed, Natural England created the LoNI process for this purpose and to de-risk the application for developers. The advice given by the Consents Service Unit (CSU)[15] states that "*It is worth noting where developers choose to apply for non-planning consent later in the process, it may be difficult to provide the Examining Authority with reassurances about the likelihood of obtaining them*" (page 5) and Annex 2 on page 8 includes examples of how the CSU has helped support developers in understanding the risks of not undertaking this process. We therefore reiterate that advice at this stage.		
11	**ECOLOGY:** Project-wide impacts on nationally designated sites ▪ Alde-Ore Estuary SSSI ▪ Leiston-Aldeburgh SSSI	Groundwater and surface water impacts from a number of project elements, and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features.	**<u>Context and background</u>** See comments under issue 1 above for a general summary of the impact pathway, risk to designated site features and the history of Natural England's previous advice to EDF Energy on this. The impact assessments (including eco-hydrological modelling, FRA etc.) and any mitigation included within the groundwater and surface water strategies must also consider impacts on these SSSIs. We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission.	TBC	

[15] https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2015/07/CSU-Prospectus.pdf

	▪ Minsmere – Walberswick Heath and Marshes SSSI ▪ Orwell Estuary SSSI ▪ Sizewell Marshes SSSI	**(C) and (O)**	**<u>Comments on the DCO application – further information required</u>** <u>MDS impacts</u> • **Sizewell Marshes SSSI** The principle remaining hydrological concerns relate to impacts of the MDS on Sizewell Marshes SSSI as follows: i) **Long term impact of cut-off wall on groundwater flow**: The DCO application presents an inconsistent account of the long term impacts of the cut off wall on ground water flow to Sizewell Marshes SSSI and requires further clarification.It is proposed that these impacts would be managed through engineered mitigation and /or drain maintenance. No specifics are provided. Further clarification is needed of how the long term impact of the cut-off wall has been assessed. The modelling work should address this question directly. ii) **Impacts on surface water flow regime during the construction phase:** The application presents a confusing picture of the potential for construction to impact on water levels in Sizewell Marshes and modify flows leaving the site via the Leiston drain. Further clarification of this issue is needed. The assessment conclusions that hydrological impacts are "not significant" rely strongly on an assumption that the mitigation scheme <u>which is yet to be determined</u>, will be effective. **iii) Impacts of water level drawdown during the construction phase:** Dewatering during the construction phase is substantially mitigated by the proposed cut-off wall. However, Natural England's view is that a residual predicted water level drawdown in the order of up to 10 cm is ecologically significant and so is the impact of reduced groundwater inflow from the Crag. Water level management is proposed to mitigate dewatering effects in Sizewell Marshes yet the method of water level manipulation has not been determined. Further information is required to demonstrate to suitability of mitigation**.** <u>AD site impacts</u> (Northern Park and Ride, Two Village Bypass, Sizewell Link Road, Yoxford Roundabout, Freight Handling Facility, Rail proposals):		

			• **Alde-Ore Estuary SSSI** • **Leiston-Aldeburgh SSSI** • **Minsmere – Walberswick Heath and Marshes SSSI** • **Orwell Estuary SSSI** No significant impacts hydrological impacts are anticipated for the SSSIs listed above from the associated development. Risks can be adequately mitigated through the provisions of Outline Drainage Strategy and Code of Construction Practice. **However, there is clearly a dependency that mitigation set out in the Outline Drainage Strategy and Code of Construction Practice will be rigorously implemented and maintained to ensure that groundwater and surface water impacts from the AD sites do not occur. We recommend that these mitigation measures are secured in the requirements of the DCO.**		
12	**ECOLOGY:** Project-wide impacts on nationally designated sites ▪ Leiston-Aldeburgh SSSI ▪ Minsmere – Walberswick Heath and Marshes SSSI ▪ Sizewell Marshes SSSI	Foul water impacts from a number of project elements, and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features. **(C) and (O)**	**<u>Context and background</u>** See comments under issue 2 above for a general summary of the impact pathway, risk to designated site features and the history of Natural England's previous advice to EDF Energy on this. **<u>Comments on the DCO application</u>** Natural England has no further comment to make on this. These issues are adequately addressed in the approaches outlined for management of Foul Drainage which should be secured through the DCO requirements.	The Drainage Strategy and Code of Construction Practice must be rigorously implemented. We recommend that these mitigation measures are secured in the requirements of the DCO.	
13	**ECOLOGY:** Project-wide impacts on nationally designated sites:	Water use impacts from a number of project elements (including potable and non potable	**<u>Context and background</u>** See comments under issue 3 above for a general summary of the impact pathway, risk to designated site features and the history of Natural England's previous advice to EDF Energy on this.	TBC	

	▪ Alde-Ore Estuary SSSI ▪ Leiston-Aldeburgh SSSI ▪ Minsmere – Walberswick Heath and Marshes SSSI ▪ Sizewell Marshes SSSI	freshwater supply) and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features. **(C) and (O)**	The impact assessments and any mitigation included within the abstraction/ water use strategy must also consider impacts on these SSSIs. We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** See our comments under issue 3 above which also apply here		
14	**ECOLOGY:** Project-wide impacts on nationally designated sites ▪ Leiston-Aldeburgh SSSI ▪ Minsmere – Walberswick Heath and Marshes SSSI ▪ Sizewell Marshes SSSI	Waterborne pollution impacts from a number of project elements during construction and operation (including acidic leachate as a result of backfilling any borrow pits) and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features. **(C) and (O)**	**<u>Context and background</u>** See comments under issue 4 above for a general summary of the impact pathway, risk to designated site features and the history of Natural England's previous advice to EDF Energy on this. The impact assessments and any mitigation included within the waterborne pollution prevention strategy must also consider impacts on these SSSIs. We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** See our comments under issue 4 above which also apply here	TBC	
15	**ECOLOGY:** Project-wide impacts on nationally designated sites:	Airborne pollution impacts from a number of project elements and subsequent	**<u>Context and background</u>** See comments under issue 5 above for a general summary of the impact pathway, risk to designated site features and the history of Natural England's previous advice to EDF Energy on this.	TBC	

	▪ Alde-Ore Estuary SSSI ▪ Leiston-Aldeburgh SSSI ▪ Minsmere – Walberswick Heath and Marshes SSSI ▪ Sizewell Marshes SSSI	ecological effects on nationally designated sites (SSSIs) and their notified features. **(C) and (O)**	The impact assessments and any mitigation included within the airborne pollution prevention strategy must also consider impacts on these SSSIs. We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** See our comments under issue 5 above which also apply here		
16	**ECOLOGY:** Project-wide impacts on nationally designated sites: ▪ Alde-Ore Estuary SSSI ▪ Leiston-Aldeburgh SSSI ▪ Minsmere – Walberswick Heath and Marshes SSSI ▪ Sizewell Marshes SSSI	Unintentional introduction or spread of invasive non-native species (INNS) from a number of project elements and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features. **(C) and (O)**	**<u>Context and background</u>** See comments under issue 6 above for a general summary of the impact pathway, risk to designated site features and the history of Natural England's previous advice to EDF Energy on this. The impact assessments and any mitigation included within the biosecurity control measures (e.g. within the CoCP) must also consider impacts on these SSSIs. We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** See our comments under issue 6 above which also apply here	TBC	
17	**ECOLOGY:** Project-wide impacts on nationally designated sites:	Physical interaction between species and project infrastructure from	**<u>Context and background</u>** See comments under issue 7 above for a general summary of the impact pathway, risk to designated site features and the history of Natural England's previous advice to EDF Energy on this.	TBC	

	▪ Alde-Ore Estuary SSSI	a number of project elements and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features. **(C) and (O)**	The impact assessments and any mitigation included within any collision avoidance measures must also consider impacts on these SSSIs. We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** See our comments under issue 7 above which also apply here		
18	**ECOLOGY:** Project-wide impacts on nationally designated sites: ▪ Minsmere – Walberswick Heath and Marshes SSSI ▪ Sizewell Marshes SSSI	Impediment to the management practices required for conservation of any designated site from a number of project elements and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features. **(C) and (O)**	**<u>Context and background</u>** See comments under issue 8 above for a general summary of the impact pathway, risk to designated site features and the history of Natural England's previous advice to EDF Energy on this. The impact assessments and any mitigation for this issue must also consider impacts on these SSSIs. We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** See our comments under issue 8 above which also apply here	TBC	
19	**ECOLOGY:** Project-wide impacts on nationally designated sites: ▪ Alde-Ore Estuary SSSI	Cumulative assessment of impacts from a number of project elements and subsequent ecological effects on nationally	**<u>Context and background</u>** It must be ensured that all relevant sites, features and impact pathways to these nationally important sites are correctly identified and included in the EIA. The impact assessments and any mitigation measures must also consider cumulative impacts on these SSSIs.	TBC	

	▪ Leiston-Aldeburgh SSSI ▪ Minsmere – Walberswick Heath and Marshes SSSI ▪ Sizewell Marshes SSSI	designated sites (SSSIs) and their notified features. Includes assessment between different elements of the project/impact pathways and other plans/ projects. **(C) and (O)**	Some individual SSSI impact topic areas relating to specific elements of the project proposals (e.g. Sizewell Marshes SSSI compensation approach for direct habitat loss, crossing design, hydrological impacts, recreational disturbance etc.) were discussed with Natural England through the applicant's pre-application workshop programme, but this was not exhaustive with regards to impacts on SSSIs. Furthermore, none of these workshops specifically focussed on the cumulative assessment for SSSI impacts and we consider this to be a significant omission. We have flagged this omission a number of times throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 2.2, 3.2, 3.5, 4.3, 4.10, 4.11 and 5.8); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.4, 3.5, 3.8 – 3.12, 4.1 – 4.5, 4.13 and throughout Annex 3 on specific elements of the project); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, e.g. paragraphs 3.5, 3.6, 3.9.13 – 3.9.15 and throughout Annex 4 on specific elements of the project); • Natural England's response to the *Sizewell C – Stage 4 Consultation: 18th July 2019 to 27th September 2019* (our ref: 289446, dated 26th September 2019, comment 6); We have further reiterated this advice through a number of pre-application workshops and document reviews facilitated by EDF Energy and so have provided a large amount of advice on this issue to EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (which we again flagged in our response (our ref: 299823, dated 9th December 2019).		

			We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** On the basis of the information submitted at this stage, we do not consider that a suitably robust assessment has been undertaken on cumulative impacts from all project elements on the listed SSSIs and their notified features. This is a crucial element of the SSSI impact assessment process and therefore needs to be agreed before the project is consented.		
20	**LANDSCAPE:** Project-wide impacts on nationally protected landscapes: ▪ Suffolk Coast and Heaths AONB ▪ Suffolk Heritage Coast	Adequacy of assessment, mitigation and compensation approach for landscape impacts from the project as a whole on the special features for which the AONB is designated. **(C) and (O)**	**<u>Context and background</u>** The proposed development is a major development scheme in any context but it presents a particular challenge to the highly sensitive and nationally important landscape of the Suffolk Coast and Heaths AONB and Heritage Coast. Should permission be granted, Natural England's priority in this regard is to ensure that the statutory purpose of the AONB (i.e. to conserve and enhance the natural beauty of the area) is maintained as far as possible through the design, construction and operation of the power station. Our primary focus is therefore on the MDS and those parts of the scheme located outside the AONB but within its immediate setting, The Landscape and Visual Impact Assessment (LVIA) for the project should assess these impacts alone and cumulatively within the project and also between other projects in and around the AONB. Only then case full assessment of impacts and adequacy of mitigation/ compensation measures be determined. We have flagged this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 2.2 (iii), 3.3, 3.6, 4.3 (v) and throughout Annex 2 (see comments under sections 4.3, 5.3, 5.5 and 5.8); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February	TBC	

			2017, paragraphs 3.13 – 3.15, 4.5 – 4.7, 4.10 – 4.12 and throughout Annex 3 (see comments under 7.4.6, 7.4.8, 7.4.14, 7.4.23 – 7.4.25, 7.4.26, Figures 7.12 – 7.18, 7.4.65, 7.4.72 – 7.4.78, 7.5.15 – 7.5.16, 7.5.35, 7.5.61, 7.6.41 – 7.6.44, 7.9.7 and 7.9.10)); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, e.g. paragraphs 3.6, 3.9.21 – 3.9.28, 3.9.37 – 3.9.40 and 4.5.58 – 4.5.61, 4.6.2.28 – 4.6.2.29, 4.6.4.11 – 4.6.4.12, 4.6.5.10, 4.6.6.2, 4.6.7.6 – 4.6.7.8, 4.6.8.5, 4.6.9.3, 4.6.10.3, 4.6.11.5 – 4.6.11.6, 4.6.13.2, 4.6.14.4, 4.7.1.8, 4.7.2.7, 4.8.1.8, 4.8.3.7); • Natural England's response to the *Sizewell C – Stage 4 Consultation: 18th July 2019 to 27th September 2019* (our ref: 289446, dated 26th September 2019, comment 3, 5 and 11); We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy and so have provided a large amount of advice on this issue to EDF Energy. Despite this, the incomplete draft ES Chapter which considers AONB impacts and which were included in the *Sizewell C – Stakeholder Review Process (draft DCO submission)* documents did not reflect our previous advice (i.e. the final LVIA with full supporting information, Lighting Management Plan and OLEMP were omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** <u>Overview of our landscape advice</u> 1. In relation to landscape effects Natural England's advice is focused on the Suffolk Coast and Heaths AONB designation and its statutory purpose. Because our focus is the AONB our assessment and comments relate to the main development site and those parts of the scheme located outside the AONB but within its immediate setting. We are not able to comment on how the development could affect the wider non-designated landscape.		

			2. Siting a nuclear power station within a nationally designated landscape will adversely affect the delivery of its statutory purpose despite what mitigation measures are applied. The question is how extensive a significant effect would be. A development of this type is certainly not conducive with a statutory purpose to conserve and enhance the area's natural beauty. The National Policy Statement for Nuclear Power Generation (EN-6) recognises the risks to the AONB. Specifically in relation to the Sizewell C proposal it states: *In assessing this site the Government has considered the purpose of the AONB, which is of conserving and enhancing the natural beauty of the area of outstanding natural beauty. The Appraisal of Sustainability identified that there is the potential for some long lasting adverse direct and indirect effects on landscape character and visual impacts on the Suffolk Coast and Heaths AONB, with limited potential for mitigation given that the site is wholly within the AONB. This could have an effect on the purpose of the designation…..* 3. The developer and their consultants judge that significant effects on landscape character and visual resources would be localised with no significant effect on the AONB more widely. Our advice is intended to help the examination to decide whether this is the case or whether the power station would have more far reaching consequences for the AONB in terms of its designation and statutory purpose. Should permission be granted for Sizewell C, Natural England's priority is to ensure that the statutory purpose of the AONB is upheld as far as possible throughout the construction and operational phases. The challenge of doing so in this case is made more complicated by the presence of two existing nuclear power stations, two substations and associated energy infrastructure all within a narrow neck of the AONB. 4. Our advice is formulated and presented principally in relation to the overall effect of the development as a whole on the AONB, both during its construction and operational phases. This is appropriate for Natural England, as the national landscape agency and designating authority for AONBs. We are in any case not able to carry out further site visits at this time to review each viewpoint and receptor based conclusion of the Landscape and Visual Impact Assessment (LVIA) or to assess the plans for individual components of the scheme in the field. We hope however, that our generally higher level advice relating to the designation and statutory purpose will complement any more detailed advice and observations that the local planning authorities, the AONB Partnership and others may wish to offer.		

			Our comments on individual components of the scheme are therefore limited but do highlight important observations and issues in relation to some elements. 5. To help understand the implications for the area's statutory purpose we have reviewed the Landscape and Visual (chapter 13 of the ES), together with the Main Development Site Design and Access Statement (8.1), the Outline Landscape and Ecological Management Plan (8.2) and other relevant documents. Our advice is also guided by national policy. This includes the National Policy Statement for Energy (EN-1) which does not expect that the visual impact of a nuclear power station can be eliminated, but does expect mitigation to reduce the visual impact as far as reasonably possible. We have also taken into account that the operational footprint of the development would be much smaller than the construction phase footprint. <u>The vulnerability of the AONB and its statutory purpose to the development</u> 6. The proposed development is a challenge to the highly sensitive and nationally important landscape of the Suffolk Coast and Heaths AONB, and to the Heritage Coast. The AONB's statutory purpose is to conserve and enhance the area's natural beauty. The AONB designation recognises the Suffolk Coast and Heaths as one of the nation's finest landscapes, and its landscape and scenic beauty is afforded the highest level of protection by national planning policy. 7. Cumulative effects are a major concern. The new power station would be sited in a narrow part of the AONB which already accommodates the Sizewell A and Sizewell B power stations plus the Galloper and Greater Gabbard substations and high voltage transmission lines. The marine setting of the wider AONB also features offshore wind energy schemes with more proposed. There is local concern, communicated to central government, about the number of energy schemes the area is being asked to accommodate with no strategic oversight or consideration of cumulative effects on the landscape and seascape character of this part of Suffolk and the statutory purpose of the AONB. <u>Observations on the receiving landscape</u> 8. The character of the receiving landscape would both help and hinder the accommodation of the power station. The relevant National Character Area and the more detailed Landscape Character Assessment present the area as characterised by expansive views (except where enclosed by woodland), a mainly flat or gently rolling topography, and a largely unsettled landscape. The Estate Sandlands and		

			Coastal Levels are the landscape types principally affected. In Natural England's view: • A nuclear power station (in either its construction or operational phases) cannot be hidden within long, low lying and open views, notably in long coastal views such as those from the Coast Guard Cottages and from Minsmere Sluice and the Suffolk Coast Path (viewpoints 17, 14 and 16). • Distance, combined with few if any higher vantage points, and intermediate vegetation screening should diminish the visual impact of the power station as one moves inland. Para 13.4.99 of the LVIA notes that views of the existing power stations are constrained by woods, tree lines and embankments and we can confirm this from our own site visits. We would however highlight that occasional, repeated and sequential views of the new construction site or operational power station could produce a strong awareness of the development in the landscape. That would be amplified by the cumulative effect of the three power stations and other energy infrastructure. <u>Seascape and the Heritage Coast</u> 9. The purposes of the Heritage Coast includes conserving, protecting and enhancing the natural beauty of the coastline. This is not a statutory designation and the statutory purpose of the AONB and policies to protect its landscape and scenic beauty provide the principle basis for planning decisions. The Heritage Coast does however highlight the qualities of this coastline which also contribute to the AONB designation. The addition of a third nuclear power station on the coast is therefore a challenge to the purposes of the Heritage Coast which don't anticipate this type of industrialisation. To reinforce this point the NCA profile describes this coastline in terms of its sense of tranquillity and wildness, which has inspired writers, artists and naturalists and the area is a popular recreation and tourist destination. 10. LVIA para 13.6.154: concedes that *'……. long-term effects on the purposes of designation of the Heritage Coast would be large scale in the localised area north and south of the main development site area extending along the coast including offshore areas up to 2km from the site. These effects would be of high–medium magnitude,* ***major (significant)*** *and adverse'*. 11. The seascape setting of the AONB underpins its character and statutory purpose. Offshore views of the power station are not a principal concern for Natural		

			England. We are however, struck by the operational phase image for viewpoint 26 (directly east of the power station) which shows the cumulative effect of the three power stations presenting a heavily industrialised stretch of coastline to an offshore observer. 12. Our greater concern is how the development would affect onshore and longshore views combining land, foreshore and sea which are more important to how people experience the coastal part of the AONB. For Sizewell C the longshore views effected are primarily from the north along the coast path, from Dunwich and near the Minsmere Sluice. We consider the effect on these views in more detail later in this advice, but there would be a notable extension to and massing of industrial development in these views. <u>The Landscape and Visual Impact Assessment</u> 13. We are content with the LVIA methodology including the Zone of Theoretical Visibility (ZTV) and the viewpoints selected. We do note however, that at para 13.1.3 there is no reference to the Noise and Vibration chapter of the ES as a source of data for the LVIA. Whilst however, the methodology is sound it is reliant on the application of 'professional judgement' to provide the final assessment of effects and overall conclusions. Those assessments and conclusions are therefore open to challenge where they may underplay the effects of a proposed development scheme. 14. The LVIA's recognition of significant adverse impacts remaining after mitigation on landscape character at the development site and on visual resources in views from the north along the coast is welcome. NE however, is not persuaded that the power station would not, during its long construction phase and operationally in combination with the existing power stations and other energy infrastructure, have a significant effect on the wider designated area and delivery of the AONB's statutory purpose. <u>Special Qualities, Natural Beauty Indicators and the statutory purpose</u> 15. The LVIA's assessment of effects on the area's defined Natural Beauty Indicators and Special Qualities is helpful. The defined special qualities and natural beauty indicators of the AONB illustrate and articulate why the area has been designated as an AONB and what makes it distinctive in terms of its intrinsic character and high quality. Development which has a significant adverse effect on special qualities and / or natural beauty indicators will therefore be expected to		

			directly affect delivery of the AONB's statutory purpose. LVIA Table 13.14 identifies effects on AONB natural beauty indicators and special qualities during construction as follows: • **Landscape quality** - *High: construction work is likely to affect the intactness and condition of the landscape, introduce incongruous visually intrusive elements, harm the physical integrity of characteristic elements and detrimentally affect the uncluttered and simple appearance of the existing power station/s - but physical condition of remaining wider landscape context remains intact*. • **Scenic quality** - *High: construction work is likely to impact on sense of place (character); striking landform (including views along and towards the coast); visual interest (by altering the pattern and composition of the landscape) and appeal to the senses (by bringing views of construction, artificial light and noise)*. • Also 'High' for Relative wildness and Relative tranquillity. 13.6.149 *In conclusion, there would be significant effects from construction on the natural beauty indicators and special qualities of the AONB over a limited extent of the designation. However, the overall integrity and resilience of the wider designated landscape would not be compromised and the wider countryside especially west of the construction area, would continue to support the AONB's general countryside characteristics*. . 13.6.150 *Taking the above into consideration, the overall effect on the wider AONB would be medium scale across a limited extent of the designation, leading to effects that are low magnitude,* ***slight (not significant)*** *and adverse*. 16. The LVIA therefore considers these effects to be 'limited'. Nonetheless a high adverse impact on characteristics as fundamental to the AONB (or any designated landscape) as landscape quality, scenic quality, wildness and tranquillity suggests that the capacity of this area to continue to deliver the AONB's statutory purpose would be compromised, potentially to a significant degree, at least by the long-term duration of the construction phase. <u>Other LVIA conclusions</u>		

			17. We cannot provide a detailed analysis of the LVIA to confirm or challenge all of its conclusions regarding all individual receptors and viewpoints. The local planning authorities and the AONB Partnership may wish to comment in detail on those. Natural England has considered the LVIA's overall findings and related those to our knowledge of the development site and its wider landscape setting in considering the effects of the scheme on the AONB and its statutory purpose. 18. The LVIA identifies significant adverse effects from the scheme both during the construction and operational phases. However, those significant effects are deemed by the LVIA to be localised and there would not 'overall' be a significant effect on the AONB designation or the Heritage Coast. Natural England however, is concerned that the development may, both in its construction and operational phases, compromise to a significant degree the AONB's statutory purpose, notably by affecting how this part of the AONB relates and contributes to the designated area as a whole. 19. As the national landscape agency and designating authority for the AONB we are especially concerned with the importance of the designation, its statutory purpose, the need to uphold that purpose and the vulnerability of the AONB to development of this sort. Based on this we are not convinced that a significant effect on the development on the AONB would be as containable and geographically limited as the LVIA concludes. <u>Issues for the examining authority to address</u> **a. Upholding the AONB's statutory purpose** 20. To help determine to what extent the Sizewell C proposal would compromise the delivery of the AONB's statutory purpose we recommend that the following issues are addressed: • This area is a narrow neck of the AONB which already accommodates two nuclear power stations and other energy infrastructure. The cumulative effect of three nuclear power stations lined up along the coast with a collective significant land take from the designated area and strong (locally dominant) presence could associate this area primarily with power generation and transmission, rather than natural beauty. • If the landscape character and perceptual qualities of this narrow section of the designated area are adversely affected (so that it is no longer making an effective contribution to the designation purpose and isn't perceived or valued as part of the AONB), that change could functionally sever the more		

			extensive parts of the AONB north and south. Hence the whole of the AONB would be significantly affected. • Whether specifically the scale and long duration of the construction phase will permanently alter how this part of the AONB is viewed, used and plays its part in the designated area as a whole. • The extent to which the effects of the operational power station would be mitigated by the embedded (design) mitigation, screening measures and landscape enhancements provided through the Landscape and Ecology Management Plan. These points are explored in more detail below. **b. The construction phase and mitigation**. 21. The LVIA and ES anticipate significant adverse construction phase effects on landscape and visual resources being contained locally to the site. There would be no significant effect on the AONB overall. Natural England however, is concerned that the combined extent of the construction area, construction activities and a very long (9 to 12 years) construction phase could permanently alter how this part of the AONB is viewed, used and enjoyed. The effect on those seeking to enjoy the AONB could be long lasting and profound because the area will be associated with major construction for that very long period. 22. A Sizewell C visitor survey (Volume 2, Chapter 15 of the ES and summarised in table 13.14 of the LVIA) found that approximately 30% of people surveyed said that they would be displaced elsewhere to avoid disturbance during construction. That sizeable percentage is indicative of how this part of the AONB could fall below general expectations of what qualities and experiences it should offer. We are concerned that the actual scale of the construction phase, when encountered, could significantly increase the amount of displacement and provide a clear marker that the area is not delivering the conservation or enhancement of natural beauty. 23. In terms of landscape character the extensive area needed for construction works will, as the LVIA recognises, be entirely changed (with the exception of some individual landscape features) i.e. stripped, excavated and re-profiled. 24. We note the intention to provide temporary bunds and fences to visually contain the construction site. We also welcome the plans to protect (exclude from the construction site) some wooded areas like the Kenton Hills and some woodland on part of Goose Hill, and to protect and reinforce with new and advance planting some perimeter hedges and tree belts. We welcome the intention to retain woodland and		

			forested areas at Ash Wood, Great Mount Wood and the northern extents of Dunwich Forest and Goose Hill which could provide screening of some construction activities such as vehicle movements from vantage points to the north. (DAS 6.2.5) 25. We note the proposal to use temporary landscaped bunds (some of which may be retained permanently) to aid visual screening e.g. on the northern edge of Kenton Hills to screening of views of vehicle movements along the Sizewell access. 26. However, no matter how well a construction site like this is screened and managed it will still communicate its presence to receptors who, seeking a strong sense of tranquillity from the AONB, will be highly sensitive to such activity. Some perceptual cues may be individually relatively subtle, arising from general construction activities across the site, but collectively intrusive. Others will be clear markers of major construction within the AONB, notably large stockpiles and cranes and noisier construction activity. The need for six hundred daily HGV movements in the early years of the construction phase, rising to as many as a thousand at peak construction is a stark indication of what the AONB designation is expected to contend with. 27. We therefore recommend that the examination carefully considers whether the scale and long duration of the construction phase could detract from the delivery of the area's statutory purpose and alter, perhaps permanently, how this part of the AONB is viewed, used and plays its part in the designated area as a whole. **c. Operational phase and mitigation**. <u>Design and other embedded mitigation</u> 28. The NTS (section 6.1) describes the application of the design principles and what the designers have sought to achieve in terms of a set of structures which respond to their landscape setting and relate appropriately to the existing power stations. 29. The LVIA (para 13.6.299) in presenting visual effects of the operational station refers to the '*extensive design process that underpins the final proposals which have sought to secure through Design Principles and other means, project design that is integrated and responds appropriately to context'*. We don't disagree that the design of the station has 'sought' that integration and to respond 'appropriately to context'.		

			30. The design of the development is guided by a set of overarching and detailed design principles, and informed by important source documents, notably: the Suffolk County landscape character assessment, Suffolk Coast and Heaths AONB Management Plan and the AONBs Landscape Character Guidelines. We agree with the design principles established for the scheme and a unifying design approach. We note the work which has been done to minimise land take for the main nuclear platform, retain existing screening landscape features where possible, factor the rurality of the area into the design of subsidiary structures, address light spill, etc. 31. The embedded mitigation for the scheme in terms of the axial alignment of the built structures in relation to Sizewell A and B, attempts to simplify their outline with 'large, bold and simple forms', and the work to identify the best colour and surface finishes is welcome, although we are not able to confirm that the colour treatment is the most appropriate. 32. We also note the endorsement of the Design Council. DAS para 13.1.7 reports that *the design process has been the subject of design review by the Design Council, who have noted: "The extension of the Sizewell Nuclear Facility to create Sizewell C is a significant intervention in a sensitive and remarkable landscape. Extensive steps are being taken by the project team to carefully integrate the Sizewell C site into its historic, coastal setting. Overall, we think the proposal is being approached with great care and attention across architecture, engineering, landscape design and ecology*." 33. We therefore recognise and appreciate what the design and orientation of the new structures is seeking to achieve. This constitutes essential mitigation. Design measures are however limited in what they can achieve given the nature of the development, the primacy of operational safety of the nuclear facility and the high sensitivity of this landscape. We question whether there is clear enough acceptance in the ES and supporting documents that the design of the power station can only respond to a very limited extent to its sensitive landscape setting. For example: • the architectural merits of the Sizewell C structures in relation to the A and B power stations will not mitigate for the massing effect of the existing and new power stations in close and some more distant views; and • the use of large bold and simple forms and neutral finishes to produce a clean lined profile will be compromised by the need to have connector cables carried on pylons and monopoles between the turbine halls and National Grid sub-station instead of being undergrounded.		

			Screening vegetation 34. We agree that the vegetated sea defences and other screening measures should be effective in screening views of lower parts of the station and ground level activities in close views and more of the development in some longer views from inland. We cannot confirm that the growth rates for screening vegetation set out at para 13.3.39 are achievable. The expected growth rates on the restructured sea defences (13.3.40) could be confirmed by reference to the growth rates achieved by vegetation planted on the defences to help screen the Sizewell B station. 35. Natural England is not persuaded that these design and screening mitigation measures will, by themselves, overcome the cumulative effect of massing three nuclear power stations in this one area and in views along the coast from the north (see our comments below about effect on current views towards Sizewell B). We believe that careful consideration should be given to whether the new power station, in combination with the existing power stations and other energy infrastructure, would produce a fundamental shift in landscape character in this part of the AONB. That shift would move landscape character from one which features energy infrastructure to one in which energy generating and transmission infrastructure is a main defining characteristic. That would certainly affect the area's ability to contribute to the statutory purpose of the AONB and is not easily reconciled with the conservation and enhancement of natural beauty. EDF Energy Estate and Landscape and Ecological Management Plan (DOC 8.2) 36. Crucial to the effective mitigation of the scheme is, we believe, the Estates Strategy and Landscape and Ecological Management Plan (LEMP). A much stronger role for the Estate Strategy and the LEMP in mitigating for the presence of the power station in this landscape could, we believe, be sought. 37. The current landscape narrative around the oLEMP is about reinstatement / restoration incorporating screening measures, rather than restoration and enhancement. Landscape is principally referred to in relation to landscape scale habitat creation. For example at para3.5.12 the LVIA says: *The establishment and management of the restored landscape areas and new habitats/vegetation, including areas of proposed and existing structural planting that provides screening of the proposed development and existing structures. This would be secured through the implementation of the oLEMP.*		

			38. We believe that the LEMP should seek to lift, as far as is possible, the quality of the landscape (relative to the pre-construction landscape) so that it can better accommodate the power station by providing an enhanced landscape counterbalance to its presence. We recommend the examination to consider: • the extent to which the oLEMP in its current form can provide an 'uplift' in terms of landscape character and quality relative to the landscape pre-construction phase; • what that could constitute in terms of a mitigating counterbalance to the effect of the new power station and enabling the AONB landscape to better accommodate the development; and • whether what is proposed needs to be more ambitious. This could involve expanding the area proposed for new Sandlings grassland and heath where there is the potential within the EDF Estate or possibly acquiring other land in the area. Alternatively the developer might enable enhancement works on land owned by other parties, so long as those enhancements would be maintained over the lifetime of the power station. That might include 'rewilding' projects to extend wetland areas and features in conjunction with and to complement the Minsmere marshes. 39. The detailed designs for the permanent landscape immediately around the nuclear island and across the wider estate will be submitted to the local planning authority for approval. This includes the Landscape and Ecology Management Plan, which will be prepared in general accordance with the measures set out in the Outline Landscape and Ecology Management Plan. It is unfortunate that those detailed designs are not available for review as part of the examination for the DCO given its importance to mitigating the operational power station. The examination could however elicit an agreement from the developer to full review of the oLEMP to secure further landscape mitigation benefits. The AONB Partnership and the statutory AONB management plan can guide and inform this exercise. 40. In the meantime we welcome the intention to create approximately 121ha of new Sandlings grassland to re-establish that traditional landscape across some of its former range, and 51ha mixed woodland. This would replace improved agricultural land and commercial forestry. We note that this is also a means of using excess excavated material to create new 'naturalistic' landforms. We recommend that the detailed plans are backed by a clear commitment that the need to utilise spoil on the site will not compromise that intention to create naturalistic landforms.		

			<u>More general note of caution re. spoil</u> 41. There is a potential risk that the use of spoil to reinstate the construction area may produce an appreciable uplift in the height of the land, especially centrally to the construction area, plus steeper slopes than are characteristic of this part of the AONB. We note that Volume 2 Appendix 3B Materials Management Strategy1.8.4 states: *'It is estimated that there will be more excavation material available than required to backfill the main construction area and borrow pit area. It is anticipated that the additional material would be used to restore the temporary construction area. The landscaping requirements of the temporary construction area are detailed in the oLEMP'* 42. We understand the wish to use excess spoil on the site and the potential for some re-profiling of the area to help screen the training centre and access road. However, this also needs to be carried out very carefully to avoid creating a new topography which presents as highly artificial and/or contrasts significantly with the wider surrounding AONB. A naturalistic set of new landforms must be the clear outcome. **Cumulative effects** <u>Cumulative effects with other schemes</u> 43. The Suffolk Coast and Heaths AONB is facing growing development pressures from onshore and offshore energy schemes. The effects of the construction and operation of Sizewell C on the AONB and its statutory purpose needs to be properly understood in that context. 44. Our primary concern are the EA1 North and EA2 offshore wind energy schemes because these are the most advanced of the major energy scheme proposals currently proposed for this part of the AONB. Other proposed NSIPs i.e. Nautilus Interconnector, Eurolink Interconnector, Greater Gabbard extension and Galloper Extension offshore windfarm are at an earlier and more speculative stage. 45. The cabling for EA1 North and EA2 would come ashore and be routed through this part of the AONB close to the Sizewell C construction site, taking advantage of the narrowness of the AONB at this point. The cable trenching and drilling can be expected to have a significant effect (subject to full details of the proposal being assessed). A combination of this and the Sizewell C construction site raises the prospect of significant cumulative effects.		

			46. Reference Volume 10 Project-wide, Cumulative and Transboundary Effects Chapter 4 Assessment of Cumulative Effects with Other Plans, Projects and Programmes considers the effect of relevant proposals, including the EA1N and EA2 onshore cabling, on landscape and visual receptors. For the construction phase for the AONB and Heritage Coast it concludes: • Suffolk Coast and Heaths Area AONB – combined major adverse **significant** effects from the Sizewell C Project during construction. The addition of the other proposals would not result in an increase to the significance of the effects. • Suffolk Heritage Coast – combined major adverse **significant** effects from the Sizewell C Project during construction. The addition of the other proposals would not result in an increase to the significance of the effects. 47. Of course if the effects (localised) of the power station's construction have already been deemed by the ES to be major adverse then the cumulative effect can't register as any higher on that scale. We would contend however, that the cumulative effect could nonetheless reinforce the effects of major construction on the AONB. Those seeking to enjoy the area's special qualities and natural beauty will not differentiate between the two construction sites but simply perceive them as a single and very major and intrusive development within and disrupting this part of the AONB, and reinforce an association of the area with ongoing, long-term and major construction. Of course how this cumulative effect would actually be expressed would depend on what part of the Sizewell project's nine to twelve years construction phase the cable route's construction (expected to take three years) would coincide with. 48. For the operational phase of the cabling route we don't anticipate any significant cumulative effects with the operational power station, assuming that the undergrounding scheme has been properly managed and the landscape fully reinstated along the cable route. The proposed new sub-station at Friston would be sited well outside the AONB and we don't anticipate any cumulative construction or operational phase cumulative effects with the Sizewell C project. <u>Negating the design mitigation for the Sizewell B station</u>		

			49. We would like to highlight the impact of the Sizewell C scheme on how the Sizewell B station currently relates visually to its immediate and wider landscape setting. Sizewell B is a well-considered bespoke design which seeks to be as sensitive as it can to that landscape character. It is widely regarded as having achieved a good degree of success in that regard, particularly in how it appears in more distant views. Its simple clean lines and profile and colour treatment generally works well with the low lying topography, seascape and natural lighting of the area. The Design and Access Statement notes (para 2.12.6) that 'The built form of Sizewell B ……..utilizes white and a dominant blue tone which at times recedes into the expanse of sky'. 50. Sizewell C would detract significantly from the effectiveness of Sizewell B's embedded mitigation by introducing structures which, whilst attempting to complement the existing power station in terms of architectural style/merit and orientation, will entirely alter how it is perceived. This would be particularly noticeable in the view from the Coast Guard Cottages. Currently the combined simple, visually compact form and clean lines of Sizewell B and the simple block structure of Sizewell A is relatively well contained and managed within that view. Sizewell B's position and colour treatment helps to screen and mute (make more recessive) what would otherwise be the lone grey presence of Sizewell A. But with the addition of Sizewell C this would be replaced by a much greater massing and spread of industrial development which performs very differently in views from the north. The before and after images provided for viewpoint 17 (View from National Trust Dunwich Coastguard Cottages car park) illustrate this. 52. The LVIA (para 13.6.302) identified a significant adverse effect across the Minsmere Coastal Levels and the southern edge of Dunwhich Heath, recognising that *'the main platform would occupy the foreground in views from the north and partially obscure existing views of Sizewell A/B'*. That same bullet point also says that *'There would be a slight extension of built form further west in views from these locations'*. We believe that the actual perception would be of a visual massing of industrial development in that and other views along the coast north of the power station visually strongly conflicting with and detracting from the wider landscape. **Comments on some individual components of the scheme** 53. As explained earlier our focus is on the implications of the development as a whole for the statutory purpose of the AONB. We believe that the local planning authorities and Suffolk Coast and Heaths AONB Partnership are better placed to provide more detail advice relating to individual elements of the development.		

			However, we would like provide some observations on some individual components of the scheme. <u>Main power station platform – turbine halls and reactor buildings</u> 54. The turbine halls and reactor domes will be the largest and therefore most visually dominant parts of the Sizewell C complex. We note the 'embedded' mitigation proposed for the major structures of the power station, notably the turbine halls and reactor buildings with the developer striving for large, bold and simple built forms 'informed' by the design of Sizewell B and in terms of this and their orientation intended to 'mirror' how the existing power station behaves in the landscape (para 13.5.8 refers). We also note the neutral and consistent colour scheme and that the turbine halls will lack glass and will feature a light responsive surface treatment. A simplified form for the Interim Spent Fuel Store, now without a chimney, is also noted. 55. We had asked whether the reactor domes could be covered in white cladding to complement that treatment of the Sizewell B dome. We understand that the reactor domes for Sizewell C cannot be clad because, unlike for the earlier station, they need to be regularly and closely inspected. 56. The design mitigation measures identified are welcome. Without further site visits we do not wish to make any definitive comments about the chosen colour scheme. The potential mitigation benefits will however: – not address a general cumulative effect of the power station with existing energy infrastructure on the landscape character of the AONB; – not alter the massing effect of the new and existing power stations on long coastal views from the north; and – be undermined by the proposal to carry electrical cables on pylons rather than, as initially proposed, undergrounding those connectors. The resulting visual clutter will detract from clean lines established for the main buildings. <u>SSSI crossing</u> 57. Natural England's pre-application advice has consistently sought an option which best protects the ecological quality of the Sizewell Marshes SSSI. That is not to dismiss the need for a crossing structure designed to respect its AONB location, but to ensure that the SSSI can continue to flourish as a prominent and important		

			landscape feature as well as a valuable habitat. We are therefore disappointed that a culverted causeway has been selected because we don't believe that this is the best option for maintaining the wetland SSSI. . 58. The main mitigation measure if a causeway is constructed is an effective planting scheme on and in proximity to the crossing to maximise how the causeway is screened and blended into the landscape. We note a commitment to plant the margins with trees and shrubs to integrate the crossing into the local landscape and screen / filter views of moving vehicles. That will not compensate for any significant harm which arises to the SSSI but it may reduce the visual impact of the causeway and its cumulative impact with any visual degradation of the wetland habitat. <u>Coastal and beach structures</u> 59. In relation to sea defences, beach frontage and impacts on the coastal zone we offer the following comments: • We welcome the intention to undertake and complete works to the sea defences, northern mound and beach landing facility and access road as early as possible in the programme in part to minimise impacts on amenity to users of Sizewell Beach and Suffolk Coast Path/Sandlings Walk. We note that the new sea defences and the northern mound would be designed to tie in the existing sea defences at Bent Hills adjacent to Sizewell B and that the heights would be such that these features screen views to activity and lower lying buildings and structures adjacent to the main power station. As stated earlier we believe that this screening would be effective. We also note that planting on the sea defences and northern mound would comprise species that are characteristic of the local coastline, including trees that, once established, would add further screening. • Regarding the BLF we believe that from a coastal landscape and seascape perspective this is much preferable to a long term or permanent jetty, although it will still present as a significant coastal feature whilst in operation. Volume 2 Chapter 3 Description of Construction 3.4.57 The BLF would extend up to approximately 37m seaward of the mean high water mark and approximately 70m seaward of the HCDF. Para 6.2.24 of the DAS says that the BLF is designed to allow the deck sections to be dismantled and stored when not in operational use, with pier supports remaining in-situ as permanent features.		

			• In relation to changes to the coast we wish to point out that the landscape character of the beach and land immediately behind the beach frontage will be significantly altered. We understand the vital need to protect the power station but the extent of the changes to the Coastal Levels and Coastal Dunes and Shingle Ridges landscape types should not be underplayed. The issues include: – The re-profiling of the beach, the current 12m Northern Mound replaced with a higher 14.2m mound, the final main sea defence at 10.2 metres high but with a retained option to raise this to 14 metres in the future if necessary, the increased heights of existing defensive mounds – Brent Hills and lower vegetated bunds. This will make the bunds more prominent landscape features which may further emphasise their artificial nature and increase any contrast with the natural topography of the area. – The use of rock armour. Volume 2 Chapter 3 Description of Construction 3.4.41 says that: *The Northern Mound is likely to consist of mainly made ground material as a repository for Sizewell B surplus construction materials. Due to seismic requirements, the existing Northern Mound would need to be demolished and excavated down to a suitable formation layer before being built back up. Piling foundations may need to be constructed to stabilise the ground works prior to the installation of large rock armour. The rock armour would then be overlaid with site-won fill material and seeded to allow vegetation to take hold as early in the construction period as practicable*. We have raised the issue several times of how beach materials can adhere to underlying rock armour. There is the prospect (if not likelihood) that storms and strong tides would frequently wash away that material leaving the rock armour exposed. If that exposure was very regular and perhaps finally permanent the rock armour would be a strong visual feature of this stretch of coastline. <u>Accommodation campus</u> 60. The accommodation campus would be located outside but immediately adjacent to the AONB and therefore fully within the setting of the designated area. This puts it in a very sensitive location with the potential to impact significantly on the AONB, including in combination with the power station construction site and activities. The campus site is immediately adjacent to the main stockpiling site. The campus would		

			therefore be perceived in conjunction with the main development site and as essentially contiguous with it. 61. The accommodation campus is by itself a significant development for the boundary of an AONB, given that it includes: • 3-storey and 4-storey residential buildings placed in a broadly east–west orientation and providing up to 2,400 bed spaces; • non-residential welfare, administration and amenity facilities, including: a 2-storey recreation building with a restaurant, kitchen, two bars, gym, multi-functional room, prayer / quiet room, plant and services; and a two storey reception building, incorporating administration /management space and a medical facility; • 300 surface car parking spaces and a covered accommodation campus multi-storey car park, providing approximately 1,300 car parking spaces; 62. We note the application of the design principles to this scheme and the resulting mitigation measures proposed including consideration of the heights (maximum four storeys rather than five) and the orientation of the buildings east / west to minimise visual effects. The proposal to locate non-essential facilities elsewhere is also important e.g. sports pitches which may involve flood lighting and will generate noise to be locate at Leiston. We would make two important points in relation to the DCO documents: • There does not seem to be an explanation in the DCO documents of any alternative and less sensitive sites that have been considered and rejected for the accommodation campus and the reasons for their rejection. • It would have been helpful to have some images showing how the campus would appear in the landscape. <u>New National Grid 44 kilovolts substation, with associated infrastructure including electrical connections (additional pylons)</u> 63. Initial plans for the power station included the undergrounding of cable connections to the nuclear island. It has now been concluded that there isn't room to bury the cabling which must therefore be carried overhead on pylons. The additional four pylons and six monopoles will add visual 'clutter' and detract from		

			any positive attributes (strong clean lines) the reactor buildings may be able to achieve. <u>Sizewell Link Road</u> 64. We note the construction and operational phase mitigation for the Link Road. Ref construction phase. Para 13.5.9 of the LVIA promises to: *Align the construction access road vertically and horizontally to permit its retention in the operational phase and in a location that can be properly integrated in the restored landscape, that connects at grade, with the bridleway whilst also connecting to the SSSI crossing and without undue impact on retained tree cover*. 65. Ref operational phase. Para 13.5.12 of the LVIA states that: *The access road delivered during the construction phase would be reduced in width and set within the restored landscape by the creation of undulating naturalistic landforms to ensure that it is integrated in the landscape and substantially screened in views from the surrounding landscape*. 66. Para 6.2.18 of the DAS also says that post construction phase the road would be reduced in width and the surrounding landscape re-profiled to create naturalistic landforms covered with Sandlings grassland and pockets of mixed scrub, heath and stands of trees. 67. We welcome the mitigation proposals for the permanent link road. We would however, like to caution against the risk of creating a road for the operational phase which despite the promised mitigation, still presents as a suburbanising feature in a rural landscape. We cannot confirm from the plans contained in the DCO that this will not be the case for the Sizewell Link Road. Features which can easily detract from the character of a minor country road belonging in this landscape are concrete kerbing and a plethora of signs. If soft verges are not an option for operational or safety reasons then alternatives to concrete kerbing could be explored. Speed limits can be painted in roundels on the road surface instead of being put on poles. Natural England is not stipulating that this can or must be done but that the road plans are properly scrutinised to ensure that the full potential to achieve a 'rural' road has been explored.		
21	**ECOLOGY:** Loss of/ damage to ancient woodland and	Impacts from the proposals (MDS and AD sites) on	**<u>Context and background</u>** As set out in NPS EN – 1, "*Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost it cannot*	TBC	

	ancient or veteran trees	ancient woodlands and ancient or veteran trees **(C) and (O)**	*be recreated. The IPC should not grant development consent for any development that would result in its loss or deterioration unless the benefits (including need) of the development, in that location outweigh the loss of the woodland habitat*" (paragraph 5.3.1). Any proposals (MDS and AD sites) within close proximity to ancient woodlands must consider potential impacts to them in line with the avoidance-mitigation-compensation hierarchy in terms of: • ***Direct loss:*** as a first principle, direct loss should be avoided; • ***Damage:*** damage to ancient woodland should also be avoided. The Natural England/Forestry Commission Ancient Woodland Standing Advice advises a minimum buffer of 15 meters between development and any ancient woodland. However, the advice also says that the size of the buffer should be suitable for the scale, type and impacts of the development and that a wider buffer may be suitable. The minimum 15 meter buffer is to avoid root damage. Where assessment shows other impacts are likely to extend beyond this distance, a larger buffer zone is likely to be needed e.g. to avoid the effect of air pollution from development that results in a significant increase in traffic. • ***Fragmentation:*** fragmentation of ancient woodland which would reduce the ecological connectivity between them should be avoided. This can negatively impact on species movement and create/increase edge effects; **Comments on the DCO application – further information required** 1. **The approach to identifying Ancient Woodland, an irreplaceable habitat, within the entire proposal is insufficient and risks Ancient Woodland sites not being appropriately considered either directly or indirectly.** The Ancient Woodland Inventory in Suffolk is based upon the original inventory conducted in the 1980's. Subsequent revisions in other parts of England have shown that the current inventory is incomplete both due to errors but due to the application of GIS to identify sites and formalising the methodology (Ancient Woodland Inventory Handbook, 2018). We would advise that as a minimum, sites within the proposal boundaries relevant zones a review in line with Stage 1 of the Ancient Woodland Inventory Handbook Process to identify if there are any possible		

			sites further stages should be undertaken. Reliance upon the Ancient Woodland Inventory in this case increases the risk of permanent loss of Ancient Woodland as well as not fully considering indirect impacts to these sites – such as a change in water table adversely impacting the ancient woodland or increase in Nitrogen deposition at these sites. Ideally, for a project of this scale and nature, a scoping exercise should be undertaken to identify potential ancient woodland not already on the inventory 2. **There is no identification or mention of ancient or veteran trees and appropriate consideration of avoidance of loss of these irreplaceable habitats in their own right or mitigation of indirect impacts.** Appropriate consideration should be given to identifying and implementing appropriate avoidance and mitigation as covered in the standing advice for these features. They may have been considered in relation to associated protected species habitats but should be considered in their own right not just a supporting habitat but their value as a feature in their own right as within the landscape. This also includes mitigation for works not just direct loss – i.e. root protections zones to avoid damage by heavy machinery, as well avoiding alterations to the water table that could adversely impact the trees. 3. **Ecological Mapping Figures such as Terrestrial Ecology and Ornithology should include ancient woodland and ancient and veteran tree locations.** We would advise that this is useful to do so that it can be clearly seen the connections with other habitats and landscape to help with consideration of indirect impacts and reducing fragmentation and severance.		
22	**ECOLOGY:** Project-wide impacts on wider biodiversity receptors of importance, including but not limited to:	Assessment of impacts from the project on wider biodiversity	**<u>Context and background</u>** The project proposals will also have significant impacts on a wide range of habitats and species of importance beyond internationally designated sites (SACs, SPAs, and Ramsar sites), nationally designated sites (SSSIs) and European and nationally protected species. These include priority habitats and species and regional and local sites of ecological importance (e.g. County Wildlife Sites).	N/A	

