



Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects

The Applicant's Response to Natural England's Deadline 3 Submission

Revision A

Deadline 4

May 2023

Document Reference: 18.4

Title:	
Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects Examination submission	
The Applicant's Response to Natural England's Deadline 3 Submission	
PINS document no.: 18.4	
Document no.: C282-RH-Z-GA-00281	
Date:	Classification
May 2023	Final
Prepared by:	
Royal HaskoningDHV	
Approved by:	Date:
Sheery Atkins / Felix Cryer, Equinor	May 2023

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1 The Applicant's Response to Natural England's Deadline 3 Submission

1. This document presents the Applicant's response to Appendix I3 and Appendix I4 of Natural England's Deadline 3 submissions [REP3-144, REP3-145]. The Applicant's comments on Natural England's responses to second written questions are provided in **The Applicant's Comments on Responses to the Examining Authority's Second Written Questions** [document reference 18.2].

Table 1 Applicant's responses to Natural England's Natural England's comments on the Bats Technical Note and related advice to the Outline Code of Construction Practice and Outline Ecological Management Plan [REP1-063, REP1-024 and REP1-028]

ID	Natural England Comment	Applicant Response
0	<p>In providing this advice, Natural England has reviewed the following documents received at</p> <p>Deadline 1 in relation to Bats:</p> <ul style="list-style-type: none"> • [REP1-024] 9.17 Outline Code of Construction Practice (Revision B) (Tracked) • [REP1-028] 9.19.3 Outline Ecological Management Plan (Revision B) (Tracked) • [REP1-063] 13.10 Bats - Alderford Common SSSI and Swannington Ugate Common SSSI Technical Note 	Noted. No further comment required.
Summary		
1	<p>Natural England welcomes the Applicant's updates within the 13.10. Bats - Alderford Common SSSI and Swannington Ugate Common SSSI Technical Note [REP1-063] at Deadline 1. As outlined in our response at Deadline 2 [REP2-063], comments relating to Bats within the Outline Code of Construction Practice (OCoCP) [REP1-024] and Outline Ecological Management Plan (EMP [REP1-028] were deferred until review of the technical note could be undertaken. Therefore we advise further updates to the OCoCP and EMP in relation to bats should take into consideration our comments on the Bats technical note, in addition to the OCoCP and EMP as set out below.</p>	Noted. No further comment required.
2	<p>Natural England notes that the technical note focuses on the existing Alderford Common and Swannington Ugate Common SSSIs, which form part of the wider area and Core Sustenance Zones (CSZ) for foraging and commuting barbastelle maternity roosts. However, we advise that trenchless crossing methods (Horizontal Directional Drilling (HDD) should also be considered where there is the potential for significant effects on supporting hedgerows/treelines/ditches/linear features for the foraging and/or commuting bats within the Weston, Morton on the Hill and Scotchwood Hills areas. In particular, an open cut section is proposed through the east of</p>	<p>The Applicant reaffirms that Natural England's concerns regarding bats Alderford Common/Swannington Ugate Common SSSIs would be addressed by pre-construction surveys of that area, as confirmed in the earlier technical note [REP1-064].</p> <p>The barbastelle maternity roost CSZ is thought to relate to 'Wensum Woods' which may be designated as a SSSI in the future but currently CSZs or other aspects of this potential SSSI (such as which woodlands might be included within it) are not defined. Therefore, these two issues are separate as one relates to two existing SSSIs and the other relates to a potential,</p>

ID	Natural England Comment	Applicant Response
	<p>Scotchwood Hills which has been identified as a key barbastelle area (Figure 5 of .3.20.3 Environmental Statement Appendix 20.3 - Bat Activity Survey Report [APP-216]). We advise that if this section can't be avoided then HDD methods should be considered by the Applicant.</p>	<p>undefined SSSI. There may be ecological overlaps between the existing and potential SSSIs, but this is not known at this stage because the barbastelle study has not been published and Wensum Woods has not been designated as a SSSI.</p> <p>The Applicant has committed to completing pre-construction bat surveys of all habitats and features which are considered to be potentially important to bats (in terms of foraging, commuting and roosting) and which are at realistic risk of being impacted by SEP and DEP, such as hedgerows or treelines which would be breached by sections of the cable corridor to be installed using open-cut methods. Consideration of which habitats and features may be important will be scoped into the pre-construction bat surveys and will take account of surrounding habitat contexts, such as nearby woodlands. Areas of woodland and connected habitats within the Wensum corridor will be given particular consideration in this process, given their potential to be included in the future Wensum Woods SSSI.</p> <p>Where pre-construction surveys confirm that features such as hedgerows, treelines or watercourses are important for bats, mitigation will then be designed and provided. This process of using pre-construction surveys to inform mitigation is considered more appropriate than detailing mitigation before pre-construction surveys have taken place, particularly so for mitigation relating to the potential Wensum Woods SSSI on which no bat survey data has yet been made publicly available.</p>
3	<p>As outlined at Deadline 1 [REP1-063], Natural England advises that as a protected species, bats, along with their breeding roosts and resting places, are afforded protection whether notified features of a designated site or not. It is acknowledged that a draft licensing decision has been issued for the projects in the form of a Letter of No Impediment. However, due to the 3 - 7 year gap between consent and construction of the DEP and SEP projects; we also suggest that the Applicant considers adopting appropriate mitigation measures at the consenting phase in recognition that the area to the west of Norwich known as Wensum Woodlands is being considered for SSSI notification for bats, including barbastelles. Whilst it is recognised under Natural England's designations programme that inclusion is not a commitment to designate, and therefore areas on this list are not afforded</p>	<p>The Applicant acknowledges that bats and their breeding/resting places are afforded legal protection in their own right regardless of any site designations (such as SSSIs). However, the cable corridor would not involve any open-cut installation and associated habitat loss of any woodland habitat in the Wensum valley, so impacts to bats roosting in woodland which may become designated as a SSSI would not be relevant.</p> <p>The Applicant has committed to completing pre-construction bat roost surveys of any features (i.e. trees) which have credible roost potential, and which are at risk of being impacted (i.e. felled). As no woodland habitat which is expected to be designated as the potential Wensum Woods SSSI would be removed, there should be no concerns that draft licences and the</p>

ID	Natural England Comment	Applicant Response
	<p>the same legal protection as those notified as a SSSI under the Wildlife and Countryside Act 1981 (as amended); we would encourage the adoption of further best practice due to the potential that this area could be a notified SSSI in the future. This is likely to future proof the project by avoiding any unnecessary disruption/delay to the projects in the event that the Wensum Woods area becomes notified.</p>	<p>LoNI regarding mitigation requirements for roosting bats would leave bats roosting in the potential Wensum Woods SSSI under protected.</p> <p>If/when Wensum Woods SSSI is formally designated, mitigation can be designed and implemented at that stage, and be further informed by pre-construction surveys. Mitigation cannot be designed and committed to at this stage, in the absence of a confirmed site boundary of the potential SSSI, any information about its ecology (e.g. CSZs) and before any pre-construction surveys have taken place.</p> <p>There is some uncertainty on the part of the Applicant regarding mitigation at the consenting phase, in terms of what this would comprise, how it would be implemented and what it would be seeking to mitigate. The concerns of consenting-phase mitigation would be that it could elevate the baseline value/importance of habitats in and around the Order Limits before construction impacts occur. Consenting-phase mitigation could lead to increased impact risks during construction because the baseline value of the areas to be impacted would have been increased.</p> <p>The Applicant would also question whether such measures would constitute mitigation rather than pre-impact enhancement; mitigation implies an impact will occur or has occurred which requires amelioration, yet this would not be the case if implemented at consenting phase before pre-construction surveys. The Applicant will seek to use pre-emptive avoidance measures as part of the mitigation package, to be informed by pre-construction surveys, such as routing the construction footprint through existing hedgerow breaks wherever possible. This process (avoidance as the first stage of the Mitigation Hierarchy) could be compromised by/come into conflict with any mitigation implemented at consenting phase. For example, if hedgerow gaps are infilled at the point of consent, and bats begin to use the hedgerow for commuting, it would lead to a greater impact when the hedgerow comes to be removed than if the hedge gap had been left in-situ, construction works could be route through it, and then the gap is infilled post-construction.</p> <p>Following on from the above point, the Applicant would have no legal powers to implement mitigation until after granting of the DCO, so such measures could only ever be feasibly implemented post-consent.</p>

ID	Natural England Comment	Applicant Response
Detailed Advice		
13.10 Bats - Alderford Common SSSI and Swannington Upgate Common SSSI Technical Note [REP1-063]		
4	<p>Para 7: It is stated that 'arable habitat was not surveyed as it was considered relatively unlikely to be a key habitat for bat species'. We advise that arable areas form potential suitable foraging habitat and should not be automatically ruled out. We advise that the requirement for surveys should be based on several factors including: the presence of other habitats/features, potential impacts and a combined wider scale impact, and not just based on land usage.</p>	<p>Arable habitat is heavily and regularly disturbed such as by ploughing, spraying, harvesting etc., it supports a monoculture vegetation and structure, provides limited shelter from wind and predators, and it will support far lower levels of invertebrate life than semi-natural habitats such as hedgerows, watercourses, non-improved grasslands and woodlands. Furthermore, the proposed construction works would create a temporary corridor of bare ground stripped of vegetation through arable fields, but this would be essentially indistinguishable from bare ploughed field habitat which is one of the baseline conditions of arable fields.</p> <p>The change from ploughed arable field to construction site would be particularly indistinguishable for nocturnal animals such as bats which would only be present around the construction footprint at night when disturbance from construction works will be minimal. These factors explain why bat surveys should focus principally on habitats which provide bats with a diversity of relatively undisturbed, sheltered, invertebrate-rich foraging and commuting habitats such as woodlands, scrub, certain grasslands, hedgerows and watercourses; these are the more valued areas for bats and the nature of these habitat is such that construction impacts pose a greater risk of affecting bat populations than do works to arable habitat.</p> <p>The scope of pre-application bat surveys was discussed and agreed in various ETG meetings [refer to APP-030, Annex 5.2.1.1 for ETG meeting minutes and Annex 5.2.1.2 for ETG Agreement Logs], during which the consensus was that arable field habitat did not, in its own right, warrant bat surveys. The only exception was at the Onshore Substation Site, where the impact risk of this particular element of the scheme (a permanent, large, above ground structure) justified bat surveys of what is predominantly an arable site.</p> <p>Where an arable field forms a component of an area of potentially important bat habitat, it would be scoped into pre-construction surveys if it is considered relevant and appropriate; there is not an automatic exclusion of arable field habitat in all circumstances. It is anticipated that pre-construction</p>