	▪ Priority habitats and species listed under section 41 of the NERC Act (various) ▪ Regional and local sites of ecological importance		Some of the priority habitats which are likely to be impacted include: ▪ *Deciduous woodland* (MDS, FMF, SLR and Theberton bypass) ▪ *Floodplain grazing marsh* (Two Village Bypass) ▪ *Heathland* (MDS) ▪ *Parkland* (SLR and Theberton bypass) Some of the regionally and local importance likely to be impacted include: • *Suffolk Shingle Beaches County Wildlife Site (CWS)* (MDS): An area of shingle habitat (of SSSI quality) will be directly lost to the footprint of the proposed development and that in front of the hCDF will be squeezed and eventually lost. The current coastal frontage is of nationally high value for its vegetation communities and invertebrates. ▪ *Southern Minsmere Levels CWS* (MDS) ▪ *Sizewell Levels and Associated Areas CWS* (MDS) ▪ *Leiston Common CWS* (MDS) ▪ *Sizewell Rigs CWS* (MDS) ▪ *Buckle's Wood CWS* (green rail route) A large number of priority species will also likely to be impacted. For these habitats and species, consideration should also be given to potential impacts arising from the project during construction and operation from those elements of the project within the MDS and AD sites, against the current baseline, as outlined in NPS EN – 1 (see paragraphs 5.3.13 (regional and local sites) and 5.3.17 (priority habitats and species)). Priority habitats and species listed under section 41 of the NERC Act are, in the Secretary of State's opinion, of principal national importance for the purpose of conserving biodiversity. The avoidance-mitigation-compensation hierarchy should be clearly followed with respect to these habitats and species. The assessment should also include consideration of impacts on any agri-environment scheme which delivers benefits for wildlife, including priority species,		

			and implications for the agreement holder. Land within close proximity to the main development site is currently under Entry Level Stewardship (ELS) and Higher Level Stewardship (HLS), these areas include parts of Sizewell SSSI and are managed by both EDF Energy and the Suffolk Wildlife Trust. The Sizewell C proposal will impact various land areas under agreement which are being managed for wildlife in accordance with scheme prescriptions HK6 – species rich grassland and HK10 - Grassland for wintering waders. Loss of this habitat may result in direct land take or damage to land under agreement in addition to SSSI habitat. Any land removed from the HLS scheme may result in repayment of subsidies dating back to year 1 of the scheme, and with additional penalty. Construction and operational activities that pose an impact to agreement land in terms of water resources and quality of habitat and species, loss and fragmentation and disturbance (noise, light and visual) should be considered. Timing and dates of work should be considered to ensure that habitats retained can be sufficiently maintained. Required mitigation should be included with the Code of Construction practise and secured in the DCO. It should also be noted that any compulsory land purchases which are subject to Agri-environment schemes would also need to be repaid. Where impacts to these habitats cannot be avoided, mitigated or compensated for, their loss/damage should feed in to EDF Energy's biodiversity net gain (BNG) calculations (see issue 23 below).		
23	**ECOLOGY:** Project-wide impacts on wider biodiversity receptors of importance	Delivery of biodiversity net gain (BNG) through the project as a whoe (MDS and AD sites)	**Context and background** We welcome the inclusion of BNG in the DCO application. This is something we had pushed for in previous discussions and consultations with EDF Energy and are glad that they have embraced it in advance of it being a statutory requirement in the NPSs for NSIPs. The BNG approach has been developed to not only help halt declines in wildlife by conserving what habitats and species are left, but begin the task of restoring some of what has been lost. In simple terms, BNG calculations should, ideally using the recently released Defra biodiversity net gain metric 2.0, compare the current biodiversity value of the habitats within the project red line boundary to be lost (excluding designated sites and ancient woodland) with the biodiversity value of the habitats forecast to be created following development, with the intention being to demonstrate an overall increase in biodiversity (minimum 10 %).	TBC	

			The government recently announced in June 2019 that it would legislate for net zero greenhouse gas emissions by 2050. Achieving net zero emissions globally is essential to meeting commitments under the Paris Agreement to hold the level of climate change to substantially less than 2 °C and pursue efforts to limit it to 1.5 °C above the pre-industrial average. Creation of semi-natural habitats can help mitigate climate change by adopting practices which promote carbon storage and reduce emissions. In addition to enhancing the biodiversity value of the local area, semi natural habitats take up and store significant amounts of carbon in soils and vegetation and act as a 'Natural Climate Solution'. See Carbon storage by habitat: Review of the evidence of the impacts of management decisions and condition of carbon stores and sources (NERR043) for more information. In addition to the considerable ecological benefits, such an approach would also be hugely important as a landscape and visual mitigation measure in this part of the Suffolk Coast and Heaths AONB, commensurate with its nationally designated status. Establishing a strong landscape character which reinforces and lifts the landscape quality can help to indirectly mitigate those significant impacts of the scheme which cannot be directly mitigated by altering the design or location of buildings or by screening. This is therefore the only way in which the Sizewell C project can provide for landscape net gain. However, it is imperative that the project as a whole avoids, mitigates and/or compensates for impacts internationally designated sites (SACs, SPAs, Ramsar sites), nationally designated sites (SSSIs) and that the necessary measures are agreed and secured through the relevant statutory requirements (e.g. Habitats Regulations, Wildlife and Countryside Act etc.. **The BNG approach is therefore dependent on all relevant parties, including Natural England, agreeing that the project represents no 'biodiversity net loss' in these regards; this necessarily requires all designated site issues within this table be classified as 'green' before the project is consented.** However, none of these topic areas have been discussed with Natural England in detail through the applicant's pre-application workshop programme, although we have flagged these issues a number of times throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859,		

			dated 6th February 2013, paragraph 4.2 and throughout Annex 2 (see comments under section 4.2)); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraph 3.5 and throughout Annex 3 (see comments under 7.4.14, 7.4.60 and 7.9.6)); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, e.g. paragraphs 3.5, 3.6, 3.9.29 – 3.9.41 and 4.5.1 – 4.5.57); • Natural England's response to the *Sizewell C – Stage 4 Consultation: 18th July 2019 to 27th September 2019* (our ref: 289446, dated 26th September 2019, comments 2 and 11); We have further reiterated this advice through a number of pre-application workshops and document reviews facilitated by EDF Energy and so have provided a large amount of advice on this issue to EDF Energy. Despite this, the information included in the *Sizewell C – Stakeholder Review Process (draft DCO submission)* documents did not reflect our previous advice (i.e. BNG assessment, Plants and Habitats Synthesis Report omitted from the review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO – further information required</u>** Appendix 14E: Biodiversity Net Gain Report is unclear about where the distinction lies between what is being provided to mitigate SAC/SPA/SSSI adverse effects and impacts, and what is contributing to BNG, and the difference. There is brief reference (last para of 1.3) to the wetland elements of Aldhurst Farm and the fen meadow compensation sites not being included in the calculation to avoid double counting with SSSI mitigation, but there needs to be a clear comparable distinction		

			and separation throughout of what is protected site mitigation or compensation, and what BNG is. Further clarification is required to show how biodiversity unit calculations have been provided for the associated developments. Further information is needed about the cumulative area of habitat loss across all development sites to demonstrate biodiversity net gain. If all areas of losses and gains could be mapped across both the main development site and associated developments it might provide greater clarity to determine under what circumstances multiple objectives might be legitimately be delivered within a single parcel of land. While the inclusion of BNG calculations are very welcome, we had also discussed with EDF Energy, at pre-application stage, the potential for the project to contribute to creating a true legacy landscape within more of the red line boundary given its position witin the Suffolk Coast and Heaths AONB surrounded by multiple designated wildlife sites. This would give EDF Energy the opportunity to contribute and showcase habitat creation, potential re-wilding and nature recovery ambitions within the governments' 25 year environment plan. It would make a major contribution to 'bigger, better and more joined up' habitats in the area. It could and should be something exemplary that properly reflects a development of this magnitude and projected lifespan within the AONB, as part of a wider potential Suffolk Coast Nature Recovery Area. As it stands we cannot see any reference to this in the DCO and it appears that the BNG requirement as calculated is planned to be met almost entirely within existing commitments i.e. Aldhurst Farm. We advise that EDF Energy should recognise the magnitude of the proposal and its location, and properly reflect this in their ambitions to use their wider landholding to contribute to BNG.		
24	**LANDSCAPE:** Project-wide impacts on wider landscape receptors of importance, such as those which are highly valued locally	Impacts from the project on wider landscapes (MDS and AD sites)	**<u>Context and background</u>** The project proposals will also have significant impacts on landscapes of importance beyond the nationally designated Suffolk Coast and Heaths AONB. For these landscapes, consideration should also be given to potential impacts arising from the project during construction and operation from those elements of the project within the MDS and AD sites, against the current baseline, as outlined in	N/A	

			NPS EN – 1 (see paragraphs 5.9.14 – 5.9.17 (wider landscapes which are highly valued locally).		
25	**ACCESS:** Project-wide impacts on access and recreation receptors of national importance: ▪ England Coast Path (ECP)	Impacts from the project on the route of the ECP	**<u>Context and background</u>** The Marine and Coastal Access Act 2009 places a duty on the Secretary of State and Natural England to secure a long distance walking trail around the open coast of England, i.e. the ECP, together with public access rights to a wider area of land along the way for people to enjoy (which we call 'spreading room'). Natural England is currently working on the alignment of the Aldeburgh to Hopton on Sea ECP stretch which include the section of beach which fronts Sizewell A, B and C (as proposed) and is engaged in discussions with landowners, including EDF Energy and Magnox. Further information on timescales for the adoption of the ECP is given on our website: https://www.gov.uk/government/collections/england-coast-path-improving-public-access-to-the-coast. Our current proposals for this section is a route which uses the already well-used 'track' on the beach seaward of the Sizewell site as the main trail. The main trail sits within the wider coastal margin which is also subject to coastal access rights and the coastal margin comprises land both seaward and landward of the main trail. All land seaward of the main trail is part of the coastal margin and the landward edge of the landward side of the coastal margin is formed by the fences and walls associated with the seaward curtilage of the site. Those aspects of the project proposals which are likely to affect the ECP route, such as the use of the BLF, may require access mitigation (e.g. a banksman to facilitate access, provision of an alternative temporary diversion route during ECP closure etc.). We have flagged this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.7 and within Annex 2 (see comments under section 4.4); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February	TBC	

			2017, paragraphs 3.16 and within Annex 3 (see comments under 7.4.67, Figures 11.29 – 11.30 and 11.17.5) • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, paragraphs 3.9.42 – 3.9.45, 3.9.47 and 4.6.4.13 – 4.6.4.20); We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy and so have provided a large amount of advice on this issue to EDF Energy. Despite this, the incomplete draft ES Chapter which considers ECP impacts and which were included in the *Sizewell C – Stakeholder Review Process (draft DCO submission)* documents did not reflect our previous advice (i.e. access and recreation strategy omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** We reiterate the advice presented in the background section above. Natural England would welcome recognition that it has proposed the route of the new England Coast Path National Trail which if approved by the Secretary of State would form a further recreational route within the project area. Natural England believe this is important to the context of the project, as a National Trail is designated by government and managed to a set of quality standards that set them above other recreational routes identified within the plan. National Trails are intended to offer walkers the very highest quality walking experiences through the best landscapes in the UK, and it is in this context that the impact of the project needs to be assessed. The England Coast Path National Trail will run around the entire coast of England, so impacts on users of the trail both on and beyond the frontage of the proposed project need to be considered. The amenity and recreation report (page 50) acknowledges the proposed route of the England Coast Path, which if approved by the Secretary of State would form a		

			further recreational route within the study. However as mentioned above there is no distinction made between the status and value of this to users as distinct from the existing local and regional routes. National Trails are intended to offer walkers the every highest quality walking experiences through the best landscapes in the UK, and it is in this context that the impact of the project needs to be assessed. The England Coast Path National Trail will run around the entire coast of England, so impacts on users of the trail both on and beyond the frontage of the proposed project need to be considered. Natural England welcomes the provision of an inland alternative route for use by walkers when the beach and proposed main route of the England Coast Path would be closed for the construction of the sea defences, the construction of the beach landing facility and also the use of the beach landing facility during the 10 year build programme. However we note that regrettably the route proposed is much longer and of poorer amenity because it runs alongside busy roads, crosses roads at various points and through the edge of the EDF workers campus site. Natural England are particularly concerned that within this route there is a section which requires walkers to walk within the Eastbridge Road. This is a narrow, hedged road with no verges or steps offs, which the EDF visitor surveyors described as 'risky for walkers.' In addition to this it's accepted that construction workers are likely to use it as well as public traffic. Natural England feels this would be unsafe for walkers and requests that EDF secures an alternative route for the England Coast Path at Eastbridge which is off road. Natural England also requests that EDF employ a banksman at at the Beach Landing Facility (BLF) to ferry people across to the other side when it is in use and the beach is closed as it did during construction of Sizewell B. This would: • Avoid interruption to a (about to be proposed) National Trail • Retain an asset valued by the local community and particularly local dog-walkers • Reduce potential recreational displacement impacts on other sensitive sites • Avoid a long and in places unpleasant, diversion • Reduce the safety risk to walkers who on this diversion are forced to cross the road at several points • Retain a route for walkers only, so that people are not forced into close proximity with other user types		

			Once the sea defences are built but whilst the Sizewell C site is being built, the temporary alignment for the England Coast Path is propose along a slightly seaward alignment of the landscaped corridor which would be composed of shingle. Raw shingle is difficult for less able bodied walker to negotiate and is an impediment to walkers with pushchairs or wheelchair users. As the path might follow this alignment for a number of years Natural England would like to see EDF liaise with ourselves and Suffolk County Council at establishment stage to identify an appropriate easy to use surface and ensure that this is provided here. Natural England note that the proposed final alignment for the England Coast Path is along a landscaped corridor seaward of the main sea defence mound. We understand this is expected to erode over time and that when this happens the underlying rock armour and hard defence is likely to be revealed. Natural England recognise that whilst EDF's proposed route is more scenic for walkers in the short term, because they would be screened from the power station by the sea defence mound, however exposed rock armour is not likely to provide a suitable surface for walkers. The route will therefore need to be monitored carefully, with EDF making good the surface as necessary. If in the longer term this route is no longer viable, EDF will need to liaise with Natural England and Suffolk Country Council to discuss a potential realignment through a variation order.		
26	**ACCESS:** Project-wide impacts on access and recreation: ▪ Wider public access	Impacts from the project on wider public access and amenity	**<u>Context and background</u>** More widely, recreation and access within the project red line (MDS and AD sites) is currently provided by public footpaths, including the Sandlings Walk, the Suffolk Coast Path and permissive footpaths and bridleways. Consideration should be given during all stages of the proposal to ensuring no net loss of public access and amenity as outlined in NPS EN – 1 (see paragraphs 5.10.24). EDF Energy should look for opportunities to enhance access and enjoyment, especially of Suffolk Coast and Heaths AONB and Suffolk Heritage Coast, in a manner consistent with conservation of their natural beauty and the needs of agriculture, forestry and other uses. We have flagged this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008:	N/A	

			• Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, Annex 2 (see comments under section 4.4); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.17 – 3.18) • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, paragraphs 3.9.46 – 3.9.47); We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the incomplete draft ES Chapter which considers ECP impacts and which were included in the *Sizewell C – Stakeholder Review Process (draft DCO submission)* documents did not reflect our previous advice (i.e. access and recreation strategy omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019).		
MAIN DEVELOPMENT SITE					
27	**ECOLOGY:** Impacts on internationally designated sites: ▪ Alde-Ore Estuary SPA ▪ Alde-Ore Estuary Ramsar site ▪ Benacre to Easton Bavents SPA ▪ The Humber Estuary SAC	Impacts from noise, light and visual disturbance from a number of the MDS project elements, and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	**<u>Context and background</u>** A large proportion of the proposed works within the MDS are in close proximity to a number of sensitive designated sites which are either wholly or in part notified for mobile species such as birds (terrestrial and marine species, breeding and non breeding) and marine mammals. The project therefore presents the potential for noise, visual and light disturbance impacts to these species (and their prey species where relevant) during both construction and operational phases of the project. Where works are within the zone of influence (ZoI) where such disturbance is possible, full survey data covering all relevant species are needed in order to allow a full and thorough assessment of these impacts (in air and underwater). This assessment should not be limited to the boundaries of the designated sites but also include land within and around the red line boundary which may play an important role as functionally linked land (FLL), for example, in the context of Minsmere and marsh harrier (one of many notified species) this includes Sizewell Marshes and arable farmland which are used for foraging. The project should assess all notified species where there may be functional linkages with	TBC	

	▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site ▪ Outer Thames Estuary SPA ▪ Sandlings SPA ▪ Southern North Sea SAC ▪ The Wash and North Norfolk Coast SAC		the MDS and surrounding land, and evidence should be provided to support any assumptions that areas of habitat are not deemed to represent FLL. Where significant numbers of birds and marine mammals are found to be present within the ZoI for noise, visual and light disturbance, the necessary assessments and underpinning modelling are required to determine impacts. In terms of noise impacts, for breeding bird species chronic noise is of particular concern, whereas for non breeding birds species sudden loud impulsive noises such as piling are of particular concern. Modelling of predicted noise levels (during demolition, construction and operation) against existing background noise levels should therefore be undertaken using suitable disturbance thresholds i.e. average noise levels for breeding species (LA_{eq}) and (typically) peak noise levels for non breeding species (LA_{max}). If shown to be required following the noise modelling, measures to avoid, mitigate or compensate for such impacts should be identified. In line with the avoidance-mitigation-compensation hierarchy, this should first consider avoidance measures (e.g. phasing works to avoid the most sensitive times for the relevant species), then mitigation measures (e.g. acoustic screening), then compensation measures (e.g. creation of compensatory habitat elsewhere). Details of how any proposed measures are likely to be effective (e.g. for mitigation measures, how they would reduce noise levels to acceptable levels in the context of the bird disturbance thresholds) should be provided, along with details of how they would be monitored to ensure their efficacy Some limited noise modelling was provided for Natural England to review at pre-application for a very limited number of terrestrial bird species but none was provided for marine birds or mammals (in air and underwater). Further information is required regarding construction dredging, shipping and piling and SCDF nourishment works/ This should be assessed with regard to all sensitive features. Due to the limited information we were provided on these issues at pre-application, we have only provided detailed advice to EDF Energy on the assessment of impacts to marsh harrier in these regards. This included a proposal to create alternative foraging areas for marsh harriers in response to the forecast loss of foraging resource at Sizewell Marshes SSSI and surrounding arable farmland. However, this has yet to be fully quantified in terms of area to be lost vs. area to be created and the final design of these areas. We understand that these alternative foraging areas are areas of largely dry habitats, designed to optimise their use by small mammals and birds as a foraging resource for marsh harrier. This includes a		

			core area of habitat within the MDS area (which also includes an element of wetland habitat creation) and some additional areas outside the MDS; for the latter, clarification is needed on whether these areas would be implemented from the outset or set aside as contingency to be triggered into use following monitoring of marsh harrier impacts during construction and whether they will be permanent or temporary. Natural England is satisfied that the criteria for derogating from the Habitats Regulations are fulfilled with respect to marsh harrier We consider these to be significant omissions which we have flagged throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 2.2 (ii), 3.2, 3.3, 3.5, 4.2, 4.3 (i, ii) and throughout Annex 2 (see comments under sections 4.2, 4.6, 4.14 and 4.16)); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.2, 3.3, 3.5 – 3.11, 4.3, 4.8, 4.9 and throughout Annex 3 (see comments under 7.4.39, 7.4.75, 7.4.92, 7.5.10, 7.5.58 – 7.5.60, 7.5.65, 7.5.82, 7.8.6, 7.8.11, 7.9.4, 7.9.29, 7.9.68 – 7.9.70, 12.3.2 and 12.3.12); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, paragraphs 3.1, 3.5, 3.6, 3.9, 3.9.1 – 3.9.15, 4.5.1, 4.5.8, 4.5.9, 4.5.11 – 4.5.13, 4.5.15, 4.5.16, 4.5.40 – 4.5.48, 4.6.3.3, 4.6.4.8, 4.6.4.10 and 4.6.15.3); • Natural England's response to the *Sizewell C – Stage 4 Consultation: 18th July 2019 to 27th September 2019* (our ref: 289446, dated 26th September 2019, comments 3, 7 and 10); We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the incomplete draft shadow HRA which was circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. incomplete shadow HRA, bird survey data, marsh harrier mitigation strategy, lighting management plan and noise		

			modelling assessment omitted from the review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA. **Comments on the DCO – further information required** Marsh harrier compensation: The applicant is unable to demonstrate no adverse effect on the integrity of breeding SPA marsh harriers. The construction phase of the development is anticipated to result in the disturbance of breeding SPA marsh harriers causing displacement from their foraging habitat beyond the SPA on Minsmere South Levels, or the barrier effect of the construction phase preventing birds from accessing foraging habitats at Sizewell Marshes SSSI. Within the DCO application the applicant had considered that Stage II Appropriate Assessment has failed to exclude adverse effect on site integrity and following the completion of Stages III (no alternatives) and Stages IV (imperative reasons of overriding public interest), the need for compensation has been identified. The main topic of EDF's engagement with Natural England over SPA bird issues has been the issue of marsh harrier foraging, with the audit trail showing detailed consultation for over seven years. Specifically, the concern related to the disturbance of breeding SPA marsh harriers resulting in their displacement from their foraging habitat beyond the SPA on Minsmere South Levels, or the barrier effect of the construction phase preventing birds from accessing foraging habitats at Sizewell Marshes SSSI. Marsh harriers have large foraging ranges and this issue affects foraging undertaken beyond the boundary of the SPA and not disturbance at nesting locations. For an impact to occur, firstly, marsh harriers would have to be excluded from areas of functionally linked land, in line with their predicted behavioural response to noise and visual stimuli, or experience reduced foraging success due to auditory screening / interference. Secondly, marsh harriers would have to be unable to compensate for this loss in foraging resource elsewhere within their home range.		

			Thirdly, marsh harriers would have to be unable to provision their chicks with the same amount of food and, finally, this would have to result in a decline in productivity and a potential reduction in their SPA population. There is uncertainty associated with each of these stages. Nevertheless, as survey work to identify marsh harrier flight lines did reveal significant use in areas potentially exposed to development effects, and the precautionary principle requires impact to be excluded rather than demonstrated (and considering the problematic nature of the highly technical work that would be necessary for this assessment to be even attempted) the requirement for offsetting was agreed. As potential displacement was occurring beyond the SPA site boundary, it was possible for habitat creation / improvements required to offset this loss to also occur beyond the site boundary, yet still constitute mitigation if created within the foraging range of marsh harriers nesting at Minsmere. Optimal habitat for foraging marsh harriers is wetland, yet the applicant stated that the topography of the only area of land available was unsuitable *('Based on a review of the available data on the ground levels, the underlying geology and ground and surface water regimes in and around the mitigation area, it is concluded that it would not be feasible to create wetland across the majority of the mitigation area').* The applicant was unwilling to consider that if a Stage II Appropriate Assessment failed to exclude adverse effect on site integrity in the absence of sub-optimal terrestrial mitigation, following the successful completion of Stages III (no alternatives) and Stages IV (imperative reasons of overriding public interest) of an HRA, opportunities might then be sought elsewhere in order to create an optimal area of wetland habitat creation to secure the coherence of the network. As the option for optimal like for like wetland habitat creation was not deemed possible by the applicant, Natural England engaged upon this basis in order to develop an experimental approach to terrestrial habitat creation that sought to maximise populations of those prey species found in drier habitats. As Terrestrial Habitat of this type has not been created before in order to support marsh harriers, to overcome any residual uncertainty, an option for adaptive management has been presented whereby additional habitat might be created should observed use by foraging marsh harriers fall short of predicted use. The submitted DCO and associated documents now show, however, that the applicant has indeed completed shadow HRA stages III and IV that reach favourable conclusions, removing the applicant's self-imposed constraint. If endorsed by the Secretary of State, this would facilitate the creation of optimal wetland habitat with additional biodiversity benefits, not only with potential to		

			support marsh harriers, but also other species of breeding and non-breeding wetland birds. With minimal adaptations to habitat management, the original terrestrial area identified might instead help compensate for potential shortfalls in the approach towards Net Gain and terrestrial species of bird that Natural England has identified. N.B. There were considerable levels of engagement over the design phase of the proposed terrestrial compensation area. Despite engagement on the basis that alternative more beneficial options for optimal wetland habitat creation were not possible, and despite the experimental nature this approach (unlike wetland habitat creation), it is nevertheless deemed sufficient to prevent impact to foraging marsh harriers. <u>Other bird species</u> All baseline survey data for the project, covering all habitats and species likely to be affected, should be acceptable in terms of methodologies, coverage and age. The recent Chartered Institute of Ecology and Environmental Management (CIEEM) Advice note on the Lifespan of Ecological Reports and Surveys states that, for surveys which are more than three years old, "*The report is unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated*". Where the ecological survey data to inform the various Sizewell C impact assessments are not in line with this, we advise that clear justification must be provided on how the data remain valid and robust enough to inform conclusions. For a development of this scale directly which is directly adjacent to an SPA classified for (among other features) internationally and nationally important non-breeding coastal waterbirds would be expected to have conducted, as a minimum, two complete winters' survey effort, with typically two surveys per month from October to March (24 counts in total). Survey months might be extended to capture any classified populations of passage species present earlier in the autumn or spring. These up-to-date survey data could only then be deemed representative and allow an adequate assessment to be conducted. If reduced survey effort is deemed acceptable, the potentially unrepresentative sample relied upon must be taken into account and treated with an appropriate amount of precaution when determining impact and any potential requirement for mitigation / compensation. Surveys should also be tailored to the individual species' ecology; for example, bearing in mind that the construction site would be active 24 hours a day, nocturnal surveys for white-fronted geese should ideally be undertaken as they are most active outside daylight hours and daytime surveys only may therefore overlook potential impacts.		

			Surveys of wintering SPA waterbirds: No complete winter's worth of dedicated project-specific survey for non-breeding gadwall and shoveler at Minsmere South Levels and Sizewell Marshes have been provided. Wintering surveys would be expected to be undertaken between October to March. Just two winter periods were surveyed with counts from November to March in 2014/15 and December to February in 2018/19. In addition, during the 2014/15 winter, only a single count was undertaken when all sectors were recorded together, rather than on separate dates. Wetland Bird Survey (WeBS) data were used to supplement project-specific counts, but these did not record the within-sector location of birds to enable development effects to be assessed. In addition, the Sizewell Marshes WeBS sector did not cover key parts of the project-specific survey area, missing Goodrum's Fen and SSSI Reedbed, hindering the use of WeBS data to supplement the lack of project-specific counts. Finally, neither have the distribution data associated with those limited project-specific bird counts been provided in sufficient detail to allow the conclusion of the shadow-HRA to be properly critiqued.		
28	**ECOLOGY:** Impacts on internationally designated sites: ▪ Minsmere to Walberswick Heath and Marshes SAC ▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site	Impacts from changes to coastal processes/ geomorphology arising from a number of the MDS project elements (e.g. hCDF, BLF) and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(O)**	**<u>Context and background</u>** **Overview of coastal geomorphology advice and issues for the natural environment**: • The stretch of coast alongside the proposed main development site is important for habitats, species and geomorphology at international, national and local level. It supports a number of shoreline features that are typical of Suffolk and East Anglia but which are rare in UK and Europe, and often under pressure from a range of human activities including coastal development. • The geomorphological features and their dependent wildlife exist as a mosaic in a dynamic environment, where features are often ephemeral, seasonal, and adapted to living alongside waves, storms and tides. Erosion, sediment transport and wave energy moves material that feeds the beaches in great volumes and often over long distances. The coastal zone may change considerably in the future in response to climate change, with or without the proposed Sizewell project. Any potential effects of the project on the geomorphology and hydrodynamic processes which effect the alignment of the coast, need to be thoroughly and properly understood and assessed.	TBC	

			• Potential indirect effects extend beyond the immediate foreshore. The Minsmere Valley, part of the Minsmere to Walberswick protected area (SAC/SPA and SSSI) is for all intents and purposes a low-lying coastal wetland, buffered from the sea by the shingle beach and ridges, and impacted by predicted future sea level rise and frequency and intensity of storm surge breaching and over-topping. The integrity of the foreshore habitats in turn helps conserve the wetland habitats in the valley behind, building resilience and time to plan future adaptation. • The entire coastal frontage is within the Suffolk Coast and Heaths AONB, and development pressures on the foreshore and adjacent coast have the potential to impact the special qualities of the nationally significant landscape. **Summary of geomorphological concerns raised during pre-app to be addressed in the DCO**: • It is accepted that this stretch of coast is likely to change in response to future sea level rise and climate change, with or without the Sizewell C project, with possible consequent permanent changes to habitats and features. Our headline requirement is for the project to demonstrate beyond reasonable doubt the planned coastal defences, landing facility and nearshore structures to will not disrupt coastal processes to cause or magnify adverse effects on habitats, species or geomorphology, relative to any background natural change. • The project should avoid, alone or in combination, a direct adverse effect on foreshore wildlife and the geomorphology of Minsmere-Walberswick Marshes SAC/SPA and SSSI and wetland habitats and species within Minsmere Valley itself, as a result of changes to coastal processes. Particularly where any are identified and cannot be avoided, they will need to be mitigated on-site or compensated for in advance off-site. This particularly relates to features Annual vegetation of drift lines and perennial vegetation of stony banks; Coastal shingle vegetation outside the reach of waves) and the species they potentially support for nesting (e.g. little terns and ringed plovers); • Indirect adverse effects on designated freshwater wetland habitats and species landward of the barrier beach within Minsmere Valley and RSPB reserve are also possible, by increasing the risk of saltwater breaching or		

			overtopping. Again, where any are identified and cannot be avoided, they will need to be mitigated on-site or compensated for in advance off-site • A locally important County Wildlife Site, supporting dune and shingle habitats, currently runs along the foreshore corridor in front of Sizewell B and C. It is likely to be largely destroyed or permanently altered as a result of land-take to the main development site platform and adjacent hard and soft coastal defences. We are looking for the project to demonstrate how it will offset and replace this loss, on or off-site. • The project should explore and commit to opportunities arising from the coastal defence and structures, to enhance the coastal natural environment through the Biodiversity Net Gain route. Opportunities for wider enhancement of the coastal natural environment beyond statutory protected site requirements should be explored, as a potential contribution to wider landscape scale habitat creation and nature recovery. We have advised on these issues throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 2.2 (i and ii), 3.5, 4.3 (i), 4.4 (i) and section 4.12); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 4.9 and throughout Annex 3 (see comments under 7.4.52, 7.4.58, 7.4.64, 7.4.77, 7.5.48 and 7.9.58 – 7.9.63); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, e.g. paragraphs 3.9.1 – 3.9.15, 4.5.11 – 4.5.16, 4.6.4.3, 4.6.4.4 – 4.6.4.7, 4.6.4.9 and 4.6.5.2 – 4.6.5.9); We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's		

			Sizewell C – Stakeholder Review Process (draft DCO submission) did not reflect our previous advice in this regard (incomplete shadow HRA, relevant BEEMS report omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA. **Comments on the DCO – further information required** **Specific comments on the Coastal Geomorphology and Hydrodynamics report within the DCO, including further information or evidence we think is required or which needs clarification:** • We welcome the coastal geomorphology and hydrodynamics report as part of the DCO consultation, it is detailed and contains a thorough attempt to quantify and assess impact pathways for all the coastal defence and nearshore structures, relative to the Minsmere to Walberswick designated site. We note that the conclusion for most of these are that any effects are mostly negligible and insignificant, particularly where offshore effects are predicted relating to the outfalls, intakes and Beach landing facility. • We welcome the inclusion of an Expert Geological Assessment, something we had previous identified as being needed. We note its conclusion that without mitigation, the Hard Coastal Defence Structure HCDF is likely to be impacted by coastal erosion sometime between 2053 and 2087, within the operational life of the project. • The report explores various mitigation scenarios and proposes mitigation through beach management (nourishment, bypassing and recycling) should the HCDF becomes exposed by shoreline recession, and potentially interrupt sediment pathways to the designated site to the north. A significant (moderate) risk to designated site features is identified. It is explained how the measures will help maintain beach volumes, in turn supporting beach volume and form and geomorphological features. But there is less explanation of how the various beach measures will avoid an adverse effect		

			and maintain condition of SAC foreshore annuals vegetation communities. It is important this is clarified, particularly where future beach management measures might require manual intervention (for example, vehicle movements on the beach) which in turn could adversely affect the feature by hindering colonising plants. This is important as manual beach management schemes elsewhere often involve lorry movements directly on beaches, which is disturbing to flora and fauna. • The report predicts an increase in sediment supply from the SCDF and slowing of erosion along the southern SAC/SPA frontage, against current and anticipated erosion rates there. It is reassuring if it can be demonstrated that this will reduce risk there. But more clarity is required on the extent to which the measures will also reduce the risk to SAC/SPA habitats in Minsmere Valley behind the barrier beach, by building resilience on the beach to storm breaches and over-topping and reducing risk of the project exacerbating the impact of storm-tide surge events. There is reference in the report to the beach potentially tripping over into a state of more over-washing and possible breach, in theory increasing risk of saltwater inundation risk to the more brackish or freshwater SAC and SPA habitats in the Valley. Storm driven events (like the 2013 tidal surge) are predicted to increase in frequency and severity through the life of the project. The project needs to demonstrate that the proposed mitigation measures are sufficient to avoid the Project contributing to this trend and escalating it. • The report refers to the material for the SCDF and any subsequent nourishment needs as coming from excavated beach material (under the HCDF footings), a licensed aggregate extraction site, or material excavated from the main development site. The importance of the source material being compatible with the integrity of the geomorphology is an important part of maintaining site condition. It is important for barrier beach grain, form and the way wave processes sort and grade the beach, part of its geomorphological function. It is also necessary for the extent to which the beach is suitable substrate for SAC vegetated shingle communities to establish, and nesting sites for breeding shorebirds. More clarity is needed on beach sediment sources and their compatibility with the designated site. • The report mentions the dune County Wildlife Site but makes little or no mention of the impact of the coastal defence measures on it. We would		

			welcome more detail here on how the loss of most of the site will be mitigated or offset within the footprint of the HCDF and SCDF. • There is reference in the report to how the beach management measures will avoid to reduce risk of adverse effect on designated habitats, but little exploration of how the coast protection of the development site will enhance the wider coastal natural environment, including its form, function, and ability of coastal habitats to contribute to climate change resilience and nature recovery, as part of UK governments 25 Year Environment Plan.		
29	**ECOLOGY:** Impacts on internationally designated sites ▪ Alde-Ore and Butley Estuaries SAC ▪ Alde-Ore Estuary SPA ▪ Alde-Ore Estuary Ramsar site ▪ Minsmere to Walberswick Heath and Marshes SAC ▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site	Impacts from changes/ increases in recreational disturbance arising from the MDS project elements (accommodation campus and temporary caravan site on the LEEIE), and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	**<u>Context and background</u>** The proposed accommodation campus and temporary caravan site on LEEIE will house up to 7900 workers during the construction peak. The proposed development is likely to change the way designated sites in the area are used by people for recreation, both during construction and operation. Such changes are likely to be driven by the new population of workers within the Sizewell area (7900 at peak) who will likely use designated sites for recreation to some degree, and the displacement of local people who currently use the development site and surrounding area (e.g. Sizewell Beach) to other locations for recreation, including these nearby sensitive designated sites. Recreational activities such as walking, dog walking, cycling/mountain biking, etc. can negatively impact on the designated site features (species and habitats) through noise disturbance, trampling etc. EDF Energy have collected a suite of evidence and data to inform the recreational disturbance impact assessment and this was shared with Natural England at the pre-application stage which was helpful. However, EDF Energy have also acknowledged that "*Given the existing relatively high levels of recreational disturbance, as recognised in the SIPs, and the inherent difficulties in assessing relatively small incremental changes that may be attributable to Sizewell C against this background, it is considered prudent to develop a recreational management and monitoring strategy, in partnership with relevant stakeholders*" (paragraph 4.9.6 of *HRA Recreational Disturbance Assessment v2_20190528* as circulated at pre-application). Given these acknowledged uncertainties, we consider the development of a recreational disturbance mitigation and monitoring strategy to be the correct	TBC	

	▪ Outer Thames Estuary SPA ▪ Sandlings SPA		mitigation approach in the context of the precautionary principle which is enshrined in the Habitats Regulations. This approach is consistent with that which we have followed in advising East Suffolk Council and housing developers on impacts from their projects on these sites, which resulted in the development of the Suffolk Coast Recreational disturbance Avoidance Mitigation Strategy (Suffolk Coast RAMS). In terms of the package of mitigation measures to ensure that adverse effects to these sites do not occur as a result of the Sizewell C project, we consider that this should constitute a two-pronged approach of: **1. Provision and promotion of 'on-site' alternative greenspace within/ in close proximity to the MDS** This should include provision and promotion of an area of greenspace within/ in close proximity to the MDS, with the aim being to minimise any increase in recreational pressure to the designated sites (from workers and displaced local people) by concentrating a proportion of recreation in this area. Such provisions must be carefully designed to ensure that people will use them in preference to the sensitive designated sites and the Suitable Accessible Natural Greenspace (SANG) guidance here is helpful in designing them; it should be noted that this document is specific to the SANG creation for the Thames Basin Heaths, although the broad principles are more widely applicable. As a minimum, we advise that such provisions should include: • High-quality, informal, semi-natural areas including a variety of habitat types and topography where possible; • Circular dog walking routes of 2.7 km[16] within the site and/or with links to surrounding public rights of way (PRoW); • Dedicated 'dogs-off-lead' areas; • Adequate parking provisions;		

[16] Taken from *Jenkinson, S., (2013), planning for dog ownership in new developments: reducing conflict – adding value. Access and greenspace design guidance for planners and developers*

			• Signage/information leaflets to users (workers and displaced local people in this case) to promote these areas for recreation; • Dog waste bins; • A commitment to the long term maintenance and management of these provisions. EDF Energy have previously indicated that they are currently considering the use of Aldhurst Farm to fulfil this function. If this site it to be taken forward, the current baseline recreational use of the site must be assessed to ensure that it would have the capacity to fulfil its function as a SANG for the new and displaced users. The same considerations are needed for the proposed improvements to Kenton Hills car park if this is also going to be included as part of the 'on-site' recreational disturbance mitigation package. Furthermore, it must be ensured that the above features could be successfully integrated into the design of Aldhurst Farm without compromising the other functions that it is proposed to fulfil, including Sizewell Marshes SSSI habitat loss compensation (e.g. reedbed and ditches), protected species mitigation (e.g. water voles, reptiles), access mitigation (including the England Coast Path temporary diversion route) and grassland/heathland habitat creation as part of the wider ecological legacy. **2. Strategic 'off-site' measures to make the designated sites more resilient to changes/increases in recreational pressures (e.g. visitor engagement, education and information, access management etc.) arising from the proposed development** The unique draw of the designated sites in the surrounding area means that, even when well-designed, such 'on-site' provisions are unlikely to fully mitigate impacts, especially when the proposed development is considered 'in combination' with other plans and projects within reach of them, including new residential development and the England Coast Path (ECP)[17]. Consideration of 'off-site' measures (i.e. in and around the relevant designated site(s)) are also therefore required as part of the mitigation package for predicted recreational disturbance impacts.		

[17] Further information on timescales for the adoption of the ECP is given on our website here

			Whilst these measures will need to be focussed on the designated site features to which impacts are likely to occur (as informed by the baseline evidence report), they should form part of a wider co-ordinated strategic approach involving these statutory sites and the respective land managers (including Natural England) within the zone of influence for recreational disturbance impacts. As mentioned above, in recent years Natural England and others have been working with local planning authorities in Suffolk, including East Suffolk Council, to develop the Suffolk Coast RAMS Essentially, this is a package of strategic mitigation measures aimed at making sensitive designated sites more resilient to recreational pressures arising from new housing development within reach of them. The mitigation package is funded by financial developer contributions (a per dwelling tariff) and includes visitor engagement (coordinated wardens/rangers, responsible dog owner project etc.), visitor access management (audit of current signage and car parks, new signage and interpretation, new paths, path diversions etc.), visitor education/ information (incl. codes of conduct) and effectiveness monitoring (of visitors, birds, habitats etc.). It is therefore fair and reasonable to expect the approach to mitigating recreational disturbance impacts from the proposed Sizewell C project through the 'off-site' measures to be in line with and complimentary to the approach and principles of the Suffolk Coast RAMS. The package of measures should be proportionate to the nature, scale and duration of the development. As a starting point, it is worth bearing in mind that the numbers of workers will be 7900 people at peak (roughly equivalent to 3300 houses by number of people) and that the required financial developer contribution for new housing within Zone B of the Suffolk Coast RAMS (within which the Sizewell C project is proposed) is £321.22 per dwelling. The proposed recreational management and monitoring strategy must also include a monitoring element (of 'on-site' and 'off-site' mitigation measures) as these will be crucial to ensuring that the final package of measures are successful in avoiding/ mitigating adverse impacts on these designated sites. We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 2.2 (ii), 3.4, 3.5, 4.2, 5.3 and 5.8);		

			• Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.7, 3.10, 4.10 and throughout Annex 3 (see comments under 7.4.14 and 7.5.58 – 7.5.60); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, e.g. paragraphs 3.9.1 – 3.9.15 and 4.6.8.1 – 4.6.8.4); • Natural England's response to the *Sizewell C – Stage 4 Consultation: 18th July 2019 to 27th September 2019* (our ref: 289446, dated 26th September 2019, comment 6); We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents circulated through EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (incomplete shadow HRA, Recreational Management and Monitoring Strategy omitted from the review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA. **<u>Comments on the DCO application – further information required</u>** As raised in our previous screening advice February 2019 (Our Ref 273239), disturbance due to increase in recreational pressure' category: we advise that increased recreational pressure is a potential impact pathway for which LSE cannot be ruled out without consideration of further detailed information (e.g. visitor surveys etc.). As such, we advise a LSE cannot be ruled out at this stage.		

			Further information is required to determine the sufficiency of the monitoring plan in providing mitigation to prevent the impacts of recreational displacement. We advise that any measures proposed are discussed with Natural England and secured through DCO requirements.		
30	**ECOLOGY:** Impacts on internationally designated sites ▪ Alde-Ore Estuary SPA ▪ Alde-Ore Estuary Ramsar site ▪ The Humber Estuary SAC ▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site ▪ Outer Thames Estuary SPA ▪ Southern North Sea SAC ▪ The Wash and North Norfolk Coast SAC	Impacts from intakes and outfalls and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	**<u>Context and background</u>** The Intakes and Outfalls may have potential water quality impacts upon designated sites and species, either directly through the presence of the infrastructure itself and the chemical thermal plume or indirectly through food webs and associated displacement of prey species and bioaccumulation. The main issues associated with the intakes include the assessment methods for total fish and invertebrate entrapment losses (combined impingement and entrainment), the scale of the assessment zone of influence at the North Sea Spawning Stock Biomass or ICES, which does not consider local fish stocks and populations. There is currently no clear justification of why an Acoustic Deterrent Device could not be used as mitigation at the SZC site. The conservation objectives for a number of designated species within the GSB include to maintain the water quality standards on which these species rely. There are concerns that there may be indirect impacts on the food web and in particular those species with small foraging ranges. The presence of the infrastructure and associated scour protection may also lead to a long-term/permanent loss of habitat within designated sites. We have flagged these issues throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: ▪ Natural England's response to the Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development (our ref: 71859, dated 6th February 2013). ▪ Natural England's response to the Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017 (our ref: 202551, dated 2nd February 2017, paragraphs 7.4.49-7.4.56, 7.5.47);	TBC	

			▪ Natural England's response to the Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019 (our ref: 272181, dated 29th March 2019, e.g. paragraphs 4.5.34, 4.5.36, 4.6.3-4.6.3.22); We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy (Our Ref 283006, 284902, 284923, 295524). Despite this, the incomplete draft shadow HRA and relevant ES chapter which were circulated to Natural England in December 2019 as part of EDF Energy's Sizewell C – Stakeholder Review Process (draft DCO submission) did not reflect our previous advice in this regard (incomplete shadow HRA, incomplete entrapment report, no WFD assessment, no CoCP, missing BEEMS reports) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA. **<u>Comments on the DCO application – further information required</u>** The impacts from the intake and outfalls will be assessed as part of a Water Discharge Activity Permit for the construction and operational phase of the proposed development, as issued by the Environment Agency. Due to the simultaneous submission of the permitting and DCO applications by the Applicant Natural England have not yet been consulted on the permit and may not be able to provide our final advice in relation to likely effects until the permitting process is complete, i.e. potentially not within the DCO examination period. It should be clear from the permitting what monitoring and mitigation are proposed. We would expect to see the Water Framework Directive Assessment presented not just at WFD waterbody scale but also to show areas of localised detrition in relation to SAC and SPA areas and considered in HRA against conservation objectives.		

31	**ECOLOGY:** Impacts on internationally designated sites ▪ Alde-Ore Estuary SPA ▪ Alde-Ore Estuary Ramsar site ▪ The Humber Estuary SAC ▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site ▪ Outer Thames Estuary SPA	Impacts from the thermal plume and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	**<u>Context and background</u>** The thermal plume for the outfall may be above the 2/3 ºC threshold uplift criteria for SAC and SPAs and WFD criteria. The thermal plume may cause avoidance of the area by designated species or their prey items. The thermal plume may also form a barrier to migration for some fish species. We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013. • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017. • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019. We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the incomplete draft shadow HRA and relevant ES chapter which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (incomplete shadow HRA, WDA permit application) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA.	TBC	

			Comments on the DCO application – further information required The thermal plume will be managed as part of the WDA operational permit, as issued by the Environment Agency. Natural England has yet to be consulted on the permit and associated HRA. Natural England will need to see further details of the proposed and final permit application before we can provide robust advice on potential impacts to designated sites and species. As raised previously Natural England would welcome the provision of further information on the modelled determination of water quality status in relation to WFD status criteria at a localised scale in relation to SAC and SPA areas.		
32	**ECOLOGY:** Impacts on internationally designated sites ▪ Alde-Ore Estuary SPA ▪ Alde-Ore Estuary Ramsar site ▪ The Humber Estuary SAC ▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site ▪ Outer Thames Estuary SPA	Impacts from the Combined Drainage Outfall (CDO) and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	**Context and background** The Combined Drainage Outfall from the site will be used during the construction phase for the dewatering of the site, all brown water/ sewage, any hydrazine testing and all Tunnel Boring muds will be discharged via the CDO. The discharge from the CDO will be managed in accordance with the WDA Construction and Operation permits. There may be significant water quality impacts on the plume which may impact upon designated sites and species. The Applicant currently proposes to leave the CDO in place during the operational phase, but not use it as a discharge point. The increase in hard surface area may mean that the infrastructure is above the threshold criteria for Non Native Invasive Species. We have flagged this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013. • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017.	TBC	

			• Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019. We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the incomplete draft shadow HRA and relevant ES chapter which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA. **<u>Comments on the DCO application – further information required</u>** Natural England will need to see further detail on the likely impacts of the DCO through the permitting process. Natural England will be consulted on the permit and the associated HRA in due course. We would expect to see further information on the monitoring and mitigation proposed as part of the permit. Natural England cannot provide our final advice until the permitting process is finalised. Natural England would welcome further information on why the CDO will be left in place during the operational phase if it is not be used, and whether given the increase in hard infrastructure and necessary scour protection, anti fouling, potential for INNS whether there is the potential to remove the infrastructure?		
33	**ECOLOGY:** Impacts on internationally designated sites ▪ Alde-Ore Estuary SPA	Impacts from the chemical plume and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and	**<u>Context and background</u>** The chemical plume associated with the outfall exceeds EQS or PNEC for Bromoform. Water quality effects may have direct and indirect effects on designated sites and species, and indirectly though impacts to prey species.	TBC	

	▪ Alde-Ore Estuary Ramsar site ▪ The Humber Estuary SAC ▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site ▪ Outer Thames Estuary SPA	their notified features. **(C) and (O)**	We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013. • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017. • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019. We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the incomplete draft shadow HRA and relevant ES chapter which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard, which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA. **<u>Comments on the DCO application – further information required</u>** Natural England considers additional evidence is required, detailing the direct impacts that any chemical plume will have on the features of the listed designated sites. While the application considers foraging area sterilisation as a result of the chemical plume, we would advise that risks from direct or repeated exposure to the chemical plume should be considered and detailed. With particular reference to marine foraging birds species.		

34	**ECOLOGY:** Impacts on internationally designated sites ▪ Alde-Ore Estuary SPA ▪ Alde-Ore Estuary Ramsar site ▪ The Humber Estuary SAC ▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site ▪ Outer Thames Estuary SPA	Impacts from chlorination and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	**<u>Context and background</u>** The Applicant proposes to chlorinate the system, after the drum screens, to reduce biofouling. Chlorination will be seasonal when water temperatures are above 10 ºC with spot chlorination at other times. Chlorination may have water quality impacts to designated sites and species directly and indirectly though impacts to prey species. We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013. • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017. • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019. We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the incomplete draft shadow HRA and relevant ES chapter which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard, which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA.	TBC	

			<u>Comments on the DCO application – further information required</u> We welcome that the Chlorination strategy as outlined in the Mitigation Route Map includes the use of seasonal chlorination and that chlorination would be applied after the drum screens. We note that this mitigation will be secured within the WDA operational permit. Natural England have not yet been consulted on the WDA permit as part of the DCO and cannot provide detailed comment on the potential impacts and would welcome further clarification of wording of the mitigation and definition of spot chlorination, and clarification of localised effects to water quality with mitigation in place.		
35	**ECOLOGY:** Impacts on internationally designated sites ▪ Alde-Ore Estuary SPA ▪ Alde-Ore Estuary Ramsar site ▪ The Humber Estuary SAC ▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site ▪ Outer Thames Estuary SPA	Impacts from hydrazine and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	**<u>Context and background</u>** The Hydrazine plume may be above EQS or PNEC and may have water quality impacts to designated sites and species directly and indirectly through prey species. We have flagged this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013). • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017). • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019). We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the incomplete draft shadow HRA and relevant ES chapter which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard, which we again flagged in our response (our ref: 299823, dated 9th December 2019).	TBC	

			We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA. **<u>Comments on the DCO application – further information required</u>** Natural England welcome that Hydrazine discharges would be treated, Natural England would welcome further details on this process. We note that this is not secured in the CoCP or DCO/DML and will be secured as part of the WDA permit process (Mitigation Route Map). Natural England has not currently been consulted on the permitting process and therefore cannot provide our final advice until the permitting process is finalised.		
36	**ECOLOGY:** Impacts on internationally designated sites ▪ Alde-Ore Estuary SPA ▪ Alde-Ore Estuary Ramsar site ▪ The Humber Estuary SAC ▪ Minsmere-Walberswick SPA ▪ Minsmere-Walberswick Ramsar site	Impacts from drilling mud and bentonite break out and subsequent ecological effects on internationally designated sites (SACs, SPAs and Ramsar sites) and their notified features. **(C) and (O)**	**<u>Context and background</u>** The Applicant proposes to use Tunnel Boring Machines to install the intake and outfall pipelines. during the tunnelling process drilling muds including bentonite are frequently used. We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013). • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017). • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019). We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the incomplete draft	TBC	

	▪ Outer Thames Estuary SPA		shadow HRA and relevant ES chapter which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard, which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. Assurances from Natural England on this were not therefore obtained before the application was submitted, contrary to the advice given in paragraph 4.2 of the Planning Inspectorate's advice note 10 with regards HRA. **Comments on the DCO application – further information required** Given the number of occurrences of bentonite break outs or frack outs that have occurred on other HDD projects around the coast recently Natural England consider the potential for this impact pathway to be considered a likely significant effect. We would therefore expect to see further information provided on the methodology, procedures and safe guards that would be put in place to reduce the possibility of frack outs in designated sites, and for this to be outlined in a certified document, for example the CoCP. In the case of a drilling mud breakout in a designated site Natural England would want to be consulted within 24 hours, and this commitment to be secured in a certified document. We would also welcome the inclusion of potential drilling muds to be used to be specified as part of the DCO/DML.		
37	**ECOLOGY:** Impacts on protected species ▪ Bats ▪ Natterjack toads ▪ Otters ▪ Reptiles ▪ Water voles	Protected species' mitigation and compensation for MDS impacts **(C) and (O)**	**Context and background** See issue 10 above for our advice on the protected species licencing approach. The MDS supports a number of protected species as listed which will be impacted by the projects. Potential impacts include: • **Bats** – Habitat loss (e.g. conifer plantation at Goose Hill etc.) and habitat fragmentation affecting key foraging and commuting routes (including the SSSI crossing); • **Natterjack toads** – Habitat loss and habitat fragmentation (Retsom's Field);	TBC	

	▪ Badgers ▪ Deptford Pink ▪ Breeding birds		• **Otters** – Habitat loss and habitat fragmentation (including the SSSI crossing), impacts on water quality and quantity and direct disturbance; • **Reptiles** – Habitat loss and habitat fragmentation; • **Water voles** – Habitat loss and habitat fragmentation (particularly around the SSSI crossing) and impacts on water quality and quantity; • **Badgers** – Habitat loss and direct disturbance; • **Deptford Pink** – Direct loss (north of Sizewell B power station) • **Breeding birds** – Habitat loss and direct disturbance Natural England was not given the opportunity to review the complete up-to-date survey information for each of these species at the pre-application stage alongside the respective mitigation strategies. It has not therefore been possible for us to provide extensive comments on protected species mitigation to date. We advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.8, 4.3 (iii) and 4.4 (iii and iv)); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.19 and throughout Annex 2 (see comments under 4.3, 4.4 and Annex 3 (see comments under 7.4.78, 7.4.84, 7.5.3, 7.5.58 – 7.5.60, 7.5.65, 7.8.6, 7.9.6, Table 9.3 and Table 10.3); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019,		

			paragraphs 3.9.16 – 3.9.20, 4.5.18 – 4.5.26, 4.5.44, 4.5.48 – 4.5.51 and 4.6.2.21 – 4.6.2.27). We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. Natterjack Mitigation Strategy, Reptile Mitigation Strategy, Water Vole Mitigation Strategy, Appendix: Amphibians, Appendix: Reptiles, Appendix: Ornithology, Appendix: Bats, Appendix: Terrestrial Mammals within ES Chapter 14: Terrestrial Ecology Ornithology omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **Comments on the DCO application – further information required** All baseline survey data for the project, covering all habitats and species likely to be affected, should be acceptable in terms of methodologies, coverage and age. The recent Chartered Institute of Ecology and Environmental Management (CIEEM) Advice note on the Lifespan of Ecological Reports and Surveys states that, for surveys which are more than three years old, "*The report is unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated*". Where the ecological survey data to inform the various Sizewell C impact assessments are not in line with this, we advise that clear justification must be provided on how the data remain valid and robust enough to inform conclusions. Further detailed advice on this for MDS protected species is outlined throughout Appendix III to this letter, but to summarise some of our key concerns: • **Bats:** Further details about the project are required to enable assessment, specifically the provision of bat hibernaculum. Further consideration should also be given to the retention of additional section of Goose Hill, following further surveys.		

			Bat surveys have not been carried out since 2016 therefore some updated surveys are required. Additional surveys should be carried out on the Goose Hill pine plantation that is to be destroyed by the development to assess the current bat assemblage and identify further bat foraging areas/commuting routes/flight paths. Where it is deemed that disturbance may lead to roost abandonment additional avoidance measure are to be considered: ▪ **Trees with confirmed bat roosts:** Where surveys confirm the presence of bat roosts further consideration should be given to the possibility of retaining the roost. ▪ **Potential Bat roosts in woodland blocks:** Where woodland block are to be removed and there is potential trees with unidentified roost to be lost further consideration should be given to the need for a mitigation licence using Licensing Policy 4. • **Badgers:** The possibility of retaining Main sett 3 should be considered further. Current proposals include the permanent exclusion of badgers from a number of setts which impacting two social groups. This includes the destruction of the main badger's sett in each of these territories. Sett 3, the main sett for the Goose hill/Coronation Wood/ Reckham Pitts Social Group is just within the red line boundary of the development footprint. The location of the individual sett entrances has not been provided. However further consideration should be to the possibility of retaining this sett or justification provided as to why this is not considered possible. • **Water voles**: Water vole surveys have not been carried out since 2009, other than at the Aldhurst Farm receptor site. It is noted that it is proposed to carry out surveys in 2020, details of these up-to-date surveys are required before an assessment of the impacts can be made. Insufficient water vole survey information has been provided to enable an assessment of the impacts and thus the suitability of the compensation provided. Upon completion of 2020 surveys it is recommended that Natural England pre submission screening service is used to enable us to fully		

			assess and comment on The trapping of water voles must be timed to enable them to be relocated directly to the receptor site for release to prevent them having to be taken into captivity. Displacement should also be considered if short lengths of bank are being impacted only. Further information is required detailing the quantity and location of water vole habitat will be damaged or destroyed and where trapping or displacement will occur. • **Breeding birds:** The results of breeding bird surveys are valid for 3 years. Typically, for many designated site surveys, data would be deemed valid for two years. Such an approach is endorsed by CIEEM who state that after three years ecological reports are unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated. Owing to the scale of the development and, consequently, the need to survey multiple taxonomic groupings and multiple interest features owing to the range of designations affected, it is understandable that survey work has been spread over a longer time period than would normally be expected. This does not, however, invalidate the basis of the CIEEM advice. There are a lack of buffers to assess the effects of indirect habitat loss. Breeding bird surveys should consider indirect effects of the proposal of breeding birds beyond the red line boundary.		
38	**ECOLOGY:** Impacts on nationally designated sites: ▪ Alde-Ore Estuary SSSI ▪ Leiston-Aldeburgh SSSI ▪ Minsmere – Walberswick Heath and Marshes SSSI	Impacts from noise, light and visual disturbance from a number of the MDS project elements, and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features. **(C) and (O)**	**<u>Context and background</u>** See comments under issue 27 above for further details. The impact assessments and any mitigation/compensation must also consider the notified features of these SSSIs. We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** See our comments under issue 27 above which also apply here with regards SSSI features		

39	**ECOLOGY:** Impacts on nationally designated sites: ▪ Minsmere – Walberswick Heath and Marshes SSSI ▪ Sizewell Marshes SSSI	Impacts from changes to coastal processes/ geomorphology arising from a number of the MDS project elements (e.g. hCDF, BLF) and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features. **(O)**	**Context and background** See comments under issue 28 above for further details. The impact assessments and any mitigation/compensation must also consider the notified features of these SSSIs. We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **Comments on the DCO application – further information required** See our comments under issue 28 above which also apply here with regards SSSI features	TBC	
40	**ECOLOGY:** Impacts on nationally designated sites: ▪ Alde-Ore Estuary SSSI ▪ Leiston-Aldeburgh SSSI ▪ Minsmere – Walberswick Heath and Marshes SSSI	Impacts from changes/ increases in recreational disturbance arising from the MDS project elements (accommodation campus and temporary caravan site on the LEEIE), and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features.	**Context and background** See comments under issue 29 above for further details. The impact assessments and any mitigation/compensation must also consider the notified features of these SSSIs. We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **Comments on the DCO application – further information required** See our comments under issue 29 above which also apply here with regards SSSI features	TBC	

		(C) and (O)			
41	**ECOLOGY:** Impacts on nationally designated sites: ▪ Alde-Ore Estuary SSSI	Impacts from intakes and outfalls and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features. **(C) and (O)**	**Context and background** See comments under issue 30 above for further details. The impact assessments and any mitigation/compensation must also consider the notified features of these SSSIs. We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **Comments on the DCO application – further information required** See our comments under issue 30 above which also apply here with regards SSSI features	TBC	
42	**ECOLOGY:** Impacts on nationally designated sites: ▪ Alde-Ore Estuary SSSI	Impacts from the thermal plume and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features. **(C) and (O)**	**Context and background** See comments under issue 31 above for further details. The impact assessments and any mitigation/compensation must also consider the notified features of these SSSIs. We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **Comments on the DCO application – further information required** See our comments under issue 31 above which also apply here with regards SSSI features	TBC	

43	**ECOLOGY:** Impacts on nationally designated sites: ▪ Alde-Ore Estuary SSSI	Impacts from the Combined Drainage Outfall (CDO) and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features. **(C) and (O)**	**<u>Context and background</u>** See comments under issue 32 above for further details. The impact assessments and any mitigation/compensation must also consider the notified features of these SSSIs. We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** See our comments under issue 32 above which also apply here with regards SSSI features	TBC	
44	**ECOLOGY:** Impacts on nationally designated sites: ▪ Alde-Ore Estuary SSSI	Impacts from the chemical plume and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features. **(C) and (O)**	**<u>Context and background</u>** See comments under issue 33 above for further details. The impact assessments and any mitigation/compensation must also consider the notified features of these SSSIs. We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** See our comments under issue 33 above which also apply here with regards SSSI features	TBC	
45	**ECOLOGY:** Impacts on nationally designated sites:	Impacts from chlorination and subsequent ecological effects on nationally	**<u>Context and background</u>** See comments under issue 34 above for further details. The impact assessments and any mitigation/compensation must also consider the notified features of these SSSIs.	TBC	

	▪ Alde-Ore Estuary SSSI	designated sites (SSSIs) and their notified features. **(C) and (O)**	We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** See our comments under issue 34 above which also apply here with regards SSSI features		
46	**ECOLOGY:** Impacts on nationally designated sites: ▪ Alde-Ore Estuary SSSI	Impacts from hydrazine and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features. **(C) and (O)**	**<u>Context and background</u>** See comments under issue 35 above for further details. The impact assessments and any mitigation/compensation must also consider the notified features of these SSSIs. We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** See our comments under issue 35 above which also apply here with regards SSSI features	TBC	
47	**ECOLOGY:** Impacts on nationally designated sites: ▪ Alde-Ore Estuary SSSI	Impacts from drilling mud and bentonite break out and subsequent ecological effects on nationally designated sites (SSSIs) and their notified features. **(C) and (O)**	**<u>Context and background</u>** See comments under issue 36 above for further details. The impact assessments and any mitigation/compensation must also consider the notified features of these SSSIs. We do not consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission.	TBC	

			Comments on the DCO application – further information required See our comments under issue 36 above which also apply here with regards SSSI features		
48	**ECOLOGY:** Impacts on nationally designated sites: ▪ Sizewell Marshes SSSI	Permanent direct habitat loss of the following SSSI features to the main platform and SSSI crossing: ▪ Tall herb fen (reedbed) ▪ Lowland ditch systems **(C)**	**Context and background** Two of the habitats for which Sizewell Marshes is in part notified as being of national significance are its tall herb fen (reedbed) and lowland ditch systems. The works for the construction of the main power station platform and SSSI crossing as proposed will lead some the permanent loss of these habitats. We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.5, 4.3 (iii and iv), 4.4 (ii and iii) and 4.2.8) • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.4, 3.8 – 3.11, 4.1 – 4.4 and throughout Annex 3 (see comments under Table 7.1, 7.4.39 and7.4.72 – 7.4.78); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, e.g. paragraphs 3.6, 3.9, 3.9.13 – 3.9.15, 4.5.1 – 4.5.4, 4.5.6, 4.6.1.2 and 4.6.2.2 – 4.6.2.9); • Natural England's response to the *Sizewell C – Stage 4 Consultation: 18th July 2019 to 27th September 2019* (our ref: 289446, dated 26th September 2019, comments 4 and 5); We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's	TBC	

			Sizewell C – Stakeholder Review Process (draft DCO submission) did not fully reflect our previous advice in this regard which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **Comments on the DCO application – futher information required** In all regards, the project proposals should clearly follow the avoidance-mitigation-compensation hierarchy in terms of impacts to ecology and landscape, and include consideration of less damaging alternatives as per section 4.4. and paragraph 5.3.7 of NPS EN-1. In the context of Natural England's remit, this is particularly important in the context of high value ecological receptors of national importance such as the SSSI. EDF Energy have proceeded with a culvert with embankment design for the SSSI crossing when potentially less damaging options for its design exist. Several alternative design options were presented to us by EDF Energy during pre-application and Natural England's preferred option remains that which would have the least environmental impact, including on the SSSI. One of the alternative design options included a three span bridge which we understand would be less damaging to these particular SSSI features (reedbed and ditches) by requiring less land take of these habitats. The proposal for future management of water levels also presents challenges and risks for the survival and quality of the SSSI as a result of the project. It should be noted that any impacts on the functionality of the ecological corridor between Sizewell Marshes and Minsmere South Levels cannot be addressed by the habitat creation scheme at Aldhurst Farm which can only account for habitat loss. Maintaining a visibly healthy and thriving wetland is important ecologically as well as to the landscape character and quality of this part of the AONB. Progressing with a design option which goes against this principle of 'least direct SSSI land take' is contradictory the protection afforded to SSSIs in England under the Wildlife and Countryside Act 1981 (as amended) to minimise damage the special interest of the site. **In light of the above, we do not consider that**		

			adequate justification for progressing with this design option has yet been provided. This is therefore a significant omission which needs to be addressed through the submission of further information. Irrespective of the SSSI crossing design, the general principle of compensating for the loss of these SSSI habitats (which would occur to a degree under all crossing design options) has previously been established at the earlier stages of our engagement, with an area of new reedbed and ditches already created at Aldhurst Farm. Should the culvert/ embankment design for the SSSI crossing be considered justifiable against possible alternatives, then we advise that the area of replacement reedbed and ditch habitats should be greater than the area of habitat to be lost due to the inherent risk of creating habitat of the same quality and distinctiveness. We understand that the area of reedbed and ditch habitat that has been created at Aldhurst Farm is broadly in line with the agreed minimum compensation ratios. **However, this needs to be fully quantified within the application documents in terms of areas to be lost vs. areas created.** We note and welcome that these wetland habitats at Aldhurst Farm have developed a characteristic avifauna, which includes some species of the SSSI wet grassland assemblage as well as wider non-designated species. However, it should be recognised that the ecological connectivity for species moving between Sizewell Marshes SSSI and the wetland habitats created at Aldhurst Farm is currently severely limited by the culvert crossing that exists on Lover's Lane. We understand that the Environment Agency also have records of otter mortality at this location. We therefore advise that this culvert should be replaced with a crossing to improve this situation. The proposed road improvement works on Lover's Lane presents the opportunity to undertake these improvement works at the same time and EDF Energy committed to exploring this at pre-application. **However, this does not appear to have been addressed in the application and is therefore an omission which needs to be addressed through the submission of further information.**		
49	**ECOLOGY:** Impacts on nationally designated sites:	Permanent direct habitat loss of the following SSSI feature to the	**<u>Context and background</u>** One of the habitats for which Sizewell Marshes is in part notified as being of national significance is its fen meadow. The works for the construction of the main	TBC	

	▪ Sizewell Marshes SSSI	main platform and SSSI crossing: ▪ Fen meadow **(C)**	power station platform and SSSI crossing as proposed will lead to the permanent loss of an area of this habitat type. We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.5, 4.3 (iii and iv), 4.4 (ii and iii) and 4.2.8); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.4, 3.8 – 3.11, 4.1 – 4.4 and throughout Annex 3 (see comments under Table 7.1, 7.4.39 and 7.4.72 – 7.4.78 and 7.9.3); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, e.g. paragraphs 3.6, 3.9, 3.9.13 – 3.9.15, 4.5.1 – 4.5.6, 4.6.1.2 and 4.6.2.2 – 4.6.2.9); • Natural England's response to the *Sizewell C – Stage 4 Consultation: 18th July 2019 to 27th September 2019* (our ref: 289446, dated 26th September 2019, comments 4, 5 and 8); We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not fully reflect our previous advice in this regard (i.e. fen meadow strategy omitted from the review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission.		

			<u>Comments on the DCO application – further information required</u> As highlighted above under issue 48, the project proposals should clearly follow the avoidance-mitigation-compensation hierarchy in terms of impacts to high value ecological receptors of national importance such as the SSSI and include consideration of less damaging alternatives where available, as per section 4.4. and paragraph 5.3.7 of NPS EN-1. EDF Energy have proceeded with a culvert with embankment design for the SSSI crossing when potentially less damaging options for its design exist. Several alternative design options were presented to us by EDF Energy during pre-application and Natural England's preferred option remains that which would have the least environmental impact, including on the SSSI. One of the alternative design options included a three span bridge which we understand would be less damaging to this particular SSSI feature (fen meadow) by requiring less land take of this habitat. Maintaining a visibly healthy and thriving wetland is important ecologically as well as to the landscape character and quality of this part of the AONB. Progressing with a design option which goes against this principle of 'least direct SSSI land take' is contradictory the protection afforded to SSSIs in England under the Wildlife and Countryside Act 1981 (as amended) to minimise damage the special interest of the site. **In light of the above, we do not consider that adequate justification for progressing with this design option has yet been provided. This is therefore a significant omission which needs to be addressed through the submission of further information.** Firstly, unlike the reedbed and ditch habitats discussed in issue reference 48 above it must be acknowledged that the feasibility of re-creating fen meadow is not well evidenced. Creating compensatory habitat of the same quality to that which will be destroyed will therefore be extremely difficult, if not impossible. Holistic headwater seepage, floodplain and river restoration is likely to be the most successful and sustainable approach to providing compensatory fen meadow habitat at the sites which have been proposed by EDF Energy. Even if successful, it should be acknowledged that these sites are functionally removed from Sizewell Marshes SSSI which is a limitation of this approach. Although this particular feature of the SSSI may be re-created there, the complex ecological interactions with other features which will be lost at Sizewell Marshes would not be.		

			Should the culvert/ embankment design for the SSSI crossing be considered justifiable against possible alternatives, then we advise that the area of replacement fen meadow habitat should be greater than the area of habitat to be lost due to the inherent risk of creating habitat of the same quality and distinctiveness. The extent of fen meadow likely to be destroyed is not identified consistently across the different chapters/sections of the DCO documents. Appendix 14C says the permanent loss 'is likely to be less than 0.5 ha'. The non-technical survey document identifies that 0.7 ha will be destroyed, and 0.9 ha will be required for temporary land-take. **Further information is required to clarify if these latter two figures are the same areas, or are they additive. More detail is also required to understand the impact of the temporary land take.** Given the rarity and continued losses of M22 fen meadow in the UK – the Guidelines for Grassland SSSI Selection report less than 10000 ha (the true figure for England is likely to be less than 5000 ha) – and the known difficulty of restoring species-rich fen/fen meadow habitat, we advise that the maximum multiplier needs to be applied here, i.e. area to be lost × 9. This will result in compensation areas of either 4.5 ha, 6.3 ha, or more, depending on severity and potential long-term impact of temporary land-take. Given the hydrological complexity of high value wetland habitats, it is anticipated that a larger extent of wetland restoration/compensation would be required in order to provide the conditions required specifically by the M22 fen meadow. Restoration will likely give rise to areas of wetter conditions and drier conditions that do not support M22, given natural hydrological, topographical and substrate variation within sites. The proposed fen meadow creation sites have been selected and taken forward to the DCO application stage following a walk-round survey and shallow soil core survey. The following documentation does not seem to have been provided: • A feasibility study into appropriate creation methods has not been carried out • Details of the ongoing and future ownership/management of the sites • Long-term management and monitoring plans • A contingency plan should fen meadow compensation not be possible		

			It is possible that once the next steps are undertaken (detailed ecological survey, topographical survey, surface and groundwater level data collection and hydrochemical data) that none of the sites are suitable. The risk of these creation options not coming to fruition therefore appears high. **With regard to the restoration and action needed to give highest chance of success, further detail is required to give confidence that any work would achieve compensation aims**. In particular, the stated desire to avoid engineering/groundworks is likely to significantly reduce the likely success of restoration works, given the published literature on fen restoration, including the findings recently published based on a review of European restoration projects, which suggested that both topsoil removal and re-wetting/hydrological manipulation were necessary to restore functioning fen habitat. Klimkowska A, Goldstein K, Wyszomirski T, Kozub Ł, Wilk M, Aggenbach C, et al. (2019) Are we restoring functional fens? – The outcomes of restoration projects in fens re-analysed with plant functional traits. PLoS ONE 14(4): e0215645. https://doi.org/10.1371/journal.pone.0215645 Given this lack of confidence in the outcomes of any compensatory fen meadow restoration, based on both lack of detail on area needed/to be provided and techniques/methods, it is not possible to conclude that the loss of fen meadow from Sizewell Marshes SSSI is not significant, as stated in the non-technical summary document.		
50	**ECOLOGY:** Impacts on nationally designated sites: ▪ Sizewell Marshes SSSI	Permanent direct loss of habitat (wet woodland) which supports the following SSSI feature to the main platform and SSSI crossing: ▪ Invertebrate assemblage **(C)**	**Context and background** Sizewell Marshes is also in part notified as being of national significance is its invertebrate assemblage. The works for the construction of the main power station platform and SSSI crossing as proposed will lead to the permanent loss of 2.3 ha of wet woodland. Whilst the wet woodland itself is not a notified feature of the SSSI, it is part of the SSSI site fabric and supports the invertebrate assemblage which is a notified feature; this is in part due to the braided nature of the ditches and open sediment where it passes through the alder woodland and this will be impacted by the proposals, including the re-routing of the Sizewell Drain. Compensation for the loss of this habitat must therefore be provided.	TBC	

			We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.5, 4.3 (iii and iv), 4.4 (ii and iii) and 4.2.8) • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.4, 3.8 – 3.11, 4.1 – 4.5 and throughout Annex 3 (see comments under Table 7.1, 7.4.39 and 7.4.72 – 7.4.78); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, e.g. paragraphs 3.6, 3.9, 3.9.13 – 3.9.15, 4.5.1 – 4.5.3, 4.5.6, 4.5.10, 4.6.1.2 and 4.6.2.2 – 4.6.2.9); • Natural England's response to the *Sizewell C – Stage 4 Consultation: 18th July 2019 to 27th September 2019* (our ref: 289446, dated 26th September 2019, comments 4, 5 and 9); We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not fully reflect our previous advice in this regard (i.e. Appendix: Invertebrates of ES Chapter 14 for MDS omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** As highlighted above under issue 48, the project proposals should clearly follow the avoidance-mitigation-compensation hierarchy in terms of impacts to high value		

			ecological receptors of national importance such as the SSSI and include consideration of less damaging alternatives where available, as per section 4.4. and paragraph 5.3.7 of NPS EN-1. EDF Energy have proceeded with a culvert with embankment design for the SSSI crossing when potentially less damaging options for its design exist. Several alternative design options were presented to us by EDF Energy during pre-application and Natural England's preferred option remains that which would have the least environmental impact, including on the SSSI. One of the alternative design options included a three span bridge which we understand would be less damaging to this particular SSSI feature (invertebrate assemblage) by requiring less land take of the supporting wet woodland habitat. It would also cause less indirect harm to the SSSI invertebrates which include aquatic beetles (Coleoptera), flies (Diptera), moths (Lepidoptera), dragonflies (Odonata) and spiders (Araneae)), through reducing connectivity at Sizewell Marshes; groups such as Odonata which are strong dispersers and high flying (and so able to see beyond the drain) may not be affected by the culvert design. However, other wetland invertebrate groups are not such good, or poor, dispersers, and so are likely to be directly affected by the culvert as proposed, being narrow and 70 m long, which will result in lack of light reaching the water. The design could potentially be modified (e.g. widened) so that light is able to reach the water and alleviate some of the most significant effects but a bridge design would alleviate these concerns. Maintaining a visibly healthy and thriving wetland is important ecologically as well as to the landscape character and quality of this part of the AONB. Progressing with a design option which goes against this principle of 'least direct SSSI land take' is contradictory the protection afforded to SSSIs in England under the Wildlife and Countryside Act 1981 (as amended) to minimise damage the special interest of the site. **In light of the above, we do not consider that adequate justification for progressing with this design option has yet been provided. This is therefore a significant omission which needs to be addressed through the submission of further information.** Should the culvert/ embankment design for the SSSI crossing be considered justifiable against possible alternatives, then we advise that the area of replacement wet woodland habitat should be greater than the area of habitat to be lost due to the inherent risk of creating habitat of the same quality and distinctiveness. Habitat		

			creation should also be established in advance of the habitat being lost to the development. The applicant has proposed an area of 0.7 ha of wet woodland to be created within the north of the development, adjacent to the marsh harrier habitat improvement area to provide some compensatory habitat for this loss. **However, we advise that further information is needed to demonstrate that the proposed wet woodland would fully compensate for the SSSI loss** by being: • *In a suitable location:* It is not obvious that the proposed location for this habitat would be appropriate hydro-topographically for the creation of any wetland habitats. The creation of a natural wet to dry transition at the SSSI edge may still be worthwhile but it may mean that it will not specifically provide compensation for wet woodland loss associated with the Sizewell Marshes SSSI crossing. If that is the case, then other potential compensation sites will need to be identified and Natural England consulted on these. The creation of wet woodland compensation should also not be at the expense of the existing SSSI features (i.e. open water, reedbed, fen) and we require clarification on this point. • *Of a sufficient size:* i.e. what is a suitable compensation ratio? The applicant proposes 0.7 ha of wet woodland habitat to compensate 2.63 ha lost (para 14.7.130, Chapter 14, Environmental Statement). As this is a significant effect on wet woodland and its associated invertebrate assemblage, measures still need to be put in place to compensate for the direct loss of habitat, as mitigation does not seem to be possible. It is Natural England's recommendation that creation of wet woodland habitat should compensate for the total quantum of habitat lost as well as any damage caused by accessing and drilling within them. • *Of a sufficient structure and quality to support the designated invertebrate interest:* this also needs to take into account ecological connectivity and the facilitation of species movement. Connectivity between areas of high quality habitat is vital on a landscape scale and must be retained, or if it is considered that some has to be lost/ damaged, we need to know how this would be mitigated for. The current proposals to produce compensation for lost wet woodland include non-natives species. There appears to be no		

			justification for including these rather than replacing species like-for-like and this therefore requires further consideration. • *Fully functioning as wet woodland within a suitable timeframe*: planting vs natural regeneration should be considered here. If feasible, the latter may produce a more diverse outcome, but would likely take longer to establish and therefore become functional as compensation; • *Secured and maintained in the long-term and integrated into the overall site management plan;*		
51	**ECOLOGY:** Impacts on nationally designated sites: ▪ Sizewell Marshes SSSI	Potential for temporary losses from the main platform and SSSI crossing to SSSI habitats and species (see issue refs 48 – 50 above) to become permanent **(C)**	**<u>Context and background</u>** There is potential for some of the temporary land take from the SSSI to become permanent which would be additional to losses outlined in issue references 48 – 50 above. Full detail must therefore be provided on the plans to restore these areas upon completion of the temporary works to ensure that this does not occur. We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.5, 4.3 (iii and iv), 4.4 (ii and iii) and 4.2.8) • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.4, 3.8 – 3.11, 4.1 – 4.5 and throughout Annex 3 (see comments under Table 7.1, 7.4.39 and 7.4.72 – 7.4.78); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, e.g. paragraphs 3.6, 3.9, 3.9.13 – 3.9.15, 4.5.1 – 4.5.3, 4.5.6 – 4.5.7, 4.5.10, 4.6.1.2 and 4.6.2.2 – 4.6.2.9);	TBC	

			We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not fully reflect our previous advice in this regard (which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **Comment on the DCO application – further information required** Further information is required to understand the impacts of temporary land take and how it will be restored. All habitat impacted by construction should be restored and maintained in accordance with what was originally present. Any restoration should not be at the expense of existing SSSI features. Further detail is required about the reestablishment of SSSI habitat, including method, objectives, timeframe, monitoring (including success in establishing desirable species) and management. We recommend that opportunities to improve the habitat area considered within the boundary of the SSSI.		
ASSOCIATED DEVELOPMENT SITE – Two Village Bypass (A12)					
52	**ECOLOGY:** Impacts on protected species ▪ Bats ▪ Badgers ▪ Otters ▪ Water voles	Protected species' mitigation and compensation for Two Village Bypass impacts **(C) and (O)**	**Context and background** This AD site supports a number of protected species as listed which will be impacted by the project. Potential impacts include: • Bats - Habitat loss with possible fragmentation • Badgers – Habitat loss and direct disturbance with possible fragmentation • Otter - Habitat loss with possible fragmentation • Water vole - Habitat loss and direct disturbance with possible fragmentation Natural England was not given the opportunity to review the complete up-to-date survey information for each of these species at the pre-application stage alongside the respective mitigation strategies. It has not therefore been possible for us to provide extensive comments on protected species mitigation to date.	TBC	

			We advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.8, 4.3 (iii) and 4.4 (iii and iv)); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.19 and throughout Annex 2 (see comments under 4.3, 4.4 and Annex 3 (see comments under 7.4.78, 7.4.84, 7.5.3, 7.5.58 – 7.5.60, 7.5.65, 7.8.6, 7.9.6, Table 9.3 and Table 10.3); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, paragraphs 3.9.16 – 3.9.20, 4.5.26, 4.5.44, 4.5.48 – 4.5.51 and 4.6.16.3). We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. the protected species which should be included within ES Chapter 14: Terrestrial Ecology Ornithology was omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **Comments on the DCO application: further information required:** All baseline survey data for the project, covering all habitats and species likely to be affected, should be acceptable in terms of methodologies, coverage and age. The recent Chartered Institute of Ecology and Environmental Management (CIEEM) Advice note on the Lifespan of Ecological Reports and Surveys states that, for		

			surveys which are more than three years old, "*The report is unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated*". Where the ecological survey data to inform the various Sizewell C impact assessments are not in line with this, we advise that clear justification must be provided on how the data remain valid and robust enough to inform conclusions. Further detailed advice on this for Two Village Bypass protected species is outlined throughout Appendix III to this letter, but to summarise our key concerns: • **Water vole:** For the water vole method statement, additional information will be required to determine whether an individual licence or Class licence is required for the works. • **Badgers:** Underpasses to be considered depending upon results of further surveys. Badger surveys carried out along the route included a 50m buffer however further surveys of the wider area are required. If it identified that the route will sever territories the placement of underpasses along key commuting routes should be incorporated into the design.		
53	**ECOLOGY: D**amage to ancient woodland: ▪ Foxburrow Wood, Palant's Grove and Pond Wood	Impacts from the routing of the road on these woodlands **(C) and (O)**	**<u>Context and background</u>** Foxburrow Wood,Palant's Grove and Pond Wood are designated as ancient woodland and are in close proximity to the proposed route of the bypass. As set out in NPS EN – 1, "*Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost it cannot be recreated. The IPC should not grant development consent for any development that would result in its loss or deterioration unless the benefits (including need) of the development, in that location outweigh the loss of the woodland habitat*" (paragraph 5.3.1). We therefore welcome that the red line boundary for the bypass was amended following our pre-application advice at Stage 3 to avoid direct loss of Foxburrow Wood ancient woodland. However, any routing of the bypass in close proximity to these ancient woodlands must also consider wider potential impacts to them (indirect damage, fragmentation etc.) in line with the avoidance-mitigation-compensation hierarchy as outlined further below.	TBC	

			We have raised this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, paragraph 4.6.16.4). • Natural England's response to the *Sizewell C – Stage 4 Consultation: 18th July 2019 to 27th September 2019* (our ref: 289446, dated 26th September 2019, comment 1); We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. the Two Village Bypass Terrestrial Ecology Ornithology ES Chapter was omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **Comments on the DCO application – further information required** As mentioned above, the routing of the bypass is in close proximity to these ancient woodlands and therefore needs to consider potential impacts to them in line with the avoidance-mitigation-compensation hierarchy in terms of: • ***Direct loss:*** as a first principle, direct loss should be avoided; • ***Damage:*** routing the road in such a way as to avoid damage to ancient woodland. The Natural England/Forestry Commission Ancient Woodland Standing Advice advises a minimum buffer of 15 meters between development and any ancient woodland. However, the advice also says that the size of the buffer should be suitable for the scale, type and impacts of the development and that a wider buffer may be suitable. The minimum 15 meter buffer is to avoid root damage. Where assessment shows other		

			impacts are likely to extend beyond this distance, a larger buffer zone is likely to be needed e.g. to avoid the effect of air pollution from development that results in a significant increase in traffic. • ***Fragmentation:*** the road should be routed in such a way that it avoids fragmentation of ancient woodland which would reduce the ecological connectivity between them, negatively impacting on species movement and creating/increasing edge effects; We are not yet satisfied that damage/fragmentation to these woodlands will be avoided/mitigated as proposed. If it cannot, we do not consider that adequate justification for progressing with this option where less damaging options might be available has yet been provided. Natural England was recently requested to review evidence and information for Pond Wood which resulted in it being added to the Ancient Woodland Inventory (AWI). It therefore needs to be accounted for appropriately in relation to this aspect of the proposal. In Chapter 7 Terrestrial Ecology and Ornithology and its appendices, loss of habitat within Pond Wood is identified and mitigated proposed in the form of new habitat creation.. However, consideration of the avoidance of any potential direct loss to the site and appropriate buffering in line with our standing advice should be considered as already applied to Foxburrow Wood. This includes appropriate recognition in Outline Landscape and Ecological Management Plan (oLEMP), Code of Construction Practice etc. as needed. Due to its inclusion on the AWI it should be also be screened in to the Air Quality Assessment for this project and impacts to ground water changes should also be considered.		
ASSOCIATED DEVELOPMENT SITE – Yoxford roundabout (A12)					
54	**ECOLOGY:** Impacts on protected species • Bats • Breeding birds	Protected species' mitigation and compensation for Yoxford roundabout impacts **(C) and (O)**	**<u>Context and background</u>** This AD site supports a number of protected species as listed which will be impacted by the project. Potential impacts include: • Bat – Habitat loss Natural England was not given the opportunity to review the complete up-to-date survey information for each of these species at the pre-application stage alongside	TBC	

			the respective mitigation strategies. It has not therefore been possible for us to provide extensive comments on protected species mitigation to date. We advised EDF Energy on this issue a number of times throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.8, 4.3 (iii) and 4.4 (iii and iv)); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.19 and throughout Annex 2 (see comments under 4.3, 4.4 and Annex 3 (see comments under 7.4.78, 7.4.84, 7.5.3, 7.5.58 – 7.5.60, 7.5.65, 7.8.6, 7.9.6, Table 9.3 and Table 10.3); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, paragraphs 3.9.16 – 3.9.20, 4.5.26, 4.5.44, 4.5.48 – 4.5.51 and 4.6.17.4). We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. the protected species which should be included within ES Chapter 14: Terrestrial Ecology Ornithology was omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** All baseline survey data for the project, covering all habitats and species likely to be affected, should be acceptable in terms of methodologies, coverage and age. The		

			recent Chartered Institute of Ecology and Environmental Management (CIEEM) Advice note on the Lifespan of Ecological Reports and Surveys states that, for surveys which are more than three years old, "*The report is unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated*". Where the ecological survey data to inform the various Sizewell C impact assessments are not in line with this, we advise that clear justification must be provided on how the data remain valid and robust enough to inform conclusions. Further detailed advice on Yoxford Roundabout protected species is outlined throughout Appendix III to this letter, but to summarise: • **Bats:** Natural England supports the inclusion of bat boxes, however the applicant needs to provide a variety of bat boxes to accommodate the different roost types such as maternity, day and hibernation. • **Birds:** Natural England strongly recommends that the applicant undertakes a series of bird surveys at the site to determine the impacts of the development to any breeding or wintering birds that use the site. The survey effort should cover the following periods: Breeding bird season (March – July), Wintering bird season (November – March) and Passage birds (March – October**).** • Natural England recommends that where possible the applicant considered enhancing local habitats to improve biodiversity.		
ASSOCIATED DEVELOPMENT SITE – Sizewell Link Road (B1122)					
55	**ECOLOGY:** Impacts on protected species • Bats • GCN • Water voles	Protected species' mitigation and compensation for SLR impacts **(C) and (O)**	**Context and background** This AD site supports a number of protected species as listed which will be impacted by the project. Natural England was not given the opportunity to review the complete up-to-date survey information for each of these species at the pre-application stage alongside the respective mitigation strategies. It has not therefore been possible for us to provide extensive comments on protected species mitigation to date. Potential impacts include:	TBC	

			• Bat – Habitat loss and possible fragmentation • GCN – habitat loss • Water vole – possible habitat loss We advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.8, 4.3 (iii) and 4.4 (iii and iv)); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.19 and throughout Annex 2 (see comments under 4.3, 4.4 and Annex 3 (see comments under 7.4.78, 7.4.84, 7.5.3, 7.5.58 – 7.5.60, 7.5.65, 7.8.6, 7.9.6, Table 9.3 and Table 10.3); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, paragraphs 3.9.16 – 3.9.20, 4.5.26, 4.5.44, 4.5.48 – 4.5.51 and 4.7.1.5). We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. the protected species which should be included within ES Chapter 14: Terrestrial Ecology Ornithology was omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission.		

			Comments on the DCO application – further information required All baseline survey data for the project, covering all habitats and species likely to be affected, should be acceptable in terms of methodologies, coverage and age. The recent Chartered Institute of Ecology and Environmental Management (CIEEM) Advice note on the Lifespan of Ecological Reports and Surveys states that, for surveys which are more than three years old, "*The report is unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated*". Where the ecological survey data to inform the various Sizewell C impact assessments are not in line with this, we advise that clear justification must be provided on how the data remain valid and robust enough to inform conclusions. Further detailed advice for SLR protected species is outlined throughout Appendix III to this letter, but to summarise: • **Bats:** Natural England strongly advises the applicant to create a bat lighting plan for the route. Along the route the lighting placement should take into account foraging and commuting routes of bats. The bat hop over points, should be areas where there is no lighting present due to the sensitivity of certain bat species to light. Close board fencing along the route should be considered to prevent light spill into woodland areas or by having the lighting not exceed 0.1 lux. Other methods such as having the lamps fitted with hoods to prevent further light spill, or using bat friendly colours or shades along the route should be considered • **GCN:** The proposals of the link road as they stand will lead to a net loss of habitat for great crested newts. Though some compensatory habitat has been proposed, there is still a net loss of overall. With any habitat provided as mitigation and compensation for the scheme Natural England strongly recommends providing habitats of high ecological value to newts. The applicant should consider the provision of further areas of scrub habitat or wild flower grass lands as areas of foraging. • **Water vole:** Any loss of water vole habitat should be considered and compensated for. An updated assessment of the ditches should be made in advance of the works.		

ASSOCIATED DEVELOPMENT SITE – Theberton Bypass (B1122)					
56	**ECOLOGY:** Impacts on protected species • Bats • GCN • Water voles	Protected species' mitigation and compensation for Theberton Bypass impacts **(C) and (O)**	**<u>Context and background</u>** This AD site supports a number of protected species as listed which will be impacted by the project. Natural England was not given the opportunity to review the complete up-to-date survey information for each of these species at the pre-application stage alongside the respective mitigation strategies. It has not therefore been possible for us to provide extensive comments on protected species mitigation to date. We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.8, 4.3 (iii) and 4.4 (iii and iv)); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.19 and throughout Annex 2 (see comments under 4.3, 4.4 and Annex 3 (see comments under 7.4.78, 7.4.84, 7.5.3, 7.5.58 – 7.5.60, 7.5.65, 7.8.6, 7.9.6, Table 9.3 and Table 10.3); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, paragraphs 3.9.16 – 3.9.20, 4.5.26, 4.5.44, 4.5.48 – 4.5.51 and 4.8.3.4). We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. the protected species which should be included within ES Chapter 14: Terrestrial Ecology Ornithology was omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019).	TBC	

			We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **<u>Comments on the DCO application – further information required</u>** All baseline survey data for the project, covering all habitats and species likely to be affected, should be acceptable in terms of methodologies, coverage and age. The recent Chartered Institute of Ecology and Environmental Management (CIEEM) Advice note on the Lifespan of Ecological Reports and Surveys states that, for surveys which are more than three years old, "*The report is unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated*". Where the ecological survey data to inform the various Sizewell C impact assessments are not in line with this, we advise that clear justification must be provided on how the data remain valid and robust enough to inform conclusions. Further detailed advice for Theberton Bypass protected species is outlined throughout Appendix III to this letter, but to summarise: • Please see comments for issue 56 above (SLR) which largely apply here too.		
ASSOCIATED DEVELOPMENT SITE – Wickham Market Park and Ride (southern)					
57	**ECOLOGY:** Impacts on protected species • Bats • Badgers • Reptiles • Breeding birds	Protected species' mitigation and compensation for Wickham Market Park and Ride impacts **(C) and (O)**	**<u>Context and background</u>** This AD site supports a number of protected species as listed which will be impacted by the project. Potential impacts include: • Bats – Habitat loss • Badgers – habitat disturbance • Reptiles – habitat loss/disturbance • Breeding birds – direct disturbance Natural England was not given the opportunity to review the complete up-to-date survey information for each of these species at the pre-application stage alongside the respective mitigation strategies. It has not therefore been possible for us to provide extensive comments on protected species mitigation to date.	TBC	

			We have advised EDF Energy on this issue a throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.8, 4.3 (iii) and 4.4 (iii and iv)); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.19 and throughout Annex 2 (see comments under 4.3, 4.4 and Annex 3 (see comments under 7.4.78, 7.4.84, 7.5.3, 7.5.58 – 7.5.60, 7.5.65, 7.8.6, 7.9.6, Table 9.3 and Table 10.3); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, paragraphs 3.9.16 – 3.9.20, 4.5.26, 4.5.44, 4.5.48 – 4.5.51 and 4.6.19.3). We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. the protected species which should be included within ES Chapter 14: Terrestrial Ecology Ornithology was omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **Comments on the DCO application – further information required** All baseline survey data for the project, covering all habitats and species likely to be affected, should be acceptable in terms of methodologies, coverage and age. The recent Chartered Institute of Ecology and Environmental Management (CIEEM) Advice note on the Lifespan of Ecological Reports and Surveys states that, for surveys which are more than three years old, "*The report is unlikely to still be valid*		

			and most, if not all, of the surveys are likely to need to be updated". Where the ecological survey data to inform the various Sizewell C impact assessments are not in line with this, we advise that clear justification must be provided on how the data remain valid and robust enough to inform conclusions. Further detailed advice for Wickham Market Park and Ride protected species is outlined throughout Appendix III to this letter, but to summarise: • **Bats:** More than 3 years has lapsed since the bat surveys were undertaken, Natural England strongly advises the applicant undertakes up to date surveys of the site. It is essential to have up to date survey information on what species may utilise the site and the potential impacts any construction on the site poses to any species present. This is essential to informing on any protected species licences that the applicant needs to apply for. • **Badgers:** If any badger setts or entrances are discovered on the site, the ECoW should be contacted to come out and survey the hole, any construction work in the meantime should stop immediately. If a badger sett and any entrance is confirmed, then a Protected species licence needs to be obtained from Natural England. Natural England recommends that the applicant undertakes a more recent walk over survey of the site for badger activity, given the close proximity of a main badger sett to the site boundary – this should be undertaken prior to any construction taking place. If there is any badger activity found then the applicant will need to apply for a European Protected Species Licence. • **Reptiles:** Whilst most of the site is considered sub-optimal for reptiles across the development site. The arable edges, where there is hedgerows and around pond 59 have potential for reptiles. The applicant should consider a phased vegetation clearance to encourage any reptiles that may be present on the site to move off the site. • **Birds:** The bird surveys data is currently more than 3 years old, Natural England expects all survey data to be a maximum of 3 years of age. Once the applicant updates the bird surveys for the site, the IEF for overwintering		

			and breeding birds will need to revaluated based on the results of the recent survey data to ensure they are scoped in or out accordingl.		
ASSOCIATED DEVELOPMENT SITE – Darsham Park and Ride (northern)					
58	**ECOLOGY:** Impacts on protected species • Bats • GCN	Protected species' mitigation and compensation for Darsham Park and Ride impacts **(C) and (O)**	**<u>Context and background</u>** This AD site supports a number of protected species as listed which will be impacted by the project. Potential impacts include: • Bat – Habitat loss • GCN – direct disturbance Natural England was not given the opportunity to review the complete up-to-date survey information for each of these species at the pre-application stage alongside the respective mitigation strategies. It has not therefore been possible for us to provide extensive comments on protected species mitigation to date. We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.8, 4.3 (iii) and 4.4 (iii and iv)); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.19 and throughout Annex 2 (see comments under 4.3, 4.4 and Annex 3 (see comments under 7.4.78, 7.4.84, 7.5.3, 7.5.58 – 7.5.60, 7.5.65, 7.8.6, 7.9.6, Table 9.3 and Table 10.3); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, paragraphs 3.9.16 – 3.9.20, 4.5.26, 4.5.44, 4.5.48 – 4.5.51 and 4.6.16.4). We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which	TBC	

			were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. the protected species which should be included within ES Chapter 14: Terrestrial Ecology Ornithology was omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **Comments on the DCO application – further information required** All baseline survey data for the project, covering all habitats and species likely to be affected, should be acceptable in terms of methodologies, coverage and age. The recent Chartered Institute of Ecology and Environmental Management (CIEEM) Advice note on the Lifespan of Ecological Reports and Surveys states that, for surveys which are more than three years old, "*The report is unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated*". Where the ecological survey data to inform the various Sizewell C impact assessments are not in line with this, we advise that clear justification must be provided on how the data remain valid and robust enough to inform conclusions. Further detailed advice for the Darsham Park and Ride is outlined throughout Appendix III to this letter, but to summarise: • **Bats:** Further consideration should be given to the placement of the buffer to avoid disturbance. 2015 surveys should be updated in advance of works • **GCN:** Natural England advises the applicant to consider the placement of the amphibian fencing. The amphibian fencing needs to prevent access onto the construction site by great crested newts in order to prevent any incidental injury or death. The applicant would need to obtain a European Protected Species Mitigation Licence in order to install the fencing. The fencing should enclose the entire development site, to prevent any newts venturing there. If it is not possible then the applicant should consider turn backs into the fencing in order to prevent newts coming onto the site.		