ID	Natural England Comment	Applicant Response
		<p>surveys, especially transect surveys, will encompass extensive areas of arable habitat where this occurs in proximity/connection to other features which are considered potentially important for bats. As outlined above, the context of the habitats around the Order Limits will be a key consideration in the design of pre-construction bat surveys. For example, the Applicant has committed to completing pre-construction bat surveys of the area of the Order Limits which runs in-between Alderford Common SSSI and Swannington Uppgate Common SSSI, an area which is almost entirely arable fields.</p>
5	<p>Para 10: Natural England welcomes that ‘the majority of what are considered to be the key habitat connection in the area between Swannington and Attlebridge would be retained through the use of trenchless techniques’. However, there are several sections of hedgerow presented in Figure 1 that are proposed for partial removal or breach with which Natural England has concerns. These are:</p> <ul style="list-style-type: none"> • Two sections of hedgerow opposite Alderford Common SSSI are to be partially removed or breached. These are located approximately 250m and 180m east of the common. It is not clear from the information provided if these areas have been surveyed. There appears to be no maps or data to suggest survey and no monitoring at this location. Wild Wings Ecology survey data (Figure 5, 2020/2021 Static Bat Detector and Bat Transect Survey Report in [APP-216]) shows barbastelle key areas south of this, and therefore it is presumed these key areas would extend further north. • A section of hedgerow near to Swannington, approximately 1km east of the church. Aerial mapping indicates that this may not be a hedgerow. Natural England requests clarification on the actual status of this feature to determine if we have concerns with the works proposed in this area. <p><u>We advise that unless further evidence can be provided by the Applicant and/or preconstruction surveys that these areas are of sufficiently low importance to bat species, the default should be to undertake trenchless crossings at these locations.</u></p>	<p>Mitigation measures to address the impacts of hedgerow breaches and other habitat losses would be informed by pre-construction surveys. The decision as to the scope and type of mitigation required would depend on the nature of use of a given feature as established through the surveys. Therefore, the Applicant would prefer to not commit to detailed mitigation measures before pre-construction surveys have been completed.</p> <p>Regarding the highlighted hedgerows:</p> <p>The two hedgerows east of Alderford Common SSSI are scoped in for pre-construction bat surveys. They have not been surveyed as part of the pre-application surveys (confirmation of which areas were included in these surveys is provided in the Static Bat Detector and Bat Transect Survey Report [APP-216]) because at that stage individual hedgerow crossing points and techniques (e.g. HDD or open-cut) were not defined</p> <p>The hedgerow crossing schedule was informed by various pre-application surveys underway at the same time as the ecology surveys. The hedgerow crossing schedule indicates that these hedgerows may need to be breached, and assuming this is the case, they would be subject to pre-construction surveys to ascertain their importance for bats. Any subsequent mitigation measures for these hedgerow crossings would be informed by the findings of the pre-construction surveys.</p> <p>The Wild Wings Ecology map (not survey data, as none has been provided or published to date) does not confirm the presumption that key barbastelle areas to the south of these hedges also extend to the north where they may overlap with these hedgerows; this statement has no supporting evidence</p>

ID	Natural England Comment	Applicant Response
		<p>and is a speculation on the basis of a map of a different area that has been provided without any supporting data.</p> <p>The hedgerow 1km east of Swannington Church is thought to relate to the hedgerow bordering a public footpath to the south-east of Moegoe's Plantation. This was an established, species-rich intact hedgerow with trees at the time of the Phase 1 Habitat Survey (2020-21) [APP-214].</p>
6	<p>Para 10: As per the Outline EMP, we welcome that pre-construction bat activity surveys would include surveys at 'potentially sensitive positions throughout the Order Limits where there is considered to be a risk of impacts to foraging or commuting bats' and will include hedgerows, ditches and other boundary features that may be impacted/ severed by construction works, which have potential connectivity importance. However, we advise that the pre-construction bat surveys should also aim to:</p> <ul style="list-style-type: none"> • assess and understand the use of foraging and commuting bats within this area. • inform the decision on whether to open cut or Horizontally Directionally Drill (HDD) at crossing points <p>This is in line with the requirements for the draft licence decision, but also in recognition that the area to the west of Norwich known as Wensum Woodlands is being considered for SSSI notification for bats, including barbastelles.</p>	<p>Pre-construction surveys would have the primary aim of informing the assessment and understanding of the use of foraging and commuting bats within the surveyed areas. This information would subsequently inform the mitigation measures to be adopted.</p> <p>The draft licence decision (LoNI) relates to roosting bats, which would have a separate survey approach to the bat activity surveys that investigate foraging and commuting bats along habitats such as hedgerows. Bat roost mitigation would follow Natural England's established European Protection species (EPS) Mitigation Licensing approach, which is currently covered by the LoNI, and will be updated by pre-construction bat roost surveys. Bat activity mitigation (relating to features such as hedge breaches) does not involve or require EPS Mitigation Licensing unless it directly affects roosting bats as well.</p> <p>As outlined above, the design of pre-construction surveys will take account of the habitats and issues within and around the proposed construction footprint. This will include the potential Wensum Woods SSSI. At present, this potential SSSI has no defined boundary or associated information, so mitigation relating to it cannot be proposed. However, at the time of pre-construction surveys and when construction commences, more information on this potential SSSI may be available, making it possible to incorporate it more fully within the mitigation package.</p>
7	<p>Para 10: Natural England welcomes the use of HDD to avoid removal of some sections of hedgerow and along the Marriot's Way within the Swannington/Alderford Common Area.</p>	<p>Noted. No further comment required.</p>
8	<p>Para 11: Natural England notes that a section of hedgerow north and diagonal to Marriott's Way is to be partially removed or breached. But this is</p>	<p>As outlined above, the Wild Wings Ecology figure referenced from the bat report [APP-216] is not supported by any published data so it is not</p>

ID	Natural England Comment	Applicant Response
	<p>observed to be a key area for barbastelles (Figure 5, 2020/2021 Static Bat Detector and Bat Transect Survey Report [APP216]). We advise that if this section can't be avoided then HDD methods should be considered by the Applicant.</p>	<p>considered to be an appropriate source on which to solely base the scope of mitigation. It is not known (because Wild Wings Ecology has not yet published) what level of survey, if any, was completed at this hedgerow, when any surveys were completed, and by what methodology this hedgerow was classified as a key barbastelle area. Pre-construction surveys will cover possible hedgerow breaches in the area of Alderford Common SSSI, Swannington Upgate Common SSSI and the potential Wensum Woods SSSI, which will include this hedgerow north and diagonal to Marriott's Way. Mitigation would be designed and proposed on the basis of these targeted surveys, supported by data which will be available for scrutiny by stakeholders.</p>
9	<p>Para 11: Natural England notes that there is a section of potentially remnant hedgerow on Felthorpe Road which is proposed to be breached. Please could the Applicant clarify if in fact this is remnant hedgerow. We advise that if this is found not to be remnant hedgerow, further mitigation measures are likely to be required.</p>	<p>The hedgerows on both north and south sides of Felthorpe Road, east of Attlebridge were found to comprise recently planted hedgerow whips (estimated at 2-5 years old) with infrequent larger shrubs occupying a small proportion of the hedge line. These larger shrubs may have represented a former hedgerow or a former defunct hedgerow. The Phase 1 Habitat classification system does not allow distinction between recently planted hedgerows and older hedgerows, but nevertheless, these boundary features qualify as species-rich, intact hedgerows as shown on the Phase 1 Habitat Survey maps.</p> <p>Where possible, impacts to hedgerows would be reduced by micrositing and reducing the crossing width to 20m. Micrositing would utilise existing gaps in hedgerow vegetation. The precise location of the crossing, and any mitigation required, would be informed by pre-construction surveys.</p> <p>Preconstruction tree and hedgerow surveys are secured by Requirement 11 (Provision of landscaping) of the draft DCO (Revision G) [document reference 3.1] which state that:</p> <p>(e) details of existing trees and hedges to be removed and details of existing trees and hedges to be retained, with measures for their protection during the construction period where applicable and the details provided should be in accordance with British Standard 5837:2012 Trees in relation to design, demolition and construction and the Hedgerow Regulations 1997.</p>