			As it stands the development of the park and ride results in a severance of connectivity for great crested newts from pond 78 to pond 101. Natural England strongly advises to consider the design of mitigation to enable GCN to access the wider area. Any culverts or tunnels placed are only effective with directional fencing ensuring any newts are guided towards the tunnel. Another success factor comes from the either side of the tunnel having a water body within 100m of each entrance of the tunnel. The applicant should consider other options should as dropped curbs and offsetting gully pots to create GCN crossing points and linking these areas up using vegetation and hedgerows.		
ASSOCIATED DEVELOPMENT SITE – Other Highway Improvements					
59	**ECOLOGY:** Impacts on protected species • GCN	Protected species' mitigation and compensation for Other Highway Improvement impacts **(C) and (O)**	**<u>Context and background</u>** This AD site supports a number of protected species as listed which will be impacted by the project. Natural England was not given the opportunity to review the complete up-to-date survey information for each of these species at the pre-application stage alongside the respective mitigation strategies. It has not therefore been possible for us to provide extensive comments on protected species mitigation to date. We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.8, 4.3 (iii) and 4.4 (iii and iv)); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.19 and throughout Annex 2 (see comments under 4.3, 4.4 and Annex 3 (see comments under 7.4.78, 7.4.84, 7.5.3, 7.5.58 – 7.5.60, 7.5.65, 7.8.6, 7.9.6, Table 9.3 and Table 10.3);	TBC	

			• Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, paragraphs 3.9.16 – 3.9.20, 4.5.26, 4.5.44, 4.5.48 – 4.5.51 and 4.6.20.2). We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. the protected species which should be included within ES Chapter 14: Terrestrial Ecology Ornithology was omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **Comments on the DCO application – further information required** All baseline survey data for the project, covering all habitats and species likely to be affected, should be acceptable in terms of methodologies, coverage and age. The recent Chartered Institute of Ecology and Environmental Management (CIEEM) Advice note on the Lifespan of Ecological Reports and Surveys states that, for surveys which are more than three years old, "*The report is unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated*". Where the ecological survey data to inform the various Sizewell C impact assessments are not in line with this, we advise that clear justification must be provided on how the data remain valid and robust enough to inform conclusions. Further detailed advice on Other Highway Improvements and protected species is outlined throughout Appendix III to this letter, but to summarise: • **GCN:** Natural England acknowledges that no access was granted for surveys on P005 and P161 however the HIS surveys were results were 'Good' for both water bodies. Natural England advises the applicant to take caution when making ruling out GCN presence on the site. The habitats within the proposed site although are arable and offer little benefit to GCN apart from areas of foraging when ploughed, there's habitat present within the wider area (500m). The habitat within the wider area are small pockets		

			of woodland, with other waterbodies present within 500m. The road (Felixstowe Road) and the rail way line offer partial barriers of dispersal to GCN across the wider area. Natural England recommends the applicant working under a Reasonable Avoidance Measures (RAMS) method statement to work under as a precaution due to lack of access to the ponds (P005 and P161) for survey.		
ASSOCIATED DEVELOPMENT SITE – Green Rail Route					
60	**ECOLOGY:** Impacts on protected species • Bats • GCN	Protected species' mitigation and compensation for Green Rail Route impacts **(C) and (O)**	**<u>Context and background</u>** This AD site supports a number of protected species as listed which will be impacted by the project. Potential impacts include: • Bat – Habitat loss and fragmentation • GCN – direct disturbance Natural England was not given the opportunity to review the complete up-to-date survey information for each of these species at the pre-application stage alongside the respective mitigation strategies. It has not therefore been possible for us to provide extensive comments on protected species mitigation to date. We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.8, 4.3 (iii) and 4.4 (iii and iv)); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.19 and throughout Annex 2 (see comments under 4.3, 4.4 and Annex 3 (see comments under 7.4.78, 7.4.84, 7.5.3, 7.5.58 – 7.5.60, 7.5.65, 7.8.6, 7.9.6, Table 9.3 and Table 10.3); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019,	TBC	

			paragraphs 3.9.16 – 3.9.20, 4.5.26, 4.5.44, 4.5.48 – 4.5.51 and 4.8.1.4 – 4.8.1.6). We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. the protected species which should be included within ES Chapter 14: Terrestrial Ecology Ornithology was omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **Comment on the DCO application – further information required** All baseline survey data for the project, covering all habitats and species likely to be affected, should be acceptable in terms of methodologies, coverage and age. The recent Chartered Institute of Ecology and Environmental Management (CIEEM) Advice note on the Lifespan of Ecological Reports and Surveys states that, for surveys which are more than three years old, "*The report is unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated*". Where the ecological survey data to inform the various Sizewell C impact assessments are not in line with this, we advise that clear justification must be provided on how the data remain valid and robust enough to inform conclusions. Further detailed advice on the Green Rail Route and protected species is outlined throughout Appendix III to this letter, but to summarise: • **Bats:** Insufficient information has been provided to enable an assessment method statement. It is recommended that Natural England pre submission screening service is used to enable us to fully assess and comment on proposals set out in a draft licence application. Bat Crossing points to be considered depending on results of further surveys**.**		

			Additional surveys should be carried out where the route will bisect hedgerows or tree lines A number of trees to be lost have been assessed as having potential roost feature. Therefore activity surveys are required to determine roost status and species present. • **GCN:** Full population size class surveys were conducted for GCN within 500m of the site in 2014, whilst EDNA was undertaken in 2016. Since the survey data is older than 3 years old, Natural England recommends the surveys are updated to provide current information on the population sizes and presence of GCN across the site. Having current, up to date survey data is essential to understand the impacts the development proposes to the GCN population on the site and within 500m of the site boundary. If the applicant is to apply for a European Protected Species licence, then having survey data with a maximum age of 3 years is recommended.		
ASSOCIATED DEVELOPMENT SITE – Other Rail Improvements					
61	**ECOLOGY:** Impacts on protected species • Bats • GCN • Badgers • Breeding birds	Protected species' mitigation and compensation for other rail improvement impacts **(C) and (O)**	**<u>Context and background</u>** This AD site supports a number of protected species as listed which will be impacted by the project. Natural England was not given the opportunity to review the complete up-to-date survey information for each of these species at the pre-application stage alongside the respective mitigation strategies. It has not therefore been possible for us to provide extensive comments on protected species mitigation to date. We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.8, 4.3 (iii) and 4.4 (iii and iv)); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February	TBC	

			2017, paragraphs 3.19 and throughout Annex 2 (see comments under 4.3, 4.4 and Annex 3 (see comments under 7.4.78, 7.4.84, 7.5.3, 7.5.58 – 7.5.60, 7.5.65, 7.8.6, 7.9.6, Table 9.3 and Table 10.3); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, paragraphs 3.9.16 – 3.9.20, 4.5.26, 4.5.44, 4.5.48 – 4.5.51 and 4.8.2.3). We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. the protected species which should be included within ES Chapter 14: Terrestrial Ecology Ornithology was omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **Comments on the DCO application – further information required** All baseline survey data for the project, covering all habitats and species likely to be affected, should be acceptable in terms of methodologies, coverage and age. The recent Chartered Institute of Ecology and Environmental Management (CIEEM) Advice note on the Lifespan of Ecological Reports and Surveys states that, for surveys which are more than three years old, "*The report is unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated*". Where the ecological survey data to inform the various Sizewell C impact assessments are not in line with this, we advise that clear justification must be provided on how the data remain valid and robust enough to inform conclusions. Further detailed advice on the Other Rail Improvements and protected species is outlined throughout Appendix III to this letter, but to summarise: • Natural England strongly recommends the applicant under takes an Extended phase 1 habitat survey of the site, and identifies plants and habitats within the site and makes a note of any protected species. A desk		

			survey is useful for providing background information of the site and identifying what may be present on the site, a Phase 1 habitat survey is needed to confirm the presence of any protected species/habitats on the site. Having survey data which informs on the status of any plants and habitats on the site is essential in understanding the impacts of the development and the impacts to any protected species on the site. • Natural England advises a review of the Important Ecological Features (IEFs) once survey data has been updated for GCN, bats, birds and badgers. It is essential the IEFs are updated to ensure the correct ones are scoped in or out to assess the impacts to the protected species on site and ensure there is adequate mitigation and compensation. • Natural England recommends bird surveys (breeding and wintering) are undertaken at the site to understand the species that utilise the site, this is essential in understanding the impact to the species that may be present on the site. The information gathered from surveys is key to informing upon the methodology, and timings of any construction and to whether any mitigation and compensation is required due to the impacts.		
ASSOCIATED DEVELOPMENT SITE – Freight Management Facility					
62	**ECOLOGY:** Impacts on protected species • Bats • Breeding birds	Protected species' mitigation and compensation for freight management facility impacts **(C) and (O)**	**<u>Context and background</u>** This AD site supports a number of protected species as listed which will be impacted by the project. Potential impacts include: • Bat – Habitat loss • Breeding birds – habitat loss Natural England was not given the opportunity to review the complete up-to-date survey information for each of these species at the pre-application stage alongside the respective mitigation strategies. It has not therefore been possible for us to provide extensive comments on protected species mitigation to date.	TBC	

			We have advised EDF Energy on this issue throughout our pre-application engagement, including on the following statutory consultations under Section 42 of the Planning Act 2008: • Natural England's response to the *Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development* (our ref: 71859, dated 6th February 2013, paragraphs 3.8, 4.3 (iii) and 4.4 (iii and iv)); • Natural England's response to the *Sizewell C – Stage 2 Consultation: 23 November 2016 to 3 February 2017* (our ref: 202551, dated 2nd February 2017, paragraphs 3.19 and throughout Annex 2 (see comments under 4.3, 4.4 and Annex 3 (see comments under 7.4.78, 7.4.84, 7.5.3, 7.5.58 – 7.5.60, 7.5.65, 7.8.6, 7.9.6, Table 9.3 and Table 10.3); • Natural England's response to the *Sizewell C – Stage 3 Consultation: 4th January 2019 to 29th March 2019* (our ref: 272181, dated 29th March 2019, paragraphs 3.9.16 – 3.9.20, 4.5.26, 4.5.44, 4.5.48 – 4.5.51 and 4.7.2.4). We have further reiterated this advice through pre-application workshops and document reviews facilitated by EDF Energy. Despite this, the documents which were circulated to Natural England in December 2019 as part of EDF Energy's *Sizewell C – Stakeholder Review Process (draft DCO submission)* did not reflect our previous advice in this regard (i.e. the protected species which should be included within ES Chapter 14: Terrestrial Ecology Ornithology was omitted from review) which we again flagged in our response (our ref: 299823, dated 9th December 2019). We do not therefore consider that this issue was addressed by EDF Energy in sufficient detail at pre-application and we are seeing key information in this regard for the first time at formal submission. **Comments on the DCO application – further information required** All baseline survey data for the project, covering all habitats and species likely to be affected, should be acceptable in terms of methodologies, coverage and age. The recent Chartered Institute of Ecology and Environmental Management (CIEEM) Advice note on the Lifespan of Ecological Reports and Surveys states that, for surveys which are more than three years old, "*The report is unlikely to still be valid*		

			and most, if not all, of the surveys are likely to need to be updated". Where the ecological survey data to inform the various Sizewell C impact assessments are not in line with this, we advise that clear justification must be provided on how the data remain valid and robust enough to inform conclusions. Further detailed advice on the FMF and protected species is outlined throughout Appendix III to this letter, but to summarise our key concerns: • **Bats:** Natural England supports the applicant on wanting to prevent light spill into adjacent habitat. Natural England recommends the applicant considers other additional lighting options to prevent light spill into any adjacent habitats and limit the disturbance and severance of bat commuting and foraging routes. The applicant should consider bat friendly lighting, hoods for the lights to prevent spill, low to the ground lighting and coloured filters to attached to any lighting hoods so the light spill is a different colour and less impactful to bats. • **Breeding birds:** Natural England acknowledges that the applicant has only undertaken a desk study of the site for ornithology. Desk studies are useful to providing a background to the site and are useful supplementary records however there have been no ornithological surveys undertaken on the site. With the habitat being mostly arable and the presence of hedgerows surrounding the site there is habitat on the site which is suitable for a number of bird species. Natural England strongly advises that ornithological surveys are undertaken at the site to determine the impacts of the development proposals to birds. The survey effort should cover the following periods: Breeding bird season (March – July), Wintering bird season (November – March) and Passage birds (March – October).		

Appendix I: Natural England's risk rating and associated colour coding system as applied throughout Parts I and II

Natural England's Comment	Risk
Red Natural England considers that unless these issues are resolved it will have to advise that (in relation to any one of them, and as appropriate) it is not yet possible to ascertain that the project will not: • Have adverse effects on the integrity of internationally designated SAC, SPA or Ramsar sites; • Have adverse effects on European and/or nationally protected species • Have adverse effects on the cited features of nationally designated SSSIs; • Have adverse effects on priority habitats and species; • Otherwise comply fully with the Environmental Impact Assessment requirements, in particular with regards impacts on ancient woodland • Be detrimental to the conservation of the wildlife and beauty the Suffolk Coast and Heaths AONB **and/or;** • Have adverse effects on the use and enjoyment of the ECP That is unless the following are satisfactorily provided: • New/updated baseline data; • Significant design changes; and/or • Significant mitigation and/or compensation measures; Natural England consider that issues given Red status are sufficiently complex, or require the provision of so much outstanding information, that there is a strong possibility of them not being resolved during examination, and respectfully suggests that they be addressed beforehand.	
Amber Natural England considers that unless these issues are resolved it will have to advise that (in relation to any one of them, and as appropriate) it is not yet possible to ascertain that the project will not: • Have adverse effects on the integrity of internationally designated SAC, SPA or Ramsar sites; • Have adverse effects on European and/or nationally protected species • Have adverse effects on the cited fearures of nationally designated SSSIs; • Have adverse effects on priority habitats and species; • Otherwise comply fully with the Environmental Impact Assessment requirements, in particular with regards impacts on ancient woodland • Be detrimental to the conservation of the wildlife and beauty the Suffolk Coast and Heaths AONB **and/or;** • Have adverse effects on the use and enjoyment of the ECP That is unless the following are satisfactorily provided: • New/updated baseline data; • Significant design changes; and/or • Significant mitigation and/or compensation measures; Natural England considers that if these issues are not addressed or resolved by the end of examination then they would become a Red risk as set out above. Likely to relate to fundamental issues with assessment or methodology which could be rectified; preferably before examination.	
Yellow These are issues/comments where Natural England does not yet completely agree with the Applicant's position or approach. However, we are satisfied for this particular project that they do not make a material difference to our advice or the outcome of the decision-making process. It should be noted by Interested Parties that just because these issues/comments are not raised as part of our Relevant Representations in	

this instance it should not be understood or inferred that in other cases or circumstances Natural England will take this approach. Furthermore, these may become issues should further evidence be presented.	
Green Natural England supports the Applicant's approach but considers that the respective mitigation/compensation as proposed must be fully secured through the DCO.	

Appendix II – Glossary of terms used throughout Natural England's relevant representation

Term	Definition
AA	Appropriate Assessment
AD	Associated Development
AEOI	Adverse Effect on Integrity
AFD	Acoustic Fish Deterrent
AONB	Area of Outstanding Natural Beauty
BLF	Beach Landing Facility
BNG	Biodiversity Net Gain
CBC	Common Bird Census
CDO	Combined Drainage Outfall
CHP	Combined Heat and Power
CIEEM	Charted Institute of Ecology and Environmental Management
CLe	Critical Levels
CoCP	Code of Construction Practice
CSU	Consents Service Unit
CT	Common tern
CWS	County Wildlife Site
DAS	Design and Access Statement
DCO	Development Consent Order
DEFRA	Department for Environment, Food and Rural Affairs
DML	Deemed Marine License
EA	Environment Agency
EA1N	East Anglia 1 North
EA2	East Anglia 2
ECoW	Ecological Clerk of Works
ECP	England Coast Path
eDNA	Environmental DNA
EDR	Effective Deterrent Radius
EIA	Environmental Impact Assessment
ELS	Entry Level Stewardship
EPS	European Protected Species
EQS	Environmental Quality Standards
ES	Environmental Statement
ExA	Examining Authority
FLL	Functionally Linked Land
FMF	Freight Management Facility

FRA	Flood Risk Assessment
FRR	Fish Recovery and Return
GCN	Great Crested Newt
GIS	Geographic Information Systems
GSB	Greater Sizewell Bay
hCDF	Hard Coastal Defence
HCM	Hydro-ecological Conceptual Modelling
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicle
HLS	Higher Level Stewardship
HRA	Habitat Regulations Assessment
ICES	International Council of the Exploration of the Seas
IEF	Important Ecological Feature
INNS	Invasive Non-Native Species
ISIS	Invertebrate Species-habitat Information System
IUCN	International Union for the Conservation of Nature
JNCC	Joint Nature Conservation Committee
LBBG	Lesser black-back gull
LoNI	Letter of No Impediment
LPA	Local Planning Authority
LSE	Likely Significant Effect
LT	Little tern
LVIA	Landscape and Visual Impact Assessment
LVSE	Low Velocity Side Entry
MDS	Main Development Site
MMMP	Marine Mammal Mitigation Plan
MMO	Marine Management Organisation
NE	Natural England
NERC	Natural Environment and Rural Communities
NOx	Nitrogen Oxide
NSIP	Nationally Significant Infrastructure Project
OLEMP	Outline Landscape and Ecology Management Plan
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
OWF	Offshore Wind Farm
PAM	Passive Acoustic Monitoring
PINS	Planning Inspectorate
PNEC	Predicted No Effect on Concentration
PRoW	Public Right of Way

RAMS	Reasonable Avoidance Measures (in the context of protected species) or Recreational disturbance Avoidance and Mitigation Strategy (in the context of recreational disturbance the 'Suffolk RAMS')
RSPB	Royal Society for the Protection of Birds
RTD	Red-throated diver
SAC	Special Area of Conservation
SANG	Suitable Accessible Natural Greenspace
sCDF	Soft Coastal Defence
SCOS	Special Committee on Seals
SIP	Site Integrity Plan
SLR	Sizewell Link Road
SNCB	Statutory Nature Conservation Body
SNS	Southern North Sea
SPA	Special Protected Area
SSB	Spawning Stock Biomass
SSC	Suspended Sediment Concentration
SSSI	Site of Special Scientific Interest
ST	Sandwich tern
SuDS	Sustainable Drainage Systems
SWT	Suffolk Wildlife Trust
SZB	Sizewell B
SZC	Sizewell C
TBM	Tunnel Boring Machine
TRO	Total Residual Oxidants
UXO	Unexploded Ordinance
WCA	Wildlife and Countryside Act 1981
WDA	Water Discharge Activity
WFD	Water Framework Directive
WMZ	Water Management Zone
ZoI	Zone of Influence
ZTV	Zone of Theoretical Visibility

Appendix III: Natural England's further detailed comments on the terrestrial aspects of the DCO application document review

Natural England comment reference	Document Title	Paragraph number	Natural England comment
1.	Book 3: Development Consent Order 3.1 Draft DCO	General – Protected Species	The development of Sizewell C Nuclear PowerStation has the potential to cause impacts to many protected species there is little mention of any protected species within the DCO. Protected species need to be acknowledged within the DCO as they are under the protection of the Wildlife and Countryside Act (1981), schedule 8 and other such legislation. The impact to protected species across the Sizewell main development site and associated other developments are significant the DCO needs to include impacts as mitigation and compensation will be required, as well as ecological monitoring.
2.	Book 3: Development Consent Order 3.1 Draft DCO	General – Protected Sites	There has been no mention of any impacts to protected sites and habitats within DCO this needs to be addressed within the DCO.
3.	Book 3: Development Consent Order 3.1 Draft DCO	4 Project wide: Terrestrial Ecology and monitoring plan (Page 66)	Not all the associated developments are listed for the Sizewell C development and associated infrastructure. The Sizewell Link road, Two Village bypass and Yoxford roundabout have not been mentioned within this section, these need to be added in as surely they are under the terrestrial ecology management plan
4.	Book 3: Development Consent Order 3.1 Draft DCO	Article 3	The implementation plan for fen meadow compensation habitat should be secured as part of the DCO. Compensation habitat should be stabled and ecologically functioning in advance of construction.
5.	Book 3: Development Consent Order 3.1 Draft DCO	Requirement 7	Water level management and dewatering of the main development site may pose an impact to the designated interest features of Sizewell Marshes SSSI and Minsmere - Walberswick SSSI, SPA, SAC and Ramsar. Natural England require consultation on the final draft of water level management plan and any appropriate mitigation established through this process should be secured through the DCO.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
6.	Book 3: Development Consent Order 3.1 Draft DCO	Requirement 14	We strongly advise that the Landscape Ecology Management Plan and the commitment to habitat creation and enhancement is secured through the DCO in addition to the broad overview of the outline Landscape Ecology Management Plan.
7.	Book 3: Development Consent Order 3.1 Draft DCO	Part 1.2	Supplemental Powers Natural England would welcome further clarification of which water courses may be used in the connection, carrying out and operation and maintenance of the authorised development. It is unclear from this statement which water courses the document refers to and if these are linked to designated sites and features and water bodies. The article could reference the ES and limit to water courses that have been included in the assessment of impacts. We note that the definition of water course within the DCO is broad and includes almost any and all water courses save sewers or public drains.
8.	Book 3: Development Consent Order 3.1 Draft DCO	12 (5)	Does this include smaller rivers, wetlands, ditches etc.?
9.	Book 3: Development Consent Order 3.1 Draft DCO	39 (1)	Does schedule 17 coordinates align with red-line boundary? Or could this extend over designated sites?
10.	Book 3: Development Consent Order 3.1 Draft DCO	Schedule 1 General	Authorised Development We would advise that the first paragraph of schedule 1 is amended to note that the following development and works, is authorised as described in the Environmental Statement. The works list provide a wide range of buildings and structures to be constructed. However, a link to the Environmental Statement should be included to make it clear that buildings of size or scale not assessed in the ES may not be constructed.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
11.	Book 3: Development Consent Order 3.1 Draft DCO	(2)	Project wide: Code of Construction Practice What does general accordance mean? Unless otherwise agreed by the LPA, and suggest this includes in consultation with the relevant SNCB to include NE.
12.	Book 3: Development Consent Order 3.1 Draft DCO	(4)	The terrestrial ecology monitoring plan should be submitted in consultation with the relevant SNCB including Natural England.
13.	Book 3: Development Consent Order 3.1 Draft DCO	(7)	MDS Water Management The water level management plan for the SSSI, including specified method of proposed water level management should be submitted in consultation with the relevant SNCB and Natural England.
14.	Book 3: Development Consent Order 3.1 Draft DCO	9	'In consultation with the relevant SNCB.' Requested text to be added to the end of the condition to ensure Natural England is consulted in our statutory role.
15.	Book 3: Development Consent Order 3.1 Draft DCO	14 (1)	'In consultation with the relevant SNCB.' Requested text to be added to the end of the first sentence to ensure Natural England is consulted in our statutory role.
16.	Book 3: Development Consent Order 3.1 Draft DCO	14	'In consultation with the relevant SNCB.' Requested text to be added to the end of the condition to ensure Natural England is consulted in our statutory role.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
17.	Book 3: Development Consent Order 3.1 Draft DCO	Schedule 22 General	Certified Documents does not currently include: any of the Monitoring and Mitigation Plans, such as: Terrestrial Ecology monitoring Plan Can the Applicant confirm where and how commitments to these will these be secured?
18.	Book 5: Reports Volume 1 5.10 Shadow Habitats Regulations Assessment Part 1	Table 2.2	At the peak of construction the SZC project workforce is anticipated to be 7,900. It is reasonable to assume that those living in the area during the period of construction are likely to walk and explore the surrounding area for leisure activities. Increased recreational pressure can lead to trampling of designated habitats and disturbance impacts to species and populations of interest.
19.	Book 5: Reports Volume 1 5.10 Shadow Habitats Regulations Assessment Part 1	Table 5.1	Changes in air quality should also include potential air quality impacts to designated sites from vehicles associated with the MDS and associated development.
20.	Book 5: Reports Volume 1 5.10 Shadow Habitats Regulations Assessment Part 1	Table 5.2	We note that Orfordness is predominantly accessible by National Trust boat or accessible on foot from Aldeburgh along the shingle ridge, which is a considerable distance. On this basis we understand that this site is unlikely to be significantly impacted by recreational disturbance.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
21.	Book 5: Reports Volume 1 5.10 Shadow Habitats Regulations Assessment Part 1	7.4.56	The HRA states that "*the Institute of Air Quality Management guidance states that ecological receptors within 50m of potential dust sources, 50m of the routes used by construction vehicles on the public highway and within 500m of construction site access require assessment; beyond these distances, dust effects from construction activities can be expected to be negligible"*. It is Natural England's recommendation that national, European and international sites within 200m of a road and sources of dust.
22.	Book 5: Reports Volume 1 5.10 Shadow Habitats Regulations Assessment Part 1	7.4.76.	Potential displacement of recreational visitors to Alde-Ore – 7,000 individual equivalent to 29,000 visits. This is characterised as being a small change, coming on top of 580,000 visits pa, but is still a 5% increase which is significant and an extra pressure to manage especially during the breeding season. Although predation is seen as main pressure on site, recreational disturbance is identified as a pressure so may need to manage extra pressure. Particularly true if it requires education of new visitors in appropriate behaviour, as new visits are presumably likely in the breeding (maximum sensitivity) season. In HRA assessment it is assumed that current practise (which is only perpetuating unfavourable condition not securing recovery) is sufficient to manage risk. Applies equally to LBBG; ST; CT; LT
23.	Book 5: Reports Volume 1 5.10 Shadow Habitats Regulations Assessment Part 1	Table 7.8	Minsmere to Walberswick SAC Would expect Coast Path to be screened in to an in-combination assessment and AONB Management Plan to be screened in to assessment of recreational disturbance.
24.	Book 5: Reports Volume 1	Table 11.1	We welcome the commitment to a monitoring program to inform local mitigation measures to manage recreational disturbance impacts. This program should include objectives, details of how those objectives will be met and associated triggers at which point mitigation should be implemented. Any management should be monitored to ensure that mitigation is meeting set objectives and is fit for purpose. Should monitoring show that mitigation is effective, action should be taken to amend management to prevent an

Natural England comment reference	Document Title	Paragraph number	Natural England comment
	5.10 Shadow Habitats Regulations Assessment Part 1		impact to designated sites and inform new or additional mitigation measures if monitoring shows current measures are ineffective.
25.	Book 5: Reports Volume 1 5.10 Shadow Habitats Regulations Assessment Part 1	7.7.25-7.7.28	The HRA concludes no adverse effect to the interest features of Minsmere to Walberswick Heaths and Marshes SAC but does not clearly state if the emissions produced will or will not exceed critical load within the designated site. It is stated that background levels are already in exceedance and that the contributions from the road are unlikely to result in significant change. The results from the modelling should be clearly and succinctly stated in the HRA to support conclusions made.
26.	Book 5: Reports Volume 1 5.10 Shadow Habitats Regulations Assessment Part 1	Fragmented assessment of multiple developments considered separately General Comment	Fragmented Assessment and Associated Developments: Within a Habitat Regulations Assessment (HRA), the plan or project must be considered both alone and in combination with other plans or projects. Whilst some of the potential effects associated with the whole Sizewell C development might not impact upon designated / classified Natura interest features (ecological receptors might be protected species or undesignated populations found within the wider environment), and are thus considered from the perspective of an Environment Impact Assessment rather than HRA, splitting the assessment of the project into the Main Development Site and multiple Associated Developments conducted in separate volumes, fails to satisfactorily complete the alone test. The failure to complete a proper alone test dilutes the potential impact of the development by simply dividing it up into separate components. The scale of predicted effects for each Associated Development is not necessarily deemed to reach a threshold of significance, such that impact associated with the overall development is overlooked. The Associated Developments (Northern Park and Ride, Southern Park and Ride, Two Village Bypass, Sizewell Link Road, Yoxford Roundabout, Freight Management Facility and Rail) are further from those coastal Natura Sites than the Main Development Site. In some cases, therefore, the fragmented nature of the assessment may not significantly affect HRA conclusions as, unlike the Main Development Site, Natura

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			interest features may not present in the vicinity of Associated Developments. It is acknowledged that this fragmented assessment primarily affects biodiversity in the wider environment. Understandably, the focus when conducting ornithological surveys has initially been on the SPA interest features and the main development, but this should not to be the exclusion of undesignated bird interest. Natural England would expect most small and medium scale housing developments to be accompanied by a complete survey of breeding birds and not a more basic characterisation. Many of these types of development would not affect Natura Sites. Large areas would not be missed and a net gain approach would take account of bird species' populations. It is counter intuitive that as the both the spatial and economic scale of development increases, that it is acceptable to reduce the intensity of survey effort such that large areas receive no coverage, potential effects are sub-divided and only SPA bird interest is considered in detail.
27.	Book 5: Reports Volume 1 5.10 Shadow Habitats Regulations Assessment Part 1	Noise and Birds General comment	Anthropogenic noise can impact birds in a number of different ways, ranging from direct physical or physiological effects on individuals to population-level effects on density and abundance. Although noise can be measured in a number of different ways, the applicant has used predicted maximum noise levels as the key measure to assess disturbance of all types of bird and at any time of year. This type of measurement is most relevant when assessing the potential behavioural response of non-breeding waterbirds i.e. what do flocks of wintering birds do when subjected to loud bangs. It was also deemed appropriate to assess the potential displacement of foraging marsh harriers. The overreliance on a maximum level, however, could prevent potential effects on breeding populations of waterbirds, and particularly passerines (i.e. songbirds), from being properly assessed. Birds using habitats adjacent to roads are particularly exposed to chronic traffic noise. Many studies have shown a reduction in species-richness of a wide range of animals in close proximity to roads and also in the breeding productivity and numbers of breeding birds in the vicinity of motorways. Noise is considered to be the most critical factor in reducing densities of breeding birds in woodland adjacent to roads. This highlights the need for the use of suitable buffers. The response of non-breeding birds to maximum noise levels is also lacking precaution. One of the key references is used to suggest that levels up to 70dB (A) represent an acceptable dose and unlikely to have

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			any affect or occasionally induce a low level behavioural response such as a “heads-up”. The reference in question actually states that for auditory disturbance to qualify as a high level, it must constitute a sudden noise event of over 60dB (at the bird, not at source) or a more prolonged noise of over 72dB.
28.	Book 5: Reports Volume 1 5.10 Shadow Habitats Regulations Assessment Part 1	Recreational disturbance and displacement General comments	Disturbance to Nightjars due to increased recreational pressure: Part I of the Habitat Regulations Assessment confirms the large number of workers who will be resident in order to construct the new nuclear facility. There will be 7,900 workers at the Main Development Site and 600 workers for the Associated Developments. Many of these new workers will be housed within Campus Accommodation. The impact to ground-nesting birds, and nightjar in particular, as a result of increased recreational pressure are of particular concern. For new housing applications approaching this scale (or potentially significantly smaller in scale), Natural England would expect far more detailed monitoring and mitigation strategies. Table 11.1 within HRA part I, however, clarifies that much of this detail has yet to be provided; A monitoring programme would be developed, for recreational displacement and identify local mitigation measures, to be agreed with local land managers, which could be introduced to further reduce recreational disturbance,
29.	Book 5: Reports Volume 1 5.10 Shadow Habitats Regulations Assessment Part 4	HRA Screening Matrix B1.1	Recreational Pressure General As raised in our previous screening advice February 2019 (Our Ref 273239), disturbance due to increase in recreational pressure’ category: we advise that increased recreational pressure is a potential impact pathway for which LSE cannot be ruled out without consideration of further detailed information (e.g. visitor surveys etc.). As such, we advise a LSE cannot be ruled out at this stage.
30.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5	D1.5 Minsmere to Walberswick Heaths and Marshes SAC	The disturbance caused by the likely increase in recreational pressure means that a LSE cannot be discounted

Natural England comment reference	Document Title	Paragraph number	Natural England comment
	Appendix D1. HRA Integrity Matrices for SACs		
31.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5 Appendix 5.10E Recreational Disturbance Assessment	4.9.8	'*Whilst the Suffolk RAMS is not directly applicable to the Sizewell C Project, EDF Energy is committed to the principles outlined within the Strategy and would adopt a similar approach to mitigate for any potential impacts.* Further information is required to understand if this mitigation will be effected and how it will be secured.
32.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5 Appendix 5.10E Recreational Disturbance Assessment	General	There is currently no monitoring or mitigation triggers specified for potential recreational disturbance impacts to European sites.
33.	Book 5: Reports 5.11 Schedule of Other Consents, Licences and Agreements	Table 1.1: Main Development Site	Number 4 Relevant Protected Species Licences – The only key legislation listed is the Habs regs however it should also include Wildlife and Countryside Act 1981 and Protection of Badgers Act 1992
34.	Book 5: Reports	Table 1.4: Two Village Bypass	Number 4 Relevant Protected Species Licences – The only key legislation listed is the Habs regs however it should also include Wildlife and Countryside Act 1981 and Protection of Badgers Act 1992

Natural England comment reference	Document Title	Paragraph number	Natural England comment
	5.11 Schedule of Other Consents, Licences and Agreements		
35.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 2 Appendix 2B Lighting Management Plan for Construction and Operational sites	1.3.9	With the installation of fixed and temporary lighting, hoods should be used on the lighting fixtures in order to limit and prevent light spill into dark areas. Preventing light spill across the development site as whole and associated infrastructure is essential for many nocturnal species such as bats that rely on dark areas of the site for commuting across the site.
36.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 2 Appendix 2B Lighting Management Plan for Construction and Operational sites	1.3.17 and 1.3.18	It is written where foraging routes and flight paths interconnect over the temporary construction are where reasonable practicable these connecting areas shall be left dark (or switched off when not required) This is welcome but further details are required to illustrate where these areas are and further consideration given to the retention of habitat in these areas. Natural England recommends the applicant should consider bat friendly lighting on areas of the site where any lighting is going to impact on bat foraging and commuting routes, especially with species that are extremely sensitive to any light spill.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
37.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 2 Appendix 2B Lighting Management Plan for Construction and Operational sites	1.3.21	Where possible on the site, low down bollard lighting should be considered, to reduce any light spill into sensitive areas. Low down, bollard lighting has the benefit of being lower to the ground and emits lighting horizontally as opposed to vertically up into the sky and on the flight paths of bats and insets
38.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 2 Appendix 2B Lighting Management Plan for Construction and Operational sites	1.3.32	The lighting modelling for the SSSI crossing has been based on the installation of a culvert. However the lighting modelling for the bridge option should be provided to enable a direct comparison as this remain Natural England's preferred option.
39.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 2 Appendix 2B Lighting Management Plan for	1.4.18	In areas where bats are present (close to foraging and commuting routes) where lighting is unavoidable the lighting should be spaced as far apart as possible and allow dark crossing points for bats.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
	Construction and Operational sites		
40.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 2 Appendix 2B Lighting Management Plan for Construction and Operational sites	1.3.38	Lighting should be kept to the minimum levels required to enable safe night time operations on site. The proposals to ensure no illuminated operator boards are fixed on Tower Cranes or Batching Plants and illuminations are switched of when machinery not in use are welcome as this will reduce the impacts on bat flight paths
41.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 3 – Description of Construction	3.4.25	Consideration should be given to Sizewell Marshes SSSI in the case of a bentonite outbreak. Information should be provided on engineering design and breakout contingencies.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
42.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 6 - Alternatives and Design Evolution	6.2.29	Para 6.2.29 states that "*SZC Co. established at an early stage of consultation that the main development site would need to be accessed from the north, from a new access road linking the site to the B1122. Access from the south via the Sizewell A decommissioned site and Sizewell B power station was not therefore a feasible alternative"* Further information is required to demonstrate how the route was selected and to justify entrance through the north. .
43.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 6 - Alternatives and Design Evolution	6.2.31	Reedbed is a designated interest feature of Sizewell Marshes SSSI and should be included in para 6.2.31.
44.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 6 - Alternatives and Design Evolution	Table 6.1 and 6.2.39	The option selected for the SSSI crossing has the greatest direct land take therefore causing the most impact of all options presented in Table 6.1. The proposal for future management of water levels and the need for a crossing all present challenges and risks for the survival and quality of the SSSIs as a result of the project. Maintaining a visibly healthy and thriving wetland is important ecologically as well as to the landscape character and quality of this part of the AONB. We consider that Option 3 would cause the least damage to Sizewell Marshes SSSI and allow the most connectivity between wetland habitats, designated and protected species.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
45.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 6 - Alternatives and Design Evolution	6.2.43	It is Natural England's request that the applicant provides detail about the quantum and type of habitats lost compared to areas that are and will be created to mitigate impacts. This information should be clearly presented for ease of comparison.
46.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 6 - Alternatives and Design Evolution	6.2.47	It is written that the water vole mitigation strategy is based on translocating water voles and excluding them form the SSSI crossing. However the bridge option would be 35.5m wide, nearly half the width of the 68.5m wide culvert option. Therefore if the bridge option was chosen water voles could be more easily relocated by displacement into the adjacent habitat rather than removed permanently form the water course.
47.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 6 - Alternatives and Design Evolution	6.2.50	Designing the culvert to leave the banks on the drain intact at the crossing point would aid the passage of water voles, the chances of dispersal of water voles would be increase further if the narrow bridge option was chosen.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
48.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 6 - Alternatives and Design Evolution	6.2.52	It is written where foraging routes and flight paths interconnect over the temporary construction are where reasonable practicable these connecting areas shall be left dark (or switched off when not required) This is welcome but further details are required to illustrate where these areas are and further consideration given to the retention of habitat in these areas.
49.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 13 Landscape and Visual	The Landscape and Visual Impact Assessment 13.1.3	We are content with the LVIA methodology including the Zone of Theoretical Visibility (ZTV) and the viewpoints selected. We do note however, that at para 13.1.3 there is no reference to the Noise and Vibration chapter of the ES as a source of data for the LVIA. Whilst however, the methodology is sound it is reliant on the application of 'professional judgement' to provide the final assessment of effects and overall conclusions. Those assessments and conclusions are therefore open to challenge where they may underplay the effects of a proposed development scheme. The LVIA's recognition of significant adverse impacts remaining after mitigation on landscape character at the development site and on visual resources in views from the north along the coast is welcome. Natural England however, is not persuaded that the power station would not, during its long construction phase and operationally in combination with the existing power stations and other energy infrastructure, have a significant effect on the wider designated area and delivery of the AONB's statutory purpose.
50.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 13 Landscape and Visual	Screening vegetation 13.3.39 13.3.40	We agree that the vegetated sea defences and other screening measures should be effective in screening views of lower parts of the station and ground level activities in close views and more of the development in some longer views from inland. We cannot confirm that the growth rates for screening vegetation set out at para 13.3.39 are achievable. The expected growth rates on the restructured sea defences (13.3.40) could be confirmed by reference to the growth rates achieved by vegetation planted on the defences to help screen the Sizewell B station. Natural England is not persuaded that these design and screening mitigation measures will, by themselves, overcome the cumulative effect of massing three nuclear power stations in this one area and in views along

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			the coast from the north (see our comments below about effect on current views towards Sizewell B). We believe that careful consideration should be given to whether the new power station, in combination with the existing power stations and other energy infrastructure, would produce a fundamental shift in landscape character in this part of the AONB. That shift would move landscape character from one which features energy infrastructure to one in which energy generating and transmission infrastructure is a main defining characteristic. That would certainly affect the area's ability to contribute to the statutory purpose of the AONB and is not easily reconciled with the conservation and enhancement of natural beauty.
51.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 13 Landscape and Visual	Main power station platform – turbine halls and reactor buildings 13.5.8	The turbine halls and reactor domes will be the largest and therefore most visually dominant parts of the Sizewell C complex. We note the 'embedded' mitigation proposed for the major structures of the power station, notably the turbine halls and reactor buildings with the developer striving for large, bold and simple built forms 'informed' by the design of Sizewell B and in terms of this and their orientation intended to 'mirror' how the existing power station behaves in the landscape (para 13.5.8 refers). We also note the neutral and consistent colour scheme and that the turbine halls will lack glass and will feature a light responsive surface treatment. A simplified form for the Interim Spent Fuel Store, now without a chimney, is also noted. We had asked whether the reactor domes could be covered in white cladding to complement that treatment of the Sizewell B dome. We understand that the reactor domes for Sizewell C cannot be clad because, unlike for the earlier station, they need to be regularly and closely inspected. The design mitigation measures identified are welcome. Without further site visits we do not wish to make any definitive comments about the chosen colour scheme. The potential mitigation benefits will however: • not address a general cumulative effect of the power station with existing energy infrastructure on the landscape character of the AONB; • not alter the massing effect of the new and existing power stations on long coastal views from the north; and

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			• Be undermined by the proposal to carry electrical cables on pylons rather than, as initially proposed, undergrounding those connectors. The resulting visual clutter will detract from clean lines established for the main buildings.
52.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 13 Landscape and Visual	Negating the design mitigation for the Sizewell B station 13.6.302	We would like to highlight the impact of the Sizewell C scheme on how the Sizewell B station currently relates visually to its immediate and wider landscape setting. Sizewell B is a well-considered bespoke design which seeks to be as sensitive as it can to that landscape character. It is widely regarded as having achieved a good degree of success in that regard, particularly in how it appears in more distant views. Its simple clean lines and profile and colour treatment generally works well with the low lying topography, seascape and natural lighting of the area. The Design and Access Statement notes (para 2.12.6) that 'The built form of Sizewell B ……..utilizes white and a dominant blue tone which at times recedes into the expanse of sky'. Sizewell C would detract significantly from the effectiveness of Sizewell B's embedded mitigation by introducing structures which, whilst attempting to complement the existing power station in terms of architectural style/merit and orientation, will entirely alter how it is perceived. This would be particularly noticeable in the view from the Coast Guard Cottages. Currently the combined simple, visually compact form and clean lines of Sizewell B and the simple block structure of Sizewell A is relatively well contained and managed within that view. Sizewell B's position and colour treatment helps to screen and mute (make more recessive) what would otherwise be the lone grey presence of Sizewell A. But with the addition of Sizewell C this would be replaced by a much greater massing and spread of industrial development which performs very differently in views from the north. The before and after images provided for viewpoint 17 (View from National Trust Dunwich Coastguard Cottages car park) illustrate this. The LVIA (para 13.6.302) identified a significant adverse effect across the Minsmere Coastal Levels and the southern edge of Dunwich Heath, recognising that 'the main platform would occupy the foreground in views from the north and partially obscure existing views of Sizewell A/B'. That same bullet point also says that 'There would be a slight extension of built form further west in views from these locations'. We believe that the actual perception would be of a visual massing of industrial development in that and other views along

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			the coast north of the power station visually strongly conflicting with and detracting from the wider landscape.
53.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 13 Landscape and Visual	Observations on the receiving landscape Para 13.4.99 viewpoints 17, 14 and 16	The character of the receiving landscape would both help and hinder the accommodation of the power station. The relevant National Character Area and the more detailed Landscape Character Assessment present the area as characterised by expansive views (except where enclosed by woodland), a mainly flat or gently rolling topography, and a largely unsettled landscape. The Estate Sandlands and Coastal Levels are the landscape types principally affected. In Natural England's view: • A nuclear power station (in either its construction or operational phases) cannot be hidden within long, low lying and open views, notably in long coastal views such as those from the Coast Guard Cottages and from Minsmere Sluice and the Suffolk Coast Path (viewpoints 17, 14 and 16). • Distance, combined with few if any higher vantage points, and intermediate vegetation screening should diminish the visual impact of the power station as one moves inland. Para 13.4.99 of the LVIA notes that views of the existing power stations are constrained by woods, tree lines and embankments and we can confirm this from our own site visits. We would however highlight that occasional, repeated and sequential views of the new construction site or operational power station could produce a strong awareness of the development in the landscape. That would be amplified by the cumulative effect of the three power stations and other energy infrastructure.
54.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 13 Landscape and Visual	Sizewell Link Road 13.5.9 13.5.12	We note the construction and operational phase mitigation for the Link Road. Ref construction phase. Para 13.5.9 of the LVIA promises to: Align the construction access road vertically and horizontally to permit its retention in the operational phase and in a location that can be properly integrated in the restored landscape, that connects at grade, with the bridleway whilst also connecting to the SSSI crossing and without undue impact on retained tree cover. Ref operational phase. Para 13.5.12 of the LVIA states that: The access road delivered during the construction phase would be reduced in width and set within the restored landscape by the creation of

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			undulating naturalistic landforms to ensure that it is integrated in the landscape and substantially screened in views from the surrounding landscape. Para 6.2.18 of the DAS also says that post construction phase the road would be reduced in width and the surrounding landscape re-profiled to create naturalistic landforms covered with Sandlings grassland and pockets of mixed scrub, heath and stands of trees. We welcome the mitigation proposals for the permanent link road. We would however, like to caution against the risk of creating a road for the operational phase which despite the promised mitigation, still presents as a suburbanising feature in a rural landscape. We cannot confirm from the plans contained in the DCO that this will not be the case for the Sizewell Link Road. Features which can easily detract from the character of a minor country road belonging in this landscape are concrete kerbing and a plethora of signs. If soft verges are not an option for operational or safety reasons then alternatives to concrete kerbing could be explored. Speed limits can be painted in roundels on the road surface instead of being put on poles. Natural England is not stipulating that this can or must be done but that the road plans are properly scrutinised to ensure that the full potential to achieve a 'rural' road has been explored.
55.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 13 Landscape and Visual	Special Qualities, Natural Beauty Indicators and the statutory purpose Table 13.14 13.6.149 13.6.150	The LVIA's assessment of effects on the area's defined Natural Beauty Indicators and Special Qualities is helpful. The defined special qualities and natural beauty indicators of the AONB illustrate and articulate why the area has been designated as an AONB and what makes it distinctive in terms of its intrinsic character and high quality. Development which has a significant adverse effect on special qualities and / or natural beauty indicators will therefore be expected to directly affect delivery of the AONB's statutory purpose. LVIA Table 13.14 identifies effects on AONB natural beauty indicators and special qualities during construction as follows: • Landscape quality - High: construction work is likely to affect the intactness and condition of the landscape, introduce incongruous visually intrusive elements, harm the physical integrity of characteristic elements and detrimentally affect the uncluttered and simple appearance of the existing power station/s - but physical condition of remaining wider landscape context remains intact.

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			• Scenic quality - High: construction work is likely to impact on sense of place (character); striking landform (including views along and towards the coast); visual interest (by altering the pattern and composition of the landscape) and appeal to the senses (by bringing views of construction, artificial light and noise). • Also 'High' for Relative wildness and Relative tranquillity. 13.6.149 In conclusion, there would be significant effects from construction on the natural beauty indicators and special qualities of the AONB over a limited extent of the designation. However, the overall integrity and resilience of the wider designated landscape would not be compromised and the wider countryside especially west of the construction area, would continue to support the AONB's general countryside characteristics. 13.6.150 Taking the above into consideration, the overall effect on the wider AONB would be medium scale across a limited extent of the designation, leading to effects that are low magnitude, slight (not significant) and adverse. The LVIA therefore considers these effects to be 'limited'. Nonetheless a high adverse impact on characteristics as fundamental to the AONB (or any designated landscape) as landscape quality, scenic quality, wildness and tranquillity suggests that the capacity of this area to continue to deliver the AONB's statutory purpose would be compromised, potentially to a significant degree, at least by the long-term duration of the construction phase.
56.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 13 Landscape and Visual	Seascape and the Heritage Coast 13.6.154 viewpoint 26	The purposes of the Heritage Coast includes conserving, protecting and enhancing the natural beauty of the coastline. This is not a statutory designation and the statutory purpose of the AONB and policies to protect its landscape and scenic beauty provide the principle basis for planning decisions. The Heritage Coast does however highlight the qualities of this coastline which also contribute to the AONB designation. The addition of a third nuclear power station on the coast is therefore a challenge to the purposes of the Heritage Coast which don't anticipate this type of industrialisation. To reinforce this point the NCA profile describes this

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			coastline in terms of its sense of tranquillity and wildness, which has inspired writers, artists and naturalists and the area is a popular recreation and tourist destination. LVIA para 13.6.154: concedes that '……. long-term effects on the purposes of designation of the Heritage Coast would be large scale in the localised area north and south of the main development site area extending along the coast including offshore areas up to 2km from the site. These effects would be of high–medium magnitude, major (significant) and adverse'. The seascape setting of the AONB underpins its character and statutory purpose. Offshore views of the power station are not a principal concern for Natural England. We are however, struck by the operational phase image for viewpoint 26 (directly east of the power station) which shows the cumulative effect of the three power stations presenting a heavily industrialised stretch of coastline to an offshore observer. Our greater concern is how the development would affect onshore and longshore views combining land, foreshore and sea which are more important to how people experience the coastal part of the AONB. For Sizewell C the longshore views effected are primarily from the north along the coast path, from Dunwich and near the Minsmere Sluice. We consider the effect on these views in more detail later in this advice, but there would be a notable extension to and massing of industrial development in these views.
57.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 13 Landscape and Visual	13.6.299	The NTS (section 6.1) describes the application of the design principles and what the designers have sought to achieve in terms of a set of structures which respond to their landscape setting and relate appropriately to the existing power stations. The LVIA (para 13.6.299) in presenting visual effects of the operational station refers to the 'extensive design process that underpins the final proposals which have sought to secure through Design Principles and other means, project design that is integrated and responds appropriately to context'. We don't disagree that the design of the station has 'sought' that integration and to respond 'appropriately to context'. The design of the development is guided by a set of overarching and detailed design principles, and informed by important source documents, notably: the Suffolk County landscape character assessment, Suffolk Coast and Heaths AONB Management Plan and the AONBs Landscape Character Guidelines. We

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			agree with the design principles established for the scheme and a unifying design approach. We note the work which has been done to minimise land take for the main nuclear platform, retain existing screening landscape features where possible, factor the rurality of the area into the design of subsidiary structures, address light spill, etc. The embedded mitigation for the scheme in terms of the axial alignment of the built structures in relation to Sizewell A and B, attempts to simplify their outline with 'large, bold and simple forms', and the work to identify the best colour and surface finishes is welcome, although we are not able to confirm that the colour treatment is the most appropriate. We also note the endorsement of the Design Council. DAS para 13.1.7 reports that the design process has been the subject of design review by the Design Council, who have noted: "The extension of the Sizewell Nuclear Facility to create Sizewell C is a significant intervention in a sensitive and remarkable landscape. Extensive steps are being taken by the project team to carefully integrate the Sizewell C site into its historic, coastal setting. Overall, we think the proposal is being approached with great care and attention across architecture, engineering, landscape design and ecology." We therefore recognise and appreciate what the design and orientation of the new structures is seeking to achieve. This constitutes essential mitigation. Design measures are however limited in what they can achieve given the nature of the development, the primacy of operational safety of the nuclear facility and the high sensitivity of this landscape. We question whether there is clear enough acceptance in the ES and supporting documents that the design of the power station can only respond to a very limited extent to its sensitive landscape setting. For example: • the architectural merits of the Sizewell C structures in relation to the A and B power stations will not mitigate for the massing effect of the existing and new power stations in close and some more distant views; and

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			• The use of large bold and simple forms and neutral finishes to produce a clean lined profile will be compromised by the need to have connector cables carried on pylons and monopoles between the turbine halls and National Grid sub-station instead of being undergrounded.
58.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 13 Landscape and Visual	Other LVIA conclusions General	We cannot provide a detailed analysis of the LVIA to confirm or challenge all of its conclusions regarding all individual receptors and viewpoints. The local planning authorities and the AONB Partnership may wish to comment in detail on those. Natural England has considered the LVIA's overall findings and related those to our knowledge of the development site and its wider landscape setting in considering the effects of the scheme on the AONB and its statutory purpose. The LVIA identifies significant adverse effects from the scheme both during the construction and operational phases. However, those significant effects are deemed by the LVIA to be localised and there would not 'overall' be a significant effect on the AONB designation or the Heritage Coast. Natural England however, is concerned that the development may, both in its construction and operational phases, compromise to a significant degree the AONB's statutory purpose, notably by affecting how this part of the AONB relates and contributes to the designated area as a whole. As the national landscape agency and designating authority for the AONB we are especially concerned with the importance of the designation, its statutory purpose, the need to uphold that purpose and the vulnerability of the AONB to development of this sort. Based on this we are not convinced that a significant effect on the development on the AONB would be as containable and geographically limited as the LVIA concludes.
59.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 13 Landscape and Visual	Issues for the examining authority to address Upholding the AONB's statutory purpose	To help determine to what extent the Sizewell C proposal would compromise the delivery of the AONB's statutory purpose we recommend that the following issues are addressed: • This area is a narrow neck of the AONB which already accommodates two nuclear power stations and other energy infrastructure. The cumulative effect of three nuclear power stations lined up along the coast with a collective significant land take from the designated area and strong (locally

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		General	dominant) presence could associate this area primarily with power generation and transmission, rather than natural beauty. • If the landscape character and perceptual qualities of this narrow section of the designated area are adversely affected (so that it is no longer making an effective contribution to the designation purpose and isn't perceived or valued as part of the AONB), that change could functionally sever the more extensive parts of the AONB north and south. Hence the whole of the AONB would be significantly affected. • Whether specifically the scale and long duration of the construction phase will permanently alter how this part of the AONB is viewed, used and plays its part in the designated area as a whole. The extent to which the effects of the operational power station would be mitigated by the embedded (design) mitigation, screening measures and landscape enhancements provided through the Landscape and Ecology Management Plan. These points are explored in more detail below. b. The construction phase and mitigation. The LVIA and ES anticipate significant adverse construction phase effects on landscape and visual resources being contained locally to the site. There would be no significant effect on the AONB overall. Natural England however, is concerned that the combined extent of the construction area, construction activities and a very long (9 to 12 years) construction phase could permanently alter how this part of the AONB is viewed, used and enjoyed. The effect on those seeking to enjoy the AONB could be long lasting and profound because the area will be associated with major construction for that very long period. A Sizewell C visitor survey (Volume 2, Chapter 15 of the ES and summarised in table 13.14 of the LVIA) found that approximately 30% of people surveyed said that they would be displaced elsewhere to avoid disturbance during construction. That sizeable percentage is indicative of how this part of the AONB could fall below general expectations of what qualities and experiences it should offer. We are concerned that the actual scale of the construction phase, when encountered, could significantly increase the amount of

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			displacement and provide a clear marker that the area is not delivering the conservation or enhancement of natural beauty. In terms of landscape character the extensive area needed for construction works will, as the LVIA recognises, be entirely changed (with the exception of some individual landscape features) i.e. stripped, excavated and re-profiled. We note the intention to provide temporary bunds and fences to visually contain the construction site. We also welcome the plans to protect (exclude from the construction site) some wooded areas like the Kenton Hills and some woodland on part of Goose Hill, and to protect and reinforce with new and advance planting some perimeter hedges and tree belts. We welcome the intention to retain woodland and forested areas at Ash Wood, Great Mount Wood and the northern extents of Dunwich Forest and Goose Hill which could provide screening of some construction activities such as vehicle movements from vantage points to the north (DAS 6.2.5). We note the proposal to use temporary landscaped bunds (some of which may be retained permanently) to aid visual screening e.g. on the northern edge of Kenton Hills to screening of views of vehicle movements along the Sizewell access. However, no matter how well a construction site like this is screened and managed it will still communicate its presence to receptors who, seeking a strong sense of tranquillity from the AONB, will be highly sensitive to such activity. Some perceptual cues may be individually relatively subtle, arising from general construction activities across the site, but collectively intrusive. Others will be clear markers of major construction within the AONB, notably large stockpiles and cranes and noisier construction activity. The need for six hundred daily HGV movements in the early years of the construction phase, rising to as many as a thousand at peak construction is a stark indication of what the AONB designation is expected to contend with. We therefore recommend that the examination carefully considers whether the scale and long duration of the construction phase could detract from the delivery of the area's statutory purpose and alter, perhaps

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			permanently, how this part of the AONB is viewed, used and plays its part in the designated area as a whole.
60.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 13 Landscape and Visual	SSSI crossing General comment	Natural England's pre-application advice has consistently sought an option which best protects the ecological quality of the Sizewell Marshes SSSI. That is not to dismiss the need for a crossing structure designed to respect its AONB location, but to ensure that the SSSI can continue to flourish as a prominent and important landscape feature as well as a valuable habitat. We are therefore disappointed that a culverted causeway has been selected because we don't believe that this is the best option for maintaining the wetland SSSI. The main mitigation measure if a causeway is constructed is an effective planting scheme on and in proximity to the crossing to maximise how the causeway is screened and blended into the landscape. We note a commitment to plant the margins with trees and shrubs to integrate the crossing into the local landscape and screen / filter views of moving vehicles. That will not compensate for any significant harm which arises to the SSSI but it may reduce the visual impact of the causeway and its cumulative impact with any visual degradation of the wetland habitat.
61.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 13 Landscape and Visual	Coastal and beach structures General comment	In relation to sea defences, beach frontage and impacts on the coastal zone we offer the following comments: • We welcome the intention to undertake and complete works to the sea defences, northern mound and beach landing facility and access road as early as possible in the programme in part to minimise impacts on amenity to users of Sizewell Beach and Suffolk Coast Path/Sandlings Walk. We note that the new sea defences and the northern mound would be designed to tie in the existing sea defences at Bent Hills adjacent to Sizewell B and that the heights would be such that these features screen views to activity and lower lying buildings and structures adjacent to the main power station. As stated earlier we believe that this screening would be effective. We also note that planting on the sea defences and northern mound would comprise species that are characteristic of the local coastline, including trees that, once established, would add further screening.