ID	Natural England Comment	Applicant Response
10	<p>Para 11: Natural England notes that approximately 350m of hedgerow is proposed to be breached/partially removed along Fakenham Road at Attlebridge, a long section of which connects with a parcel of woodland southeast, the church, River Wensum and other suitable commuting hedgerows within approximately 250m. As the wider area forms part of the Core Sustainance Zones (CSZ) for barbastelle maternity colonies (including the area known as Wensum Woodlands currently being considered for SSSI notification under Natural England's designations programme, we advise that sufficient survey data is collected as part of the pre-construction surveys to assess potential impacts on the foraging and commuting bats, and HDD methods considered if necessary.</p>	<p>The Applicant refers Natural England to the Tree Preservation Order and Hedgerow Plan (Revision B) [REP2-007, Sheet 23], which shows the locations and extent of hedgerow removal. Two hedgerows run parallel along Fakenham Road. H0104 runs adjacent to the main compound, approximately 150m of this hedgerow has been identified for removal, as a worst-case. On the far side of the road, the length of hedgerow H0103 which will be crossed using HDD has been reduced to allow for the removal of 73m of hedgerow to facilitate the improved visibility splay and road safety, a requirement stipulated by the Highways Authority. There is potential for this hedgerow to be cut back/coppiced; however, as a worst-case, removal of 73m is assumed.</p> <p>Impacts to hedgerows would be reduced, where possible and the precise location of the crossing, and any mitigation required, would be informed by pre-construction surveys.</p>
11	<p>Para 12: We welcome that further pre-construction surveys will be carried out for the two hedgerows north of Reephram Road, which may support community and foraging bats between the SSSIs, to ensure that the risks of habitat severance are appropriately considered.</p>	<p>Noted. No further comment required.</p>
12	<p>Para 13: Natural England welcomes the commitment the Applicant has made 'where hedgerows are found to be important for bats, the Applicant would seek to implement mitigation to ameliorate the effects of habitat severance. This may include timing works so that the hedgerow breach is in effect during bat dormancy periods (broadly from late October to late March)'. We advise this commitment is included as appropriate by the Applicant in the OCoCP and EMP and secured in the DCO. In addition, Natural England advises the Applicant provides details of further mitigation measures to manage the gap outside of the dormancy period in the event hedgerow is not re-instated immediately.</p>	<p>This approach is secured in wording within the Outline Ecological Management Plan (Revision C) [REP3-068] and Requirement 13 (Ecological management plan) of the draft DCO (Revision G) [document reference 3.1].</p> <p>There is an inherent time lag between hedgerow replanting (or entirely new hedgerow planting) and the functioning of the hedgerow as an established linear habitat. It should be noted, however, that the Applicant is committed to planting at the optimum time of year, which is broadly from October to April (other than when the ground is frozen). Therefore, in applicable instances whereby hedgerows are removed, and construction works completed all inside the bat dormancy period, hedgerows would generally be replanted before the end of the dormancy period (i.e. before March/April), thereby reducing the time lag between planting and the functioning of fully effective mitigation.</p>

ID	Natural England Comment	Applicant Response
13	<p>Para 13: We welcome the commitment the Applicant has made to restrict night working in open cut sections of the route. However, if night working is required to carry out HDD, we advise lighting is cowled and must be directed downwards away from boundary habitats such as hedgerows and watercourses and kept to a minimum.</p>	<p>The Applicant refers Natural England to the Outline Code of Construction Practice (Revision D) [document reference 9.17, Section 3.7] which contains mitigation measures to manage emissions from artificial light during construction will be in accordance with Bats and Lighting in the UK guidance (Bat Conservation Trust and Institute of Lighting Engineers, 2018).</p>
14	<p>Para 14: Natural England welcomes 'the Applicant will micro-site the precise construction footprint to avoid features of high ecological value', which in the context of hedgerows means the crossing will be through any gaps or the poorest sections. We advise this commitment is secured within the Outline CoCP and EMP.</p>	<p>Where possible, impacts to hedgerows would be reduced by micrositing and reducing the crossing width to 20m. Micrositing would utilise existing gaps in hedgerow vegetation. This is detailed in the Outline Code of Construction Practice (Revision D) [document reference 9.17], which states:</p> <ul style="list-style-type: none"> • Where individual/groups of trees and hedgerows occur within the construction area, the working corridor width would be reduced to a typical working width of 20m. This is on the basis that a large part of the 45m (for a single project) or 60m (for both SEP and DEP) corridor is for soil storage/management, and trees and hedgerows would not be removed for this purpose and would be retained outside the 20m working corridor. The reduced 20m working width at trees/groups of trees and hedgerow crossings applies to all scenarios (Section 2.5.11). • the project will seek to avoid mature trees within hedgerows through the micro-siting of individual cables (Section 6.2). <p>The Outline Code of Construction Practice (Revision D) [document reference 9.17] is secured by Requirement 19 of the draft DCO (Revision G) [document reference 3.1].</p> <p>In addition, the Outline Ecological Management Plan (Revision C) [REP3-068], states:</p> <ul style="list-style-type: none"> • The working width for each hedgerow crossed by open-cut trenching will be limited to 20m (Section 3.2). <p>The Outline Ecological Management Plan (Revision C) [REP3-068] is secured via Requirement 13 (Ecological management plan) of the draft DCO (Revision G) [document reference 3.1].</p> <p>The precise location of the crossing, and any mitigation required, would be informed by pre-construction surveys. Preconstruction tree and hedgerow</p>

ID	Natural England Comment	Applicant Response
		surveys are secured by Requirement 11 (Provision of landscaping) of the draft DCO (Revision G) (document reference 3.1).
15	Para 15: Natural England welcomes that 'SEP and DEP have been able to ensure that woodland habitat in the vicinity of the River Wensum (key barbastelle maternity roost colony) will be avoided by committing to HDD sections that intersect woodland habitat'. As per our advice in relation to the Wensum Woodlands area being considered for SSSI notification and the benefits of considering further mitigation measures; we advise this should also include linear features such as hedgerows that may form part of the foraging and/or commuting habitat for these roosts, and for other bat species using the area. These commitments should be incorporated within the Outline CoCP, EMP and secured within the DCO.	As outlined above, pre-construction bat surveys will be informed by a comprehensive review of the projected impacts of the construction of SEP & DEP and of the habitat network it would pass through. In the case of the potential Wensum Woods SSSI, any features to be impacted (such as hedgerow breaches) that are connected to habitats thought to comprise part of the potential SSSI or discernibly related to it (such as CSZ features) would be factored into the design of the scope of bat surveys.
16	Para 16: We welcome that information from the 'the forth coming study' of the barbastelle colony will 'be factored into the design of pre-construction surveys to ensure that impacts are appropriately considered and mitigated'. Natural England seeks clarification as to when the forth coming study is planned to be undertaken and requests to be consulted to review the findings of these surveys and any mitigation proposed.	The Applicant has made multiple requests to Dr Packman for data relating to Barbestrelle bat populations in the Wensum Valley. To date, these data have not been made available by Dr Packman or Wild Wings Ecology. The Applicant confirms it will provide Natural England with the survey data as and when it is received.
9.17 Outline Code of Construction Practice (Revision B) [REP1-024] and 9.19.3 Outline Ecological Management Plan (Revision B) [REP1-028]		
17	Natural England's comments in relation to bats within the Outline Code of Construction Practice (OCoCP) [REP1-024] and Outline Ecological Management Plan (EMP) [REP1-028] are set out in Table 2 below.	Noted. See Table 2 for the Applicant's response.

Table 2 Natural England's detailed comments to Outline Code of Construction Practice (OCoCP) [REP1-024] and Outline Ecological Management Plan (EMP) [REP1-028]

NE Ref	Section	Para / Table	Natural England's Concern	Natural England's Recommendation	Risk	Applicant's Comment
Outline Code of Construction Practice (OCoCP) [REP1-024]						
1	2.5.10	55	Once survey data have been obtained for hedgerow boundaries between and around Alderford Common SSSI which are potentially sensitive, including the Onshore Substation, and for where open cut crossings are proposed through hedgerow/tree/ditch or other linear features within the Weston, Morton on the Hill, Scotchwood Hills areas, we advise trenchless (HDD) crossing methods should be considered where there is the potential for significant effects.	In addition, Natural England advises that the project should ensure sufficient mitigation measures are included such as a lighting strategy and sufficient habitat and hedgerow planting for areas where hedgerows are removed and outlined within the EMP and secured within the DCO. As tree planting is prohibited within the construction corridor, we advise efforts should be made to minimise tree and hedgerow removal in those areas sensitive for commuting/foraging and the use of HDD methods should be considered for these crossings.		<p>With regard to the Artificial Light Emissions Management and Mitigation Plan, as detailed in The Applicant's Responses to the Examining Authority's First Written Questions [REP1-037, Q1.6.6.1], the Applicant confirms that the detailed plans listed in the Outline Code of Construction Practice (Revision D) [document reference 9.17] would be prepared by the Principal Contractor and submitted and approved post consent during detailed design phase. Outline details of the management measures to be included within those plans are set out within Section 3.7 of the Outline Code of Construction Practice (Revision D) [document reference 9.17]. Of note, as set out within paragraph 61, <i>lighting would be kept to a minimum and adhere to the Bats and Lighting in the UK guidance.</i></p> <p>Full details of ecological mitigation would be informed by pre-construction bat surveys and would be relevant to the habitat feature and its use/importance for bat species and is secured within the Outline Ecological Management Plan, which is secured by Requirement 13 (Ecological mitigation</p>

NE Ref	Section	Para / Table	Natural England's Concern	Natural England's Recommendation	Risk	Applicant's Comment
						<p>plan) of the draft DCO (Revision G) [document reference 3.1]</p> <p>Where possible, impacts to hedgerows and trees would be reduced by micro-siting and reducing the crossing width to 20m. Micro-siting would utilise existing gaps in hedgerow vegetation. The precise location of the crossing, and any mitigation required, would be informed by pre-construction surveys.</p> <p>Preconstruction tree and hedgerow surveys are secured by Requirement 11 (Provision of landscaping) of the draft DCO (Revision G) [document reference 3.1] which state that:</p> <p>(e) details of existing trees and hedges to be removed and details of existing trees and hedges to be retained, with measures for their protection during the construction period where applicable and the details provided should be in accordance with British Standard 5837:2012 Trees in relation to design, demolition and construction and the Hedgerow Regulations 1997.</p>
2	3.7	72	<p>We welcome that emissions from artificial light during construction will be in accordance with Bats and Lighting in the UK guidance (Bat Conservation Trust and Institute of Lighting Engineers, 2018), and will include the use of directional beams, non-reflective</p>	<p>Please also refer to our comments for the Outline EMP (NE Point 24) [REP2-063].</p> <p>We advise that a detailed lighting plan is included in the EMP and secured within the DCO during the consenting phase to ensure impacts upon</p>		<p>With regard to the Artificial Light Emissions Management and Mitigation Plan, as detailed in The Applicant's Responses to the Examining Authority's First Written Questions [REP1-037, Q1.6.6.1], the Applicant confirms that the detailed plans listed in</p>