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			• Regarding the BLF we believe that from a coastal landscape and seascape perspective this is much preferable to a long term or permanent jetty, although it will still present as a significant coastal feature whilst in operation. Volume 2 Chapter 3 Description of Construction 3.4.57 The BLF would extend up to approximately 37m seaward of the mean high water mark and approximately 70m seaward of the HCDF. Para 6.2.24 of the DAS says that the BLF is designed to allow the deck sections to be dismantled and stored when not in operational use, with pier supports remaining in-situ as permanent features. • In relation to changes to the coast we wish to point out that the landscape character of the beach and land immediately behind the beach frontage will be significantly altered. We understand the vital need to protect the power station but the extent of the changes to the Coastal Levels and Coastal Dunes and Shingle Ridges landscape types should not be underplayed. The issues include: • The re-profiling of the beach, the current 12m Northern Mound replaced with a higher 14.2m mound, the final main sea defence at 10.2 metres high but with a retained option to raise this to 14 metres in the future if necessary, the increased heights of existing defensive mounds – Brent Hills and lower vegetated bunds. This will make the bunds more prominent landscape features which may further emphasise their artificial nature and increase any contrast with the natural topography of the area. • The use of rock armour. Volume 2 Chapter 3 Description of Construction 3.4.41 says that: The Northern Mound is likely to consist of mainly made ground material as a repository for Sizewell B surplus construction materials. Due to seismic requirements, the existing Northern Mound would need to be demolished and excavated down to a suitable formation layer before being built back up. Piling foundations may need to be constructed to stabilise the ground works prior to the installation of large rock armour. The rock armour would then be overlaid with site-won fill material and seeded to allow vegetation to take hold as early in the construction period as practicable. We have raised the issue several times of how beach materials can adhere to underlying rock armour. There is the prospect (if not likelihood) that storms and strong tides would frequently wash away that material

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			leaving the rock armour exposed. If that exposure was very regular and perhaps finally permanent the rock armour would be a strong visual feature of this stretch of coastline.
62.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 13 Landscape and Visual	Accommodation campus General comments	The accommodation campus would be located outside but immediately adjacent to the AONB and therefore fully within the setting of the designated area. This puts it in a very sensitive location with the potential to impact significantly on the AONB, including in combination with the power station construction site and activities. The campus site is immediately adjacent to the main stockpiling site. The campus would therefore be perceived in conjunction with the main development site and as essentially contiguous with it. The accommodation campus is by itself a significant development for the boundary of an AONB, given that it includes: • 3-storey and 4-storey residential buildings placed in a broadly east–west orientation and providing up to 2,400 bed spaces; • non-residential welfare, administration and amenity facilities, including: a 2-storey recreation building with a restaurant, kitchen, two bars, gym, multi-functional room, prayer / quiet room, plant and services; and a two storey reception building, incorporating administration /management space and a medical facility; • 300 surface car parking spaces and a covered accommodation campus multi-storey car park, providing approximately 1,300 car parking spaces; We note the application of the design principles to this scheme and the resulting mitigation measures proposed including consideration of the heights (maximum four storeys rather than five) and the orientation of the buildings east / west to minimise visual effects. The proposal to locate non-essential facilities elsewhere is also important e.g. sports pitches which may involve flood lighting and will generate noise to be locate at Leiston. We would make two important points in relation to the DCO documents:

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			• There does not seem to be an explanation in the DCO documents of any alternative and less sensitive sites that have been considered and rejected for the accommodation campus and the reasons for their rejection. • It would have been helpful to have some images showing how the campus would appear in the landscape.
63.	Book 6 Environmental Statement 6.3 Volume 2 Main Development Site Chapter 13 Landscape and Visual	New National Grid 44 kilovolts substation, with associated infrastructure including electrical connections (additional pylons) General comments	Initial plans for the power station included the undergrounding of cable connections to the nuclear island. It has now been concluded that there isn't room to bury the cabling which must therefore be carried overhead on pylons. The additional four pylons and six monopoles will add visual 'clutter' and detract from any positive attributes (strong clean lines) the reactor buildings may be able to achieve.
64.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.2.12 (e) Guidance)	It would be expected that the following additional guidance, not listed should also have been considered during the survey and assessment process: • Bat Mitigation Guidelines 2004 • Water Vole Conservation Handbook Third Edition 2011 • The Water Vole Mitigation Handbook 2016

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65.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.3.18	The orders of magnitudes used in the Environmental Statement would be difficult to relate to the favourable condition status of nationally designated SSSI's. This is because SSSI objectives are set up so that any loss can render the site unfavourable/or part destroyed.
66.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.4.5	The application for Sizewell B has been revised and resubmitted to the Local Planning Authority. Natural England have not yet had the opportunity to provide detailed comment on the revised application. We would expect the DCO to be updated with the details of the new application and to consider potential impacts in combination.
67.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.4.5	This section relates to the environmental design and mitigation for the Sizewell B relocation works. In the secondary mitigation section mitigation measures in relation to reptiles and bats have been provided however there is no mention of badgers. This is an omission as a licence is required to temporarily exclude badgers from a sett, or to cause disturbance to badgers whilst occupying a sett.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
68.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.4.9	Natural England recommends that with the temporary accommodation being provided for onsite workers on the main development site that workers should also not bring any cats onto the site. This is due to the risk posed to wildlife across the site and in habitats adjacent to the site from the impact of cat predation.
69.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.4.10 – point 4	We have repeatedly advised that the installation of a bridge, rather than a culvert, at the SSSI crossing is the preferred option. However it is still proposed to install a culvert. It is acknowledged that the design of the culvert is such that it is intended to prevent habitat fragmentation by enabling the passage of bats, otters and water voles. However the provision of bridges is still considered to be the preferred option as the long term land take would be reduced by the removal of one of the bridges upon completion of construction. This would in turn aid the passage of wildlife.
70.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.4.11	Linkage from Aldhust Farm to Sizewell Marshes SSSI in its current state does not provide sufficient connectivity for species to move from one site to the other. Movement between the two sites is an intrinsic aspect of the mitigation and we recommend that the existing culvert is improved to facilitate that.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
71.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.4.11 – point 2	As previously advised, it is inaccurate/misleading to state that the majority of the woodland resource within the EDF energy estate would be retained when the majority of the Goose Hill pine plantation will be lost. This is a particular concern as the Corylus Ecology Sizewell Radio Tracking Survey dated May 2016 concluded that Goose Hill formed part of the foraging area for breeding and juvenile Barbastelle bats, with roost located to the north and south (and a lesser extent to the west) of this woodland. Measure should be taken to ensure north-south connectivity is retained across the site during construction. Furthermore details of how the loss of this resource will be compensated for, by either post development planting or creation of additional off site habitat, should be included in the bat mitigation licence application.
72.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.4.11 – point 4	As previously advised, we have not been provided with any details of the water vole carrying capacity of the fence lagoon at Aldhurst farm or any indication of the numbers of water voles that may be captured on the main development site. There is currently a risk that additional water vole habitat will need to be created, particularly if the water vole fencing is breached and the compensation site becomes naturally colonised in advance trapping.
73.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.4.11 – point 5	As previously advised, we have not been provided with any details of the water vole carrying capacity of the fence lagoon at Aldhurst farm or any indication of the numbers of water voles that may be captured on the main development site. There is currently a risk that additional water vole habitat will need to be created, particularly if the water vole fencing is breached and the compensation site becomes naturally colonised in advance trapping.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
74.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.4.16	Natural England supports the applicant's proposals for the use of earth bunds to screen sensitive sites and where possible these should be sowed with wildflower seed mixes to attract pollinators and enhance biodiversity across the site. Another recommendation is the use sound proof fencing around the development site in order to further screen sensitive areas such as the site boundaries adjacent to Minsmere.
75.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.4.16 Point 3	Further information is required for the pre-provision and realignment of the overhead lines within Sizewell Marshes SSSI. We request a full method statement including maps that clearly show where the works will be undertaken including entry and exit onto the site.
76.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.4.17 point 8	It is noted that, following previous advice, the transfer of potential roost features, bark replacement and veteranisation of retained trees is now being considered, this is welcome.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
77.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.4.17 point 8	The provision of hibernation boxes of building are also being considered which is also welcome. Existing hibernation roosts can be difficult to detect and there is the risk that fragmentation may result in bats being cut off from their usual hibernating sites. Therefore further consideration should be given to the provision of hibernation roosts to the north and south of the development. This could also include features such as bat brick being installed at the SSSI crossing (under the bridge or culvert).
78.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.4.17 point 10	The applicant should consult Natural England in advance of clearing works as the destruction of bird habitat may require consent/assent.
79.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.4.15 point 12	Prior to the realignment of the ditch, surveys should be undertaken to check for SSSI plant assemblage features. Features of interest found should be reallocated to suitable habitats. Method of translocation should be provided by the applicant.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
80.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.7.127	Para 14.7.127 states that *"the construction works to create the main platform and the SSSI crossing would result in the loss of reedbed, wet woodland and ditch habitat as defined in Table 14.10 above. As outlined in section 14.4 of this chapter, primary mitigation measures to create replacement reedbed and ditch habitat have already been implemented at Aldhurst Farm, adjacent to the western edge of Sizewell Marshes SSSI. In a letter dated 16 February 2015 (Ref 14.53), Natural England indicated that they were confident that the [then proposed] wetland habitat creation at Aldhurst Farm would provide satisfactory compensation in quality and quantity for the permanent loss of reedbed habitats at Sizewell Marshes SSSI".* Natural England's advice was based on the iterative application information available prior to the issuing of the letter on the 16th February 2015, and before the development of the crossing options. We subsequently advised at stage 2 (dated February 2017, our ref: 20255) that the final decision about whether compensatory habitat provision is satisfactory can only be made when all impacts are known and quantified. In our stage 3 consultation (dated 29 March 2019, our ref: 272181), it was explained that the principle of compensating for the proposed loss of the SSSI reedbed ('tall-herb fen') extent had been previously established at the earlier stages of our engagement, with an area of new reedbed already created at Aldhurst Farm. However, we advised that this (and the compensation proposals for the other habitat types) need to be fully quantified in terms of area to be lost vs. area to be created. We reiterate this at the DCO application stage.
81.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.7.131	This paragraph explains that "*the wet woodland would be coppiced to ground level to accommodate the machinery and restringing and subsequently the coppice stumps would be allowed to regrow, and the regrowth managed at an appropriate height*". Further detail about coppice management including specification about what the appropriate height is. Alternatives to bog matting should be specified.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
82.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14/7/134 and 14.7.135	It is Natural England's opinion that the loss of 0.7ha of fen meadow habitat is significant. The environmental Statement explains that "*further work is ongoing to develop site-specific plans to maximise the likelihood of successful fen meadow establishment at both sites and to maximise the extent of habitat created, although successful establishment cannot be guaranteed".* Natural England requests that the applicant should provide an alternative course of action should fen meadow creation be unsuccessful, to assure that compensation for habitat lost is provided. Fen meadow compensation habitat should be established and fully functioning prior to construction. This should be secured through DCO requirements.
83.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.7.279	Natural England welcome the commitment to additional measures and changes in management should mitigation be unsuccessful. We recommend that objectives and triggers are defined to initiate management change if and when required.
84.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	Table 14.12 Sizewell Marshes SSSI	We recommend that applicant commits to both a fen meadow strategy and the creation of fen meadow habitat. These compensation measures should be secured in the DCO requirements.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
85.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	Table 14.14	We recommend that all published invertebrate red lists have been checked and used to inform the Environmental Statement. Red Data Book 2 and Red Data Book 3 were published in 1987 and 1991 respectively and have subsequently been updated in the ongoing series of red lists for invertebrates being commissioned and published by Natural England. We recommend that the application is updated in accordance with updated lists.
86.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	Table 14.14 Assessment Compartment 1	This connection between the important wetland areas to the north and south is very important and must be maintained. We would expect to this secured in the outline Landscape Ecological Management Plan and secured through DCO requirements.
87.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	Table 14.14 Assessment Compartment 4/4a	White-mantled Wainscot is classed as Near-threatened (IUCN) in the recently published Moth Atlas (2019). We recommend the application is updated to reflect this.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
88.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	Table 14.14 Assessment Compartment 6/6a	Note should be made of the conclusions for this compartment regarding lower sampling size potentially resulting in artificially low number of species of conservation importance.
89.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	Table 14.14 Assessment Compartment 8	A more detailed survey is necessary to determine how important this area is (>10% of species found in one ditch were Nationally Scarce)..
90.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	Table 14.14 Assessment Compartments, 9, 11, 12	We recommend the undertaking of a survey of the dry areas of these compartments as the rare/threatened species are not confined to wetland habitats.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
91.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	Table 14.14 Assessment Compartments 13-15	It is good to see that areas outside of but adjacent to SSSIs/ SPA/SAC have been included as these obviously support a variety of invertebrates of conservation concern.
92.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	Table 14.14 Conservation Status Category Definitions	IUCN threat guidelines are described as 'post 1914'. These are very out of date and this should be replaced with the most up to date guidelines (v14 published in 2019).
93.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.8.20 14.8.22 14.8.23 14.8.99 Table 14.16	It is stated that mitigation in the form of replacement reedbed and ditch habitat have been established at Aldhurst Farm. The Norfolk Hawker is an important species of Sizewell Marshes SSSI and protected, further information is required to determine if this species is present at the mitigation habitats created at Aldhurst Farm and if the habitat created is suitable for this species in particular. The loss of reedbed and ditch habitat as a result of the proposal could be considered minor adverse subject to the replacement habitat suitability in supporting invertebrates species affected by the development and in particular the Norfolk Hawker.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
		Assessment Compartments 1, 2, 3, 4/4°, 5, 13 and 15 Reedbed, ditch and dry sandy habitats invertebrate assemblage.	Para 14.8.99 states that larvae of the Norfolk Hawker along with other macro-invertebrates in the impacted lengths of the Sizewell Drain, the Leiston Drain and related ditches will be developed will be 'recovered' under a mitigation plan yet to be developed. Further information is required in terms of the mitigation plan including larval recovery of the Norfolk Hawker as protected by Schedule 5 of the Wildlife and Countryside Act (1981). We proposed that the applicant considers the relocation of these larvae from the affected area to the newly-created habitat at Aldhurst Farm. A license will be required for any work involving the Schedule 5 Norfolk Hawker. The applicant should also provide details of: • other species that are targeted, • method statement • where the larvae would be kept • information on any receptor sites for larvae • post development monitoring surveys
94.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.8.25	Allowing wet woodland to colonise on reedbed within the triangle at the north of the SSSI may compromise existing habitats and raises concerns about the loss of designated features. An alternative option would be to create wet woodland on another nearby site.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
95.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.8.34 (Sizewell Drain)	Odonata may not be directly impacted by the realignment of Sizewell drain as they are strong dispersers and high flying (and so able to see beyond the drain). However, other wetland invertebrate groups are not such good, or poor, dispersers, and so are likely to be directly affected by the drain, which is narrow and 70m long, resulting in lack of light reaching the water. It is the view of the Natural England invertebrate specialists that the ditch design could and should be modified so that light is able to reach the water and alleviate some of the most significant effects.
96.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.8.67	With the loss of vegetated shingle and vegetated sand dunes in the site, Natural England supports the installation of the shingle barrier to account for the minor adverse impacts on the invertebrate assemblages. With this shingle barrier although it would be colonised in time by invertebrates, the impacts of the loss of vegetated shingle and dunes will affect the numbers of invertebrates. The applicant is advised to also consider improving additional dune habitats and vegetated shingle in adjacent areas to compensate for the loss of dunes and shingle for the invertebrate assemblages.
97.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.10.11	Natural England notes that Great Crested Newts have been scoped out of further assessment however this is based on survey data that was conducted in 2016 in which the ponds on the site were negative. Natural England recommends that survey data is no more than a maximum of 3 years old and a medium metapopulation is present close to the site boundary. Since the surveys were undertaken over 3 years ago, the applicant is advised to undertake the surveys on the ponds on site again to determine presence or absence on the site.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
98.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.10.18	Natural England urges the applicant to consider the impact pathways of the spread of disease or alien species that could have a potential impact on the population of natterjack toads on the site. The applicant should acknowledge this as an impact pathway and as such ensure any personal on the site within the area of Retsoms field and the area of the Water Management Zone (WMZ) adhere to biosecurity measures to protect the population of Natterjack toads
99.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.10.25	The applicant has concluded that the impacts on Natterjack toads are not significant. Natural England has concerns that although the impacts to Natterjacks have been described as “temporary” the effects of construction of the WMZ will be on-going for 9 – 12 years which is still a prolonged period of time. The impacts to Natterjack toads are within the core zone <50 m away from the breeding pond N1. The habitat being lost foraging habitat of importance to Natterjack toads as it is within close proximity of the breeding pond. Natural England supports the creation of a new water body and improving the over wintering opportunities however the applicant is strongly advised to also improve the foraging habitat of Natterjack Toads on the wider site of Restsoms field to mitigation for the loss of foraging habitat during the operation of the WMZ
100.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.11.30	Natural England supports the inclusion of primary mitigation for reptiles due to the large volume of habitat being lost for reptiles due to the construction of the main platform. The primary mitigation proposed is mainly to the South of the main development footprint and offers and offers little chance to connect with habitat to the north of the site. Natural England advises EDF to reconsider the impacts as being significant as opposed to not significant.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
101.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.12.88	The impact of construction (and decommissioning) noise on prey species of Marsh Harrier are not described here. Has this been factored into the modelling? If not it could increase the area of habitat lost for foraging above that of 'moderate' adverse effect'.
102.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.13.24 - Table 14.36	There is reference to discussions in June 2016 with NE and EA regarding the provision of a culvert at the SSSI crossing. Whilst it is acknowledge this this was discussed during this meeting it should be noted that in subsequent discussions it has repeatedly been advised that the preference would be for the provision of a bridge crossing.
103.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.14.52	Para 14.14.52 states that "*in discussions in June 2016, both Natural England and the Environment Agency confirmed that, subject to SZC Co. making a compelling economic case for the SSSI crossing option, comprising an embankment and culvert, neither body would be likely to object to the proposals subject to the following: appropriate sizing and design of the culvert including a large aperture; retention of existing ditch channel in situ; incorporation of appropriate dry ledges for voles/otters as well as potentially, dry runs for otters; and the landscape scheme to incorporate tree planting on the embankment to provide landscape screening and ecological mitigation in the form of hop-overs for bats and birds that may need to cross. It*

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			was stated that SZC Co. would need to demonstrate that the proposals have been designed in a manner that minimises land take from Sizewell Marshes SSSI". Natural England provided written advice (24th August 2016) following the discussion in June 2016, in this letter we clearly explain that **Natural England is not able to take account of economic considerations.** We also advised that loss and damage to any features of Sizewell Marshes SSSI to be kept to a minimum, with a development designed that allows the SSSI ecosystems to function as naturally as possible.
104.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.14.67	It is written that due to primary and tertiary mitigation in place no additional enhancement is proposed. However in order that a licence may be issued to permit the destruction of water vole habitat it must be demonstrated that there is a conservation net gain to water voles, which will require an enhancement.
105.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	14.14.69	Consideration should be given to including mink monitoring at the site to aid the continued survival of the water vole population.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
106.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	General: SSSI crossing	Less damaging alternatives are available to the embankment and culvert option advanced in the DCO for reasons NE has previously set out. The proposal results in unnecessary land take, habitat destruction and loss of ecological connectivity. However, impacts on hydrology, in particular the interaction between Sizewell Marshes and Minsmere-Walberswick, are unlikely to be significant provided that the culvert and drain are designed appropriately.
107.	Book 6: Environmental Statement 6.3 Volume 2 – Main Development Site: Chapter 14 – Terrestrial Ecology and Ornithology	Protection afforded to the nests and eggs of all wild birds Destruction of nest habitat in the breeding season General comment	Reference to the destruction of nesting habitat during the breeding season, where this is conducted under the surveillance of an Ecological Clerk of Works / Watching Brief. Such an approach is not recommended. Removal of anything other than small areas of nesting habitat could result in nest destruction and potentially be deemed unlawful. Birds are ubiquitous and anything more than small bits of scrubby habitat / isolated trees are likely to contain birds' nests. Nest finding is a highly specialised skill; for example, there are a very small number of real expert nest finders who might find dozens of nests where other professional ornithologists might only find just one or two. A typical ecological consultant (who in other regards might be experienced) might find none. A standard survey for breeding birds could reveal the presence of singing males / bird territories, so almost certainly nests are present, but finding them all is a different matter. An example of an appropriate use of an ECOW / watching brief might be supervising the removal of a short section of hedgerow, otherwise preventing a developer accessing part of a site.
108.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix 14A1-Introduction to the Ecological Baseline	General Invertebrates	We recommend that the tool used to determine whether invertebrate assemblages fit a particular habitat type is referred to consistently and throughout the document as Pantheon, as opposed to the Invertebrate Species-habitat Information System (ISIS) for clarity.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
109.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix 14A1-Invertebrates	General	The new Moth Atlas, published last year (2019) has updated threat statuses for macro moths This should be examined for any additional species which are now considered threatened or NR/NS. It should be acknowledged that invertebrate surveys are based on red list guidance that is now out of date. The recently published red lists for various invertebrate groups will contain more up to date lists IUCN threatened and NR/NC species. These should be examined for other threatened species which may be affected by this development.
110.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix 14A1-Invertebrates	Appendix K	It should be noted that these are based on out of date publications, and mention should be made of the most up to date IUCN red list guidance (2019) as NR & NS definitions haven't changed.
111.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix14A7 Ornithology	Lack of buffers to assess effects of indirect habitat loss General Comment	Use of Buffers: Fundamentally, assessing the potential avian impact of a development requires the location of birds to be mapped and compared against the boundary of the development; where overlap occurs then this represents the zone of potential effect. Indirect effects (e.g. displacement as a result of noise, visual disturbance, lighting etc.) must also be considered within a buffer zone beyond the direct loss of habitat that occurs beneath the development footprint. Appendix 14A7 refers to the buffer used around the Main Development Site when assessing the distance over which indirect effects on foraging marsh harriers extend beyond the main development site; 300m reducing to 150m where visual effects where tree cover provides screening. When assessing the breeding bird interest of the Main Development Site and the breeding bird interest around the Associated Developments, the use of a buffer to consider indirect effects appears to have been dropped. For such a large Main Development Site and a number of still highly significant Associated Developments, the failure to properly consider effects on breeding birds beyond the red-line boundaries

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			could significantly under estimate impact and, consequently, the amount of mitigation required to offset this impact.
112.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix14A7 Ornithology	Noise and birds General comment	Anthropogenic noise can impact birds in a number of different ways, ranging from direct physical or physiological effects on individuals to population-level effects on density and abundance. Although noise can be measured in a number of different ways, the applicant has used predicted maximum noise levels as the key measure to assess disturbance of all types of bird and at any time of year. This type of measurement is most relevant when assessing the potential behavioural response of non-breeding waterbirds i.e. what do flocks of wintering birds do when subjected to loud bangs. It was also deemed appropriate to assess the potential displacement of foraging marsh harriers. The overreliance on a maximum level, however, could prevent potential effects on breeding populations of waterbirds, and particularly passerines (i.e. songbirds), from being properly assessed. Birds using habitats adjacent to roads are particularly exposed to chronic traffic noise. Many studies have shown a reduction in species-richness of a wide range of animals in close proximity to roads and also in the breeding productivity and numbers of breeding birds in the vicinity of motorways. Noise is considered to be the most critical factor in reducing densities of breeding birds in woodland adjacent to roads. This highlights the need for the use of suitable buffers. The response of non-breeding birds to maximum noise levels is also lacking precaution. One of the key references is used to suggest that levels up to 70dB (A) represent *an acceptable dose* and *unlikely to have any affect* or *occasionally induce a low level behavioural response such as a "heads-up".* The reference in question actually states that for auditory disturbance to qualify as a high level, it must constitute a sudden noise event of over 60dB (at the bird, not at source) or a more prolonged noise of over 72dB.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
113.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix14A7 Ornithology	Page 11, Page 12 figures 1-13, Page 482, figure 1.1 and 14A7.11, figures 14-25	Survey coverage of Breeding Birds: Understandably, a project of this scale and complexity has evolved such that the precise development locations could not be confirmed at the stage the earliest ecological surveys were undertaken. Therefore, earlier breeding bird survey work encompassed a larger survey area. The 2007 surveys undertaken be Wood (formerly Entec and then AMEC), covered the whole EDF Energy Estate (Appendix I Page 11). This area is subsequently described as the whole EDF Energy Estate plus a 1 km buffer, covering an area of 9km2 in total (Page 12, Appendix figures 1-13). There is, however, no additional 1km buffer for much of the Estate Boundary and the full extent of the survey area actually lie within the boundary at the north of the Estate, rather than beyond it, as depicted on Page 187 Figure 2.2 Appendix I showing the territory mapping survey area. The inconsistency between the written description and actual survey boundary equates to several hundred hectares. These Wood surveys were repeated in 2010, but with boundary changes restricting survey coverage to the Strategic Site Area plus a 250m buffer (Page 482 Figure 1.1. Appendix I). Although incorporating a 250m buffer, the SSA was a far smaller area than the EDF estate plus 1 km buffer. This survey area was then extended in the middle of the 2010 survey for the month of June, as further information was made available about the location of Temporary Facilities during the Sizewell Site Plot Plan Review of the 4th June (Page 482, Fig 1.1, Appendix I). The survey was extended northward to encompass an area within 250m of these facilities. The final bird Survey was undertaken by Arcadis (formerly Hyder) in 2014. By this stage, the development area had been revised once more to the Sizewell C Main Development Site Boundary. Reflecting this change in the development site boundary, the survey area also changed (see Figure 14A7.11 in Appendix Figures 14-25). Whereas the approach by Wood (Entec / Amec) had been to visit all areas within 50m, Arcadis developed transects (Arable, Reedbed, Platform and Beach, Goose Hill and Coronation Wood) within parts of the Main Development Site boundary. Parts of the main development site were not covered (locations spanning several kilometres wide with no bird survey) and, within areas that were covered by transects, not all parts were covered within 50m (up to several hundred metres between transects within those areas that were surveyed). There was no buffer and no areas were surveyed beyond the red-line boundary of the Main Development Site. According to Appendix 1-13, some of these boundary changes

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			were clarified within Appendix 14AI Introduction the Ecological Baseline, however this document could not be found on the planning inspectorate website. Breeding birds have also been surveyed for Associated Developments where, similarly to the Arcadis Surveys of the Main Development Site, there does not appear to have been any use of buffers recognising the potential for indirect effects. Even within the red-line boundaries for the Associated Developments, rather than survey within 50m of all parts of a site, transects are several hundred metres apart in places. Whilst wider spacing might be justified for routes following hedgerows, where bird interest is more limited within field centres (and certain in-field nesting species such as skylark can be observed from arable field boundaries), this does not justify such excessive spacing. For example, the approximate 800m gap between the eastern most survey transect mapped in Figure 7.9 Volume 6 Chapter 7 Terrestrial Ecology and Ornithology and the western most transect mapped in Figure 7.10. Incomplete coverage within boundaries and the lack of buffers will underestimate potential effects on breeding birds.
114.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix14A7 Ornithology	Number of Breeding Bird Survey Visits Table 1.1 and 1.2, Page 114	Number of Breeding Bird Survey Visits: CIEEM guidance is still in development so, at the time surveys were undertaken, there was no accepted standard methodology. Surveys followed an adapted form of the BTO's Common Bird Census, but with a reduction from the 10 visits used for the CBC. Natural England would recommend 5 visits. Wood (Entec / AMEC) conducted 4 visits between April and July in 2007 and between March to June in 2010. Arcadis undertook 3 visits between April and June in 2014 (see Tables 1.1 & 1.2 Appendix I). Therefore, in addition to the gaps in the geographic scope (no buffers, transects too widely spaced, areas remaining unsurveyed), the reduction to just 3 survey visits will underestimate species diversity and result in significantly lower population totals. N.B. Further surveys were undertaken by Wood in 2012 (Page 114, Appendix I), but to provide a baseline against which any increases in biodiversity might be assessed following arable reversion of survey fields in question. Further arable breeding bird survey work was conducted by Arcadis in April & May 2015, in order to update Wood surveys (presumably their 2012 arable work on establishing a reversion baseline), although survey areas and results do not appear to have been provided. Whilst this kind of approach might be sufficient for characterisation of the breeding bird assemblage, without knowing the size of breeding bird populations within the total area affected by all Associated Developments

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			and the Main Development Site, including a buffer representing the zone of indirect effect, it will not be possible to attempt to quantify loss. Neither has an estimate of population size been attempted, based on the more limited characterisation of avian interest. Currently, only a habitat-based approach has been attempted in relation to Net Gain so, superficially, the absence of robust whole-development (Main Development Site plus Associated Developments) breeding bird data may not appear to present an issue in relation to the process adopted to date. Such an approach is likely, however, to underestimate impact such that Net Gain will not be delivered for avian interest.
115.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix14A7 Ornithology	Age of survey data General comment	As noted at Page 103, Appendix Part I the results of breeding bird surveys are valid for 3 years. Typically, for many Natura Surveys, data would be deemed valid for two years. Such an approach is endorsed by CIEEM who state that after three years ecological reports are *unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated.* Owing to the scale of the development and, consequently, the need to survey multiple taxonomic groupings and multiple interest features owing to the range of designations affected, it is understandable that survey work has been spread over a longer time period than would normally be expected. This does not, however, invalidate the basis of the CIEEM advice. The validity of surveys between 18 months to 3 years will need to be considered and surveys over three years old updated. Where this did not occur, an allowance for environmental change needs to be considered with assessments suitably amended on a precautionary basis.
116.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix 14A8 Bats - Annex 14A8.1 figures 14A8.1 – 14A8.20	Annex 14A8.1 figures 14A8.1 – 14A8.20	There are no plans of any transect surveys for Goose Hill however as a high proportion of the trees in this area will be lost this have a significant impact on bat activity leading to fragmentation. Therefore additional survey efforts should be concentrated in this area.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
117.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix 14A9 Terrestrial Mammals	1.1.4	IT is written ‘section 1.4 of this chapter brings together all of this information into a detailed consideration of the baseline conditions for amphibians within the ZOI’ assume this should read ‘mammals’
118.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix 14A9 Terrestrial Mammals	1.2.31	Figure 14A9.3 illustrates the location of the water vole survey transect but does not have details of field signs identified during the surveys. Plans used to illustrate updated surveys should include details of all field signs i.e. burrows, latrines, droppings, feeding remains. This will give a better understanding of the level of activity in the different water courses.
119.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix 14C2A Reptile Mitigation Strategy	1.4.14	The reptile receptor sites were last assessed in 2015 and Natural England supports these re-assessment of receptor sites prior to any construction commencing and the start of the translocations. Natural England recommends that all reptile receptor sites should meet the Good Suitability Grade prior to receiving any translocated reptiles to ensure that the habitat is suitably established and will ecologically function as a habitat for translocated reptiles.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
120.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix 14C2A Reptile Mitigation Strategy	1.4.17	The surveys undertaken on the 9 receptor sites to determine reptile prey availability on the receptor sites, were undertaken in 2015. Since more than 3 years has lapsed since the surveys were undertaken, Natural England recommends that the prey availability surveys are undertaken again prior to any translocations of reptiles to the receptor sites. The duration since the last surveys have been carried out has been 5 years, prior to any translocations taking place the levels of prey available for translocated reptiles needs to be understood to ensure there are adequate food sources for any reptiles translocated to the receptor sites.
121.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix 14C2A Reptile Mitigation Strategy	1.4.24	Natural England acknowledges the comments in regards to the receptor sites being in close proximity to a water source. Where specific receptor sites are targeted for the release of any translocated Grass snakes, there needs to be a water source within close proximity as grass snakes utilise these areas for foraging. One site in particular is the Studio field site which does not have a water body present and has been targeted for a Grass snake receptor site, Natural England recommends a water body such as a pond or ditch scrape is created on this site to ensure there is an adequate water source for any translocated grass snakes to the receptor site at Studio field.
122.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix 14C2A Reptile Mitigation Strategy	1.5.5	The translocation of reptiles from the main development footprint needs to take into account protocols which need to be undertaken in the event reptile eggs are encountered during the reptile translocations of the main site. Such protocols should address whether the eggs would be left and undisturbed onto such time the hatch or would the eggs be taken into captivity onto such a time any hatched individuals are ready for release.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
123.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix 14C2A Reptile Mitigation Strategy	1.5.8	Natural England urges the applicant to take caution when the translocations commence that care should be taken when beginning translocations in early March. Care and consideration needs to be applied to any adders that have just come out of torpor and have just moved to basking spots. During this period adders are extremely sensitive to any disturbance as they have just come out of torpor. Natural England recommends that any individuals that are in this stage should be avoided being capture until such a time when they have fully come round from torpor.
124.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix 14C2A Reptile Mitigation Strategy	1.5.19	Any habitat clearance where vegetation is cut down to 150mm and then bare ground. During the cutting of any vegetation from 150mm to bare ground 48 hours should be left before the vegetation is cut down to bare ground. This would minimise any injury to reptiles and will allow for time for reptiles to disperse out of the area.
125.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix14C2B - Reptile Method Statement	1.3.12	Natural England recommends that throughout the construction phase that any vegetation on the construction site is maintained at ground level in order to discourage any reptiles entering the site and therefore reduce any injury or mortality.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
126.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix14C2B - Reptile Method Statement	1.4.5	Natural England recommends that if any construction works or vegetation clearance should be required in winter then any vegetation clearance should avoid known areas where reptiles may be hibernating and commence in that area once hibernation is over.
127.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix 14C3A Badger mitigation strategy Confidential	1.3.4	Figure 14A9.6 illustrates the location Main sett 3 is one of two main setts to be lost. The location of the individual entrances have not been provided however the sett appears to be in very close proximity to the site boundary. Therefore further consideration should be given to the possibly of retaining this sett (or the majority of the sett). Alternatively details should be provided of what options were considered in order to retain the sett and justification provided as to why this is not considered possible.
128.	6.3 Volume 2 Main Development Site Chapter 14 – Terrestrial Ecology and Ornithology Appendix 14C3A Badger mitigation strategy Confidential	1.4.6	The proposal to use of ground penetrating radar to map out badger tunnels may be used as a guide but cannot be relied upon to confirm absence of tunnels. Therefore additional measures will be required to ensure tunnels of active badger setts are not damaged.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
129.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14C4: Fen Meadow Compensation Study	4: Summary and Next Steps	Fen meadow creation sites have been selected and taken forward to DCO application stage following a walk-round survey and shallow soil core survey. It seems possible that once the next steps are undertaken (detailed ecological survey, topographical survey, surface and groundwater level data collection and hydrochemical data) that none of the sites are suitable. To the best of my knowledge according to the documentation I have seen: • A feasibility study into appropriate creation methods has not been carried out • The ongoing ownership/management of the sites has not been secured • Long-term management and monitoring plans have not been drafted • From the above, the risk of these creation options not coming to fruition therefore appears high.
130.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14C4: Fen Meadow Compensation Study	Overview	The extent of fen meadow likely to be destroyed is not identified consistently across the different chapters/sections of the DCO. App 14C says the permanent loss 'is likely to be less than 0.5 ha'. The non-technical survey document identifies that 0.7 ha will be destroyed, and 0.9 ha will be required for temporary land-take. Are these latter two figures the same areas, or are they additive? What is the impact of the temporary land-take? I do not see this assessed. Given the rarity and continued losses of M22 in the UK – the Guidelines for Grassland SSSI Selection report less than 10000 ha – (the true figure for England is likely to be less than 5000 ha), and the known difficulty of restoring species-rich fen/fen meadow habitat, the maximum multiplier needs to be applied here, i.e. area to be lost × 9. This will result in compensation areas of either 4.5 ha, 6.3 ha, or more, depending on severity and potential long-term impact of temporary land-take. Given the hydrological complexity of high value wetland habitats, I would also anticipate that a larger extent of wetland restoration/compensation would be required in order to provide the conditions required specifically by the M22 fen meadow. Restoration will likely give rise to areas of wetter conditions and drier

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			conditions that do not support M22, given natural hydrological, topographical and substrate variation within sites. With regard to the restoration and action needed to give highest chance of success, I did not see the level of detail that is needed to give confidence that any work would achieve its aims. In particular, the stated desire to avoid engineering/groundworks is likely to significantly reduce the likely success of restoration works, given the published literature on fen restoration, including the findings recently published based on a review of European restoration projects, which suggested that both topsoil removal and re-wetting/hydrological manipulation were necessary to restore functioning fen habitat. Klimkowska A, Goldstein K, Wyszomirski T, Kozub Ł, Wilk M, Aggenbach C, et al. (2019) Are we restoring functional fens? – The outcomes of restoration projects in fens re-analysed with plant functional traits. PLoS ONE 14(4): e0215645. https://doi.org/10.1371/journal.pone.0215645 Given this lack of confidence in the outcomes of any compensatory fen meadow restoration, based on both lack of detail on area needed/to be provided and techniques/methods, it is not possible to conclude that the loss of fen meadow from Sizewell Marshes SSSI is not significant, as stated in the non-technical summary document.
131.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14C5: Marsh Harrier Mitigation Area Feasibility Report	All 3.3	While monitoring of the mitigation area is mentioned with regard to success of prey species and Marsh Harrier prey preferences, there is no reference to any plan or proposal for ongoing monitoring. While this document may not be the appropriate place for such a plan, it should be referenced here and does not appear to be available elsewhere in the DCO application. Unless monitoring proposals exist elsewhere for Marsh Harrier, we would suggest a similar approach to other monitoring proposals in the oLEMP; monitoring twice annually for the first five years (to assess foraging potential and actual usage by Marsh Harrier during both breeding and wintering periods) followed by a review, at which point monitoring over the next five years will be decided. Post-establishment management is not described. Presumably this would be flexible and dependent on the ongoing monitoring (?), however the mechanisms by which it will be funded (e.g. agri-environment schemes etc.) seem unclear in this document and the oLEMP. To have confidence in the success of this area for the

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			estimated 10 year mitigation period during construction, an outline of how management will be achieved (i.e. funded and carried out) is necessary.
132.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14C7a - Natterjack Toad Mitigation Strategy	1.4.2	The creation of the Water Management Zone (WMZ) will result in the temporary loss of foraging habitat for Natterjack Toads, within the core zone (<50 m) from pond N1. This loss of foraging habitat within close proximity to the breeding pond N1, is likely impact on the population of Natterjack Toads without mitigation or compensation. Natural England recommends the applicant considers the enhancement of terrestrial habitat for foraging north of pond N1 to ensure there are adequate areas for foraging with the loss of foraging habitat from the WMZ.
133.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14C7a - Natterjack Toad Mitigation Strategy	1.4.4	Natural England recommends the applicant considers extending the number of capture and exclusion days from 30 days as with the population size of Natterjacks toads being estimated as medium this would require a minimum of 45 days capture and exclusion.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
134.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14C7a - Natterjack Toad Mitigation Strategy	1.4.6	Natural England recommends caution is taken when installing the perimeter amphibian proof fencing. The rabbit warrens which are used by the Natterjacks for hibernation are within close proximity to where the fencing is to be placed. Once the fencing is installed any entrances that of the rabbit warren that are located within the Water Management Zone should be noted and soft blocked to ensure that no Natterjack Toads gain access to the WMZ while it is in operation.
135.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14C7a - Natterjack Toad Mitigation Strategy	1.4.8	Natural England supports the applicant's proposals of connecting up the population of isolated natterjacks to the wider area and populations at Minsmere. The currently proposal of creating another water body as a stepping stone pond between ponds N1 and N3 is supported by Natural England. Natural England recommends providing more refuge opportunities between N1 and N3, the proposal of a linear mound is supported. Small pockets of scrub or heath could also be provided to provide further opportunities for refuge and shelter within the wider area form pond N1. Further recommendations would be to diversity the topography of the site by creating smaller, linear sand mounds to provide further shelter around the site.
136.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14C7a - Natterjack Toad Mitigation Strategy	1.4.3	Natural England recommends that any human presence on the site close to the Natterjack toad habitat that disease protocols are acknowledged. With any member of staff present on the site disease protocols need to be in place to prevent the spread of any disease such as chytridiomycosis and ranavirus and spread of invasive species Crassula helmsii which could affect the population of Natterjack Toads at Retsoms field. Biosecurity methods should be followed by any employee who is on the site at Restoms field.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
137.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14C9a - Great Crested Newt Method Statement	1.4.1	With the Great Crested newt surveys being undertaken in 2016, 4 years has lapsed since the surveys were undertaken. Despite the surveys being negative for GCN back in 2016, there is optimal habitat on site for GCN and they are present close to the site boundary. Natural England would recommend repeating the EDNA surveys to ensure that their presence/ absence on the site is understood prior to the start of any construction works as Protected species licences would need to be applied for if presence is determined.
138.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14C9a - Great Crested Newt Method Statement	1.5.3	Natural England recommends any vegetation clearance undertaken on the site, the first cut of vegetation down to 15 cm (150mm) and then 48 hours cut down to bare ground. The vegetation should be cut in the direction away from the site in order persuade any newts that may be present within the habitat to move to habitat off the site. During construction Natural England recommends that any vegetation on site during the construction period is kept to bare ground to discourage any newts from entering the site. During construction the site should be kept tidy and any rubble piles, or materials stored should be avoided on the site as these can act as refugia for any newts that enter the site.
139.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology	1.6.5	Natural England strongly advises to undertake a walkover at least a season before the translocation is proposed. This is recommended to inform on the size of the population of Deptford pink within the donor area and ensure there is adequate space for the translocation of the population to the receptor area. The walk over survey should be undertaken between June- September when the plants are in flower. Knowing an approximate population of Deptford pink plants will help inform on enhancement needed to ensure the receptor site habitat is optimal to receive any translocated plants.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
	Appendix 14C11 - Deptford Pink Method Statement		
140.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14C11 - Depford Pink Method Statement	1.6.5	Natural England supports the electronically categorising of the receptor area into compartments and assigning different categories to the habitats. The applicant should undertake this characterisation of the site a minimum of a season prior to the translocation taking place, to allow for any enhancement of the receptor site to occur prior to translocation.
141.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14C11 - Depford Pink Method Statement	1.6.12	Natural England supports the seed collection in dry weather however seed collection should be undertaken in August/September when the plants have finished flowering and the seed pods have fully developed.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
142.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14C11 - Depford Pink Method Statement	1.6.13	Natural England recommends the refrigeration of any seed pods to ensure they do not rot or that any mould gets into the pods and ruins them.
143.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14C11 - Depford Pink Method Statement	1.6.20	Natural England recommends translocating the plants during winter to early spring to the receptor area, and supports the approach of the plants being transplanted on the same day.
144.	Book 6: Environmental Statement 6.3 V2 Main Development Site Chapter 15 - Amenity and Recreation	15.4.47, 15.4.48, 15.4.49, 15.4.51, 15.6.193	In relation to section 15.4.47 please note that the Coastal Access proposals for the Aldeburgh to Hopton on Sea stretch were split down into 6 length reports. The proposals for length reports AHS 1, 2 (which includes Sizewell), 3, 5, and 6 were uncontested. It is anticipate that these will be determined by the secretary of state this autumn. We will then work with the local authority and relevant landowners to implement them on the ground. Whilst the effects on the England Coast Path will be the same as those for the Suffolk Coast Path as note in section 15.4.48, the England Coast Path is a National Trail and the Suffolk Coast Path is a Regional Route.

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			National Trails are of national importance and regional routes of regional importance and the impact must be assessed accordingly. In 15.4.49 please note that the seaward extent of the coastal margin is mean low water. In section 15.4.51 please note that the legislation enabling the creation of the England Coast Path ensures that it cannot be permanently lost due to erosion. Section 55B of the 1949 National Parks and Access to the Countryside Act provides powers for the future line of the trail to be determined in accordance with the roll back provisions made in our proposals to the Secretary of State. These enable the trail to be moved inland as the coast changes. The roll back proposals for this stretch of coast are given in the “Proposals Tables” with each length report for the Aldeburgh to Hopton on Sea stretch. In 15.6.193 Natural England would welcome recognition that changes to the environment would also affect the perception of tranquillity of users of the proposed England Coast Path states would which will follow the same route as Suffolk Coast Path at Sizewell.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
145.	Book 6: Environmental Statement 6.3 V2 Main Development Site Chapter 15 - Amenity and Recreation	15.6.45	It is stated that construction workers would favour formal recreation including football and gym activity over informal outdoor recreation this is evidenced in appendix 9E. We have not been able to locate appendix 9E and are therefore unable to provide comment of the justification. We suggest that prediction should be reviewed in light of Coronavirus and how that may influence choice of excursive with potentially more people opting for outdoor activities.
146.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 19. Groundwater and Surface water	19.4.30, 19.5.8, 19.6.16, Table 19.10, 19.6.35, 19.6.38 , 19.6.86, 14.7.139, Table 9.11	

Natural England comment reference	Document Title	Paragraph number	Natural England comment
	Book 6: Environmental Statement 6.3 V2 Main Development Site Appendix 14B1	1.3.108, 1.3.98, 1.3.961.3.1381.3.153	**Long term impact of cut-off wall on groundwater flow.** Chapter 19, para 19.4.30 points to evidence of elevated groundwater levels due to the existing cut-off wall at Sizewell B. However, at para 19.6.86 it goes on to state that modelling showed no impact of the proposed cut-of wall for Sizewell C. In contrast, para 1.3.108 of App 14B1 states on the basis of modelling "*It is determined that localised changes in groundwater would generate a slight rise in levels due to rebound from the construction of the cut-off wall*". The main text of Chapter 14 also identifies the cut-off wall as construction element likely to cause a change in hydrological conditions (para 14.7.139) but does not consider it further. App19B makes several significant observations: • (Sect 2.4) identifies modelled, unmitigated rise in groundwater levels in Sizewell Marshes SSSI in the order of 0.1 m. • Para 6.3.5.2 points to evidence from groundwater contours that the Sizewell B cut-off wall is causing a local rise in ground water level. • Sect 7.4 states "*the cut-off wall will act as a barrier to groundwater flow leading to a rise in upgradient groundwater levels. Unmitigated rise in groundwater levels has the potential to increase groundwater discharge to surface watercourses with an associated potential rise in surface water levels and an increase in flows*". It is proposed that these impacts would be managed through engineered mitigation and /or drain maintenance. No specifics are provided. App 19E also identifies at para 1.4.18 the potential for an increase in groundwater base-flow due the cut-off wall. However, it concludes that the "*impact is likely to be lower than the current level of flow depletion resulting from local water abstraction*". The report does not consider what would happen if these abstractions ceased. Table 1.16 of App 19E also identifies the presence of a cut-off wall as an 'activity' in the operational phase with the potential to cause "*Direct changes to groundwater flow patterns and volumes*
	Book 6: Environmental Statement 6.3 V2 Main Development Site Appendix 19B	Sect 2.4, Sect 7.4, 6.3.5.2	
	Book 6: Environmental Statement 6.3 V2 Main Development Site Appendix 19E	1.4.18, Table 1.16	

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			could result in impacts on surface waters (depending on where the water is discharged), including increased surface water flows…". A drainage system is identified as a control measure but no specifics are provided. The numerical modelling report (App 19A) does not appear to directly address the question of the long-term impact of the cut-off wall in the operational phase. Nor does it specifically model the efficacy of any of the mitigation alluded to in App 19B (Sect 7.4). Plates that show the results from modelling are poor quality and difficult to interpret. Further clarification is needed of how the long term impact of the cut-off wall has been assessed. The modelling work should address this question directly. **<u>Impacts on surface water flow regime during the construction phase</u>** Chapter 19 presents a confusing picture of the potential for construction to impact on water levels in Sizewell Marshes and modify flows leaving the site via the Leiston drain. Further clarification of this issue is needed. Para 19.6.35 states "The dewatering activities have the potential to increase or lower the water levels of the Sizewell and Leiston Drains and the Sizewell Marshes SSSI." The mechanisms by which these two contrasting outcomes might be reached are not clearly explained or differentiated. Para 19.6.38 states "Greater volumes of water may need to discharge down the Leiston Drain to ensure the SSSI water levels behind the water management structures are maintained.." This statement is reiterated in para 14.7.57 of Chapter 14 and paras 1.3.96 and 1.3.98 of App 14 B1. Paragraph 14.7.62 of Chapter 14 goes on to state "proposed water management structures would also allow for manipulation of the water levels and flows and thus levels/flows within the Leiston Drain could be reduced as and when required…" It is unclear where this additional water discharging to the Leiston Drain would be coming from during the construction phase given that the Modelling Report (App19A) identifies it is likely that reduced upflow from the crag (due to dewatering) will result in a net decrease in stream discharge leaving the site (assuming a drainage strategy is in place to prevent enhanced surface water run-off leaving construction areas).

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			Moreover, reducing flow to the Leiston drain with 'water management structures' would require additional temporary storage and raised water levels in Sizewell Marshes. The impact of this on Sizewell Marshes is not considered. There is a repeated assertion throughout the DCO application that the construction of new water control features in Sizewell Marshes to enable manipulation of water levels and flows would mitigate for any alterations to hydrological regime caused by construction activities. Assessment conclusions for impacts on flow of "Minor adverse (not significant)" (Chapter 19, Table 9.11), rely heavily on the assumption that this mitigation will be effective. However, little detail is provided on the design and management of the mitigation package. Chapter 19 (19.6.38) states "This would require the inclusion of new water level control structures on the realigned Sizewell Drain and potentially the revised operation of other existing structures" The only specifics provided relate to the re-routing of the Sizewell Drain which includes a proposal to install a new control structure at its northern end (App 19C). The Monitoring and Response Strategy (App 19F) provides a reasonable level of detail on future monitoring, but limited detail on specific options for water level manipulation. No explanation is provided as to how this mitigation method would operate in practice to effectively manage the potential impacts identified. The modelling undertaken (App 19B) does not specifically test this approach. Chapter 19 (19.6.38) states "The specific position, nature and operational parameters of the control structures will be determined in conjunction with stakeholders". Therefore, assessment conclusions that hydrological impacts are "not significant" rely strongly on an assumption that the mitigation scheme which is yet to be determined, will be effective. **Impacts of water level drawdown during the construction phase.** Dewatering during the construction phase is substantially mitigated by the proposed cut-off wall. However, with the cut-off wall in place modelling (App 19A) still predicts a residual water level drawdown of up to (around) 10cm in Sizewell Marshes under a 'dry scenario' (and 13 cm for the very southern edge of Minsmere South Levels as it abuts the northern edge of the platform area). The impact results largely from a reduction in hydraulic head in the Crag causing a reduction in groundwater input to the Marshes. The reduction in groundwater inflow from the Crag to the Marshes is of concern in its own right, in addition to the reduction in wetland water table.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			The impact of dewatering is assessed as 'minor adverse' and 'not significant' (Chapter 19, para 19.6.16, Table 19.10). This is largely based on the installation of the low permeability cut-off wall in combination with other mitigation measures outlined in sect. 19.5 of Chapter. 19. However, the mitigation identified in sect. 19.5.8 does not, in fact, identify any specific measures to address the residual impacts of dewatering that are modelled to persist despite the cut-off wall. Measures are identified in relation to managing potential impacts from realignment of the Sizewell Drain. It is possible that these are also meant to be considered as potential mitigation for the residual effects of dewatering. Sect 19.5.8 identifies that revised water level management may be required for the drainage units and watercourses adjacent to the construction site. In particular it points to the inclusion of water level control structures along the realigned Sizewell Drain (detailed in App 19C) and the revised operation of other existing structures. App 14 B1 (1.3.138) states that a new Sizewell Drain control structure is "*proposed to offset the drawdown within Sizewell Marshes SSSI during the construction phase*". However, as outlined above for flow, there is a lack of information describing how this mitigation would be designed and operated in practice to mitigate the residual impacts of drawdown. App 14 B1 (1.3.153) states "*The initial high-level modelling work has shown that construction activities do cause a minor change of water levels within fen meadow by up to 10cm. The introduction of a control structure, in the realigned Sizewell drain, would however raise water levels and bring the modelled change back* *within the baseline envelope for fen meadow, and thus maintain the status* *quo as seen in Plate 1.10.*" In fact, this result is not at all evident in Plate 1.10. Moreover, the modelling work (App 19A) does not include simulations of the effect of a control structure or demonstrate how this would restore water levels to the status quo. Consequently it's unclear on what evidence this statement is based (NB: a number of statements made in App 14 B1 do not appear to be consistent with information presented in the modelling report (App 19A)).

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			Mitigation described in Chapter. 19 (19.5.8) states "*The specific position, nature and operational parameters of the control structures will be determined in conjunction with stakeholders."* Therefore, the assessment conclusion that impacts of dewatering are "*not significant*" appears to rely on mitigation of residual effects using an approach to water level management which has yet to be determined. Consequently, a conclusion that impacts of dewatering are 'not significant' is unsafe for two reasons. Firstly, a residual predicted water level drawdown in the order of up to 10cm should not be considered ecologically insignificant and nor can the impact of reduced groundwater inflow from the Crag. Secondly, a scheme that would mitigate for residual drawdown through water level manipulation has not yet been determined.
147.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14E: Biodiversity Net Gain Report	Executive summary	The executive summary explains that the BNG metric generates the potential for 10.2% increase in habitats and 14.5% in hedgerows, drawn from the MDS and off-site offsetting areas. The offsetting areas include Aldhust Farm, Fen meadow mitigation area and marsh habitat improvement areas. There should be a clear distinction to show which habitats are being created for mitigation purposes and which are being delivered as BNG to avoid double counting. The associated development areas are assessed separately. It is Natural England's recommendation that BNG is calculated for the development as a whole.
148.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14E: Biodiversity Net Gain Report	7: Areas Excluded from Assessment 10: Conclusion	The lack of confidence in offsite habitat creation of fen meadow (see additional comment items below re: Fen Meadow Feasibility Study) also bring into question the assertion here that loss of SSSI habitat has been adequately addressed. In the conclusion it states: *"The achievement of these units scores is reliant upon achieving the target condition for the created habitats, which will require creation and management plans.*

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			It is recommended that post planning, additional surveys are undertaken at an appropriate point in the planning process to update this report and to inform the necessary detailed design, habitat creation and management plans." Before there can be confidence in the net gain scores and how adequate proposed measures are these management plans need to be available (i.e. at the planning stage) so an assessment can be made of how achievable the target conditions and therefore the unit net gain scores are.
149.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14E: Biodiversity Net Gain Report	Net Gain – clarifying calculations General comments	The detail provided within Appendix 14E Biodiversity Net Gain Report does not clarify how, or if, the biodiversity units calculation for the Main Development Site considers buffers, to take into account indirect loss (see specific comments on buffers), or how, potentially, the effect of indirect disturbance might also affect the predicted value of areas of habitat creation required to offset losses (where these new areas are to be created close to the main development site). In addition to the potential omission of a buffer area, neither is the size of the Main Development Site clear; the area is listed as being both 365ha (Page 11, Net Gain report) and 371.7ha (Section 2.1.2, Shadow Habitats Regulations Assessment Volume 1: Screening and Appropriate Assessment Part 1 of 5). In line with previous comments on the fragmented nature of the assessment, neither is any detail provided to show how biodiversity unit calculations were provided for the Associated Developments. Page 44 of Appendix 14E simply lists the Biodiversity Unit calculation for the Two Village Bypass, the Sizewell Link Road and the Yoxford Roundabout and other highway improvements (133 units, 227 units and 5.5 units respectively). Neither is there any detail to confirm how it has been determined that the remaining Associated Developments, to which the report does not refer, remain unlisted. Presumably, this might reflect a conclusion that there is no predicted impact on specific ecological receptors so, consequently, the applicant might have justified a biodiversity until calculation of zero. Without some further detail, however, it remains unclear whether this remains a valid conclusion when considering the cumulative area of habitat loss across all associated developments whilst using an area-based approach to habitat offsetting.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
150.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14E: Biodiversity Net Gain Report	Net Gain – multiple objectives in a single area General comments	If all areas of losses and gains could be mapped across both the main development site and associated developments (see Net Gain – clarifying calculations comments above), it might provide greater clarity to determine under what circumstances multiple objectives might be legitimately be delivered within a single parcel of land. This is inherently complex when both area-based and species-based assessment approaches are considered in combination, to determine whether Net Gain responsibilities have been met. For example, some areas of habitat are being created to mitigate predicted impact on protected species, rather than habitat loss per se. In the case of the proposed marsh harrier compensation, a new area of habitat would be created to offset marsh harrier displacement, rather than direct habitat loss. Indirect effects affecting foraging marsh harriers might not impact other plant and animal species which remain in situ. Therefore, under similar circumstances and where species requirements are similar, multiple objectives might legitimately be delivered within the same land parcel of compensatory habitat. In other cases, however, potentially the full ecological value of habitat creation might have already been accounted for. For example, the provision of receptor areas for protected species displaced following destruction of their habitat from the wider development area. Once such mitigation is secured, albeit via a protected species-based rather than habitat-based assessment approach, impact has been offset. As effect might be deemed neutral at this stage, the original area of protected species habitat destruction might not be incorporated within Net Gain metric calculations for loss and, therefore, not attributed to a specific development (Main Development Site, Northern Distributor Road etc.). If the extent of habitat loss is only considered from a species perspective and not included in metric calculations, then neither should area-based gains be considered to offset additional loss of habitat occurring elsewhere, when the corresponding value of the habitat creation has already been fully accounted in order to overcome impact to protected species. Such a scenario may not have occurred, but without greater clarity it is unclear whether such double-counting has occurred, or the precise approach adopted.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
151.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14E: Biodiversity Net Gain Report	10: Conclusion	The first paragraph of the conclusion it is stated that marsh harrier mitigation is included within net gain calculation. It is Natural England's understand that marsh harrier is proposed mitigation/compensation for SPA disturbance and therefore should not be included in the net gain calculation.
152.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14E: Biodiversity Net Gain Report	10: Conclusion	The report identifies a projected 128ha increase in 'grassland', although the scope to expand the definition of what this means in practice and as it succeeds over time should be broadened. An acid grassland heather heath mosaic with some scrub to encourage speciality birds like nightjar and woodlark, across a large area, would be more in keeping with the heathland SSSIs in the area and the character of the AONB landscape.
153.	Book 6: Environmental Statement 6.3 V2 Main Development Site Ch. 14. Terrestrial Ecology and Ornithology Appendix 14E: Biodiversity Net Gain Report	Net gain - adapting Biodiversity Offsetting for species General comments	Whilst offsetting provides a transparent and structured approach, DEFRA's off-setting metric is generic and has been designed for habitats rather than the heightened risk of delivery associated with creating habitat for species. This heightened risk is introduced by the increasingly complex ecological interactions associated with movement up trophic levels. There may be behavioural constraints, inter-specific differences in mobility (animal species cannot be planted and translocation may not be feasible) and demographic matters to consider. Whilst there might be confidence it is possible to create the generic habitat type a certain species requires, their subsequent establishment cannot be directly manipulated and might be less certain. In particular, compared with our own crude understanding, animals with specialist requirements may perceive habitats in a different manner to ourselves. For those species and species groupings for which there is little practical experience, there will be increasing levels of uncertainty that the

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			conditions created are sufficiently favourable such that they will not only result in colonisation, but that the size of the area created will result in a population of a given size. Added uncertainty, or increased risk, might require an uplift in the extent of habitat provided. Two examples of species Natural England has encountered during planning casework, that highlight the need for a species-specific approach to biodiversity offsetting in order to secure Net Gain, are nightingale and turtle dove. Both of these birds are present within scrubbier parts of the area affected by the DCO. Considered from a habitat perspective, scrub is one of the least distinct habitat types and easy to recreate. Nightingales, however, require specific structural gradients with a shaded understorey. Turtle dove require scrub for nesting, but will forage elsewhere. Both birds are also migratory species in rapid decline. Nightingale are unlikely to persist as lone individuals and, consequently, a minimum area of habitat is required to support a subpopulation for a species attracted to the song of conspecifics. Factors to consider include: • Specialist vs generalist species • Source of recruits / demographic constraints • Minimum viable population size, habitat extent and fragmentation • Population pressure and unoccupied habitat elsewhere • Dispersal ability – natal dispersal and breeding dispersal distances rather than migratory range • Time lag for habitat establishment compared to species longevity • Additional behavioural constraints – attraction of conspecifics, social structures, colonially nesting species, site faithfulness, traditionally used sites, leks etc. • Whether autecological requirements can be met for every species within the whole bird community expected to colonise.

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			N.B. This is not a fault in the offsetting process as designed, but merely an acknowledgement that this is not the application for which it was intended. Neither could such a habitat-based metric have been populated with pre-defined scores for the enormous number of animal and plant species potentially affected by development. Therefore, the use of off-setting can require modification for the species / species groupings in question. Note that this issue primarily affects birds of the wider environment rather than being a weakness in the shadow HRA.
154.	Book 8: Other Documents 8.2 Outline Landscape and Ecological Management Plan: 3.4 Existing Management Regimes	3.4.1 Table 3.1	While it is appropriate that the areas within the EDF estate that are under existing management regimes should not be considered directly in the oLEMP, the management plans should be clearly visible within the DCO for review and comment in light of the development. This would be to enable the assessment of monitoring programmes that should be put in place to ensure the Sizewell C development does not have unforeseen and unmitigated negative impacts on these sites and, with reference to areas such as the Marsh Harrier land, that the land will achieve the stated aims and continue to do so throughout the project.
155.	Book 8: Other Documents 8.2 Outline Landscape and Ecological Management Plan: 5.1 Objectives	5.1.6	What monitoring will be put in place to assess wetland habitats affected by the realignment of the Sizewell and Leiston Drains and to assess long-term severance effects within Sizewell Marshes SSSI? The applicant need to specify the duration of this monitoring. Monitoring of temporary changes should occur during construction and for several (3-5?) years after to get an indication of whether or not there is return to pre-construction conditions. Long-term severance effects should be monitored for.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
156.	Book 8: Other Documents 8.2 Outline Landscape and Ecological Management Plan: 5.1 Objectives	5.1.7	The applicant should explained how a balance between recreation and habitat be maintained and monitored, and for how long.
157.	Book 8: Other Documents 8.2 Outline Landscape and Ecological Management Plan: 5.1 Objectives	5.1.14	Contingency plans should be in place for habitat creation if soils inherited from construction are not suitable for creation of the Sandlings grassland mosaic habitat. Further information is required about monitoring to ensure the objective is achieved.
158.	Book 8: Other Documents 8.2 Outline Landscape and Ecological Management Plan: 5.1 Objectives	5.1.18 &19	*Further information should be provided to explain how vegetated shingle (shown in example photo) will be re-created. A detailed method for this must should be provided as this habitat is extremely difficult to create artificially. Sand dune habitat may be more achievable where it is appropriate, clarity on whether EDF intend to create sand dune, vegetated shingle or both is needed here.*
159.	Book 8: Other Documents 8.11: Code of Construction Practice (CoCP) 6: Terrestrial Ecology and Ornithology	Table 6.1: Control Measures to Mitigate Potential Impacts	*Best Practice Control Measure for stockpiling vegetated shingle substrates and seedbank then reinstating them in final landscaping of coastal sea defence. Evidence should be presented to demonstrate that this measure will be effective.*

Natural England comment reference	Document Title	Paragraph number	Natural England comment
160.	Book 8: Other Documents 8.2 Outline Landscape and Ecological Management Plan: 7: Monitoring Requirements	Table 7.1: Monitoring Proposals	*Item for Vegetated Shingle states:* *"Should coverage of shingle become reduced, shingle replenishment would be required"* *. If there is a tested method for translocating or growing them on and transplanting them into shingle, it should be presented in the DCO application.*
161.	6.4 Volume 3 Northern Park and Ride Chapter 7 Ecology and Ornithology	7.4.16	With pond 100 being scoped out of further surveys due to it being dry at the time of previous surveys. Natural England would recommend that further information is provided in regards to pond 100 as it is not clear if the pond has dried up completely or just dries up on a seasonal basis.
162.	6.4 Volume 3 Northern Park and Ride Chapter 7 Ecology and Ornithology	7.4.17	The applicant considers the gardens to the west side of the A12 as Great Crested Newt habitat. Natural England advises against classifying gardens as terrestrial GCN habitat as the habitat types within the gardens are not known and may not be suitable for great crested newts.
163.	6.4 Volume 3 Northern Park and Ride Chapter 7 Ecology and Ornithology	7.5.4	Natural England recommends the applicant considers other lighting options to prevent light spill into Nursery Wood and any adjacent habitats and limit the disturbance and severance of bat commuting and foraging routes. The applicant should consider bat friendly lighting, hoods for the lights to prevent spill, low to the ground lighting and coloured filters to attached to any lighting hoods so the light spill is a different colour and less impactful to bats. In regards to the placement of the SUDs the applicant should consider making these GCN friendly and ensuring the sides are not too steep. SUDS cannot be considered as aquatic habitat for GCN however they

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			can act as terrestrial habitat for GCN and offer opportunities for foraging. Natural England advises that the SUDS are planted with wet grassland species mix and to enhance them to function as terrestrial GCN habitat.
164.	6.4 Volume 3 Northern Park and Ride Chapter 7 Ecology and Ornithology	7.5.4	Natural England supports the applicant's proposals to enhance and restore hedgerows across the site as these provide import foraging and commuting routes for bats and birds. Where possible Natural England recommends planting the hedgerows with species found locally and favouring mature shrubs and plants as these will establish quicker and allow the hedge to function as an ecological habitat quicker.
165.	6.4 Volume 3 Northern Park and Ride Chapter 7 Ecology and Ornithology	7.5.4	Natural England supports the use of landscape bunds for screening of the sites to reduce noise and disturbance. The applicant should also consider once the bunds have been created, seeding the bunds with a wild flower mix to enhance biodiversity across the site during the period when the bunds are in operation. The purpose of seeding the bunds with a wild flower seed mix would off food and attract invertebrates to the site.
166.	6.4 Volume 3 Northern Park and Ride Chapter 7 Ecology and Ornithology	7.5.9	Natural England recommends any removal of any hedgerow routes should be searched prior to removal, and taken apart my hand under the supervision of the Ecological Clerk of Works.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
167.	6.4 Volume 3 Northern Park and Ride Chapter 7 Ecology and Ornithology	7.5.9	Natural England recommends any improvement and enhancement made to pond 78 is undertaken a minimum of 6 months in advance to ensure the pond is functioning as Great Crested Newt aquatic habitat prior to the start of construction and the area becoming a receptor site.
168.	6.4 Volume 3 Northern Park and Ride Chapter 7 Ecology and Ornithology	7.6.14	Natural England strongly advises the applicant to reconsider fencing the entire site to prevent any newts from entering the site and being at risk of injury or death. Arable land does still provide some forages opportunities for great crested newts especially when ploughed, however Little Nursery wood offers good hibernation and foraging opportunism and it is likely that newts would try and cross the site to access it as it stands the current fencing plan does not encircle the full development site and there is a risk of newts entering the site.
169.	6.5 Volume 4 Southern Park and Ride Chapter 7 Ecology and Ornithology	7.5.4	Natural England supports the use of landscape bunds for screening of the sites to reduce noise and disturbance. The applicant should also consider once the bunds have been created, seeding the bunds with a wild flower mix to enhance biodiversity across the site during the period when the bunds are in operation. The purpose of seeding the bunds with a wild flower seed mix would off food and attract invertebrates to the site.
170.	6.5 Volume 4 Southern Park and Ride Chapter 7 Ecology and Ornithology 6.5 Volume 4 Southern Park and Ride	7.5.4	Natural England supports the applicant on wanting to prevent light spill into adjacent habitat. Natural England recommends the applicant considers other additional lighting options to prevent light spill into Nursery Wood and any adjacent habitats and limit the disturbance and severance of bat commuting and foraging routes. The applicant should consider bat friendly lighting, hoods for the lights to prevent spill, low to the ground lighting and coloured filters to attached to any lighting hoods so the light spill is a different colour and less impactful to bats.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
	Chapter 7 Ecology and Ornithology		
171.	6.5 Volume 4 Southern Park and Ride Chapter 7 Ecology and Ornithology	7.5.4	Natural England recommends the applicant should considering enhancement the broadleaved woodland habitat on the perimeter of the site. The recommendations would be to strengthen the tree lines through planting of new specimens, any coppicing where appropriate in order to improve any habitats on the site with the impact of the development foot print of the park and ride. Natural England recommends where possible the applicant should consider the replanting of hedgerows with mature shrubs and plants to enable the hedgerows to ecologically function as a habitat quicker. Natural England encourages the applicant to consider enhancing and improving the biodiversity across the site in order to offset the development of the southern park and ride and promote a wider biodiversity gain. By enhancing pond 59 and improving the HSI score of the pond through planting or dredging any silt in the ponds would encourage and improve the wildlife that utilise the pond.
172.	6.5 Volume 4 Southern Park and Ride Chapter 7 Ecology and Ornithology	7.5.9	Natural England supports the provision of bat boxes for a variety of bat species which are at risk of being impacted for the loss trees on the site. Different types of bat boxes for the roost types should be used for example offering bat boxes that function as day roosts, maternity roosts and hibernation roosts

Natural England comment reference	Document Title	Paragraph number	Natural England comment
173.	6.5 Volume 4 Southern Park and Ride Chapter 7 Ecology and Ornithology	7.5.10	Natural England supports the phased vegetation clearance of the site margins to encourage reptiles off the site. The vegetation should be cut to an initial length of 14 cm (150mm) and then 48 hours later when any reptiles present have dispersed from the area the vegetation should be cut down to bare ground . The direction of the cut should be away from the site to encourage any reptiles to disperse into the wider habitat. Whilst construction is ongoing vegetation on the site should be kept as close to bare ground as possible to discourage any reptiles from coming onto the site.
174.	6.5 Volume 4 Southern Park and Ride Chapter 7 Ecology and Ornithology Appendix A Ecological Baseline and Method Statements.	1.4.2	The bird surveys were undertaken between 2014 – 2014, since more than 3 years has lapsed since the surveys were undertaken – Natural England strongly advises the applicant to update the bird surveys. It is essential to have up to date survey information on what species may utilise the site and the potential impacts any construction on the site poses to any species present.
175.	6.5 Volume 4 Southern Park and Ride Chapter 7 Ecology and Ornithology Appendix A Ecological Baseline and Method Statements.	1.5.4	More than 3 years has lapsed since the bat surveys were undertaken, Natural England strongly advises the applicant undertakes up to date surveys of the site. It is essential to have up to date survey information on what species may utilise the site and the potential impacts any construction on the site poses to any species present. This is essential to informing on any protected species licences that the applicant needs to apply for.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
176.	6.6 Volume 5 Two Village Bypass Chapter 7 Terrestrial Ecology and Ornithology	7.4.32	Natural England acknowledges that breeding bird surveys have been undertaken in 2019 however there is no mention of any overwintering bird surveys being undertaken. With the close proximity to many protected sites that have overwinter birds as designated features, Natural England strongly advises that the applicant undertakes overwintering bird surveys to identify any impacts posed to overwintering birds that may utilise the habitats present on the site.
177.	6.6 Volume 5 Two Village Bypass Chapter 7 Terrestrial Ecology and Ornithology	7.5.4	Natural England supports the planting of the new hedgerows with native species. The applicant is advised to use more mature plants and shrubs to enable the hedges to establish and function as an ecological habitat sooner for species that utilise them. With existing hedgerows the applicant is advised to enhance the hedgerows by strengthening them by planting in infilling any gaps. Natural England recommends any grass verges that are created as part of the scheme are planted with a wild flower seed mix to enhance biodiversity across the site. The planting of a wild flower seed mix will encourage pollinators to the area and other invertebrates.
178.	6.6 Volume 5 Two Village Bypass Chapter 7 Terrestrial Ecology and Ornithology		Natural England supports bat boxes being provided for different species, the applicant should also consider providing a variety of bat boxes for different roosts types e.g. hibernation, maternity and day roosts.
179.	6.6 Volume 5 Two Village Bypass Chapter 7 Terrestrial Ecology and Ornithology	7.5.10	Natural England supports the phased vegetation clearance of the site margins to encourage reptiles off the site. The vegetation should be cut to an initial length of 14 cm (150mm) and then 48 hours later when any reptiles present have dispersed from the area the vegetation should be cut down to bare ground . The direction of the cut should be away from the site to encourage any reptiles to disperse into the wider habitat. Whilst construction is ongoing vegetation on the site should be kept as close to bare ground as possible to discourage any reptiles from coming onto the site.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
180.	6.6 Volume 5 Two Village Bypass Chapter 7 Terrestrial Ecology and Ornithology	7.6.15	Natural England welcomes the planting of deciduous woodland and encourages the applicant to source and plant more mature specimens and to use local, native species. With the planting of older trees, these will become established quicker and allow the habitat to ecologically function sooner and provide benefit for a wide range of species.
181.	6.6 Volume 5 Two Village Bypass Chapter 7 Terrestrial Ecology and Ornithology	7.6.43	The floodplain grassland provides an important function to the invertebrate communities, the loss of a large amount of this habitat due to the development will impact the invertebrate assemblage that exists here. As it stands with the substantial loss of flood plain grassland, Natural England strongly advises the applicant provides mitigation or compensation to offset the loss of habitat. The applicant needs to consider providing compensatory habitat on the site however if this is not possible then compensation and mitigation would need to be provided within the wider area. Compensation in the wider area could facilitate the restoration and enhancement of flood plain grassland around the River Alde floodplain which would benefit invertebrate assemblages.
182.	6.7 Volume 6 - Sizewell Link Road Chapter 7 Terrestrial Ecology and Ornithology, Appendix 7A Ecological Baseline and Method Statements	7.4.23	Natural England strongly advises the applicant undertakes a series of population class surveys on the ponds within the location of the link road, to determine the risks and impacts the development proposes to newts. It is important to understand the population size of the newts to be affected as this will enable adequate mitigation and compensation to be designed for the scheme. A full population size class survey is required if the applicant is to apply for a Protected Species Licence.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
183.	6.7 Volume 6 - Sizewell Link Road Chapter 7 Terrestrial Ecology and Ornithology, Appendix 7A Ecological Baseline and Method Statements	7.4.31	Natural England acknowledges that breeding bird surveys were undertaken in 2019, however there is no mention of any surveys targeting over wintering bird species. The applicant is strongly advised to undertake a series of surveys to determine the use of the site by any over wintering birds that may be impacted by the scheme.
184.	6.7 Volume 6 - Sizewell Link Road Chapter 7 Terrestrial Ecology and Ornithology, Appendix 7A Ecological Baseline and Method Statements	7.5.4	Natural England supports the proposals of planting trees and hedgerows. The applicant is advised to consider sourcing and planting mature older shrubs and trees in order for them to establish quicker and enable the habitat to ecologically function quicker and provide benefit for a variety of species. With the provision of new woodland blocks, planting of different height of trees is recommended to create a different layers within the woodland to enhance and promote biodiversity within the woodland. Natural recommends any grass verges that are planted along the new road route, are fully enhanced to promote biodiversity across the site. The verges should be sown with a wild flower seed mix to attract invertebrate and pollinators with the goal of enhancing biodiversity across the site.
185.	6.7 Volume 6 - Sizewell Link Road Chapter 7 Terrestrial Ecology and Ornithology, Appendix 7A Ecological Baseline and Method Statements	7.5.4	There is concern that without any mitigation and compensation the creation of the new road will lead to reduced connectivity and fragmentation between populations of newts. There is concern of the increased mortality and injury due to the proposed 60mph limit of the road. Natural advises the applicant to liaise with Natural England as early as possible through either PSS or DAS prior to any protected species licence applications. Amphibian culverts and tunnels are only successful for GCN when a water body is placed within 100m of each entrance of the tunnel or culvert. The use of offset gully pots and dropped kerbs should be used where possible to create newt friendly crossing points. The use of connecting habitats to either side of the road should also be considered, as newts often use hedges and tree lines as cover to move across the wider landscape.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
186.	6.7 Volume 6 - Sizewell Link Road Chapter 7 Terrestrial Ecology and Ornithology, Appendix 7A Ecological Baseline and Method Statements	7.5.4	Any great crested newt breeding pond that is destroyed, Natural England would expect two other water bodies to be provided as compensation. The creation of the new breeding ponds should be created as far in advance as possible to the construction starting, to enable the ponds to establish and function ecologically as breeding ponds for great crested newts. The water bodies should be created a minimum of 6 months in advance however Natural England recommends 12 months to enable the ponds to be established. The creation of any new ponds should take into account newt movement over the wider landscape and link populations together
187.	6.7 Volume 6 - Sizewell Link Road Chapter 7 Terrestrial Ecology and Ornithology, Appendix 7A Ecological Baseline and Method Statements	7.5.4	The creation of the SUDS is recommended to prevent any run off from entering ponds or the wider habitat. The provision of SUDS cannot be considered aquatic habitat for great crested newts however there is a terrestrial benefit. The SUDS can be planted with a wet grassland seed mix and can attract invertebrates and be used as areas of foraging.
188.	6.7 Volume 6 - Sizewell Link Road Chapter 7 Terrestrial Ecology and Ornithology, Appendix 7A Ecological Baseline and Method Statements	7.5.8	Natural England recommends no storage of any equipment or material on site within 10m of any ponds, in order to prevent any run off and pollution events. Natural England recommends the storage of all soils on the sites being stored a minimum of 10m away from ponds, to minimise any run off and pollution risk to the ponds.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
189.	6.7 Volume 6 - Sizewell Link Road Chapter 7 Terrestrial Ecology and Ornithology, Appendix 7A Ecological Baseline and Method Statements	7.5.11	Natural England supports bat boxes being provided for different species, the applicant should also consider providing a variety of bat boxes for different roosts types e.g. hibernation, maternity and day roosts.
190.	6.7 Volume 6 - Sizewell Link Road Chapter 7 Terrestrial Ecology and Ornithology, Appendix 7A Ecological Baseline and Method Statements	7.6.31	The proposals of the link road as they stand will lead to a net loss of habitat for great crested newts. Though some compensatory habitat has been proposed, there is still a net loss overall. With any habitat provided as mitigation and compensation for the scheme Natural England strongly recommends providing habitats of high ecological value to newts. The applicant should consider the provision of further areas of scrub habitat or wild flower grass lands as areas of foraging.
191.	6.8 Volume 7 Yoxford Roundabout and Other Highway Improvements, Chapter 7 Terrestrial Ecology and Ornithology	7.4.14	With a record of Sandy Stilt Puffball recorded on the site, Natural England would encourage the applicant to undertake a targeted survey in the autumn in order to record any presence or absence on the site. This is essential due to the designations of the Sandy Stilt Puffball as protected by the Wildlife and Countryside Act 1981 (Schedule 8) and Under the NERC Act. It is important to understand any risks and impacts to the Sandy Stilt Puffball on the site due to the development of the roundabout.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
192.	6.8 Volume 7 Yoxford Roundabout and Other Highway Improvements, Chapter 7 Terrestrial Ecology and Ornithology	7.4.23	Though there is no direct habitat loss to RNR 197 there are still indirect effects that pose a risk to biodiversity within RNR 197.Natural England recommends that where possible the applicant considers enhancing the habitat within RNR 197, to order to improve biodiversity within RNR197.
193.	6.8 Volume 7 Yoxford Roundabout and Other Highway Improvements, Chapter 7 Terrestrial Ecology and Ornithology	7.4.38	Natural England recommends that the applicant considers enhancing any hedgerows and tree lines on the site to enhance the habitats and promote biodiversity on the site. Any enhancement of hedgerows would involve planting of native shrubs to strengthen hedgerow lines and infill any gaps. Improvement of any tree lines would involve supplementary planting of trees or any coppicing and pruning of trees. For the creation of any new hedgerows the applicant should source and plant mature shrubs and plants to enable the hedgerow to function as an ecological habitat quicker.
194.	6.8 Volume 7 Yoxford Roundabout and Other Highway Improvements, Chapter 7 Terrestrial Ecology and Ornithology	7.4.38	With the grassland areas to be planted across the site, Natural England recommends where possible planting these areas with a wild flower seed mix to encourage biodiversity. The sowing of a wild flower seed mix would be beneficial and attract invertebrates and pollinators.
195.	6.8 Volume 7 Yoxford Roundabout and Other Highway Improvements, Chapter 7 Terrestrial Ecology and Ornithology	7.5.38	Natural England recommends a minimum of a 10m buffer between the roundabout and the River Yox in order to prevent run off from the road entering the River Yox and avoiding any pollution events from occurring.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
196.	6.8 Volume 7 Yoxford Roundabout and Other Highway Improvements, Chapter 7 Terrestrial Ecology and Ornithology	7.4.41	Natural England strongly recommends no storage of any equipment, material or soil within 10m of the River Yox in order to prevent any run off into the river or pollution events.
197.	6.8 Volume 7 Yoxford Roundabout and Other Highway Improvements, Chapter 7 Terrestrial Ecology and Ornithology	7.4.41	Natural England supports the inclusion of bat boxes, however the applicant needs to provide a variety of bat boxes to accommodate the different roost types such as maternity, day and hibernation.
198.	6.8 Volume 7 Yoxford Roundabout and Other Highway Improvements, Chapter 7 Terrestrial Ecology and Ornithology	7.4.45	A phased vegetation clearance is recommended to encourage any reptiles or amphibians off the site into the wider habitat. The vegetation should be cut in the direction going away from the site, with the initial cut taking the vegetation down to a height of 15 cm (150mm) and then 48 hours later cut down to bare ground.
199.	6.9 Volume 8 Freight Management Facility Chapter 7 Terrestrial Ecology and Ornithology	7.4.23	Natural England acknowledges that the applicant has only undertook a desk study of the site for ornithology. Desk studies are useful to providing a background to the site and are useful supplementary records however there have been no ornithological surveys undertaken on the site. With the habitat being mostly arable and the presence of hedgerows surrounding the site there is habitat on the site which is suitable for a number of bird species. Natural England strongly advises that ornithological surveys are undertaken at the site to determine the impacts of the development proposals to birds. The survey effort should cover the following periods: Breeding bird season (March – July), Wintering bird season (November – March) and Passage birds (March – October).

Natural England comment reference	Document Title	Paragraph number	Natural England comment
200.	6.9 Volume 8 Freight Management Facility Chapter 7 Terrestrial Ecology and Ornithology	7.5.4	Natural England recommends that the applicant considers enhancing any hedgerows and tree lines on the site to enhance the habitats and promote biodiversity on the site. Any enhancement of hedgerows would involve planting of native shrubs to strengthen hedgerow lines and infill any gaps. Improvement of any tree lines would involve supplementary planting of trees or any coppicing and pruning of trees. For the creation of any new hedgerows the applicant should source and plant mature shrubs and plants to enable the hedgerow to function as an ecological habitat quicker.
201.	6.9 Volume 8 Freight Management Facility Chapter 7 Terrestrial Ecology and Ornithology	7.5.4	Natural England recommends planting the bunds with a wild flower seed mix in order to promote biodiversity on the site and attract pollinators and invertebrates within the 10m buffer zone, Natural England supports the enhancement of these sites given the land owners permission. The enhancement of these habitats should ensure the habitats are of higher ecological value than before.
202.	6.9 Volume 8 Freight Management Facility Chapter 7 Terrestrial Ecology and Ornithology	7.5.12	Natural England supports the phased vegetation clearance as a way to persuade any amphibians or reptiles off the site. The vegetation should be cut down to 15cm (150mm) and then 48 hours later cut down to bare ground. The vegetation should be cut in the direction leading away from the site.
203.	6.9 Volume 8 Freight Management Facility Chapter 7 Terrestrial Ecology and Ornithology	7.6.15	Natural England strongly advises to enhance the existing hedgerows where possible for use of flight lines by bats. Enhancement of the existing hedgerows should ensure aim to plant and infill any gaps and strengthen hedgerow lines. Natural England supports the creation of new hedgerows and where possible any planting should use mature shrubs and plants to ensure the hedgerows establish quicker and provide an ecologically functional habitat sooner.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
204.	6.10 Volume 9 Rail Chapter 7 Terrestrial Ecology and Ornithology	7.4.25, 7.4.26	Ornithological surveys have been undertaken for breeding birds (2011 and 2014) whilst over wintering surveys undertaken (2011- 2012 & 2014 – 2015). The age of the survey data is more than 3 years of age, Natural England recommends the survey data is updated. Having current, up to date survey data is essential in understanding the species that utilise the sight for breeding, foraging and overwintering that will be impacted by the development.
205.	6.10 Volume 9 Rail Chapter 7 Terrestrial Ecology and Ornithology	7.4.23	There have been records of reptiles between 100 – 200m away from the site and a grass snake recorded on the site. No reptile surveys have been undertaken at the site however it is likely there reptiles are present on the site and utilise the hedgerows and arable edges for foraging and commuting. Natural England recommends the use of the Reasonable Avoidance Measures (RAMS) method-statement to prevent any injury or harm to any reptiles that utilise the site. Natural England would strongly advise a more up to date walk over survey targeted at identifying any signs of reptiles or reptile usage across the site. It is essential to have current information on the status of reptiles on the site, in order to mitigate and compensate for impacts to reptiles that in habitat or use the site for commuting to other habitats.
206.	6.10 Volume 9 Rail Chapter 7 Terrestrial Ecology and Ornithology	7.4.35	Bat surveys undertaken in 2014 included transect surveys and the use of static detectors whilst tree inspections were undertaken across the site in 2016. Natural England strongly recommends that the survey effort for bats for the proposed green rail route are updated as the survey effort is more than 3 years old. The survey effort needs to include another tree survey, transects and static detectors to confirm current bat activity levels on the site and understand where any roosts are present. It is important to understand the bat species that utilize the site, the type of roosts as this is essential when mitigation and compensating for any impacts the green rail route may create.
207.	6.10 Volume 9 Rail Chapter 7 Terrestrial Ecology and Ornithology	7.4.40	Since badger survey was undertaken in 2014, the survey data is more than 3 years old, Natural England would strongly recommend that the survey is updated. In the 2014 survey a subsidiary and an outlier sett were recorded on the site, current survey data is needed to confirm badger activity on the site. It is essential the applicant confirms the badger activity on the site of the green rail route as if Protected Species licences are required, then further activity surveys will be required to support the application.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
208.	6.10 Volume 9 Rail Chapter 7 Terrestrial Ecology and Ornithology Rail Improvement works (Bratt`s Black House level crossing improvements)	7.4.50	Natural England strongly advises under taking an Extended phase 1 habitat survey of the site in order to determine the presence of any protected species. This is essential as the desk survey has identified the presence of the Purple Emperor and White-letter on the site – both are listed Under Schedule 5 of the Wildlife and Countryside Act (1981).
209.	6.10 Volume 9 Rail Chapter 7 Terrestrial Ecology and Ornithology Rail Improvement works (Bratt`s Black House level crossing improvements)	7.4.52	Access was not permitted to the pond adjacent to the site, whilst access may not be obtained to physically survey the pond the applicant should consider under taking a Habitat suitability index (HIS) survey on the pond if possible, to inform if there is any potential for it being suitable for Great Crested newts. With the desk records confirming GCN presence 240 m north of the site and there is potential for newts to be on the site. Natural England recommends the applicant considers working on a Reasonable Avoidance methods (RAMS) method statement to reduce any impact to Great crested newts.
210.	6.10 Volume 9 Rail Chapter 7 Terrestrial Ecology and Ornithology Mitigation/Compensation for Green rail route	7.5.4.	Natural England advises the applicant where possible to enhance the woodland blocks of TN6 and TN9 on site. Any enhancement of the woodland blocks would help to improve the ecological function of the habitat and benefit a variety of species. Enhancement works that should be considered are coppicing and any pruning of trees in order to maintain a canopy of different levels within the woodland. Strengthening of the tree lines should be considered where possible to create dark areas for bats and plant trees/shrubs in areas of woodland that would benefit from restorative planting.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
211.	6.10 Volume 9 Rail Chapter 7 Terrestrial Ecology and Ornithology Mitigation/Compensation for Green rail route	7.5.4	Natural England supports the recreation of the hedgerows lost however the applicant should consider enhancing existing hedgerows also on the site. The planting of mature shrubs and plants should be considered when creating new hedgerows to ensure the hedgerow has established quicker and can function as a habitat sooner. The enhancement of hedgerows should aim to strengthen the hedgerow through planting and any infilling of any gaps in the hedgerow. The planting should be native species.
212.	6.10 Volume 9 Rail Chapter 7 Terrestrial Ecology and Ornithology Mitigation/Compensation for Green rail route	7.5.4	Natural England supports the creation of landscape bunds but recommends the bunds should be sown with a wild flower seed mix to enhance and promote biodiversity on the site by attracting pollinators.
213.	6.10 Volume 9 Rail Chapter 7 Terrestrial Ecology and Ornithology Mitigation/Compensation for Green rail route	7.6.14	Natural England considers the severance of hedgerows and route of the green rail route to impact on the connectivity between the meta-populations. It is essential that Great crested newts are able to move between the metapopulations as this enables healthy genetic diversity between the populations. Natural England strongly advises that the sides and banks of the green rail route are planted with suitable habitat to promote movement between the GCN metapopulations and allow connectivity. The sides of the rail route should have pockets of scrub, species rich grassland, wild flower and linear features such as hedgerows to act as green corridors either side of the tracks to encourage newts to move around the wider area, and other additional foraging areas. The provisions of these habitats will allow foraging areas for a range of other species such as birds, bats and small mammals.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
214.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (OLEMP)	3.1.17	The applicant needs to include a mention of the some of the species present within the dune and shingle habitat as some of this are characteristic of these types of habitat.
215.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (OLEMP)	3.1.22	The applicant needs to include a mention of the Deptford Pink within the coastal dunes and habitats section. This is due to it being present on the vegetated shingle of the site and part of the county wildlife site (CWS). The post construction landscaping prescribed for coastal dunes and shingle should be mindful of the relevant designated interest features, the special qualities of the AONB and landscape character.
216.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	3.4.2	The applicant needs to provide more detail in regards to the sections featured within the OLEMP. With Lowland heath/dry acid grassland: Black walks the type of livestock should be stated here and if there is increased grazing pressure from rabbits, the applicant should consider rabbit population control to reduce grazing pressure. With Broom Covert the applicant should mention a small summary of the reptile management methods on the site and state this within the oLEMP With the waterbodies the pond at Lower Abbey Farm is stated as potentially requiring more intensive management, further information should be stated as to what this intensive management will be and stated within the oLEMP.
217.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	3.4.3	Within table 3.3 the applicant needs to include further information which should include time scales of when any management is to be carried out. Further information needs to be included on the heights that the vegetation is cut down too. How often scrub management is undertaken rather than just ‘occasional’ needs to be clarified and the names of vegetation which are being targeted for removal as per the management within the oLEMP.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
218.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	3.4.4	Within table 3.4 further information needs to be included on methodology and timescales of the management. For the wet woodland, the 'non-intervention' to be carried out for areas of wet woodland needs further information provided to what this involves and methodology for this needs to be included.
219.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	3.4.8	The applicant should include the age and height of new saplings which are used for enhancing hedgerows and infilling gaps. Natural England recommends that the use of mature shrubs and plants should be sourced and used in order to enhance and create hedgerows – this ensure the habitat establishes quickly and becomes an ecologically functioning habitat sooner.
220.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Plate 3.1 Plate 3.2	The diagram showing the oLEMP management compartments by habitat typology, shows a representation of the habitats however the colours used to identify the habitats are quite similar. Natural England recommends using different colours as it is quite hard to make out some of the habitats from one another due to the colour similarities.
221.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	5.1.6	With the management of the northern area of the dry Sandlings grassland habitat for Stone curlew, any grazing required by sheep, native species of sheep should be used to create areas of grazed sward. Stock fencing should be used where possible to prevent any over grazing of nesting areas and enable the vegetation to be at a sufficient height for nesting Stone curlews.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
222.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	5.1.12	Further information needs to be provided on what species of broad leaved woodland and mixed woodland trees would be planted. The heights of trees to be planted should be included within the oLEMP. Natural England recommends the planting of different heights of trees in order to create a health canopy, the planting should include mature trees and young saplings. Having a varied canopy creates different levels for use by different species and enables the habitat to function ecologically quicker and provide benefit for a number of species.
223.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	5.1.15	Natural England recommends that any areas of amenity grassland are sowed with a wild flower seed mix to increase biodiversity across the site and attract pollinators and enhance biodiversity across the development site as a whole.
224.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	5.1.16	The areas of SSSI discussed in this paragraph is unclear and we suggest this information is presented on map. All habitat impacted by construction should be restored and maintained in accordance with what was originally present. Any restoration should not be at the expense of existing SSSI features. We support natural regeneration and request justification for planting in this instance. Further detail is required about the reestablishment of SSSI habitat, including method, objectives, timeframe, monitoring (including success in establishing desirable species) and management. We recommend that opportunities to improve the habitat area considered within the boundary of the SSSI.
225.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	5.1.17	Further detail needs to be stated on the size of the areas of wet woodland to be planted. Natural England recommends the planting of different heights of trees in order to create a health canopy, the planting should include mature trees and young saplings. Having a varied canopy creates different levels for use by different species and enables the habitat to function ecologically quicker and provide benefit for a number of species. We strongly recommend that the species used to create wet woodland are the same as those being destroyed, thus creating like for like and appropriately mitigating.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
226.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	6.1.2	It is indicated that the reinstatement of SSSI habitats will be covered by a re-instatement plan which will be included within the detailed LEMP. Natural England require consultation of the detailed re-instatement plan and LEMP to understand what will be implemented, monitored and if delivery will result in adequate mitigation for habitat lost. We strongly recommend that a commitment to restoring SSSI habitat is secured through the DCO.
227.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Table 6.2	Any new management introduced to the site post construction will require Natural England consent/assent.
228.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Table 6.2 Wet Woodland WW1, WW2, WW3	We strongly advise that management WW1, WW2, WW3 should not be carried out within Sizewell Marshes SSSI (in Zone 3). This should only be considered if natural reaeration fails and Natural England should be consulted to determine why this is necessary.
229.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	6.2.3	We welcome the inclusion of Soil Management Plan and refer to the DEFRA Guidance on Soil Protection: Construction Code of Practise for the Sustainable Use of Soils on Construction Sites. We recommend its use in the design and construction of development including any conditions or requirements. Should the development proceed, we advise that the applicant uses an appropriately experienced soil specialist to advise on, and supervise soil handling. Natural England recommends where possible soils should be locally sourced. The storage of any soil on site should be kept more than 10m away from water sources such as ponds, rivers, streams and wet ditches in order to prevent any pollution events or run off entering water sources.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
230.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Table 6.1	With the proposed management activities the time frame needs to be specified in more detail e.g. the time of year the management would take place.
231.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Table 6.1 – HF1	Any use of herbicides and fertilisers should not be used where there are sensitive habitats present on the site, or in areas where there are species of fauna and flora present that could by impacted by their use. The use of herbicides and fertilisers should be avoided in areas close to water sources to prevent any pollution events from occurring.
232.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Table 6.1 – BEF1	The time of year the permanent beach exclusion fencing needs to be stated and any areas that will have board walks down need to be stated within the oLEMP.
233.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Table 6.1 – DSG2	The breeding bird season (March – August) needs to be defined within the proposed management section.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
234.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Table 6.1. - Grazing	The type of animals to be used for grazing needs to be defined within the proposed management section of the oLEMP.
235.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Table 6.1 – RB2	The water vole mitigation that is required needs to be stated within the proposed management section of the oLEMP. Any pre-cutting to discourage water voles in advance, the lengths of the cut need to be stated within this section of the oLEMP.
236.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Table 6.1 – Wet woodland	The species which are to be planted should be listed within this section of the oLEMP. We support natural colonisation where appropriate.
237.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Table 6.1 – Mixed plantation woodland	The tree species that will be planted need to be stated within this section of the oLEMP.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
238.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Table 6.1 - Hedgerows	Natural England strongly advises the planting of mature shrubs/plants for hedgerows to enable them to establish quicker and function as an ecological habitat. The applicant should also consider the enhancement of existing hedgerows on the site, in order to plant and infill any gaps within hedgerows.
239.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Table 6.1 – FE2	The reptile egg laying sites would need some maintenance to ensure they are fit for purpose. This should include topping up the piles with vegetation once per a year as the vegetation will decay over time.
240.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Table 7.1	Specific detail needs to be provided on which protected species are to be monitored and where the monitoring will take place on the Sizewell C main development site and associated infrastructure.
241.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Table 7.1	Monitoring data should feed into the long term management of the sites to ensure that habitats establish, ecologically function and thrive.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
242.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Landscape General comments	Crucial to the effective mitigation of the scheme is, we believe, the Estates Strategy and Landscape and Ecological Management Plan (LEMP). A much stronger role for the Estate Strategy and the LEMP in mitigating for the presence of the power station in this landscape could, we believe, be sought. The current landscape narrative around the oLEMP is about reinstatement / restoration incorporating screening measures, rather than restoration and enhancement. Landscape is principally referred to in relation to landscape scale habitat creation. For example at para3.5.12 the LVIA says: The establishment and management of the restored landscape areas and new habitats/vegetation, including areas of proposed and existing structural planting that provides screening of the proposed development and existing structures. This would be secured through the implementation of the oLEMP. We believe that the LEMP should seek to lift, as far as is possible, the quality of the landscape (relative to the pre-construction landscape) so that it can better accommodate the power station by providing an enhanced landscape counterbalance to its presence. We recommend the examination to consider: • the extent to which the oLEMP in its current form can provide an 'uplift' in terms of landscape character and quality relative to the landscape pre-construction phase; • what that could constitute in terms of a mitigating counterbalance to the effect of the new power station and enabling the AONB landscape to better accommodate the development; and • Whether what is proposed needs to be more ambitious. This could involve expanding the area proposed for new Sandlings grassland and heath where there is the potential within the EDF Estate or possibly acquiring other land in the area. Alternatively the developer might enable enhancement works on land owned by other parties, so long as those enhancements would be maintained over the lifetime of the power station. That might include 'rewilding' projects to extend wetland areas and features in conjunction with and to complement the Minsmere marshes. The detailed designs for the permanent landscape immediately around the nuclear island and across the wider estate will be submitted to the local planning authority for approval. This includes the Landscape and Ecology Management Plan, which will be prepared in general accordance with the measures set out in the

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			Outline Landscape and Ecology Management Plan. It is unfortunate that those detailed designs are not available for review as part of the examination for the DCO given its importance to mitigating the operational power station. The examination could however elicit an agreement from the developer to full review of the oLEMP to secure further landscape mitigation benefits. The AONB Partnership and the statutory AONB management plan can guide and inform this exercise. In the meantime we welcome the intention to create approximately 121ha of new Sandlings grassland-heath mosaic to re-establish that traditional landscape across some of its former range, and 51ha mixed woodland. This would replace improved agricultural land and commercial forestry. We note that this is also a means of using excess excavated material to create new 'naturalistic' landforms. We recommend that the detailed plans are backed by a clear commitment that the need to utilise spoil on the site will not compromise that intention to create naturalistic landforms.
243.	Book 8 Other Documents 8.2 Outline Landscape and Ecological Management Plan (oLEMP)	Spoil General comments	There is a potential risk that the use of spoil to reinstate the construction area may produce an appreciable uplift in the height of the land, especially centrally to the construction area, plus steeper slopes than are characteristic of this part of the AONB. We note that Volume 2 Appendix 3B Materials Management Strategy1.8.4 states: 'It is estimated that there will be more excavation material available than required to backfill the main construction area and borrow pit area. It is anticipated that the additional material would be used to restore the temporary construction area. The landscaping requirements of the temporary construction area are detailed in the oLEMP' We understand the wish to use excess spoil on the site and the potential for some re-profiling of the area to help screen the training centre and access road. However, this also needs to be carried out very carefully to avoid creating a new topography which presents as highly artificial and/or contrasts significantly with the wider surrounding AONB. A naturalistic set of new landforms must be the clear outcome.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
244.	Book 8 Other Documents 8.12 Code of Construction Practice	2.1.6	A map of the location of spill kits across the site and the associated infrastructure for Sizewell C needs to be made available for all construction workers on the site in the event of a spill.
245.	Book 8 Other Documents 8.12 Code of Construction Practice	2.1.7	A map of the location of spill kits across the site and the associated infrastructure for Sizewell C needs to be made available for all construction workers on the site in the event of a spill.
246.	Book 8 Other Documents 8.12 Code of Construction Practice	2.2.10	Within the CoCP, contact details for Natural England need to be added in in the event of pollution event or damage to a protected site (SSSI or SPA). The time frames in which the EA or the MMO will be contacted in the case of a pollution event need to be specified.
247.	Book 8 Other Documents 8.12 Code of Construction Practice	2.2.13	Where an environmental incident has or is likely to cause an impact to designated interest features or protect species Natural England should be contacted to directly and within 24 hours of the incident taking place.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
248.	Book 8 Other Documents 8.12 Code of Construction Practice	2.3.10	Within the COCP the onus placed on the construction companies to provide mitigation through the development phase. We would expect the applicant to take responsibility for any mitigation and compensation measure to protected designated interest features. Should the application be successful, consent will be granted to the company as will the responsibility to deliver agreed and prescribed measures. We note that contractors will be responsible for preparing environmental monitoring reports which will include a summary of environmental issues and actions to ensure compliance with the CoCP and other environmental requirements, including details of incidents and associated investigations and corrective actions. Method statements should be overseen and approved by the ECoW so the ecological features are fully considered and mitigation appropriate to prevent impacts to sensitive features. We also recommend that all contractors are given tool box talks by a suitably qualified ecologist to ensure that all impacts are properly considered. When working in sensitive area it is important that an ecological Clark of works is present in addition to emergency protocol as specified in 2.2.8.
249.	Book 8 Other Documents 8.12 Code of Construction Practice	General	Construction method statements should as a minimum: • Identify risks to waterways e.g. from cement, concrete, grout, suspended solids, chemicals, paint and hydrocarbons including fuels or oils • Identify potential pollution pathways • Demonstrate adherence to good working practices as detailed in current guidance e.g. PPG's and GPP's available from www.netregs.org.uk ; Detail mitigation measures to be employed to minimise the risk of pollution to any waterway (as defined by the Water (NI) Order 1999) and should include: • Safe refuelling procedures and secondary containment for chemicals, oil, fuels etc. • Emergency spill procedures

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			• Best practice for handling and storage of earth stockpiles • NIEA's Pollution Prevention hotline number 0800 80 70 60. It is recommended that in the event of a water pollution incident the NIEA water pollution hotline is contacted within 30 minutes unless it is not safe to do so. • Mitigation measures must be in place prior to the commencement of any works.
250.	Book 8 Other Documents 8.12 Code of Construction Practice	3.3.1	Natural England advises any solid barrier and landscaping to be used should be fully completed and functional as an acoustic barrier prior to construction works commencing on the site.
251.	Book 8 Other Documents 8.12 Code of Construction Practice	Table 3.1	Control measures to mitigate noise and vibration impacts This table currently only refers to human receptors and does to refer to sensitive environmental receptors. As the MDS is in close proximity to a number of designated sites (SAC, SPA, RAMSAR, SSSI, CWS) we would expect some clarification of measures put in place to reduce disturbance
252.	Book 8 Other Documents 8.12 Code of Construction Practice	Part B	Noise Monitoring and Mitigation Plan 3.3.7 Monitoring specifications seem to be focused on human receptors with no provisions for environmental receptors.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
253.	Book 8 Other Documents 8.12 Code of Construction Practice	Table 4.1	Table 4.1 states that adequate water supply will be available to supress dust and particulate matter. We understand that the amount of water required for the construction period has not been confirmed. We recommend that the required amount of water need to meet mitigation is secured prior to the commencement of construction and assessed for impacts on wetland features as part of wider water resource need. We agree that dust generating activities should situated at least 200m away from sensitive receptors. We understand the term sensitive receptors to include designated sites, protected species and any water channels that connect to those sites. The table states that cutting and grinding activities will be supressed to minimise dust generation, but no explanation is given in terms of prevention method.
254.	Book 8 Other Documents 8.12 Code of Construction Practice	Table 4.1 - Track out	The areas where wheel washing stations are positioned away from any sensitive areas, where no run off can enter the waterbodies/water courses or impact on any sensitive habitat or protected area. The water runoff from the water stations should be secured and prevent any run off into the environment to avoid any pollution incidents.
255.	Book 8 Other Documents 8.12 Code of Construction Practice	Table 4.1	Control measures to mitigate air quality impacts seem to be focused on dust. There is no consideration of air quality impacts on designated sites from in combination traffic pollution either on the MDS, or associated development. Please could the Applicant point to where air quality impacts to designated sites and features are assessed and managed (CoCP, Traffic Management Plan?).