NE Ref	Section	Para / Table	Natural England's Concern	Natural England's Recommendation	Risk	Applicant's Comment
			surfaces and barriers and screens, to avoid light nuisance whilst maintaining safety and security obligations.	sensitive habitats and species, particularly in the area around Alderford Common SSSI/Swannington/Weston/ Morton on the Hill, Scotchwood Hills areas can be suitably mitigated for.		the Outline Code of Construction Practice (Revision D) [document reference 9.17] would be prepared by the Principal Contractor and submitted and approved post consent during detailed design phase. Outline details of the management measures to be included within those plans are set out within Section 3.7 of the Outline Code of Construction Practice (Revision D) [document reference 9.17]. Of note, as set out within paragraph 61, <i>lighting would be kept to a minimum and adhere to the Bats and Lighting in the UK guidance.</i>
3	9	155	Please refer to our comments provided in the OEMP with regards to further surveys and roosting bats.	We advise any noise and vibration impacts to roosting bats should be considered. We welcome the inclusion of a Construction Noise (and vibration) Management Plan (CNMP) within the CoCP.		As detailed in Section 10.1 of the Outline Code of Construction Practice (Revision D) [document reference 9.17], A Construction Noise (and vibration) Management Plan (CNMP) will be included in the CoCP. Whilst the CNMP will detail standard measures (best practicable means) and where applicable, mitigation measures, these will not be specific to bats. However, as detailed in the Outline Ecological Management Plan (Revision C) [REP3-068, Section 3.3.3], all works affecting confirmed bat roosts (to include both roosts confirmed during preconstruction surveys and those confirmed during earlier surveys) would be undertaken in accordance

NE Ref	Section	Para / Table	Natural England's Concern	Natural England's Recommendation	Risk	Applicant's Comment
						with the Natural England Bat Mitigation Licence and EMP. Full details of potential mitigation would be informed by pre-construction bat surveys and would be relevant to the habitat feature and its use/importance for bat species.
Outline Ecological Management Plan (EMP) [REP1-028]						
1	2.2	30	In the Outline EMP, the crossing techniques for the areas closest to Alderford Common have not been confirmed. This appears to be addressed in Alderford Common SSSI and Swannington Upgate Common SSSI - Technical Note [REP1-063].	<p>Please refer to our comments to the Alderford Common SSSI and Swannington Upgate Common SSSI - Technical Note [REP1-063]. above.</p> <p>We advise the crossing techniques are included within the EMP.</p> <p>In addition, we advise that if the pre-construction surveys confirm that crossings are functionally linked to Alderford Common SSSI (noted for roosting bats) and therefore provide important commuting and foraging routes for roosting bats, that the use of HDD methods should be considered for these crossings.</p>		The Applicant confirms that this information is presented in ES – Appendix 4.1 - Crossing Schedule (Revision C) [REP3-029]. Trenchless crossing areas are also shown in Environmental Statement - Figures - Chapter 4 - Project Description (Revision B) [REP3-028. Figure 4.10]. The Applicant refers to the response in ID5 of Table 1-1 above.
2	2.3.3	36	This section does not refer to the pre-construction bat activity surveys as included in Table 2.	We advise, that for consistency this section should be updated to include pre-construction bat activity surveys.		Bat activity surveys are listed in Appendix A of the Outline Ecological Management Plan (Revision C) [REP3-069].
3	2.3.3	40	Natural England welcomes that all trees with High, Moderate or Low bat roost potential will be soft-felled and that where roosting bats have been recorded within trees the EPS	N/A		Noted.

NE Ref	Section	Para / Table	Natural England's Concern	Natural England's Recommendation	Risk	Applicant's Comment
			mitigation licence will likely include the use of soft-felling.			
4	2.3.3	41	We welcome 'that hedgerow removal will be undertaken during the winter, to allow time for bat species to adjust; that the length and width of hedgerow requiring removal will be minimised wherever possible; and where existing habitats are located adjacent to construction works areas, these areas will be retained and protected from damage using fencing where possible.'	We advise that as many of these areas as possible should be protected, particularly in sensitive areas as detailed in Table 2.		Noted.
6	Appendix A - Bat Roost Appraisals	Table 2	We welcome pre- construction bat roost appraisal surveys.	However, the Applicant should note that surveys should include any potential new constraints for bats, for example strong winds over winter may create more potential roost features within trees. We advise that if additional roost features are identified further survey should be considered.		The pre-construction walkover survey of the whole route (consisting of an Extended UK Habitat classification survey) will appraise the potential for protected species including a ground-level appraisal of the Bat Roost Potential (BRP) of all trees. Any trees which are found to have Moderate or High BRP in accordance with Bat Conservation Trust criteria, will be subject to further surveys and, if necessary, mitigation under the terms of a Natural England approved EPS Mitigation Licence. There is also a commitment to brief all tree surgeons (as site personnel) working on tree removal for SEP and DEP to the requirements set out in the EMP and the site-wide ecological requirements, which would include the potential presence of bat roosts [REP3-

NE Ref	Section	Para / Table	Natural England's Concern	Natural England's Recommendation	Risk	Applicant's Comment
						<p>060, Section 1.2.4].</p> <p>Therefore, in the event that trees previously identified as having no/negligible BRP subsequently develop BRP (in the period between when surveys are completed and when trees are to be removed, which will be targeted to take place within a few months only), the tree surgeons would be able to respond accordingly (i.e. inform the ecologist who will then determine if tree felling needs to be delayed to allow for surveys and, if necessary, licensed mitigation to be completed).</p>
7	Appendix A - Bat Roost Appraisals	Table 2	<p>As outlined in our para 8 to the Bats Technical Note above, we welcome that bat activity surveys would include surveys at 'potentially sensitive positions throughout the Order Limits where there is considered to be a risk of impacts to foraging or commuting bats' and will include hedgerows, ditches and other boundary features that may be impacted/ severed by construction works, which have potential connectivity importance.</p> <p>We also welcome that hedgerow boundaries between and around Alderford Common SSSI have been</p>	<p>Please see our summary advice above in Paras 3 and 4 and comments and advice above on the Bats Technical Note [REP1-063].</p> <p>As outlined in our Relevant Representation [RR-063] and reflected in our Risks and Issues Log [REP2-064], we advise that where sites outside of the DCO boundary that provide suitable foraging and roosting habitats, functionally linked and core sustenance zones have not been considered for surveys, evidence is presented as to why surveys are not required.</p>		<p>There will be a high number of sites outside the Order Limits that provide suitable foraging and roosting habitats, functionally linked land and CSZs for bat populations. For example, there are likely thousands of trees and buildings within a few kilometres of the Order Limits which support or are suitable for roosting bats. In some instances, there may be ecological connections between offsite bat habitats and areas which would be impacted by the SEP a DEP onshore construction works, such as for a bat population which roosts outside the Order Limits and flies to a foraging site along a commuting route which would be bisected by the construction</p>

NE Ref	Section	Para / Table	Natural England's Concern	Natural England's Recommendation	Risk	Applicant's Comment
			<p>scoped in as requiring surveys on the above and that other areas which are potentially sensitive, including the Onshore Substation and Horizontal Directional Drilling compounds and areas will also be surveyed if these are to be sited in areas of potential sensitivity to bats.</p>			<p>works. However, the impact risk to these bats would be captured by bat surveys inside the Order Limits because this is the source of the impact (i.e. in the example given, the impact would be to commuting bats, not to roosting or foraging bats). The impact risk to bat activity outside the Order Limits is tenuous and extremely difficult to quantify without identifying the full extent of all populations' roosting, commuting and foraging ranges; without this information the relative value of the Order Limits and the construction works within it would not be assessable. Such an assessment is also thought to be unprecedented for impact assessments, and its scope would be extremely difficult to define.</p> <p>It should be noted that the tree bat roost survey scope (agreed to by Natural England during the ETG meetings (refer to APP-030, Annex 5.2.1.1 for ETG meeting minutes and Annex 5.2.1.2 for ETG Agreement Logs)) comprises surveys only of trees within the Order Limits which are at risk of being impacted (i.e. felled). This means there may be multiple trees with High or Moderate BRP (and indeed with roosting bats) inside the Order Limits that do not need to be surveyed because they are not being impacted. The same principle should apply to</p>

NE Ref	Section	Para / Table	Natural England's Concern	Natural England's Recommendation	Risk	Applicant's Comment
						<p>offsite habitats which would similarly not be at risk of being impacted. It would be disproportionate to be able to screen out on-site roosting features on the basis that they are not to be impacted, but screen-in off-site potential roost features due to concerns that bats using these roosts could be impacted by off-site works possibly up to a number of kilometres distant.</p> <p>The Applicant is proposing to complete bat surveys focused on the Order Limits where direct impacts would occur and can be assessed and mitigated. Surveys of potential roost sites, CSZs and functional linked land outside the route would not materially change the assessment or mitigation approach because bats would only be at risk of impact if using the Order Limits for some purpose (e.g. foraging). The same approach applies to other mobile species such as wintering birds, where surveys only cover the Order Limits rather than surrounding areas despite the fact birds (possibly including some of the same populations) will also forage there.</p>

Table 3 Applicant's responses to Natural England's Advice on the Onshore RIAA Technical Note and Addendum to Chapter 20 Onshore Ecology and Ornithology Environmental Statement [REP2-050, REP2-053]

ID	Natural England Comment	Applicant Response
0	<p>Natural England has reviewed the following documents in relation to onshore ecology submitted at Deadline 2:</p> <ul style="list-style-type: none"> • [REP2-007] 2.12 Tree Preservation Order and Hedgerow Plan (Revision B) • [REP2-023] 6.1.19.1 Environmental Statement - Chapter 19 - Land Use, Agriculture and Recreation (Revision B) (Tracked) • [REP2-025] 6.1.20.1 Environmental Statement - Chapter 20 - Onshore Ecology and Ornithology (Revision B) (Tracked) • [REP2-050] 14.29 Report to Inform the Appropriate Assessment (RIAA) (onshore) Technical Note • [REP2-053] 14.32 Addendum to Environmental Statement Chapter 20 Onshore Ecology and Ornithology <p>[AS-008] 2.11 Public Rights of Way (to be temporarily stopped up) Plan - Revision B</p>	Noted, no further comment required.
Summary		
1	<p>Natural England welcomes the submission of the above-mentioned documents by the Applicant at Deadline 2. This document sets out our comments and advice to the updated RIAA (onshore) Technical Note [REP2-050] and the Addendum to Environmental Statement Chapter 20 Onshore Ecology and Ornithology [REP2-053]. We have no further comment to the other documents at this stage.</p>	Noted, no further comment required.
2	<p>Natural England is content that, with inclusion of the mitigation measures in relation to sediment management, pollution prevention and bentonite breakout identified in the Report to Inform the Appropriate Assessment Technical Note [REP2-050], that the risk of an adverse effect on the integrity of the River Wensum SAC can be sufficiently reduced. We advise the Applicant submits these mitigation measures as outline plans into examination and appropriately secure within the Outline Code of</p>	<p>The Outline Code of Construction Practice (Revision D) [document reference 9.17], Outline Ecological Management Plan (Revision C) [REP3-068] and the Outline Landscape Management Plan (Revision C) [REP3-066] submitted are outline documents at this stage of the application and detail the broad principles which would be followed.</p> <p>The Outline Code of Construction Practice (Revision D) [document reference 9.17] contains mitigation measures for sediment management</p>

ID	Natural England Comment	Applicant Response
	<p>Construction Practice (OCoCP), the Outline Ecological Management Plan (EMP) and Development Consent Order (DCO). As advised in our Relevant Representation [RR-063] the bentonite breakout mitigation plan should include reporting of any bentonite breakout within or close to a designated site to Natural England within 24 hours and before clean-up operations begin.</p>	<p>(Section 7.1.1), pollution prevention (Section 7.1.2) and bentonite breakout (7.1.4). All of which are secured by Requirement 19 of the draft DCO (Revision G) [document reference 3.1].</p> <p>A Bentonite Breakout Plan would be developed prior to construction and would be informed by further detailed design and surveys including hydro-fraction survey at all drill sites. A site-specific risk assessment would then be undertaken as part of the post consent detailed design process (see paragraph 131 of the Outline Code of Construction Practice (Revision D) [document reference 9.17].</p> <p>The Applicant confirms the inclusion of the following requirement to the Outline Code of Construction Practice (Revision D) [document reference 9.17, para. 133]: <i>All bentonite breakouts within designated sites are to be reported to Natural England as soon as possible and within 24 hours.</i></p>
3	<p>In relation to the Air Quality update ES [REP2-053], several of the sites are identified as already in exceedance of a critical load or considered to be at a critical level. Therefore Natural England would expect the Applicant to assess impacts to designated site features and/or priority habitats present that may be affected, within 200m of the construction vehicles on the road network. This is so that suitable mitigation measures can be adopted to avoid, reduce and mitigate the impacts and facilitate recovery where the impacts are temporary. These details should be included in the Outline EMP and CoCP.</p>	<p>The Addendum to the ES Chapter 20 Onshore Ecology and Ornithology [REP2-053], that contains a detailed assessment of potential air quality effects on ecology receptors, identified 14 statutory designated nature conservation sites that had an exceedance of a Critical Load or Critical Level (Section 4.1.1.1). These sites were assessed and before mitigation a minor magnitude effect that was a temporary impact of moderate adverse significance was identified (Section 4.1.1.2). Mitigation in the form of measures to minimise air emissions are set out in Section 7 of the Outline Code of Construction Practice (Revision D) [document reference 9.17]. After inclusion and account for these mitigation measures, the assessment of potential impacts on the statutory designated nature conservation sites concluded a negligible magnitude effect that was a temporary residual impact of minor adverse significance (Section 4.1.1.4). The same approach with the same outcome has been applied to priority habitats in Sections 4.2 and 4.3 of the Addendum to the ES Chapter 20 Onshore Ecology and Ornithology [REP2-053], The Applicant considers that the concerns of Natural England have been addressed.</p>
<p>Detailed Comments 14.29 Report to Inform Appropriate Assessment (RIAA), (Onshore) Technical Note [REP-050]</p>		

ID	Natural England Comment	Applicant Response
4	Natural England welcomes the updates provided by the Applicant in their Deadline 2 submission 14.29 RIAA (onshore) Technical Note [REP2-050]. In this document the Applicant sets out the screening in of white-clawed crayfish <i>Austropotamobius pallipes</i> , brook lamprey <i>Lampetra planeri</i> and Bullhead <i>Cottus gobio</i> features of the River Wensum SAC and the updated HRA assessment for these features.	Noted, no further comment required.
5	This technical note provides further clarity to the Report to Inform the Appropriate Assessment (RIAA) [APP-059] regarding concerns raised in our Relevant Representation [RR063] about omission of the screening of these features. In particular, an impact pathway to these features should a bentonite breakout occur from horizontal directional drilling (HDD) across the River Wensum during the installation of the cable as part of the construction phase.	The Applicant can confirm that in the Report to Inform the Appropriate Assessment (RIAA) (onshore) Technical Note [REP2-050] that the following features of the River Wensum SAC have been screened in - white-clawed crayfish <i>Austropotamobius pallipes</i> , brook lamprey <i>Lampetra planeri</i> and Bullhead <i>Cottus gobio</i> – in Section 2.1. Each of these features is then the subject of an assessment of the potential impacts should a bentonite breakout occur from horizontal directional drilling (HDD) under the River Wensum during the installation of the cable as part of the construction phase. The assessment of white-clawed crayfish is in Section 2.3.2, that for brook lamprey in Section 2.3.3 and that for bullhead in Section 2.3.4.
6	Natural England is content that, with inclusion of the mitigation measures in relation to sediment management, pollution prevention and bentonite breakout, that the risk of an adverse effect on the integrity of the River Wensum SAC can be sufficiently reduced. For audit trial purposes post consent we advise these measures must be appropriately included within the Outline Code of Construction Practice (OCoCP), the Ecological Management Plan (EMP) and secured within the Development Consent Order (DCO).	See ID 2.
7	However, we advise that in addition to planned reporting to the Environment Agency, the bentonite breakout mitigation plan includes reporting of any bentonite breakout within or close to a designated site should be reported to Natural England within 24 hours and before clean-up operations begin. The Applicant intends to include this in their updated plans and we will confirm our agreement following submission into examination.	See ID 2.
8	In addition, as outlined at Deadline 2 [REP2-063], we advised Lamprey species, including Brook Lamprey (<i>Lampetra planeri</i>), have previously been recorded within Swannington Beck. Due consideration should be given to activities which may impact on this species. Of particular concern, either	The presence of lamprey species in the Swannington Beck is recognised in the ES Chapter 18 Water Resource and Flood Risk [APP-104] in Section 18.5.5, Table 18-13, under the receptor heading 'Swannington Beck'. A cross reference is made to this information from the Environment Agency

ID	Natural England Comment	Applicant Response
	<p>directly or indirectly, is the impact that suspended sediment increases and smothering as the result of a bentonite breakout may have on these species. As above, we welcome the intention to produce a bentonite breakout plan as stated in the 14.29 RIAA (Onshore) Technical Note, Revision A [REP2-050] and would request that mitigating the impacts of increased suspended sediment and smothering from bentonite breakouts for Lamprey at watercourse crossings such as Swannington Beck are included in this plan.</p>	<p>National Fish Population Database in the ES Chapter Onshore Ecology and Ornithology [APP-106] in Section 20.5.3.9.</p> <p>The assessment of the impacts of a bentonite breakout on all watercourses crossed using the HDD technique and the aquatic species that they support is included in the ES Chapter 18 Water Resource and Flood Risk [APP-104] in Section 18.6.1.3. That assessment, including the associated mitigation, captures the potential for impacts on lamprey species. That assessment concludes that the residual impact would be of negligible significance, with the Swannington Beck named as one of the watercourses that this conclusion applies to in Section 18.6.1.3.9. This assessment is in addition to the River Wensum SAC specific assessment that is in the Report to Inform the Appropriate Assessment (RIAA) (onshore) Technical Note [REP2-050] described under ID5 above.</p> <p>The Bentonite Breakout Plan that will be prepared as noted under ID2 above will apply to all watercourses that are crossed using the HDD method and as such the Applicant can confirm that the Swannington Beck will be included in this Plan.</p>
<p>Addendum to the Environmental Statement Chapter 20, Onshore Ecology and Ornithology, Revision A [REP2-053].</p>		
9	<p>Natural England welcomes the submission of the Addendum to the Environmental Statement Chapter 20, Onshore Ecology and Ornithology, Revision A [REP2-053]. Within this document the Applicant sets out more detailed presentation of the existing assessment of the potential effects of air quality on ecological receptors. Our detailed comments are set out in Table 4 below.</p>	<p>Noted. See Table 4 for the Applicant's response.</p>

Table 4 Natural England's comments to the effects of Air Quality on Ecological Receptors as presented in the Addendum to the Environmental Statement Chapter 20, Onshore Ecology and Ornithology, Revision A [REP2-053].