Natural England comment reference	Document Title	Paragraph number	Natural England comment
256.	Book 8 Other Documents 8.12 Code of Construction Practice	6.1.3	Natural England welcomes the applicant submitting any draft licences however this should be done through the correct channels. The draft licences need to be submitted though Natural England's PSS service for any review of these draft licences.
257.	Book 8 Other Documents 8.12 Code of Construction Practice	Table 6.1	Natural England supports the creation of bunds as a method of screening however bunds should be sowed with a wild flower or native species seed mix where possible to attract pollinators and enhance biodiversity across the site as a whole.
258.	Book 8 Other Documents 8.12 Code of Construction Practice	Table 6.1 - Sizewell Marshes SSSI	Natural England recommends any coppicing of trees to ground level is undertaken outside the breeding bird season (March – August) in order to avoid any disturbance to breeding birds.
259.	Book 8 Other Documents 8.12 Code of Construction Practice	Table 6.1 – Protected species	If any evidence of protected species is found whilst construction is underway, all construction works within that area of the site should cease immediately until the ECoW has advised on the appropriate course of action.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
260.	Book 8 Other Documents 8.12 Code of Construction Practice	Table 6.1 - Birds	In the event of a bird nest being found during construction, Natural England recommends a buffer zone of 10m around a bird nest in order to prevent disturbance and avoid any bird abandoning the nest due to disturbance. The buffer zones should be kept in place until the young have fledged.
261.	Book 8 Other Documents 8.12 Code of Construction Practice	Table 6.1 ECOW	We support the appointment of a suitably qualified and experienced ecological clerk of works to oversee onsite ecological mitigation to ensure that all necessary mitigation measures are implemented to the appropriate standard to avoid impacts to protected species and designated interest features.
262.	Book 8 Other Documents 8.12 Code of Construction Practice	6.2.2	Should monitoring demonstrate a change in vegetation community and interest features and additional mitigation required, Natural England should be consulted. Change in mitigation response should be agreed with site managers in conjunction with Natural England.

Appendix IV: Natural England's further detailed comments on the marine aspects of the DCO application document review

Natural England comment reference	Document Title	Paragraph number	Natural England comment
263.	3.1 Draft Development Consent Order Part 1	Part 1.2	Commence We seek clarification on the definition of commence/ commencement, and how site preparation activities will be incorporated within the licence. We advise that dredging should be included in the definition of commence. However, we suggest that the applicant could use the approach from offshore windfarms and have a definition for onshore and offshore commencement which would avoid issues such as timing of works. This approach makes logical sense as the onshore and offshore works are both governed and enforced by different authorities under differing legislation.
264.	3.1 Draft Development Consent Order Part 4	23 (6)	We advise that this is clarified to confirm if this also refers to chemicals and thermal differences.
265.	3.1 Draft Development Consent Order Part 6	47 (1)	Public Rights of Way over foreshore may be extinguished. Has consideration of Coast Path, mitigation and alternatives been provided in EIA, CoCOP? Is mitigation secured?

Natural England comment reference	Document Title	Paragraph number	Natural England comment
266.	3.1 Draft Development Consent Order Part 6	55 (1)	Applicant to clarify how any necessary mitigation will be secured, and how process to ensure SNCB have sight of updated Plans and methodologies will be triggered. A disposal site should be specified within the DML.
267.	3.1 Draft Development Consent Order Part 6	63 (1)	We note that part (p) of section (2) allows for the creation of byelaws for the protection of flora and fauna. Given the Harbour boundary lies within the Southern North Sea SAC and Outer Thames Estuary SPA, we would advise that the relevant SNCB be named as a consultee on the creation of any byelaws affecting nature conservation.
268.	3.1 Draft Development Consent Order Part 6	65 (1)	What are the harbour approaches proposed? Have these been assessed for Red-throated diver disturbance?
269.	3.1 Draft Development Consent Order Part 7	82	Arbitration Natural England disagrees with the terms of arbitration. We advise the Applicant review the Thanet OWF recommendation and Secretary of State decision for Norfolk Vanguard OWF and apply similar terms for arbitration regarding decisions made by the SoS or the MMO under the order.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
270.	3.1 Draft Development Consent Order Schedule 2	12 (1)	'In consultation with the relevant SNCB.' Requested text to be added to the end of the condition to ensure Natural England is consulted in our statutory role.
271.	3.1 Draft Development Consent Order Schedule 2	15	'In consultation with the relevant SNCB.' Requested text to be added to the end of the condition to ensure Natural England is consulted in our statutory role. Has a lighting management plan been submitted?
272.	3.1 Draft Development Consent Order Schedule 20 DML	1	Commence We seek further clarification on the term commence within the DML and whether this incorporates monitoring prior to site preparation and construction. As some ground preparation works may be licensable we seek clarification if this is included in the definition of commence. Some monitoring or survey works are licensable activities and, should they be included in the definition of commence, may trigger requirements for plans/methodologies or other conditions at a time earlier than needed.
273.	3.1 Draft Development Consent Order Schedule 20 DML	1	Natural England - all references to Natural England should refer to relevant Statutory Nature Conservation Body (SNCB) in DCO and DML.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
274.	3.1 Draft Development Consent Order Schedule 20 DML	2	Licensed Activities All works should be able to be cross-referenced with project description and Worst Case Scenario in EIA. Further details should be provided to include maximum area and volume of dredge for example. Works such as UXO removal should be listed according to maximum number and size of detonations assessed. This is standard for UXO marine licenses, see the current EA1N and EA2 offshore windfarm applications. In addition, it should be noted that a European Protected Species license may be needed for detonation of UXOs.
275.	3.1 Draft Development Consent Order Schedule 20 DML	4 (2) a (v	The use of a temporary rock construction or jack up barge is not assessed in the marine ecology chapter. Is this assessed in coastal geomorphology EIA chapter? Needs to be considered in HRA, and definition cross referenced
276.	3.1 Draft Development Consent Order Schedule 20 DML	4 (2) b	Is 120,000m^3 WCS in the ES? The area, grain size of sand or shingle, and origin all need to be specified.
277.	3.1 Draft Development Consent Order Schedule 20 DML Part 2	4 (2) e	Maximum area and volume of scour protection should be included in DML.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
278.	3.1 Draft Development Consent Order Schedule 20 DML Part 2	4 (2) d	Disposal of Tunnel Boring Machine at a sealed point below seabed- Recommend Applicant discuss this with MMO and whether this is permissible under OSPAR.
279.	3.1 Draft Development Consent Order Schedule 20 DML	4,2,e iii	This is an act of disposal. Disposal offshore is only possible at certified disposal sites. Has the MMO defined the proposed area as a disposal site? If not then they need to or it would be a breach of OSPAR regulations on disposals at sea. The disposal site once defined and accepted would be given a reference and that reference included here.
280.	3.1 Draft Development Consent Order Schedule 20 DML Part 3	9	And SNCB, including notification to the relevant SNCB.
281.	3.1 Draft Development Consent Order Schedule 20 DML Part 3	11 (1)	Suggest this is amended (from 6 weeks) to 6 months due to the size of the proposed development and to allow for appropriate consultation with Statutory Authorities. OWF projects require 6 months, would suggest timing requirement be longer.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
282.	3.1 Draft Development Consent Order Schedule 20 DML Part 3	Part 3, general	All monitoring and mitigation plans should be included and clearly referenced, identifiable within conditions, for example the: • Operations and Maintenance Plan • Southern North Sea Special Area of Conservation Site Integrity Plan • Noise Monitoring and Mitigation Plan • Vessel Management Plan • Dredging • Rock Armour • Marine Pollution Contingency Plan • Marine Mammal Monitoring and Mitigation Plan • Environmental Management Plan
283.	3.1 Draft Development Consent Order Schedule 20 DML Part 3	Part 3 general	It appears there is currently no provision for updated methodologies, final design, or updated plans to be provided. Please clarify how this will be included and conditioned.
284.	3.1 Draft Development Consent Order Schedule 20 DML Part 3	Part 3 General	All mitigation as outlined within the final EIA should be able to be cross referenced and linked with a condition (or conditioned plan).

Natural England comment reference	Document Title	Paragraph number	Natural England comment
285.	3.1 Draft Development Consent Order Schedule 20 DML Part 3	Part 3 General	There are currently no timings specified and no mitigation requirements captured, suggest these are included in the final document. for each condition
286.	3.1 Draft Development Consent Order Schedule 20 DML Part 3	17	Advise a timing requirement be incorporated, of at least 6 months prior to offshore commencement.
287.	3.1 Draft Development Consent Order Schedule 20 DML	18	Advise a timing requirement be incorporated, of at least 6 months prior to offshore commencement. This condition should incorporate a Marine Pollution Contingency Plan, or have a separate condition for MPCP to ensure all marine pollution incidents are responded to appropriately and to industry standards and practices. Should include 'Following consultation of SNCB'.
288.	3.1 Draft Development Consent Order Schedule 20 DML Part 3	23	Include ditches, surface water drains, or watercourses (to avoid impacts to Sizewell Marshes SSSI).

Natural England comment reference	Document Title	Paragraph number	Natural England comment
289.	3.1 Draft Development Consent Order Schedule 20 DML Part 3	24	Include a requirement to produce a Marine Mammal Mitigation Protocol for all piling.
290.	3.1 Draft Development Consent Order Schedule 20 DML Part 3	39	Definition of UXO should be included. Applicant may also need to produce a Site Integrity Plan for the Southern North Sea SAC and this should be included as a condition. Please clarify if UXO detonation will only be included within construction, will this be continued during maintenance and operation, need to specify. We would have concerns about a UXO license being granted to cover the entire lifetime of the project.
291.	3.1 Draft Development Consent Order Schedule 20 DML Part 4	41	Monitoring and mitigation plan/coastal monitoring Plan should be included on Condition 41.
292.	3.1 Draft Development Consent Order Schedule 20 DML Part 4	45	We welcome that a Sabellaria Monitoring Plan will be submitted as a condition of the DML. However, this has currently not been provided and Natural England would welcome submission of an outline Sabellaria monitoring and mitigation plan into examination.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
293.	3.1 Draft Development Consent Order Schedule 20 DML Part 4	48	Is this drilling? Marine Mammal Monitoring and Mitigation Plan or Site Integrity Plan needed.
294.	3.1 Draft Development Consent Order Schedule 20 DML Part 4	50	In which document will the Water Abstraction Monitoring Plan be secured? Has this been submitted as part of the DCO?
295.	3.1 Draft Development Consent Order Schedule 22	Schedule 22 General	Certified Documents does not currently include: any of the Monitoring and Mitigation Plans, such as Any of the DML plans. Can the Applicant confirm where and how commitments to these will these be secured?
296.	3.1 Draft Development Consent Order Schedule 23	1	Natural England does not agree that an appeals process should be applied to the works covered under the DML. We would refer to the decisions made by the Secretary of State on Tilbury 2, Thanet Ext, and Vanguard offshore windfarms, where the SoS decided to exclude the MMO from arbitration and appeal processes.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
297.	3.1 Draft Development Consent Order Schedule 23	2	3 working days is not in line with the Natural England consultation period of 21 days, so will not allow sufficient time for MMO to consult statutory authorities.
298.	5.10 Shadow HRA Report Volume 1: Screening and Appropriate Assessment	2.7.2 2.7.3	Use of jack-up rigs for 15 month construction Risk unquantified for Red-throated diver feature in later assessment.
299.	5.10 Shadow HRA Report Volume 1: Screening and Appropriate Assessment	2.7.9	Need for repeated dredging to form and maintain channel Risk unquantified for Red-throated diver feature in later assessment.
300.	5.10 Shadow HRA Report Volume 1: Screening and Appropriate Assessment	Table 2.2	Chemical discharges identified as 132m^3 per second TRO/bromoform; 69ng per s Hydrazine. While sterilization risks are covered in HRA there appears to be no assessment of risks from direct exposure or repeated exposure of foraging birds – applies to Little tern; Common tern; Sandwich tern; Lesser black back gull and Red-throated diver.
301.	5.10 Shadow HRA Report Volume 1: Screening and Appropriate Assessment	Table 2.2	Dredging on longshore bar to cover 7.4ha for outfall; 20ha for the 4 intakes. Is this additional to the dredging for the BLF? If so, is it a one off endeavour during construction? Risk regarding boat traffic and presence appear unquantified later in HRA

Natural England comment reference	Document Title	Paragraph number	Natural England comment
302.	5.10 Shadow HRA Report Volume 1: Screening and Appropriate Assessment	Water Quality DCO and Permitting General	Natural England cannot currently provide our final comments on any of the potential impacts to designated sites or features within the EIA or HRA from those aspects of the proposed development of Sizewell C Power Station that will be managed by, or impacts mitigated for, as part of the Water Discharge Activity Construction and Operational Permits (i.e. impacts from intake and outfall, fisheries impingement and entrainment, and WFD assessments). Under the Environmental Permitting (England and Wales) Regulations 2016 the Environment Agency will undertake a review of the application and consult the public. Natural England, along with other Statutory Nature Conservation Bodies, may provide advice to the Environment Agency on certain aspects of environmental permitting application at this stage, including HRA. The Environment Agency may then take account of advice so operators can avoid, reduce or compensate for any adverse impacts from permitting operations. As outlined in Planning Inspectorate Advice Note 11 Annex D Permitting and DCO submissions should be timed to allow consideration of the outcome of the permitting process within the DCO application. We understand that the SZC Co DCO application has been submitted at the same time as the permitting application to the Environment Agency, to allow for parallel tracking. Given the different timelines in assessing permitting (usually 12-18 months) and DCO applications (usually 6 months) the permitting determination may not be available within the DCO timeframes. Until the WDA permitting process is finalised Natural England will not be able to comment beyond scientific doubt that there will not be an environmental impact on designated sites or an Adverse Effect on Integrity on Natura 2000 sites or Annex II species, as we will not have full sight of the final design or any mitigation secured. Natural England will continue to liaise closely with DEFRA bodies in relation to the permitting process and provide evidence into the DCO examination as appropriate. We will not be able to provide our final advice any earlier as we cannot be seen to prejudge the outcome of the permitting process.
303.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	4.2.15-18	Exclusion of distant breeding bird SPAs from further assessment Appropriate

Natural England comment reference	Document Title	Paragraph number	Natural England comment
304.	5.10 Shadow HRA Report Volume 1: Screening and Appropriate Assessment Part 1 of 5	Table 5.3	Supporting evidence to likely significant effect screening exercise for bird qualifying interest features of SPAs and Ramsar sites 7d - Any loss of an SAC or SPA in line with the Sweetman ruling (Sweetman vs Coillte Teoranta, ref: c-323/17) should be considered a LSE and considered at AA.
305.	5.10 Shadow HRA Report Volume 1: Screening and Appropriate Assessment Part 1 of 5	Table 5.5	This table seems to focus on Annex II migratory fish species and does not seem to consider food web effects that the impacts to fish species may have on Annex II species; could the Applicant clarify where this is assessed in the HRA.
306.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	6.3.14	Clupeids identified as important contributor to chick diet for Little tern (82%).
307.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	6.3.28	Clupeids identified as important contributor to chick diet for Sandwich tern (99.3%).

Natural England comment reference	Document Title	Paragraph number	Natural England comment
308.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	6.3.172	Common tern – current Minsmere and Orfordness birds included in analysis and Breydon and Foulness birds excluded as spatially remote. Appropriate.
309.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	6.3.184	Number of Red-throated diver recorded inshore appear relatively high.
310.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	6.3.191	Recent JNCC report has identified diving to depths greater than those identified here. Risks associated with intake water should be beyond normal activity.
311.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	6.3.192	Diet identified as broad but includes clupeids.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
312.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	7	Information for Appropriate Assessment: Coastal, Freshwater and Terrestrial Habitats 7.2.3 Some designated sites have specific conservation objectives, for example SNS SAC (http://data.jncc.gov.uk/data/206f2222-5c2b-4312-99ba-d59dfd1dec1d/SouthernNorthSea-conservation-advice.pdf); these should be included within the HRA and Appropriate Assessment and assessed against.
313.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	7.4.20 Table 7.1	Area affected by discharges at surface identified as: Oxidant – 336.65ha, Bromoform – 52ha, Hydrazine – 13.79ha Assessment of risks in these areas needs to reflect direct exposure pathway not just sterilization of food resource.
314.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	7.4.23	Text implies pulsed release of chemicals with limited time frame before dispersal/breakdown Can discharges be times to low risk periods? e.g. all SPA birds are believed to be visual = day light foragers.
315.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	7.4.27	Peak release of moribund fish appears to be in March. At this time would be most available to Red-throated diver and Lesser black back gull. But not clear where the fish are anticipated to go. Would need to reach the top 1.5 m of the water column to become available for terns and gulls (meaning potential net benefit as being drawn from inaccessible depths), if not reaching surface then no gain and potential loss associated with overall loss of immature clupeids from local stock. Volume of fish appears large – 3442kg/day (March peak) and 405.2kg/day in April-Sept breeding period.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
316.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	7.7.41	Minsmere to Walberswick SAC- Alteration of coastal processes/sediment transport Natural England do not believe that the evidence as currently presented for the construction, operation and decommissioning phase of the proposed development can demonstrate beyond reasonable scientific doubt that an Adverse Effect on Integrity of the Minsmere to Walberswick SAC and Annex I features Annual vegetation of drift lines and perennial vegetation of stony banks can be avoided. The proposed development is to be constructed on an episodically but generally, retreating coastline. We note the conclusion from expert geomorphological assessment predicts that, without mitigation, the HCDF is likely to be impacted by coastal erosion sometime between 2053 and 2087 during the operational phase of the proposed development and will need constant defending by the SCDF. There is currently insufficient detail provided as to how the SCDF will be managed, where material will be won from, how large the SCDF will be, grain size of material, how regularly it will need to be replaced, and how long it will be maintained for. The creation of a HCDF and SCDF will form an artificial promontory in the GSB, which will disrupt the natural coastal geomorphology process and longshore sediment transport systems. There is therefore the potential for the proposed development to effect the conservation objectives for the site: • The extent and distribution of qualifying natural habitats and species • The structure and function (including typical species) of qualifying natural habitats, and • The supporting processes on which qualifying natural habitats rely We point the Applicant to the Conservation objectives supplementary advice on conserving and restoring site features for the site. (Link to supplementary advice).

Natural England comment reference	Document Title	Paragraph number	Natural England comment
317.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	7.9.11-14	Orfordness to Shingle Street SAC Water Quality Effects Given that during the operational phase of the proposed development the thermal plume adjacent to the lagoons will be in exceedance of the 2/3 ºC thermal uplift criteria for SAC/SPA, and the lagoons are fed by percolation and overtopping, when this is considered in combination with long term climate temperature increases we would expect some monitoring of water quality parameters within the lagoon to be proposed.
318.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.3.1	Chemicals in Outfall water not screed in for marine water quality assessment on eco-toxicology grounds only proportion of foraging range effectively lost through sterilization. Key chemicals identified appear to have effects on vertebrates therefore may directly affect SPA birds species that encounter them. Risks need to be quantified and assessed. If the chemicals are in concentrations sufficient to affect marine life (e.g. fish), plume of moribund fish may act as an attractor. Applies equally to LBBG; ST; CT; LT; RtD
319.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.3.24	Sandwich terns at Minsmere Are these considered to be an independent colony or the remnants of the displaced Alde-Ore colony. This may affect how we assess them for HRA purposes.
320.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.3.35	Outer Thames Estuary SPA Target for supporting habitat: water quality contaminates is Reduce aqueous contaminants to levels equating to High Status according to Annex VIII and Good Status according to Annex X of the Water Framework Directive, avoiding deterioration from existing levels. Little tern (the species with the smallest foraging range) breeding colony locations and predicted foraging ranges are entirely within the SZC chemical plume. We understand that there may be localised deterioration of WFD status in the vicinity of the outfall and CDO. We would advise this localised deterioration is

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			assessed in relation to the conservation objectives for Annex II species and the maintain target. Natural England will be consulted by EA on the HRA as part of the CDO WDA permitting process. We will therefore be unable to provide our final advice until the permitting process has been finalised.
321.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.3.68	Conclusion of no impact on Sandwich terns. See comments for paragraph 7.4.76. Given the potential significant increase in visits to the site, and therefore recreational disturbance, we do not agree with the conclusion reached by the applicant. Particularly noting that current practise is maintaining unfavourable condition, and not securing recovery.
322.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.3.75	See comments for paragraph 8.3.68.
323.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.3.97	Sizewell B is already having an impact on prey species.
324.	5.10 Shadow HRA	8.3.99	Conclusion of low level impact on fish population.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
	Volume 1: Screening and Appropriate Assessment Part 1 of 5		Conclusion set at scale of SSB not at a scale appropriate to the ecological receptor, in particular during the year when it is a fixed point forager. Scale of impact needs framing at a scale appropriate to breeding colonies (or SPA sector for Red-throated divers). Applies equally to ST; CT; LT and LBBG
325.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.3.104	Statement that Alde-Ore Little terns are spatially isolated from chemical plumes. Appears to be contrary to figures 8.3 (oxidant) and 8.4 (bromoform) which show overlaps. Also need to consider direct effects on terns not just sterilization.
326.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.3.107	See above comment for paragraph 8.3.104.
327.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.3.115	Increases in disturbance not considered significant for Little tern. See comments for paragraph 7.4.76.
328.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment	8.3.117	See comments for paragraph 7.4.76.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
	Part 1 of 5		
329.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.3.133 8.3.137	Lesser black back gull foraging ranges are large so are likely to overlap with plumes. In terms of habitat loss, scale of impact may be minor but also need to consider direct toxicology considerations. See comments for paragraph 8.3.1 above.
330.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.3.146	Increases in disturbance not considered significant for LBBG. See above comments for paragraph 7.4.76.
331.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	General	Risk of LBBGs from Alde-Ore relocating to Sizewell C and subsequent management framework not considered.
332.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.8.278	Little Tern at Minsmere. Chemicals in Outfall water not screed in for marine water quality assessment on eco-toxicology grounds, only proportion of foraging range effectively lost through sterilization. In terms of habitat loss scale of impact may be minor but also need to consider direct toxicology considerations. See comments for paragraph 8.3.1 above.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
333.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.8.283 8.8.284	Commissioning hydrazine plume affects 3.7% of foraging area. Concluded to be not adverse effect due to short duration and small area. However, overlap with foraging area is not inconsequential and risks from direct exposure (as comments for paragraph 8.3.1) not considered. Appears to be short duration of impact so could time it so as not be an issue.
334.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.8.293 8.8.294	States no overlap of Minsmere Little terns with chemical plume. This appears to be contrary to figures 8.3 (oxidant) and 8.4 (bromoform) which show overlaps. Also need to consider direct effects on terns not just sterilization and any risks posed by moribund fish as an attractor to the plume.
335.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.8.334	States no risk for changes in recreation pattern of Minsmere Little terns. Although current colony is on lagoons formerly nested on beach, and identified mitigation is dependent on 'current management measures'.
336.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.8.340	Birds able to relocate from beach if disturbed. Ignores the fact that birds should not be displaced by recreational disturbance in the first place. It should be noted that normal behaviour is for tern chicks to be mobile once a few days old so would be at risk, and unable to relocate, until capable of flight.
337.	5.10 Shadow HRA	8.8.344	Identified dependency on continuation of existing management. Is this secured?

Natural England comment reference	Document Title	Paragraph number	Natural England comment
	Volume 1: Screening and Appropriate Assessment Part 1 of 5		
338.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.8.348	Impacts on fish populations. Impacts identified as small but not quantified, preventing conclusion on impact being assessed.
339.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	General	Little tern nesting in development site. Not identified, but once built, area within the development boundary fence may be suitable for nesting terns. This may offer some net gain opportunities.
340.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.10.3 8.10.4	Outer Thames Estuary SPA water quality risks concluded as no adverse impact for little tern. Conclusion transcribed from earlier assessments: Minsmere SPA, Alde-Ore SPA and Benacre to Easton SPA. However, as identified above (8.3.1), also need to consider direct effects on terns of chemicals particularly with reference to Minsmere and Alde-Ore where foraging ranged overlap with discharges not just sterilization and any risks posed by moribund fish as an attractor to the plume.
341.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.10.4	Outer Thames Estuary SPA Appropriate Assessment Breeding little tern water quality effects The target for designated features is to ‘Maintain natural levels of turbidity (e.g. concentrations of suspended sediment, plankton and other material) across the habitat’.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			Excessive turbidity, such as arising from marine dredging may displace prey species and reduce prey availability. Turbidity within key foraging areas should be maintained at natural levels. The impact of turbidity on little tern, as the species with the smallest foraging range which lies almost entirely within areas of higher turbidity associated with construction and operational phase capital and maintenance dredges, should be assessed against the conservation objectives. Conclusion transcribed from earlier assessments Minsmere SPA, Alde-Ore SPA and Benacre to Easton SPA. However, as identified above (See comments for paragraph 8.3.1), also need to consider direct effects on terns of chemicals particularly with reference to Minsmere and Alde-Ore where foraging ranged overlap with discharges not just sterilization and any risks posed by moribund fish as an attractor to the plume.
342.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	General	Outer Thames Estuary SPA recreational disturbance omitted from analysis for Little tern. As identified above for Minsmere and Alde-Ore, changing patterns of recreational disturbance may be an issue for SPA colonies, and should be considered in analysis.
343.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.10.10	Common tern colonies at Minsmere and Orfordness screened in for SPA assessment. Appropriate.
344.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.10.24 8.10.25 8.10.26 8.10.29	Chemical plume from Sizewell C to affect 6.5% of high activity foraging range in addition to effects of Sizewell B and lower % of whole foraging range. As discussed in comments for paragraph 8.3.1. Direct risks form chemicals need to be assessed as well as foraging area sterilization and risk of attraction to moribund prey addressed.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
345.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.10.44	Food web impacts for Common Tern assessed as small but set at scale of SSB ecological unit. Assessment needs to be made at the scale of central-point foraging rage with reference to the two colonies at Minsmere and Orfordness.
346.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.10.50	20% of SPA Red-throated Diver population in sector of SPA linked to this application.
347.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.10.53	Area affected identified but quantified solely in terms of foraging habitat lost. No quantification of size of population affected by sterilisation or risks from chemical exposure.
348.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.10.55	Outer Thames Estuary SPA Water Quality The thermal plume which exceeds the 2 and 3ºC thermal uplift would be for the operational phase of the proposed development; this would therefore be a long term/permanent impact. The thermal plume may cause an indirect loss of foraging area for RTD in the SPA. In line with the Sweetman ruling any loss of SAC or SPA should be considered a LSE. It will also be necessary to consider the outcome of the WFD assessment completed as part of the EA WDA permitting process. The Outer Thames Estuary SPA Supplementary Advice on Conservation objectives (Sept 2019) (Link to supplementary advice). Any proposals or operations which may affect the site or its features should be

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			designed so they do not adversely affect any of the attributes in the SACO or achievement of the conservation objectives : • Reduce aqueous contaminants to levels equating to High Status according to Annex VIII and Good Status according to Annex X of the Water Framework Directive, avoiding deterioration from existing levels • Maintain the dissolved oxygen (DO) concentration at levels equating to High Ecological Status (specifically ≥ 5.7 mg per litre (at 35 salinity) for 95 % of the year), avoiding deterioration from existing levels. • Maintain water quality at mean winter dissolved inorganic nitrogen levels where biological indicators of eutrophication (opportunistic macroalgal and phytoplankton blooms) do not affect the integrity of the site and features, avoiding deterioration from existing levels • Maintain natural levels of turbidity (e.g. concentrations of suspended sediment, plankton and other material) across the habitat. Natural England cannot currently provide our final advice in relation to water quality impacts until the discharge permitting process is finalised.
349.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	8.10.55	Effects on SPA dismissed as 'relatively small area' and 'low density' areas affected. Vantage point surveys show regular usage of the area by RtD, and area of activity around outfall locations would be at limit/beyond limit of shore based survey. Conclusions not robust
350.	5.10 Shadow HRA	8.10.57	Most boat traffic associated with BLF identified as being outside the period of SPA occupancy. Boat activity in the period of overlap (identified as April) and boat traffic associated with dredging and construction (e.g. piling) unquantified.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
	Volume 1: Screening and Appropriate Assessment Part 1 of 5		
351.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	9.3.132	This paragraph should refer to table 9.15, not table 9.16.
352.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	9.3 - Specifically: 9.3.40 9.3.41 9.3.86 Table 9.10	Unexploded Ordnance Natural England acknowledges that to date, no unexploded ordnance has been found at the Sizewell C site or in the area offshore where works associated with the project will take place and if any UXO were identified then a separate marine licence, including HRA would be required. However we consider it pragmatic and appropriate to consider the potential impacts, alone and in-combination, of one UXO being identified during the proposed marine works, within the HRA. We note the current level of inclusion of UXO in the HRA, however we do not consider this to be a thorough and complete assessment of the potential impacts of detonation of UXO and provides the following comments. • The Underwater Noise Assessment (appendix 22L) states that as part of the noise modelling, 1500lb charge UXO were assessed, yet the results are not included in the HRA. These results represent the worst case scenario in terms of potential impacts from UXO and should therefore form the basis of the UXO assessment within the HRA. The HRA should be updated to reflect this. • UXO detonations were not included in the in-combination assessment. Whilst Natural England acknowledges piling and UXO detonation are unlikely to occur concurrently at Sizewell C, there is

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			the potential for other projects to be undertaking UXO activities at the same time as piling operations are being undertaken for Sizewell C and this should be considered within the HRA.
353.	5.10 Shadow HRA Volume 1: Screening and Appropriate Assessment Part 1 of 5	9.5.76	Natural England note that the spatial extent of the winter portion of the Southern North Sea SAC that could be impacted by underwater noise in-combination is 32.8%, reducing to 22.2% when taking the average overlap in to account. This exceeds the maximum threshold of exclusion of harbour porpoise from 20% of the relevant area in any given day as detailed in the noise guidance, despite the seasonal average only being 1.46%. Therefore, Natural England are unable to agree with the conclusion of no adverse effect on integrity of the Southern North Sea SAC, based on the current assessment.
354.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5	HRA Screening Matrix B1.4	Humber Estuary SAC (b) Water Quality impacts to Sea and River lamprey are currently screened out. Due to the substantial amount of work that has been done on thermal and chemical plume modelling and the potential to disrupt migratory paths NE advise that this pressure pathway is screened in and discussed at AA. (t) Due to the scale of the fisheries assessment (North Sea SSB) that has been undertaken Natural England understand that there may be a number of other plans or projects that should be considered on the resource when considered at this scale. Could the Applicant confirm whether they have considered in combination impacts over the zone of influence as identified by the SSB.
355.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5	B1.5	Minsmere to Walberswick Heaths and Marshes SAC (b) According to worst case scenario coastal erosion during the construction, operation and decommissioning phases, would the European dry heaths not be impacted? (l) Natural England understand that should the temporary rock structure be built during construction then it may cause direct habitat loss of the SAC, due to a scour lens. Due to the direct habitat loss we suggest that

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			potential impacts to annual vegetation of drift lines and perennial vegetation of stony banks is screened in. Due to the extensive modelling and coastal geomorphology assessments conducted Natural England would advise that direct habitat loss pathway be screened in and considered at AA.
356.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5	B2.5	Outer Thames Estuary SPA- Food Availability Natural England advise that food availability for designated features RTD, common tern and little tern should be considered in light of the Supplementary Advice (Supplementary advice, September 2019) target to Maintain the distribution, abundance and availability of key food and prey items at preferred sizes. Little tern foraging ranges are highly limited, and key areas are generally within 6km of breeding colonies (Thaxter et al., 2012) (Eglington and Perrow, 2014). As a result, little tern rely on abundant food supplies of small fish in waters close to the colony. A precautionary approach to the timing and duration of offshore developments and pile-driving activity should be taken due to the sensitivity of little tern prey species, such as herring, which are particularly sensitive to noise disturbance. Long term monitoring is required to fully assess any impacts on prey availability for this species.
357.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5	B2.5	Outer Thames Estuary SPA (a) Alteration of coastal processes/sediment transport' category: See our general advice under section 4.4 above. Specifically for this site, the proposed development has the potential to alter the morphology and ecological function of the nearshore area during construction, operation and decommissioning. The qualifying species of the SPA may use the nearshore area within Sizewell C Rochdale envelope. As such, we advise that a LSE cannot be ruled out at this stage for these species

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			(1) As provided in our previous advice February 2019 (Our Ref273239). In light of recent case law (Sweetman vs Coillte Teoranta, ref: c-323/17), Natural England advises that any risk of a reduction in, or loss of, a terrestrial or marine European site should be judged to be a LSE, and the full significance of its impact on a site's integrity should be further tested through an appropriate assessment. This principle should be applied to all terrestrial and marine SACs, SPAs, pSPAs, cSACs and Ramsar sites. An Appropriate Assessment (AA) should examine the predicted loss in more detail, clearly identifying whether or not it would affect the habitats or supporting habitats of the European site's qualifying features within that site. This should therefore be reflected in the Screening Matrices for those sites where this is applicable. Specifically for this site, we advise that the applicant must assess potential habitat loss and fragmentation against the Conservation objectives. For the Annex 1 feature red-throated diver Gavia stellate, physical loss by removal or smothering of any of the habitats on which red-throated divers depend may result in the loss of foraging sites and therefore the reduction of the food resource for the overwintering population. This would consequently be detrimental to the favourable condition of the interest feature. Thus the overwintering population is considered to be highly sensitive to physical removal of habitat and moderately sensitive to smothering. Furthermore, during the construction, operation and decommissioning phases the construction of the jetty, dredge areas, thermal and chemical plumes could potentially lead to a loss or fragmentation of feeding habitat for features of interest, therefore leading to a loss of total available habitat within the site. LSE cannot be excluded at this stage. Red-throated diver is also considered to have a high sensitivity to non-physical disturbance. Further information needs to be provided to illustrate whether red-throated diver will be displaced from within the SPA. During construction and decommissioning prey species may also be displaced due to works to the project infrastructure (e.g. dredging, vessels, CDO, FRR, hCDF, sCDF) and therefore red-throated diver may become displaced. As such, we advise that a LSE cannot be ruled out at this stage during construction, operation or decommissioning.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
358.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5	Table C.1 Screening-Fisheries	Screening other projects for in-combination assessment As fisheries assessments are being undertaken at the North Sea SSB area level, Natural England question whether other plans or projects that may impact upon fisheries, such as other power stations are also being considered at this Zone of Influence scale?
359.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5 Appendix D1. HRA Integrity Matrices for SACs	D1.5 Minsmere to Walberswick Heaths and Marshes SAC	Alteration of coastal processes/sediment transport There is currently insufficient information provided in the EIA/CoCP/DCO/CMP on the proposed management and methodology for maintaining the SCDF during the construction and operational phase of the project to determine that there would be no LSE. The introduction of the HCDF and the SCDF may split the GSB in to two sediment cells with erosion and deposition on either side of the barrier. This pressure pathway should be considered a LSE and an AEOI considered in greater detail in AA in line with conservation objectives for the site.
360.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5 Appendix D1. HRA Integrity Matrices for SACs	D1.5 Minsmere to Walberswick Heaths and Marshes SAC	Water Quality Effects Currently water quality effects to annual vegetation of drift lines and perennial vegetation of stony banks has been screened out. Natural England advise that this impact pathway is screened in until the WDA permit process is finalised.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
361.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5 Appendix D1. HRA Integrity Matrices for SACs	D1.7: Southern North Sea SAC	Water Quality The conservation objectives for the SNS SAC include '3. The condition of supporting habitats and processes, and the availability of prey is maintained'. Natural England cannot provide our final advice in relation to AEOI from water quality effects on harbour porpoise and their prey species until the WDA permitting process is finalised.
362.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5 Appendix D1. HRA Integrity Matrices for SACs	D1.7: Southern North Sea SAC	Direct habitat loss and direct/indirect habitat fragmentation The thermal chemical plume, in combination with the offshore infrastructure, dredging, shipping, establishment of a harbour, will lead to an area of indirect habitat loss to harbour porpoise within the SAC. Whilst this area may be small in relation to the total area of the SAC it will be long term/permanent during construction, operation and decommissioning. Any loss of a site should be considered at Appropriate Assessment.
363.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5 Appendix D1. HRA Integrity Matrices for SACs	D1.7: Southern North Sea SAC	Disturbance effects on species populations Natural England has reviewed the assessment of the potential impacts of underwater noise on the Southern North Sea SAC, however we consider there are flaws in the way the assessment has been undertaken. We welcome the use of the noise guidance in undertaking the assessment but based on the size of the piles that will be installed during construction of the BLF, we would consider it more appropriate to use the pin pile effective deterrent radius (EDR) of 15km, rather than the 26km EDR that has been used here for Sizewell C. The 26km EDR is more appropriate for the large offshore windfarm developments such as East Anglia THREE OWF and Thanet Extension OWF.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			Natural England considers the inclusion of UXO in the assessment should represent the worst case scenario for that impact and therefore query why the results of the noise modelling of the 1500lb charge UXO have not been included within the assessment. UXO should also be included in the in-combination assessment with an EDR of 26km, as detailed in the noise guidance for the Southern North Sea SAC. Natural England note that in paragraph 9.5.76 (See comments for 5.10 Shadow HRA, Volume 1: Screening and Appropriate Assessment Part 1 of 5, Paragraph 9.5.76), the spatial extent of the winter portion of the Southern North Sea SAC that could be impacted by underwater noise in-combination is 32.8%, reducing to 22.2% when taking the average overlap in to account.. This exceeds the maximum threshold of exclusion of harbour porpoise from 20% of the relevant area in any given day as detailed in the noise guidance, despite the seasonal average only being 1.46%. Therefore, Natural England are unable to agree with the conclusion of no adverse effect on integrity of the Southern North Sea SAC, based on the current assessment. Natural England would strongly advise the consideration of the use of a cofferdam during the installation of piles at Sizewell C. This would create a dry environment for the work and would mean no underwater noise would be generated by piling activities, thereby removing the impact of underwater noise on marine mammals and would allow a conclusion on no adverse effect on integrity of the Southern North Sea SAC. We advise that the Applicant provide a Southern North Sea SAC Site Integrity Plan As per Natural England's advice on other recent NSIP applications, a mechanism needs to be developed by the regulators to ensure continuing adherence to the SNCB thresholds over time. Multiple SIPs will be developed, piling can take place over several years, and new projects can come online during this time. Should potential exceedance of the thresholds occur, a process for dealing with this issue needs to be in place – the affected developers / industries will need to work together with the regulator and SNCBs to prevent adverse effect on the Southern North Sea SAC. Until the mechanism by which the SIPs will be managed, monitored and reviewed is developed, Natural England are unable to advise that this approach is sufficient to address the in-combination impacts and therefore the risk of adverse effect on integrity on the Southern North Sea SAC cannot be fully ruled out.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			This is not an issue unique to the project and work will need to be undertaken to reduce the noise levels of multiple projects potentially constructing at the same time.
364.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5 Appendix D1. HRA Integrity Matrices for SACs	D1.7: Southern North Sea SAC	Physical interaction between species and project infrastructure As harbour porpoise prey species would be lost in close proximity to intake tunnels and across the Greater Sizewell Bay, and harbour porpoise would have to move out of the area to feed. Conservation objectives for the sites include that 3. The condition of supporting habitats and processes, and the availability of prey is maintained. As this will be a long term/permanent loss of foraging area within the SAC for the operational phase of the development NE advise that this would constitute an AEOI of this area of the SAC. NE advises that compensation for this loss of area be proposed.
365.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5 Appendix D1. HRA Integrity Matrices for SACs	D1.7: Southern North Sea SAC	In-combination effects: As stated above (disturbance effects) until a mechanism is in place that can manage disturbance from individual plans or projects within the SNS SAC then NE cannot beyond scientific doubt rule out an AEOI due to in combination impacts. We strongly advise the Applicant to produce a SNS SAC SIP.
366.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5	D1.9: Durmeëstuarium van de Nederlandse grens tot Gent SCI	Twaite Shad It is not clear from the tables where the 3,601 individuals would have come from and if they are 0.05% of the spawning stock biomass or they all migrate from one particular designated site.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
	Appendix D1. HRA Integrity Matrices for SACs		
367.	5.10 Shadow HRA Volume 1:Screening and Appropriate Assessment Part 4 of 5 Appendix 5.10E Recreational Disturbance Assessment	1.4.5	Stated that the potential disturbance of marine habitats will be covered through a separate assessment of SZC project impacts on the OTE SPA. Could the Applicant clarify where this is included and if it also refers to SNS SAC?
368.	6.3 Volume 2 Main Development Site. Chapter 14 Terrestrial ecology and ornithology	General	We note that marine ornithology has been located in the Terrestrial Ecology and Ornithology chapter, and would recommend its relocation to Chapter 22 – Marine Ecology.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
369.	6.3 Volume 2 Main Development Site. Chapter 14 Terrestrial ecology and ornithology	14.12.7	Inappropriate reference population for all assessments Sets frame as a continuum of the status quo, in absence of development. Where there is a restore objective specified, the relationship between the development and the restore objective not just the current population must be considered. In particular if the development may inhibit recovery.
370.	6.3 Volume 2 Main Development Site. Chapter 14 Terrestrial ecology and ornithology	14.12.11	Issues on boundary of foraging range Issues associated with Alde-Ore characterised as out of the area of concern for pathways other than recreational disturbance. This suggests that pathways may have been overlooked, though key features at risk are picked up in HRA.
371.	6.3 Volume 2 Main Development Site. Chapter 14 Terrestrial ecology and ornithology	Table 14.24	Marine Water Quality Appears to be missing from assessment of risks – chemicals from outfall may have direct impacts as well as sterilization of foraging areas.
372.	6.3 Volume 2 Main Development Site. Chapter 14 Terrestrial ecology and ornithology	Table 14.26	HRA Conclusions For reasons identified in comment for paragraph 14.12.20, not all conclusions presented here can be supported.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
373.	6.3 Volume 2 Main Development Site. Chapter 14 Terrestrial ecology and ornithology	14.12.20 Table 14.27	Marine habitat not included as habitat Loss of Marine habitat through sterilization of water column, physical modification of water column temperatures and seabed modifications appears to be seen as out of scope of assessment.
374.	6.3 Volume 2 Main Development Site Chapter 20 Coastal Geomorphology	General	We welcome the coastal geomorphology and hydrodynamics report as part of the DCO consultation, it is detailed and contains a thorough attempt to quantify and assess impact pathways for all the coastal defence and nearshore structures, relative to the Minsmere to Walberswick designated site. We note that the conclusion for most of these are that any effects are mostly negligible and insignificant, particularly where offshore effects are predicted relating to the outfalls, intakes and Beach landing facility. We welcome the inclusion of an Expert Geological Assessment, something we had previous identified as being needed. We note its conclusion that without mitigation, the Hard Coastal Defence Structure HCDF is likely to be impacted by coastal erosion sometime between 2053 and 2087, within the operational life of the project. The report explores various mitigation scenarios and proposes mitigation through beach management (nourishment, bypassing and recycling) should the HCDF becomes exposed by shoreline recession, and potentially interrupt sediment pathways to the designated site to the north. A significant (moderate) risk to designated site features is identified. It is explained how the measures will help maintain beach volumes, in turn supporting beach volume and form and geomorphological features. But there is less explanation of how the various beach measures will avoid an adverse effect and maintain condition of SAC foreshore annuals vegetation communities. It is important this is clarified, particularly where future beach management measures might require manual intervention (for example, vehicle movements on the beach) which in turn could adversely affect the feature by hindering colonising plants. This is important as manual beach management schemes elsewhere often involve lorry movements directly on beaches, which is disturbing to flora and fauna. The report predicts an increase in sediment supply from the SCDF and slowing of erosion along the southern SAC/SPA frontage, against current and anticipated erosion rates there. It is reassuring if it can be demonstrated that this will reduce risk there. But more clarity is required on the extent to which the measures will also reduce the risk to SAC/SPA habitats in Minsmere Valley behind the barrier beach, by

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			building resilience on the beach to storm breaches and over-topping and reducing risk of the project exacerbating the impact of storm-tide surge events. There is reference in the report to the beach potentially tripping over into a state of more over-washing and possible breach, in theory increasing risk of saltwater inundation risk to the more brackish or freshwater SAC and SPA habitats in the Valley. Storm driven events (like the 2014 tidal surge) are predicted to increase in frequency and severity through the life of the project. The project needs to demonstrate that the proposed mitigation measures are sufficient to avoid the Project contributing to this trend and escalating it. The report refers to the material for the SCDF and any subsequent nourishment needs as coming from excavated beach material (under the HCDF footings), a licensed aggregate extraction site, or material excavated from the main development site. The importance of the source material being compatible with the integrity of the geomorphology is an important part of maintaining site condition. It is important for barrier beach grain, form and the way wave processes sort and grade the beach, part of its geomorphological function. It is also necessary for the extent to which the beach is suitable substrate for SAC vegetated shingle communities to establish, and nesting sites for breeding shorebirds. More clarity is needed on beach sediment sources and their compatibility with the designated site. The report mentions the dune County Wildlife Site but makes little or no mention of the impact of the coastal defence measures on it. We would welcome more detail here on how the loss of most of the site will be mitigated or offset within the footprint of the HCDF and SCDF. There is reference in the report to how the beach management measures will avoid to reduce risk of adverse effect on designated habitats, but little exploration of how the coast protection of the development site will enhance the wider coastal natural environment, including its form, function, and ability of coastal habitats to contribute to climate change resilience and nature recovery, as part of UK governments 25 Year Environment Plan.
375.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	General	Natural England cannot currently provide our final comments on any of the potential impacts to designated sites or features within the EIA or HRA from those aspects of the proposed development of Sizewell C Power Station that will be managed by, or impacts mitigated for, as part of the Water Discharge Activity Construction and Operational Permits (i.e. impacts from intake and outfall, fisheries impingement and entrainment and WFD assessments). Under the Environmental Permitting (England and Wales) Regulations 2016 the Environment Agency will undertake a review of the application and consult the public. Natural England, along with other Statutory Nature Conservation Bodies, may provide advice to the Environment

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			Agency on certain aspects of environmental permitting application at this stage, including HRA. The Environment Agency may then take account of advice so operators can avoid, reduce or compensate for any adverse impacts from permitting operations. As outlined in Planning Inspectorate Advice Note 11 Annex D Permitting and DCO submissions should be timed to allow consideration of the outcome of the permitting process within the DCO application. We understand that the SZC Co DCO application has been submitted at the same time as the permitting application to the Environment Agency, to allow for parallel tracking. Given the different timelines in assessing permitting (usually 12-18 months) and DCO applications (usually 6 months) the permitting determination may not be available within the DCO timeframes. Until the WDA permitting process is finalised Natural England will not be able to advise beyond scientific doubt that there will not be an environmental impact on designated sites or an Adverse Effect on Integrity on Natura 2000 sites or Annex II species, as we will not have full sight of the final design or any mitigation secured. Natural England will continue to liaise closely with DEFRA bodies in relation to the permitting process and provide evidence into the DCO examination as appropriate. We will not be able to provide our final advice any earlier as we cannot be seen to prejudge the outcome of the permitting process.
376.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	21.3.107 and 21.6.48	Ground Conditioning Chemicals Could the Applicant clarify where ground conditioning chemicals to be used for TBM, as assessed in ES, are specified in DCO/DML or permitting?
377.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	General	We understand that the Applicant may be looking at including a desalination plant into the MDS in order to supply the shortfall in potable water during the construction phase. There however does not appear to be a desalination plant included within Chapter 2 Description of Permanent Development of within Chapter 21 Water and Sediment Quality. Could the Applicant confirm if a desalination plant is to be built and whether the impacts of this have been assessed either as part of the permitting or planning process?

Natural England comment reference	Document Title	Paragraph number	Natural England comment
378.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	Mitigation Route Map - General	Monitoring and Mitigation A number of the Marine and Sediment Quality monitoring and mitigation measures from the Main Development Site will be secured the WDA Construction permit (Management of construction discharges (via the CDO) and Monitoring under the Construction Water Discharge Activity permit) or the WDA Operational Permit (Chlorination strategy, Management of operational discharges (via cooling water outfall and Fish Recovery and Return systems), Monitoring under the Operational Water Discharge Activity permit. Natural England is a statutory consultee as part of the EA permitting process. We have currently not seen the monitoring and mitigation proposed as part of the separate permitting process and therefore cannot provide comment on any impacts this may have as part of the DCO application. Natural England therefore cannot provide our statutory advice on these elements of the monitoring and mitigation until the permitting process has been finalised.
379.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments Mitigation Route Map MDS-MWQ7	21.3.124	Construction Phase CDO Water Discharge Activity environmental permit assessment Natural England notes that the CDO will be assessed as part of the WDA Construction Permit. Natural England has not yet been consulted by the EA on the permitting process and so cannot provide detailed comment at this stage.
380.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	21.3.142	Sediment Contamination Levels Monitoring It is not currently clear where the requirement to monitor sediment contamination levels against action levels are secured in the DML could possibly be 36 (d) but it is not clear from wording. It also does not include detail about the criteria to be tested and the laboratory. Could the Applicant indicate where this detail is secured in the application? Moreover, the appropriate condition in the DML should include a requirement for MMO to consult with the relevant SNCB.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
381.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments DCO/DML	Table 21.6 and 21.7	The dredge volume and area as specified within the ES do not appear to be secured in DML. Could the Applicant confirm where the WCS parameters are secured?
382.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	21.5.8	SCDF Chapter 21 states that measures to protect water quality associated with the SCDF are outlined in CoCP. There is currently insufficient detail provided in the CoCP on the construction methodology of the SCDF to assess any potential water or sediment quality impacts. Moreover the Beach Monitoring and mitigation report does not appear to have been provided as part of the DCO application and therefore NE cannot provide comment on this. There also does not appear to be a beach monitoring and mitigation report included in a condition in the DML. Could the Applicant clarify if they mean the Coastal Process Monitoring Plan?
383.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	21.5.18	Vessel Management Plan The Vessel Management Plan (as alluded to in the CoCP as a condition to the DML) does not appear to have been submitted as part of the DCO Application. Could the Applicant confirm if this has been/will be submitted? Natural England cannot provide comment on appropriateness of water quality mitigation measures until provided.
384.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	21.5.20 21.5.37	Silt busters and oil separators We welcome that silt busters and oil separators may be used to maintain water quality standards. The commitment to their use does not appear to be specified in the CoCP or mitigation route map. Could the Applicant confirm where details of the methods are proposed and where this is secured in the DCO?

Natural England comment reference	Document Title	Paragraph number	Natural England comment
385.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments Mitigation Route Map MDS-MWQ3.	21.5.24	Chlorination strategy We welcome that the Chlorination strategy as outlined in the Mitigation Route Map includes the use of seasonal chlorination and that chlorination would be applied after the drum screens. We note that this mitigation will be secured within the WDA operational permit. Natural England have not yet been consulted on the WDA permit as part of the DCO and cannot provide detailed comment on the potential impacts and would welcome further clarification of wording of the mitigation and definition of spot chlorination, and clarification of localised effects to water quality with mitigation in place. Could the Applicant confirm if the WCS for spot chlorination is included in modelling/ assessment/permit applications?
386.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	21.5.26 21.5.39	Hydrazine '*However, hydrazine discharges would be treated until the hydrazine concentration falls below a level that is acceptable for a batch discharge'* Natural England welcome the Hydrazine discharges would be treated, but would welcome further details on this process. We note that this is not secured in the CoCP or DCO/DML and will be secured as part of the WDA permit process (Mitigation Route Map). Natural England has not currently been consulted on the permitting process and therefore cannot provide comment at this time.
387.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	21.5.31	Natural England cannot provide comment on the operational discharges to the marine environment until consulted on/ have been provided a copy of the Water Discharge Activity Permit and subsequent WFD and HRA.
388.	6.3 Volume 2 Main Development Site Chapter 21	21.6.45	Frack outs

Natural England comment reference	Document Title	Paragraph number	Natural England comment
	Marine Water Quality and Sediments		Given the number of recent occurrences of bentonite break outs or frack outs that have occurred on other HDD projects around the coast recently Natural England consider the potential for this impact pathway to be considered a likely effect. We would therefore expect to see further information provided on the methodology, procedures and safe guards that would be put in place to reduce the possibility of frack outs in designated sites, and for this to be outlined in a certified document, for example the CoCP. In the case of a drilling mud breakout in a designated site Natural England expect to be consulted within 24 hours.
389.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	21.6.68	Chemical discharges- operation monitoring We welcome the assertion that chemical discharges associated with the construction phase of the development will not intersect the Minsmere coast at concentrations that could induce ecological effects. However given the potential for direct entry via the sluice and increased overtopping and percolation, with sea level rise and coastal erosion, we would expect to see some coastal and water quality monitoring proposed in order to verify conclusions of ES. Could the Applicant confirm where monitoring is proposed or secured?
390.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	21.6.115	CDO We welcome that operational discharges are not anticipated from the CDO. We would advise the inclusion of a commitment to this within the CoCP and specifications of how the relevant SNCB will be consulted if an operational discharge is to be released.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
391.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	21.6.130	Thermal Plume The thermal plume in combination exceeds WFD and Habitats Directive standards over the GSB area. We advise that the change in water body status of these areas should therefore be assessed against the Conservation objectives for the sites and features of interest.
392.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	21.7	Monitoring and Mitigation There has been some mitigation measures mentioned within the DCO application such as a commitment to chlorination after the drum screens, only seasonal chlorination when above 10 ºC, and spot chlorination, a holding pool for Hydrazine. However none of the mitigation measures are secured as part of the DCO application, and will instead be secured as part of the WDA permit. Natural England therefore cannot provide detailed advice until we have been consulted on the monitoring and mitigation as included in the permit. Currently water quality monitoring from the FRR only appears to be quarterly for the duration of a year. Could the Applicant provide further information on the suite of water quality monitoring proposed?
393.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	Table 21.22 (21.6.13, 21.6.77, 21.6.80, 21.6.92	Changes in Suspended Sediment Concentration We note that turbidity may increase due to in combination dredging activities leading to raise the turbidity classification from intermediate to turbid across 5% of the Suffolk Coastal Waterbody. The area of exceedance would occur for 5% of the year. The area of the Suffolk Water Body that would be effected corresponds with little tern and common tern foraging areas in the Outer Thames Estuary SPA. The conservation objectives for common and little tern include to 'Maintain natural levels of turbidity (e.g. concentrations of suspended sediment, plankton and other material) across the habitat. Excessive turbidity, such as arising from marine dredging and construction may displace prey species and reduce prey availability. Turbidity within key foraging areas should be maintained at natural levels.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			As the increased SSC plumes will overlap with Little/Common/Sandwich Tern foraging sites, Natural England advise that a change to WFD status may have a LSE on these species. Natural England request that the Applicant provide further information regarding the WCS area and times of year and how this will overlap with common and little tern breeding and foraging in particular. Could the Applicant indicate where the in combination increase in SSC and turbidity of the water body is assessed against supplementary advice for Annex II species. Natural England has raised previously (Our Ref 284902) that the assessment of increased SSC on the WFD water quality status is clearly presented and mapped. The intra and inter project WCS which may impact upon WFD status should be clearly mapped against designated sites and foraging areas.
394.	6.3 Volume 2 Main Development Site Chapter 21 Marine Water Quality and Sediments	Table 21.23	Operational phase in combination water temperature increase The thermal plume exceeds the 2 and 3 degree ºC uplift criteria for SAC/SPA and WFD. The impact is currently classed as not significant by the Applicant. Natural England understands the thermal discharge will be managed in accordance with the WDA Discharge permit. Natural England will provide comment on the permit application and accompanying HRA when this has been submitted. Natural England can therefore not provide comments currently.
395.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	General	Shipping As raised in stage 2 and stage 3 consultation responses, Natural England advise that the potential impacts of shipping be assessed within the EIA and HRA. We would expect the number of marine delivery's and vessel movements to be predicted and presented in the ES. Including: number of vessels, timing of deliveries, number of support vessels dredge events, jack up barges, patrol launch etc., with predicted vessel movements per annum during construction and operation presented. The assessment should include spatial and temporal considerations in relation to sea scape and disturbance to Minsmere to Walberswick SPA, Ramsar, Outer Thames Estuary SPA and Southern North Sea SAC. Natural England would expect to see details of the main shipping routes, and alignment of vessel corridors to the SZC site. These impacts

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			should also be assessed in combination with other plans and projects. The number and type of vessel does not appear to be presented within the ES, Natural England considers this a major omission within the application and advises that this information is provided. Without this information it will not be possible to assess disturbance to marine species. It is not clear where the number and management of vessels would be secured as part of the application. The CoCP indicates that a Vessel Management Plan may be added as a condition to the DML. Could the Applicant confirm how this impact will be assessed and whether the Vessel Management Plan will be submitted as part of the DCO.
396.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	General	We note that there are currently no proposals for enhancement or 'net gain' in the marine environment associated with the proposed development. We welcome that the Applicant has committed to Net Gain across the terrestrial MDS. Whilst there is not currently a metric for marine Net Gain Natural England would welcome the inclusion of enhancements.
397.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	General	Figures It appears that not all SPA'S or the Orford Inshore MCZ are mapped in relation to proposed development.
398.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	General	Temporary Rock Platform Natural England seeks further information on whether the temporary rock platform for the BLF construction will be taken forward as part of the application.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
399.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	General	Marine Ornithology We note that the assessment of potential impacts to marine ornithology within the EIA is included in Chapter 14 Terrestrial ecology and ornithology. Please see our comments in response to chapter 14 for our marine ornithology comments. Generally, we would like to see details of the number of vessels and any mitigation laid out in a Vessel Management Plan.
400.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	General	County Wildlife Sites are referred to as Country Wildlife Sites throughout.
401.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.2.11	Guidance Need to include JNCC Marine Mammal Monitoring Guidance
402.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.3.3	Decommissioning We note that the scope of the assessment considered construction and operational phases, but not decommissioning. As raised in our Stage 3 response we consider that given the timescales involved in decommissioning and that the proposed development is to be built on a generally receding coastline it would be prudent for those aspects of the project that are foreseeable such as coastal erosion, be considered as part of the EIA.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
403.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.3.21	Impingement and Entrainment We note that impingement and entrainment effects are considered at the North Sea Spawning Stock Biomass and international landings based on ICES areas. Natural England does not agree with the current assessment of impingement losses methodology which potentially significantly underestimates the potential impacts of SZC impingement and entrainment impacts. Natural England has previously raised concerns in relation to this approach, in consultation responses to BEEMs reports TR318 and TR406 (Our Ref 283006 and 284923).
404.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	Table 22.1	The Wash & North Norfolk Coast SAC for harbour seals should also be included in this table.
405.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	Table 22.138	The distances given here should be displayed in kilometres, not just hectares, to allow comparison to information presented elsewhere. It is difficult to understand what this table is showing without the distances being displayed in kilometres.
406.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.3.37	Permanent Infrastructure List of permanent marine infrastructure should also include CDO, FRR, and SCDF, BLF and associated piles.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
407.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	Table 22.3	Impact Magnitude '*Medium - Changes across a moderate proportion of the area of interest (e.g. 100s of ha)* *Low- A partial spatial area is exposed to changes (e.g. 10s of ha)'* Natural England advise that in line with Sweetman ruling (Sweetman vs Coillte Teoranta, ref: c-323/17) any permanent habitat loss of a SAC, SPA or RAMSAR should be considered a LSE and taken to Appropriate Assessment and assessed against the conservation objectives of the site.
408.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.3.80	We would expect more detail to be included regarding piling, noise monitoring and how monitoring and mitigation will be secured.
409.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.3.84 22.6.123	Bentonite Breakout Given the frequent occurrence of bentonite break out, or 'frac-outs', experienced by Offshore Industry projects around the coast recently Natural England would argue that the potential for frac-out is a likely effect pathway and that further details need to be provided and considered further. We would like to see further details on the methodology and management techniques that will be used to ensure that a frac-out does not occur. For example the monitoring of drill head pressure, stop procedures etc. Natural England would welcome further information on 'normal tunnelling process' and for these to be secured in CoCP in order to demonstrate that there is likely to be a negligible effect from bentonite breakout. Natural England would also welcome further information on procedures in place in case of a 'frac out'. We would advise a commitment for the relevant SNCB to be consulted within 24 hours should a drilling mud break out occur within a designated site.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
410.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.3.92	With regards to WCS and water temperature we note the unlikely possibility of an excess temperature raise to 23.2 ºC if only 2 of the 4 pumps are operating. Whilst we do note that normal operating procedures are considered the WCS we advise that these potential maximum temperatures are also considered in the HRA's against SAC/SPA/WFD thermal standards.
411.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.3.93 22.7.362	10mm mesh We note that a 10mm mesh is proposed and forms the basis of the impingement and entrainment calculations. It is not clear where this commitment is included in the DCO? We understand that this may form part of the WDA permit, but Natural England have not yet been consulted on this aspect of the development.
412.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.3.94	Chlorination Natural England welcome that chlorination will be after the drum screens, we understand that this mitigation will be secured as part of the WDA permit. However, Natural England have not yet been consulted on this or the accompanying HRA.
413.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.3.95	If dosage occurs while discharge is less than the maximum 116/s, then the concentration will be higher and therefore more damaging – So current example is **not** the worst case scenario. Previous thermal plume scenario detailed if pumps were non-operational during maintenance. This falls outside of normal operation, but is a realistic scenario – Why is this not considered worst case scenario?

Natural England comment reference	Document Title	Paragraph number	Natural England comment
414.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.3.96	If the season where chlorination is deemed necessary may extend due to climate change during the operational phase of the project, does the WCS chlorination strategy as presented in Chapter 26 include an assessment of the potential WCS chlorination regime and what this may mean for Water Quality and WFD of waterbodies.
415.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.3.122	Dredging Could the Applicant confirm if there will be an annual capital dredge of the BLF throughout the construction and operational phases? Table 22.10 and 11 are WCS parameters captured in licence conditions and tie in with areas as specified in DCO/DML? 22.6.68 It is not clear from the text how the Applicant has derived that SSC plume around the BLF, will have a magnitude of medium on Plankton. Further explanation or linking to supporting documents would be welcomed and clarification on whether this assessment is for construction or operation, alone or in combination with other projects. The use of a suction hopper or plough dredge do not currently appear to be specified in the DCO/DML. The volume and area of dredge material is also not currently secured in the DCO/DML. Could the Applicant clarify where these methodologies are currently secured?
416.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.3.106	FRR Marine Licence Conditions The Licences conditions as laid out in 22.3.106 do not appear to be currently included in the DCO/DML. Could the Applicant please specify the conditions to be included and where these will be secured?

Natural England comment reference	Document Title	Paragraph number	Natural England comment
417.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.3.109	CDO Natural England note a Water Discharge Activity (WDA) Environmental Permit will be required for the CDO. Natural England will be unable to complete an in-combination assessment of water quality impacts to designated sites, in particular the Southern North Sea SAC and Outer Thames Estuary SPA until the EA have finalised their permitting decisions and secured any mitigation necessary. Natural England will work closely with EA in order to coordinate responses but it may not be possible to comment within the examination timeframe.
418.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.3.117	CDO It is not clear what is meant by there will be no operational function for the CDO. Will this not continue to function for site brown water/ sewage?
419.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.3.125	UXO 22.9.197 Natural England understands that a dedicated UXO survey has not yet been completed, and has not been submitted as part of the evidence base of the DCO. 22.8.219 Natural England has concerns with regards a hypothetical assessment as presented in Appendix 22L. Natural England cannot comment on the suitability of the proposed methodology or any case by case mitigation until it is proposed. The current assessment does not allow for an informed assessment which shows beyond scientific doubt that the noise from UXO detonation will not have an impact on the Annex II species Harbour porpoise. Natural England can therefore not comment on the suitability of methods and the methodology, or mitigation measures and is therefore not compliant with Habitat Regulations. 22.8.223

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			As the identification of UXO is a foreseeable event this should be assessed as part of the DCO application, EIA, HRA, AA and regulatory authorities consulted as part of this process. It does not make sense to delay this assessment to post consent. 22.9.201 Without seeing an assessment of UXO present, a MMMP, or the site specific mitigation Natural England cannot provide comment on the potential impacts or appropriateness of the methods. 22.9.202 Natural England question how the Applicant can be confident that effects would be not significant for Harbour porpoise and seals, when the likely effects or mitigation is yet to be proposed.
420.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.4.39	It is not clear why Marine birds are not included here, rather than the terrestrial ecology chapter.
421.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.6.28-40	**Zooplankton** Natural England note the age of the survey data presented (2008-2012).There is some reference to later surveys in 2014-17, but these provide little detail. We advise that the surveys to inform the various impact assessments should be considered in the context of the recent Chartered Institute of Ecology and Environmental Management (CIEEM) Advice note on the Lifespan of Ecological Reports and Surveys which states that, for surveys which are more than three years old, “The report is unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated”. Where the baseline survey information is not in line with this, we advise that clear justification should be provided on how the surveys remain valid and robust enough to inform assessment conclusions. The methodology used to collect 2008-12 data varies throughout the time frame, and does not sample each month in any year or in the same locations throughout the duration, meaning we do not have a complete picture of the annual zooplankton composition within the area, and the limitations of the data are highlighted in the report.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			It would have been useful to include the details of the 2014-17 surveys, rather than focusing on older data. While we can derive a more detailed picture of the general zooplankton assemblage from April-July, it is difficult for the rest of the year as no invertebrate data was collected from August-January in any year, meaning only the broadest conclusions can be drawn. We note that September and October commonly show large bivalve and gastropod larval blooms, which is evidenced in the accompanying CPR data, so assemblage data presented here does not necessarily show the complete picture.
422.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.16	Benthic Ecology The ephemeral nature of Sabellaria is considered, however are there core areas of persistent Sabellaria in the GSB?
423.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.34	Benthic invertebrates, construction, compaction It is not clear from the information in this chapter how often the SCDF will need to be replenished, or reshaped during the construction, or operation, phases. It would be beneficial for the area and spatial extent of this activity to be mapped and presented in relation to designated sites, and the temporary nature of the impact defined. (construction phase 12 years so may cover 12 breeding seasons) It is also not clear from this chapter what the food web effects may be for marine bird species that may feed on fish and small invertebrates in this area may be.
424.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	Sabellaria spinulosa - General	Sabellaria spinulosa The consultation documents (Ref 22.122) indicate that the proposed development site includes Sabellaria spinulosa Reef, a habitat of principle importance, as listed on Section 41 of the Natural Environmental and Rural Communities (NERC) Act 2006. The fact that Sabellaria is listed under section S41 means that the

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			public authorities must, in exercising its duty under section 40 of the NERC Act 2006, have regard to the conservation of this habitat when carrying out their normal functions. Natural England recommends a 50m buffer area be established for works in proximity to Sabellaria spinulosa. It is not clear if the 50m radius has been assessed in relation to dredging and drilling plumes and scour protection. Natural England would not consider any recolonisation of Sabellaria spinulosa on hard substrate to constitute natural reef – please see Natural England's position statement for Norfolk Vanguard (RR-106, EN010079) and Norfolk Boreas (RR-099, EN010087) and Hornsea Project 3 (RR-097, EN010080) offshore windfarms. Therefore colonisation on artificial structures or scour protection would not be considered Sabellaria Reef Due to the long lead in time of design and construction of a nuclear power station however Natural England recognise that it may not be possible to avoid all areas of Sabellaria Reef which may have formed in the intake outfall location in the interim. However, impacts must be minimised using pre-construction survey data. As per previously requested DCO/DML condition. We would suggest that if Sabellaria spinulosa Reef is found on the outcrop prior to construction that post construction monitoring of the intake and outfall is undertaken at 0, 3 and 5 year intervals to assess recolonization has occurred.
425.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.70	Sedimentation rates Is lack of adult mussels linked to environment/human interaction or food source? Are they subtidal? Do any bird species feed on them?

Natural England comment reference	Document Title	Paragraph number	Natural England comment
426.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.175	Sabellaria spinulosa and tunnelling effects Sabellaria and surfactants from tunnelling – Lack of direct evidence of impact, therefore an assumption of low sensitivity is made. More evidence would be required to show low significance. Figures for surface benthic larvae predictions could not be found.
427.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.183	Hydrazine Does not include a quantification of benthic larvae, but assumes that high distribution and fecundity means low significance of effects of hydrazine. Unclear of the timescale that hydrazine is to be discharged.
428.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	Plate 22.5	Locations of CWS Why is Sabellaria found present from surveys in western location, but not determined to be medium/high confidence in reed? We note Plate 22.5 showing areas of potential Sabellaria reef and confidence levels. Natural England advise that the proposed East Location for Unit 1 cooling water intake, which survey data from 2019 indicated to be in a high confidence area of Sabellaria reef, should be avoided where possible in order to reduce potential impacts to this NERC habitat. NE requests that pre construction survey to identify the presence of reef habitats 12 month prior to construction is undertaken to inform micro-siting to avoid impacts to this habitat. Where this is not possible every effort should be made to minimise the impact. The undertaking of this survey and reporting thereof should be a condition of the DCO/DML

Natural England comment reference	Document Title	Paragraph number	Natural England comment
429.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.213	Sabellaria spinulosa extraction pressure Impact magnitude is considered low at 4% area loss of reed – this is questionable. It would be useful to know the loss of substratum which will be permanent versus the habitat which may be able to recolonise.
430.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.214	Agree monitoring of Sabellaria should be conditioned. Where is the preconstruction evidence?
431.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.267	According to Mar ESA Sabellaria has a moderate sensitivity to substratum loss (not low sensitivity as stated by Applicant). Given that Sabellaria is a NERC habitat and therefore a marine ecology receptor of medium Value (Table 22.2), and that the substratum loss would be for the duration of the operational phase and therefore long term, this would constitute a high impact magnitude according to Table 22.3. Natural England advises therefore that in accordance with Table 22.5 that the impact to Sabellaria Reef from substrate removal should be considered a major effect.
432.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.268	Sabellaria spinulosa physical loss Physical loss of Sabellaria is considered not significant. Although the scale of impact is low, sensitivity should not be based on scale and is moderately sensitive. The fact that there is likely to be good recoverability is factored into the outcome of moderate sensitivity.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
433.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	Table 22.45	Within Table 22.45 the Applicant suggested a 50m buffer zone around each cooling water intake in which pressures will occur. It is not clear from the main text how this radius has been established based on the equipment and vessels that may be used. Is 50m radius sufficient for anchoring of vessels or jack up barges? It is not currently clear where monitoring and mitigation for Sabellaria habitat will be secured. There is no reference to Sabellaria monitoring and mitigation in the CoCP, we note that the DCO (45) commits to a Sabellaria Monitoring Plan but there is no reference to mitigation; and an Outline Sabellaria Monitoring and Mitigation Plan has not been submitted as part of the DCO. Natural England would welcome the submission of an outline Monitoring and Mitigation Plan into examination which clearly lays out mitigation methods and monitoring.
434.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.331	Physical loss This considers physical loss of soft to hard substrates as permanent for the lifetime of the project – no discussion is included on decommissioning and whether structures will be removed. Benthos not sensitive to physical loss as would 'largely' have been removed by dredging. This may depend on a number of factors i.e. Timings of dredge prior to construction, some recolonization may take place.
435.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.314 22.7.332 Table 22.46	In combination loss/change of benthic habitat In combination benthic physical loss of habitat, change to another seabed type. Will the in combination area involved in change to benthic habitats have an in combination effects on food webs in the area? In particular in relation to terns which rely on small and distinct foraging ranges? 22.7.314 suggests that benthic invertebrates sensitivity to removal of substratum is not significant. 22.7.332 The very small spatial extent of the pressure and the long-term presence in the marine environment results in an impact magnitude of Low

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			Table 22.46 presents potential areas of change. It is not clear where these are specified in the CoCP or DML?
436.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.357	Combined Drainage Outfall We note that the CDO is not expected to be decommissioned following the construction phase and would remain in place but no discharge would take place. Natural England question whether this would still require regular anti fouling, and if so is this included in the in combination assessment? Due to the additional potential for hard substrate to be colonised by INNS should this not be removed for the operational phase if it is not to be used? Is there a chance of nutrient enrichment from the CDO? This has been screened out as a pressure.
437.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.388	Impingement- benthic invertebrate Natural England advises that Sabellaria spinulosa that whilst sessile in their reef form, due to their planktonic larval stage, are scoped into any impingement assessments.
438.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.391	Water Temperature Figure 21.5 It would be useful if the areas of water temperature exceedance and WFD water bodies were mapped. The area where the 2 and 3 ºC thermal threshold for SAC/SPA is exceeded corresponds with the foraging area for tern species associated with the Minsmere SPA and Ramsar as illustrated in Figure 21.3.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
439.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	Table 22.53	Benthic ecology - temperature changes Pink shrimp considered low sensitivity to thermal changes due to mobility, but it is a cold water species and the assessment of low is not precautionary.
440.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.423	Water Quality Impacts We note that TRO, Bromoform, Hydrazine may all individually have a medium impact over the operational phase. Natural England understands that the management of these substances will be controlled through a WDA permit and we look forwarded to being consulted as part of this process. Natural England can therefore not provide substantive comments as to LSE until this process is completed. We look forward to being consulted on the HRA and the provision of information of the plumes in relation to breeding and foraging areas for designated species and localised impacts to WFD status.
441.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.7.458	Abrasion/physical disturbance maintenance operations We note that maintenance of infrastructure may be needed every 18 months as a WCS from a jack up barge or anchored vessel. Sabellaria has a medium/high sensitivity to this pressure, as it would be a recurring pressure and there may be insufficient time for recovery between events. As such, we would welcome monitoring, is any monitoring proposed with a trigger for mitigation to include using vessels with directional positioning in areas of Sabellaria Reef.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
442.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.8 - General	Natural England are aware of differences between the DCO application and Water Discharge Permit application submitted to the EA, in both assessment approaches and resulting calculations. Many BEEMS reports referred to have not been submitted in the DCO application, and therefore we cannot provide comment on them.
443.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.8.10-22.8.18	Survey data age The baseline survey data from the various fisheries surveys was collected between 2008 and 2017, and is therefore out of date. Ecological surveys should up to date and ideally from the most recent survey season, or at least within the last 3 years. Please see CIEEM Guidelines. The preconstruction baseline will therefore be in many cases out of date.
444.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.8.30	We dispute the ability of genetic analysis to be able to distinguish between **functionally** distinct sub-populations on such a fine scale. Genetics are a moot point if they are genetically similar, if one river's breeding stock is disproportionally impacted. Additionally, several BEEMS reports references in Appendix 22i (7.6.1), have not been submitted as part of the DCO application, and as such Natural England cannot provide comment on them.
445.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.8	In combination cumulative There does not currently seem to be an in combination or cumulative assessment with other proposed developments within the area. Natural England has concerns with assessing the zone of influence as the north sea SSB. However if this is to be the ZOI on which assessment is to be based, then this should consider in combination effects with proposed developments on fisheries over this same scale.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
446.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.8.22	Concede sandeel eggs point, however both sandeel larvae and juveniles are also entrained at Sizewell B.
447.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.8.42	The Appendix 22I refers to BEEMs report SPP100 which outlines new approach to Twaite shad baseline (includes Belgium populations) – but this not made available in the DCO application, and therefore Natural England cannot provide comment on its conclusions.
448.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.9.7	Marine Mammals We note the use of static acoustic monitoring techniques to monitor Harbour porpoise in the GSB from 2011-2013. This baseline data is therefore considered out of date and more recent data, if collected, should inform the baseline.
449.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.9.29	A cumulative effects assessment has been completed with focus on the southern North Sea SAC Chapter 4 Volume 10 of the ES. This does not appear to include a Southern North Sea Site Integrity Plan. Natural England advise that the Applicant produce a SNS SIP in line with other marine industries within the SNS to submit to MMO.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
450.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.9.257 22.9.259	Marine mammal sensitivity to temperature changes. Any permanent or long term loss of a SAC or SPA area to Annex II species caused by the exceedance of thermal tolerance limits, in line with the Sweetman ruling (Sweetman vs Coillte Teoranta, ref: c-323/17), should be considered significant and included in at Appropriate Assessment. Natural England therefore questions the not significant assessment and request that this is considered at AA.
451.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.10.24	Food webs – sensitivity to organic loading Relating FRR to fisheries discards – Neither situation is natural and therefore not appropriate.
452.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.10 - General	Marine Mammal-Habitat Loss in GSB Due to the construction of infrastructure and placement of scour protection, potential loss of prey species through entrainment and impingement, avoidance of the thermal chemical plume by prey species and associated food web effects, continuous disturbance by vessel traffic throughout the construction, and operational phases. This may lead to a (permanent 120 year plus) loss of available habitat within the SNS SAC. The loss of habitat should be considered as part of an AA against the conservation objectives of the site i.e. To ensure that the integrity of the site is maintained and that it makes an appropriate contribution to maintaining Favourable Conservation Status (FCS) for harbour porpoise in UK waters.
453.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.8.2 22.12	Mitigation and Monitoring Monitoring is not mitigation. Monitoring should be used to establish the baseline and inform trigger points for mitigation; monitoring should inform the mitigation, compensation hierarchy.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
454.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	Table 22.157	Within Table 22.157 Natural England advise that potential impacts to fish from UXO and mitigation be presented and included within examination. Whilst a MMMP has been submitted the mitigation methods within this document are specific to marine mammals and do not consider fish species, sensitivity, areas, temporal considerations in relation to sensitive periods etc. We welcome that the Low Velocity Side Entry design has been developed, however the wording in the DCO/DML Schedule 20 Part 2 4. (g) (iv) 'based on a Low Velocity Side Entry Design is a fairly loose description. Considering this is a primary form of mitigation we would expect to see further information on the design either in the CDO or the CoCP.
455.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.12.8 22.12.24 22.12.27 Table 22.156	Sabellaria Given the potential for jack up barges and anchoring vessels to damage NERC Sabellaria habitat on the Coralline Crag Natural England recommend that regular monitoring of this habitat be included in the CoCP , with limits in habitat change identified to trigger the use of less damaging methods such as directional positioned vessels. We welcome the commitment to a post construction survey. We expect this to be comprehensive, and parameters should include extent, elevation and percentage cover. We would advise surveys at 1, 3 and 5 years post construction of the intake and outfall pipes being installed in order to assess recovery over time. Is this secured in CoCP? DCO /DML? We welcome monitoring general reef extent as part of WDA permit condition at intervals of 3 to 5 years. Monitoring however is not mitigation. It is not clear from the EIA should effects on the reef be determined what mitigation could or would be put in place. Moreover where is the commitment to monitoring and subsequent mitigation secured in relation to the DCO. The WDA permit conditions may not be finalised until after the completion of the Examination for the proposed development so Natural England cannot currently comment on any mitigation that may be agreed and secured under the separate permitting application.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			Mitigation for Sabellaria as presented in Table 22.156 should include where possible avoiding any works in Sabellaria reef and a 50m buffer.
456.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	22.12.30&31	Fish We note the proposed monitoring at the FRR outfall. Natural England cannot currently comment on the monitoring as this will be defined in the Water Discharge Activity Permit, which is being considered separately to the DCO. Currently it is not clear whether any potential mitigation measures would be implemented should monitoring show that either impingement predictions were incorrect, or that the FRR is affecting water quality parameters outside of that predicted. Natural England would welcome the provision of mitigation and inclusion within DCO/DML as appropriate.
457.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22c Benthic Characterisation	22.7.4	Benthic Ecology Assessment Baseline Data The baseline benthic ecology data is presented within Appendix 22C Sizewell Benthic Ecology Characterisation. The intertidal survey data to inform the baseline appears to be based on 60 quadrats conducted in 2011. The offshore surveys were completed between 2008-2014. Data of this age is considered useful for context, however for EIA & HRA purposes is considered out of date. As raised previously (June 2019 Our Ref 283783) we advise that the surveys to inform the various impact assessments should be considered in the context of the recent Chartered Institute of Ecology and Environmental Management (CIEEM) Advice note on the Lifespan of Ecological Reports and Surveys which states that, for surveys which are more than three years old, “The report is unlikely to still be valid and most,

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			if not all, of the surveys are likely to need to be updated". Where the baseline survey information is not in line with this, we advise that clear justification should be provided on how the surveys remain valid and robust enough to inform assessment conclusions.
458.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22e Marine Mammal Characterisation	Section 2	Other data sources such as the Joint Cetacean Protocol (JCP) and the work undertaken during the designation of the Southern North Sea SAC by Heinanen and Skov 2015 report should also be considered as part of the marine mammal characterisation.
459.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22e Marine Mammal Characterisation	4.1.2	The Southern North Sea SAC is described here as a candidate site which is no longer the case. This recurs throughout the document and should be updated.
460.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22e Marine Mammal Characterisation	4.2.1	Special Committee on Seals (SCOS) reports are now available online (http://www.smru.st-andrews.ac.uk/research-policy/scos/) up to and including 2018. This section should be updated accordingly. Additionally, there are more recent telemetry papers which should be used within the assessment, E.g. Russell and McConnell, 2014; Jones et al, 2015; and updated by Russell et al., 2017, with downloadable maps.
461.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries	4.4	The Southern North Sea SAC was designated in 2019, not 2017, as stated here, and is also no longer a candidate site.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
	Appendix 22e Marine Mammal Characterisation		
462.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22f Review of Commercial and Recreational Fisheries	General	Sandeel are only mentioned in relation to Suffolk Sea Angling (7.1.4.2). Natural England have previously queried why sandeel are not scoped into the assessment.
463.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22i Impingement Predictions	General	Natural England does not agree with the current assessment of impingement losses methodology, which potentially significantly underestimates the potential impacts of SZC impingement and entrainment impacts.
464.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22i Impingement Predictions	3 - General	Natural England cannot comment on the efficacy of mitigation packages (LVSE combined with FRR), due to a lack of confidence in the assessment methodology (where known), and lack of sufficient information for an informed view. Additionally, we did not find any evidence or particular reference to barotrauma in either: Chapter 22 Marine Ecology, Appendix 22m Marine Ecology Scoping, Appendix 22i Impingement report, Appendix 22g Entrainment report. Natural England have previously specifically asked for clarity on whether barotrauma effects have been considered (RV-Nov 2019). Our comments reflect the findings of the EA's 2020 report: SC180004/R1 *Nuclear power station cooling waters: protecting biota* Section 5.1 *Cooling water system tunnels: pressure change effects*.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
465.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22i Impingement Predictions	3.2	The DCO optioneers various bits of mitigation but does not tie together the use of any behavioural deterrent to complete mitigation started with LVSE (low velocity side intake). We cannot know how the mitigation/LVSE efficiencies have been calculated and therefore do not have enough information to form a view.
466.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22i Impingement Predictions	3.4.1	Light touch assessment. 10mm chosen for practical reasons. More information on comparison needed.
467.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22i Impingement Predictions	3.5	FRR will only benefit robust species and has low survivability for pelagic/clupeids e.g. Sprat & herring which are **the most entrapped** species with or without full impingement mitigation. This is recognised in paragraph 5.7 FRR mortality table 6 which lists FRR mortality as 100% for species: sprat, herring, anchovy, smelt, twaite shad, allis shad, mackerels. Supports further consideration of fish deterrents placed at intake heads as best practise, in conjunction with mitigation measures, such as LVSE (untested mitigation).
468.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22i Impingement Predictions	5.1.2	BEEMS report SPP099 is still in draft and not supplied within DCO application. While it was submitted for consultation via our Discretionary Advice Service on 10th June 2020, Natural England has not seen this finalised report, and it has not been submitted as part of the DCO application. This means we have not seen the modelling underpinning the conclusions on effectiveness of mitigation measures, and are therefore unable to comment.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
469.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22i Impingement Predictions	5.6	Effect of the intake head design Missing report SPP099 *Predicted impingement performance of the SZC LVSE intake heads compared with the SZB intakes*. Natural England cannot provide comment on the efficacy of LVSE heads as mitigation measures.
470.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22i Impingement Predictions	5.7	FRR system mortality Natural England cannot comment on the efficacy of FRR as mitigation. We note that the FRR will only benefit robust species and does not mitigate entrapment effects of pelagic/clupeids. This group has the highest entrapment rates, both with and without the full impingement mitigation. We suggest (under EIA, possibly HRA if losses to these groups are considered) that the applicant should consider further mitigation measures targeting these groups.
471.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22i Impingement Predictions	5.7.1.2	Approach appears to have been revised since Natural England last provided comment – Group 3 is now based upon real data from 75mm trash racks at HPB. No citation for shad length/width calculations for groups 2&4 – How was this done? No mention of anguilliform bias. Eels & lampreys all Group 2 ‘calculated width’.
472.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22i Impingement Predictions	5.8.1	We favour spawning production foregone method over the current methodology, and align with the Environment Agency, to better account for repeat spawning capability in a species. This is contrasted to the applicant’s method, which simply finds number of first-time spawners that would have come from impinged fish. While we recognise that neither method account for year on year losses, we believe that the spawning production foregone method is a more useful indicator.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
473.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22i Impingement Predictions	5.10.1	Disagree – the question is whether the ICES management units are best available evidence to conduct an assessment of highly localized impacts (stationary NNB intakes). Not whether the ICES management units are doing their job in managing fisheries.
474.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22i Impingement Predictions	5.10.2	We disagree on the basis that the ICES review is irrelevant – links to core arguments against use of ICES to establish SSB. We do not dispute the expertise of ICES review for fisheries management purposes, rather we dispute the applicants use of ICES units as SSB estimate for local impact assessment despite evidence that bass sub-populations are more discrete.
475.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22i Impingement Predictions	5.10.3	The above runs contrary to principles of HRA (and EIA but expressed using different terminology) to make use of best available evidence to asses impacts on a site-specific scale. In NE's view the use of ICES stock units must be made on a species-by-species basis in conjunction with existing evidence on sub-populations to make the best use of available evidence and in conducting an assessment of site-specific impacts. Using ICES stock units as a proxy for population does not constitute a site specific assessment. Relating the impact of this NNB to wider fishing activity does provide context, but does not discount the need for assessment and neither should it inform the conclusions of the 'alone' assessment.
476.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22i Impingement Predictions	7.6.5	North Sea Herring and Blackwater Herring Recognised and incorporated our previous comment – Dropped genetics and provided evidence based on this specific stock. We continue to disagree with the scale of assessment for this species. The evidence presented is insufficient to justify the use of North Sea SSB while recognising the existence of more localised populations.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
477.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22k Disposal of Material Associated with Drilling and Dredging	General	We note that the proposed drilling and dredging disposal site lies within the SNS SAC and Outer Thames Estuary SPA. Moreover that there appears to be no reference to or consideration of potential impacts of this within the HRA other than Table 11.1 in relation to sediment quality monitoring during construction in accordance with DML. Natural England would expect to see further detail included in the HRA and commitments to any monitoring and mitigation included in the DCO/DML. We welcome that dredged sediment is to be kept within the GSB sediment cell. Due to the rectilinear tidal currents in the area (i.e. north to south), as demonstrated from modelling and the presented WCS of offshore CWS intakes and outfalls dredged sequentially with a potential 1m deep sediment deposition, Natural England would advise that disposal of material is not located immediately north of Sabellaria spinulosa reef NERC Habitat, and that a suitable buffer around this habitat should be established (at least 50m), based on increased SSC plume modelling, so that deposition on Sabellaria reef features does not smother this habitat within the disposal site. Natural England also question whether a commitment to only dispose of dredged material when the plume will be travelling in a northerly direction so as to avoid impacts to Sabellaria Reef could be included. The Advice on Operations for the Wash and North Norfolk Coast SAC, the closest SAC with subtidal Sabellaria present, under Coastal infrastructure outfalls/intake pipelines, highlights that Sabellaria sp. has a medium sensitivity to heavy deposition of up to 30cm of fine material added to the habitat in a single discreet event (Advice on operations link). Therefore, Natural England would welcome clarification on whether the disposal of dredged sediments, within the proposed disposal area is likely to lead under the WCS to deposition of sediments of over 30cm on the Sabellaria NERC habitat. Natural England would welcome further mapping of areas of drill arisings and suspected areas of sediment deposition within the disposal site in relation to Sabellaria Reef. Has there been any current assessment of the quality of sediments from the recent geotechnical investigations (2019) which could provide a contemporary view of sediment quality against EQS. The data from the 2015 survey was assessed by a non-accredited laboratory and some contaminates were above

Natural England comment reference	Document Title	Paragraph number	Natural England comment
			CEFAS Action Level 1 we would expect more detailed current, information, to be collected and presented to determine whether the dredged material is indeed acceptable for disposal at sea (p18). Natural England would welcome further assessment of increased SSC associated with dredging and disposal on food webs and foraging of SPA and Ramsar bird species (common and little tern in particular) and the temporal overlap with breeding and foraging areas. It is currently not clear from the HRA how Increased SSC from dredging events is assessed spatially against foraging areas or temporally for species (Section 8.10.13 of the HRA) It is not currently clear if any monitoring of SSC plumes is proposed. Natural England would request specifically that monitoring of deposition within the vicinity of Sabellaria NERC habitat be included in the DCO/DML certified documents. Moreover we would welcome carination of monitoring proposed specifically for Sabellaria Reef.
478.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22L Underwater Noise Assessment	8.2.2	Cumulative Effects This considers project cumulative effects but does not consider possible in combination effects with other projects, which may be working within the SNS SAC over the same period.
479.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22N Draft Marine Mammal Mitigation Protocol	General	We note it is proposed to have visual monitoring but no PAMS. Given this is in an SAC for Harbour porpoise we suggest PAMS is utilised from an offshore vessel. Noted that only one Marine Mammal Observer is planned.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
480.	6.3 Volume 2 Main Development Site Chapter 22 Marine Ecology and Fisheries Appendix 22N Draft Marine Mammal Mitigation Protocol	1.3.2	The designated site for harbour seal is the Wash and North Norfolk Coast SAC, not the Wash and Blakeney Point as stated here.
481.	6.11 Volume 10 Project-wide, Cumulative and Transboundary Effects Chapter 4 Cumulative Effects	4.15 Table 4.12	Impingement and Entrainment have been summed as a single entrapment mortality, and shown as a %SSB in Ch22 Marine Ecology overview – Only impingement is considered in this chapter.
482.	8.12 Code of Construction Practice	Part B, 2.2	Environmental Incident Response Plan Natural England would expect to see more detail included in the CoCP for particular aspects of the construction phase. For example the controls and measures that will be put in place to reduce the chance of a frack out, such as watching head pressure, shut down procedures should pressure fall, clear up procedures should drilling muds be released. Given that any potential frack outs are located within or in close proximity to SPA, SAC and Ramsar sites, we would request that the relevant SNCB be contacted within 24 hours of any incident.
483.	8.12 Code of Construction Practice	Part B 2.2.6	Environmental Incident Reporting and Investigation Where are the SZC Co procedures for managing non-conformance defined?

Natural England comment reference	Document Title	Paragraph number	Natural England comment
484.	8.12 Code of Construction Practice	Part B 2.2.8	Natural England welcome that they are referenced but advise text is amended to include reference to pollution incidents in designated sites We would advise that the relevant SNCB is consulted within 24 hours of any incident.
485.	8.12 Code of Construction Practice	Part B Table 3.1	Control measures to mitigate noise and vibration impacts This table currently only refers to human receptors and does to refer to sensitive environmental receptors. As the MDS is in close proximity to a number of designated sites (SAC, SPA, RAMSAR, SSSI, CWS) we would expect some clarification of measures put in place to reduce disturbance to designated species.
486.	8.12 Code of Construction Practice	Part B,	Noise Monitoring and Mitigation Plan 3.3.7 Monitoring specifications seem to be focused on human receptors with no provisions for environmental receptors.
487.	8.12 Code of Construction Practice	Part B Table 6.1	Control Measures to mitigate potential impacts This does not specify any mitigation included specifically for marine bird species. Where is this discussed included, secured? We would expect this to include shipping channels, characterisation of number of vessels etc.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
488.	8.12 Code of Construction Practice	Part B, 10.2.1	UXO Natural England would strongly advise that an actual UXO survey is completed prior to construction. Natural England cannot comment on the appropriateness of any mitigation until an actual UXO survey has been completed and site specific mitigation has been presented.
489.	8.12 Code of Construction Practice	Part B, 12 Marine Environments. Table 12.1	Table 12.1 Would expect to see more detail in this table in relation to activities, timings area, links to certified documents etc. Pollution prevention We would expect more detail to be included in relation to pollution prevention measures. In particular we would welcome more specifics in relation to the CDO. Natural England cannot comment on the potential water quality issues and mitigation until the discharge permitting process has been completed and the impacts to WFD waterbodies assessed, and considered within the HRA. We would expect all mitigation within the permit to be secured in the DCO.
490.	8.12 Code of Construction Practice	Part B, 12 Marine Environment. Table 12.1	We would expect greater detail to be provided in relation to the chemical use of the TBM and the methodologies which will be in place to reduce the chance of 'frack out' from tunnelling. Recent experience of HDD works in offshore industries shows that this is a common enough occurrence to be considered a likely impact to the marine environment. Given that all tunnelling will occur within designated sites (SAC and SPA) a control document outlining procedures, methodologies and clean-up operations should be included and referenced within the CoCP.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
491.	8.12 Code of Construction Practice	Table 12.1	Beach Access It is not stated where the methodology for beach access is laid out or through which certified document this will be managed. There is also no consideration provided here of potential impacts to the Coastal Path and Rights of Way and how this will be managed. Natural England would request further information on area, timings, alternative public rights of way routes etc. or for the Applicant to provide clarification of where these are provided.
492.	8.12 Code of Construction Practice	Table 12.1	Construction of the SCDF Is the beach monitoring and mitigation report referred to in this document the same as Coastal processes monitoring and mitigation plan within the DML (Part 3, 17 (2)). If so we request uniformity of nomenclature throughout the documents. We would expect further detail to be provided in relation to the construction of the SCDF, for example where material will be won from, how much is predicted to be placed as a WCS, how often, through which methods i.e. recharge or beach recycling, timings and construction methodology.
493.	8.12 Code of Construction Practice	Jack up barges	The use of jack up barges is not currently linked to the Sabellaria Monitoring and Mitigation Plan. There is currently no commitment to avoid the use of Jack up barges within areas of Sabellaria reef including a 50m buffer area. We advise that this needs to be addressed.
494.	8.12 Code of Construction Practice	Dredging	Mitigation and control measures should be clearly linked to the named document in the DML.

Natural England comment reference	Document Title	Paragraph number	Natural England comment
495.	8.12 Code of Construction Practice	Vessel Movements	Natural England advises that more information is laid out in relation to vessel movements during the construction and operation phase. We would expect to see more detailed mitigation and control measures in the CoCP, in particular in relation to disturbance of SPA bird species. We advise this to be clearly linked to the Vessel Management Plan and a condition included in the DML. We advise vessel movements to be linked with a monitoring and mitigation for marine birds.
496.	8.12 Code of Construction Practice	Piling and UXO detonation	We advise the Applicant to develop a Southern North Sea Special Area of Conservation Site Integrity Plan. This should be cross referenced in the CoCP and included in the DML conditions. Please see our detailed comments in relation to the MMMP.
497.	8.12 Code of Construction Practice	Intake Outfall Fisheries Monitoring	There is currently no link in the CoCP to fisheries monitoring or the Water Abstraction Monitoring Plan as included a condition in the DML.
498.	8.14 Water Framework Directive Compliance Assessment Report Part 2 of 4	Table 2.13 List of Protected Area within each WFD waterbody	Suffolk Waterbody Should also include the Southern North Sea SAC.
499.	8.14 Water Framework Directive Compliance Assessment Report Part 2 of 4	Table 2.71 Summary of stage 3 assessment for the construction phase	The stage 3 assessment of the construction phase identifies that the discharge of waste water and the discharge of cold test commissioning water, may impact upon water quality localised to the CDO. Though the Applicant states that this would not cause a deterioration of the water body as a whole, it is not clear from the table the duration and area of the deterioration in relation to designated sites and features. Natural England question whether this localised impact has been considered in the HRA?

Natural England comment reference	Document Title	Paragraph number	Natural England comment
500.	8.14 Water Framework Directive Compliance Assessment Report Part 2 of 4	Table 2.72	The stage 3 assessment for the operational phase 'Surface and foul water discharge via cooling water system' indicated that mixing zones were outside the WFD water body (but still within SAC and SPA). The assessment of intake of cooling water and discharge of polluting matter via the FRR identified some localised water quality impacts but that deterioration in WFD water body is not predicted. It is not clear from the information provided in this document exactly what the impacts to the Annex II species of the SAC and SPA may be. Natural England will be consulted on the WDA permit process in due course. We would expect the HRA to include maps of the areas of localised WFD status exceedance in relation to Annex II species breeding and foraging areas within the HRA for the permit.