NE ref	Page	Section / Para	Natural England's Concern	Natural England's Recommendation	Risk	Applicant's Response
Outline Code of Construction Practice (OCoCP) [REP1-024]						
1	12, 15, 20, 23, 29	4.1.1.1 / 28 and 29, 4.2.1.1 / 49, 4.3.4.1 / 85 4.3.7.1 to 4.3.9.4 / 103 to 118 4.3.16 to 4.3.18 / 152 to 169	Within these sections, a number of the screened in statutory designated nature conservation sites are already in exceedances of a critical load or at a critical level.	<p>Natural England advises 'temporary' and 'short construction period' should be defined and/or cross referenced to the Onshore Ecology and Ornithology chapter [REP2-025].</p> <p>As the sites identified are already in exceedances of a critical load or considered to be at a critical level, Natural England would expect to see the Applicant assess impacts to designated site features and/or priority habitats present that may be affected, within 200m of the construction vehicles on the road network. This is so that suitable mitigation measures can be adopted to avoid, reduce and mitigate the impacts and facilitate recovery where the impacts are temporary. These details should be included in the Outline EMP and Outline Code of Construction Practice (CoCP).</p>		<p>ES Chapter 4 Project Description [REP3-024, Section 4.6.1.3] provides information on the expected work construction works period and states that: "The onshore cable duct will be installed in sections of up to 1km at a time, with a typical construction presence of up to four weeks along each 1km section". ES Chapter 20 Onshore Ecology and Ornithology (Revision C) [REP3-026, Table 20-3] also states the realistic worst-case scenarios, including duration of works, for elements of the project build.</p> <p>The Addendum to the ES Chapter 20 Onshore Ecology and Ornithology [REP2-053], that contains a detailed assessment of potential air quality effects on ecology receptors, identified 14 statutory designated nature conservation sites that had an exceedance of a Critical Load or Critical Level (Section 4.1.1.1). These sites were assessed and before mitigation a minor magnitude effect that was a temporary impact of moderate adverse significance was identified (Section 4.1.1.2). Mitigation in the form of</p>

NE ref	Page	Section / Para	Natural England's Concern	Natural England's Recommendation	Risk	Applicant's Response
						<p>measures to minimise air emissions are set out in Section 7 of the Outline Code of Construction Practice (Revision D) [document reference 9.17]. After inclusion and account for these mitigation measures, the assessment of potential impacts on the statutory designated nature conservation sites concluded a negligible magnitude effect that was a temporary residual impact of minor adverse significance (Section 4.1.1.4). The same approach with the same outcome has been applied to priority habitats in Sections 4.2 and 4.3 of the Addendum to the ES Chapter 20 Onshore Ecology and Ornithology [REP2-053], The Applicant considers that the concerns of Natural England have been addressed.</p>
2	15	4.2.1.1 / 49	<p>Eight of the screened in non- statutory designated nature conservation sites are already in exceedance of their Critical Loads or Critical Level through a contribution from the Project which is >1% but less than 5.5%.</p>	<p>In addition to Point 1, we advise the Zones of Influence (Zol) for Ancient Woodland should be clearly stated with consideration given to any potential edge effects. We advise this is included within the OLEMS/Outline EMP and referenced in the CoCP.</p>		<p>The Applicant refers Natural England to the Outline Ecological Management Plan (Revision C) [REP3-068, Section 2.2], which provides details on Tree Root Protection Plans and buffer zones for woodland and trees. These requirements are mirrored in the Outline Code of Construction Practice (Revision D) [document reference 9.17, Section 2.5.11]. The Applicant considers that the concerns of Natural England have been addressed.</p>

NE ref	Page	Section / Para	Natural England's Concern	Natural England's Recommendation	Risk	Applicant's Response
3	16	4.2.2 / 54	Five non-statutory designated nature conservation sites were screened in based on proximity to construction vehicles on the haul roads, including Smeeth Wood and Colton wood, 20m and that 100m away from a trenchless crossing.	Natural England advises inclusion of the Zol and consideration of edge effects to habitats, is included in the CoCP.		As above
4	23	4.3.7.1 to 4.3.9.4 / 103 to 118	Felbrigg Wood, Norfolk Valley Fens SAC, The Broads SAC and Trinity Broads SSSI have woodland qualifying features and exceedances of a Critical Load or a Critical Level through a contribution from the Project that was >1%.	In addition to Point 1, we advise the Dust Management Plan in the Outline CoCP as referenced should include suitable mitigation to ensure the habitats are protected.		<p>The Applicant refers Natural England to the Addendum to Environmental Statement Chapter 20 Onshore Ecology and Ornithology [REP2-053] which concludes no impacts the sites detailed in its comment.</p> <p>With regard to the Dust Management Plan, as detailed in The Applicant's Responses to the Examining Authority's First Written Questions [REP1-037, Q1.6.6.1], the Applicant confirms that the detailed plans listed in the Outline Code of Construction Practice (Revision C) [document reference 9.17] would be prepared by the Principal Contractor and submitted and approved post consent. Outline details of the management measures to be included within those plans are set out within section 3.3.1 of the Outline Code of Construction Practice (Revision C) [document reference 9.17]. This will be progressed further during detailed design phase.</p>
5	27	4.3.13 to	Natural England remains concerned as to whether there is sufficient	Natural England advises details should be provided in the Landscape		The Applicant refers Natural England to the Addendum to Environmental

NE ref	Page	Section / Para	Natural England's Concern	Natural England's Recommendation	Risk	Applicant's Response
		4.3.15 / 135 to 151	mitigation for hedgerows with regards to air emissions. These were not provided in the OCoCP in as referred to.	Management Plan (LMP) and Outline CoCP and should also inform tree, woodland and ancient woodland buffer zones.		Statement Chapter 20 Onshore Ecology and Ornithology [REP2-053] which concludes a temporary impact of negligible significance to hedgerow habitats.

Table 5 Applicant's Responses to Natural England's Comments on the 13.3 Apportioning and Habitats Regulations Assessment Updates Technical Note VERSION B [REP2-036] and the 14.28 Auk Construction Phase Displacement Assessment (EIA Context) Technical Note [REP2-049]

ID	Natural England Comment	Applicant Response
0	<p>In providing this advice, Natural England has reviewed the following documents in relation to the impacts of Sheringham Shoal Extension and Dudgeon Extension Offshore Wind Farms ('SADEP') on Offshore Ornithology:</p> <ul style="list-style-type: none"> • [REP2-036] 13.3 Apportioning and Habitats Regulations Assessment Updates Technical Note VERSION B • [REP2-049] 14.28 Auk Construction Phase Displacement Assessment (EIA Context) Technical Note 	Noted.
Impacts on Red-Throated Diver (RTD) feature of the Greater Wash (GW) Special Protection Area (SPA)		
1	<p>Natural England concludes that adverse effects on the integrity (AEOI) of the Greater Wash SPA cannot be ruled out when SADEP is considered in-combination with other plans and projects, specifically other offshore windfarms (OWF) within or adjacent to the SPA. The in-combination contribution of SADEP is principally due to the operational displacement effects arising from the long-term presence of the Sheringham Shoal Extension Array, though vessel movements associated with the construction and operation of SADEP would also contribute. This reflects Natural England's advice to BEIS on the recent Review of consents for major energy infrastructure projects and Special Protection Areas, 2022 - GOV.UK (www.gov.uk) regarding the Greater Wash SPA.</p>	<p>Noted. The Applicant maintains its conclusions within the Apportioning and HRA Updates Technical Note (Revision B) [REP2-036] of no adverse effect on integrity of the red-throated diver feature of the Greater Wash SPA (project-alone and in-combination). Therefore, no additional mitigation is considered to be required.</p> <p>The Applicant has committed to implementing a best practice protocol for avoiding disturbance to red-throated divers as embedded mitigation (see the Outline PEMP (Revision C) [REP3-060]). The best practice protocol wording was further updated at Deadline 3 to adopt wording provided by Natural England to Hornsea Project Four which was similar but not identical to the wording already proposed by the Applicant. The Applicant has updated this wording in dialogue with Natural England and therefore considers that no further mitigation regarding construction and O&M vessel movements is required.</p>
2	<p>Natural England considers that the displacement impact should principally be considered in terms of the area over which some level of displacement may occur, both in terms of km² and % of the SPA. Natural England has some concerns over the validity of the method used to calculate 'effective area' of displacement by scaling the area of effect proportionally according to the corresponding rate of displacement (see detailed comments below for</p>	<p>The position of the Applicant is that SEP would not make a material contribution to any in-combination effect on red-throated diver populations from GW SPA. For the example cited by Natural England, the in-combination effective area of displacement is 20.63% of the SPA, but when SEP is excluded this would be reduced to 20.48%; i.e. a difference of just 0.15%. Given the high level of precaution within the assessment (e.g. as set</p>

ID	Natural England Comment	Applicant Response
	<p>further explanation). However, even if the 'effective' displacement calculation were used, 20.63% of the SPA is still considered to be subject to in-combination displacement impacts. Thus, it appears that when tested against the conservation objective to maintain or restore the distribution of features within the site, it is impossible to conclude that there is no AEOI on the red-throated diver feature of the GW SPA in combination.</p> <p>Whilst SADEP's contribution to these impacts is modest, an in-combination AEOI on the red-throated diver feature at the Greater Wash SPA cannot be ruled out due to displacement causing a significant reduction in the functional extent of the SPA available, which will modify the distribution of birds within those sites. We consider that the operational displacement effects from the array could be addressed by ensuring that no turbines are installed within 10km of the GW SPA boundary, and that further mitigation measures as regards construction and operational vessel movements are available. We would welcome discussion with the Applicant regarding these.</p>	<p>out in Paragraph 1088 of the RIAA [APP-059], the Applicant maintains that no in-combination AEoI can be concluded.</p> <p>Nonetheless, the Applicant will continue to engage with Natural England on this position and will provide a further update at Deadline 5.</p>
Estimates of impact from Hornsea Project FOUR OWF on Flamborough & Filey Coast SPA (FFC SPA) Guillemot and Razorbill		
3	<p>Natural England recognise that, in the case of Hornsea Project FOUR (HP4), there have been many iterations and variations of impact estimates produced for the above, and that the revision of estimates has continued beyond the conclusion of the HP4 examination. Natural England recommends that the Applicant refers to the HP4 submission - 'Applicant's Response to RFI dated 16 December' (EN010098-002234-G9.2 Applicants Response to RFI dated 16 December.pdf (planninginspectorate.gov.uk) as this provides a summary of impact estimates for all key FFC species.</p>	Noted.
4	<p>In the case of guillemot and razorbill there are three variations in approach presented ('the Applicants' NE standard' and 'NE bespoke'). Natural England does not support 'the Applicants' approach, as it does not follow SNCB advised methodology in relation to apportioning and displacement. When forming our position on the in-combination totals for these features, Natural England will refer to only the NE 'standard' and 'bespoke' estimates presented. We therefore request that the FFC SPA guillemot and razorbill impact estimates are updated, presenting the 'NE standard' and 'NE bespoke' approaches (as per Table 14 and 17 for guillemot, and Tables 23</p>	Noted. The Applicant will address Natural England's comments in a further update to the Apportioning and HRA Updates Technical Note (Revision B) [REP2-036] at Deadline 5.

ID	Natural England Comment	Applicant Response
	and 26 for Razorbill in the referenced submission). In combination totals and the subsequent impact assessment (including the PVA outputs) should be updated to reflect this.	
Impacts on Alde-Ore Estuary SPA lesser black-backed gull (LBBG)		
5	Natural England is satisfied that SADEP will not make a material contribution to in-combination AEOI on LBBG from the Alde-Ore Estuary SPA.	Noted. The Applicant welcomes this position.
Impacts on FFC SPA puffin (as a component of the breeding seabird assemblage)		
6	Natural England is satisfied that the impact of SADEP on puffin will not result in AEOI, alone or in-contribution, on the seabird assemblage feature of the SPA.	Noted. The Applicant welcomes this position.
Additional information request for Red Throated Diver.		
7	Natural England notes that the assessment for the impact of disturbance and displacement during the operational phase of SADEP as a result of O&M vessels on red-throated diver at the Outer Thames Estuary only presents figures based on 1% mortality. Natural England's view is that mortality rates of 1% and 10% should be presented for the potential range of displacement effects on red-throated diver.	As set out in the RIAA [APP-059; Paragraph 1088] The Applicant maintains that 1% mortality is sufficiently precautionary, and that there is no evidence to support the application of 10% mortality for birds displaced by O&M vessels. Nonetheless, for information purposes only, the Applicant can present the 10% mortality values in the update to the Apportioning and Habitats Regulations Assessment Updates Technical Note (Revision B) [REP2-036] at Deadline 5.
8	Detailed Comments Natural England's detailed comments in relation to the Deadline 2 Submission - 13.3 Apportioning and Habitats Regulations Assessment Updates Technical Note VERSION B [REP2-036] and 14.28 Auk Construction Phase Displacement Assessment (EIA Context) Technical Note [REP2-036] are set out respectively in Table 6 and Table 7 below.	Noted. The Applicant intends to respond to a number of these matters at Deadline 5 through an update to the Apportioning and Habitats Regulations Assessment Updates Technical Note (Revision B) [REP2-036]; however, responses are provided where appropriate below.

Table 6 Applicant's Response to Natural England's Comments on 13.3 Apportioning and Habitats Regulations Assessment Updates Technical Note VERSION B [REP2-036]

NE Ref	Section	Para/ Table	Natural England's Concern	Natural England's Recommendation	Risk	Applicant response
1	4. Alde-Ore Estuary SPA Lesser black-backed gull	14	Natural England agrees that the apportioning approach is likely to lead to overestimation of apportioning for projects at the further reaches of a species foraging range.	No further action required.		The Applicant welcomes this position.
2	4. Alde-Ore Estuary SPA Lesser black-backed gull	18	Natural England agrees with this conclusion, no AEOI for LBBG at Alde Ore SPA alone and no measurable contribution to in-combination.			
3	5. FFC SPA Gannet	24	Natural England welcomes the inclusion of Rampion 2 data and updating of HP4 data for the in-combination displacement assessment	No further action required.		Noted.
4	5. FFC SPA Gannet	27	Natural England welcomes the inclusion of Rampion 2 data and updating of HP4 data in the in-combination collision risk assessment. However, we note that Natural England raised a query with the Applicant regarding the correction of the avoidance rate (AR) (from 98.9 to 99.2) when commenting on the draft Collision Risk Modelling (CRM) updates (EIA context) Technical note, which was subsequently submitted into examination by the Applicant at Deadline 1 [REP1-056]. We cannot place confidence in the updated in-combination totals until this query is addressed (anticipated to be through the submission of the revised CRM report at Deadline 3).	Revised CRM report to be submitted at Deadline 3, addressing comments made by Natural England regarding REP1-056.		The Applicant has presented updated cumulative collision risk estimates in the Collision Risk Modelling (CRM) Updates (EIA Context) Technical Note (Revision B) [REP3-089] submitted at Deadline 3. This includes additional information to clarify the ARs used for existing projects, as requested by Natural England.
5	5. FFC SPA Gannet	29	Combined displacement and collision – please note point 4 above relates equally to these combined totals.			See response to NE Ref 4.
6	6. FFC SPA Guillemot	37	Natural England recognises that, in the case of HP4, there have been many iterations and variations of impact estimates produced for Guillemot and Razorbill, and that the revision of estimates has continued beyond the conclusion of the HP4 examination. Natural England recommends that the Applicant refers to the HP4 submission - 'Applicant's Response to RFI dated 16 December' (Ørsted, 2023) as this provides a summary of impact estimates for all key FFC species. In the case of guillemot (and razorbill) there are three variations in approach presented ('the applicants', 'NE standard' and 'NE bespoke'), however Natural England does not support 'the Applicants' approach, as it does not follow SNCB advised methodology in relation to apportioning and displacement. When forming our position Natural England will only refer to the 'NE standard' and 'NE bespoke' estimates presented. We request that the guillemot estimates are updated, presenting the 'NE standard and NE bespoke' approaches (as per Table 14 and 17 in the case of guillemot in the referenced submission).	Please update guillemot estimates, and all relevant tables/displacement matrices to reflect HP4 Submission and to present the two NE scenarios: (Ørsted, 2023).		Noted. The Applicant will address Natural England's comments in a further update to the Apportioning and HRA Updates Technical Note (Revision B) [REP2-036] at Deadline 5.

NE Ref	Section	Para/ Table	Natural England's Concern	Natural England's Recommendation	Risk	Applicant response
7	6. FFC SPA Guillemot	38	As noted above (point 6), the in-combination figures are based on the HP4 Applicant's standard approach for HP4, but there are two other variations - 'NE standard' and 'NE bespoke'. Natural England request that only the 'NE' approaches are presented, and figures obtained from the HP4 submission linked above (Tables 14 and 17). We note that the 'NE bespoke' approach to HP4 will result in double the in-combination impact; however, the % contribution from SADEP is halved as a result, to approximately 1% of the in-combination total.	As above (see point 6).		Noted. The Applicant will address Natural England's comments in a further update to the Apportioning and HRA Updates Technical Note (Revision B) [REP2-036] at Deadline 5.
8	6. FFC SPA Guillemot	Table 6.1	Natural England agrees the in-combination figures up to Norfolk Vanguard (tier 3) for EIA. The HP4 figures are 'the Applicants' approach, but they differ from those presented in HP4's recent submission (EN010098-002234-G9.2 Applicants Response to RFI dated 16 December.pdf (planninginspectorate.gov.uk)). As noted above, we request that estimates derived from the NE standard and bespoke approaches are presented (as per Point 6 above).	Update tables to present 'NE standard' and 'NE Bespoke' approaches to Guillemot displacement estimates.		Noted. The Applicant will address Natural England's comments in a further update to the Apportioning and HRA Updates Technical Note (Revision B) [REP2-036] at Deadline 5.
9	6. FFC SPA Guillemot	41	We note that Natural England's approach to apportioning and displacement of guillemot at HP4 result in upper impact ranges above that presented in the RIAA.	Please provide an update or explanation for the discrepancy		Noted. The Applicant will address Natural England's comments in a further update to the Apportioning and HRA Updates Technical Note (Revision B) [REP2-036] at Deadline 5.
10	6. FFC SPA Guillemot	Table 6-3	Natural England notes the table does not encompass the full range of impact, when taking into account Natural England's approach to HP4 - the maximum predicted impact is over 4000, whereas the highest impact presented (in the RIAA) is 3079.	Provide tables that present increase in mortality rate and PVA outputs (median CGR and median GPS) that encompass the full range of estimated impact (including figures from HP4 derived using the 'NE bespoke' apportioning approach.)		Noted. The Applicant will address Natural England's comments in a further update to the Apportioning and HRA Updates Technical Note (Revision B) [REP2-036] at Deadline 5.
11	7. FFC SPA Kittiwake	7.2.2	Natural England welcomes the inclusion of Rampion 2 data and updating of HP4 data in the in-combination collision risk assessment. However, we note that Natural England raised a query regarding the correction of the (AR (from 98.9 to 99.2) when commenting on the CRM updates (EIA context) Technical note to the Applicant which was subsequently submitted into examination by the Applicant at Deadline 1 [REP1-056]. We cannot place confidence in the updated in-combination totals until this query is addressed (at submission of CRM revised report at Deadline 3).	Revised CRM to be submitted at Deadline 3, addressing comments made by Natural England regarding REP1-056.		The Applicant has presented updated cumulative collision risk estimates in the Collision Risk Modelling (CRM) Updates (EIA Context) Technical Note (Revision B) [REP3-089] submitted at Deadline 3. This includes additional information to clarify the ARs used for existing projects, as requested by Natural England.
12	7. FFC SPA Kittiwake	Table 7-2	We note there is no description provided of whether these numbers have been corrected for ARs (from 98.9 to 99.2), though it would seem they have. It is crucial that a clear audit trail of how in-combination figures are calculated and where they are obtained from is presented. (See Point 11).	Provide text describing how in-combination totals have been obtained (including any AR corrections that have been applied).		The Applicant has presented updated cumulative collision risk estimates in the Collision Risk Modelling (CRM) Updates (EIA Context) Technical Note (Revision B) [REP3-089] submitted at Deadline 3. This includes additional information to clarify the ARs used for existing projects, as requested by Natural England.
13	7. FFC SPA Kittiwake	50	In-combination totals are reduced from the RIAA without an explanation for the change.	Please explain why in combination totals are reduced from the RIAA – presumably this is due to an avoidance rate correction?		The Applicant has presented updated cumulative collision risk estimates in the Collision Risk Modelling (CRM) Updates (EIA Context) Technical Note (Revision B) [REP3-089] submitted at Deadline 3. This includes additional information to clarify the ARs used for existing projects, as requested by Natural England.

NE Ref	Section	Para/ Table	Natural England's Concern	Natural England's Recommendation	Risk	Applicant response
14	8. FFC SPA Razorbill	63	The above comments apply equally to the relevant Razorbill sections.	NE recommend that razorbill in-combination totals are presented that in		Noted. The Applicant will address Natural England's comments in a further update to the Apportioning and HRA Updates Technical Note (Revision B) [REP2-036] at Deadline 5.
15	9. FFC SPA Puffin	67 to 69	<p>NE welcome the acknowledgement of potential connectivity between breeding puffin at FFC SPA and the development sites and acknowledge that both projects are at the further reaches of the mean maximum foraging range.</p> <p>Natural England acknowledge that there is no clear method to quantify what proportion of birds present at the project sites are likely to be breeding adults originating from FFC SPA. However, we do not follow the logic behind working out what proportion of immatures present in the non-breeding season (31,984) are breeding adults from FFC SPA, and then using this as an apportioning figure in the breeding season.</p> <p>The worse-case scenario is to assume 100% of birds in the breeding season are FFC adults. which would lead to a displacement impact of 0.1-2.38 for SEP and DEP together. However Natural England agrees it is unlikely that 100% of birds are breeding adults, and while we do not necessarily support the Applicant's approach/level of apportioning, we do agree with the conclusion that there would be no measurable contribution to an in-combination assessment of puffin mortality due to displacement from SEP and DEP.</p>	No action required		The Applicant welcomes this position.
16	10. FFC SPA assemblage	Section 10	Note comments relating to individual species impact above (see point 15), in particular gannet, guillemot and razorbill.	Update text on these species to incorporate full range of possible impact.		Noted. The Applicant will address Natural England's comments in a further update to the Apportioning and HRA Updates Technical Note (Revision B) [REP2-036] at Deadline 5.
17	11. GW SPA RTD	91	<p>A) We recognise that parts of the Greater Wash SPA fall outside the area identified by Maximum Curvature Analysis (MCA) as being the most suitable parts of the SPA for RTD. MCA was used to identifying the areas important to each relevant species, a composite of which was then used to determine the boundary of the SPA. However, whilst it is reasonable to say that these areas are less important to RTD than other parts of the site, we do not consider that the area should be entirely excluded from estimates of the displacement area for this species. We highlight that RTD were recorded in this area during the classification surveys, and furthermore, that recent digital aerial surveys of the GW SPA conducted in October 2022 show the presence of RTD in this area. outside the RTD MCA. Therefore, Natural England's assessment of potential impacts does include some consideration of the area that falls beyond the MCA line, albeit with the caveats noted above. It is therefore helpful that the Applicant has provided displacement area/SPA % values including as well as excluding this area.</p> <p>B) Natural England note that potential impacts from construction vessels transiting to and from the cable corridors have not been considered within the assessment, presumably due to the fact that the construction port(s) will not be confirmed until nearer the start of construction. However, Natural England consider that due to the fact that use of a port adjacent to either the Greater Wash SPA or Outer Thames is plausible, some further consideration of the</p>	<p>A) No action needed, as figures are provided for the entire SPA including the area outside the RTD MCA.</p> <p>B) Please provide any available information relevant to potential impacts from construction vessels transiting to and from the ECC on the GW SPA and/or OTE.</p>		<p>A) Noted</p> <p>B) Noted. The Applicant will review this information and if possible address Natural England's comments in a further update to the Apportioning and HRA Updates Technical Note (Revision B) [REP2-036] at Deadline 5.</p>

NE Ref	Section	Para/ Table	Natural England's Concern	Natural England's Recommendation	Risk	Applicant response
			possible impacts from construction vessels transiting to and from the ECC should be undertaken.			
18	11. GW SPA RTD	Figures 1 & 2	The legends for Figures 1 and 2 incorrectly show the boundary of the RTD MCA and the area where SEP's buffer zone overlaps the RTD MCA.	Correct Figures 1 & 2.		Noted. The Applicant will address Natural England's comments in a further update to the Appportioning and HRA Updates Technical Note (Revision B) [REP2-036] at Deadline 5.
19	11. GW SPA RTD	93	The reference population used for the assessment is 1,511 individuals. However, this figure is the population estimate for the pSPA prior to the amendment of the area covered by the SPA. The population estimate within the citation for the GW SPA is 1,407 individuals.	Update the calculations for impacts to RTD using a reference population of 1,407.		Noted. The Applicant will address Natural England's comments in a further update to the Appportioning and HRA Updates Technical Note (Revision B) [REP2-036] at Deadline 5.
20	11. GW SPA RTD	94	Natural England notes that the in-combination assessment for the GW SPA does not include any attempt to quantify the level of displacement due to vessel activity associated with existing OWFs, both in terms of the construction phase and vessels associated with ongoing operations and maintenance (O&M). In the RIAA, the Applicant argues that 'since the transit routes used by operation and maintenance vessels associated with other OWFs are unknown, it is not possible to quantitatively assess the potential in-combination impact of operational vessels on Greater Wash SPA red-throated diver'. Natural England believes that there is additional data available on the impacts resulting from vessel activity associated with relevant existing OWFs, both in terms of mortality and the area subject to displacement, which would enable the applicant to undertake a more quantitative assessment for the Greater Wash SPA and would be happy to discuss this further.	Natural England would recommend the applicant reviews the draft Review of consents for major energy infrastructure projects and Special Protection Areas, 2022 - GOV.UK (www.gov.uk) carried out by BEIS, which contains information and data on vessel activity associated with the construction and O&M of existing offshore wind farms within the Greater Wash SPA.		Noted. The Applicant will review this information and if possible address Natural England's comments in a further update to the Appportioning and HRA Updates Technical Note (Revision B) [REP2-036] at Deadline 5.
21	11. GW SPA RTD	96-97	NE welcomes the consideration of the reduction in available habitat as a result of cable installation vessels to the assessment. However, we feel there is not enough information provided to determine whether the Applicant's suggested worst-case scenario (concurrent construction of the SADEP export cables) can be considered as such.	Provide further justification as to why the concurrent scenario represents the worst-case for red-throated diver.		In Paragraph 96 of the Appportioning and HRA Updates Technical Note (Revision B) [REP2-036] it states, 'Assuming that levels of activity are equal across the length of the cables, the total duration of activity affecting the SPA (assuming a worst case of 110 days, where SEP and DEP cables were installed separately) would be approximately 25 days.' In other words, the Applicant has assumed that the <u>sequential</u> (and not concurrent) approach represents the worst-case scenario in respect of red-throated diver. This is because the total duration of work is longer for the sequential scenario and that the displacement effect at any one location would be short-term, i.e. birds would return to affected area soon (within a few hours) after vessel departure.
22	11. GW SPA RTD	99	As recognised by the Applicant in the RIAA, excluding areas that overlap existing OWFs from the calculations of area over which displacement could occur as a result of SEP alone does not account for the potential increase in the magnitude of impact in these areas if SEP is closer than the existing OWFs, and therefore this is likely to be an underestimate. Furthermore, even if SEP is further away, it is plausible that it could exert an additional displacement effect. Therefore, Natural England consider that the real project alone impact will lie somewhere within the range of 0.41% - 1.77% for the percentage of the total area of the SPA subject to displacement (and 0.12% - 0.56% for the 'effective area of displacement') based on the SEP buffer zones as presented in			Noted. The Applicant will review this information and if possible address Natural England's comments in a further update to the Appportioning and HRA Updates Technical Note (Revision B) [REP2-036] at Deadline 5. However, the Applicant notes that the majority of SEP is further from the SPA than the two existing projects (Race Bank and SOW) except in relation to a small portion of the south east and south west corners of SEP.

NE Ref	Section	Para/ Table	Natural England's Concern	Natural England's Recommendation	Risk	Applicant response
			tables 11-3 and 11-4.			
23	11. GW SPA RTD		<p>NE have some concerns over the validity of the method used to calculate the 'effective area' of displacement by scaling the area of effect proportionally according to the corresponding rate of displacement. This is because the proportion of the population that is displaced is not analogous to the area that birds are subject to displacement from. The logical supposition, if the area of effective displacement is say 55%, is that all of the divers remaining are using 45% of the area. However, this is not how displacement of Red throated diver is likely to operate, as the birds that are not displaced from a given area could well utilise it all. So, the area of effective displacement is always 100% for the birds that are displaced and could be 0% for the birds that are not displaced. In this case there seems no logical way to proportionally reduce the effective habitat loss. However, we do recognise the potential value in trying to account for the gradient of effect in spatial terms but in light of the relevant conservation objectives, consider that an area subject to any displacement effect is to some extent compromised in its ability to support red- throated diver across the whole of that area.</p> <p>We therefore welcome the presentation of figures for all approaches to calculating the area over which red-throated divers are subjected to displacement.</p>			<p>Noted. The Applicant maintains that it is reasonable to use the displacement gradient as a proxy to understand the 'effective area' of displacement. If this approach is not applied (or in the absence of an alternative approach proposed by Natural England), this suggests that the effect is the same, irrespective of the distance from the wind farm. This is not logical and will result in an unrealistic and wholly over-precautionary outcome. However, as Natural England notes, the information presented in the Apportioning and HRA Updates Technical Note (Revision B) [REP2-036] includes both the total area and effective area calculations. The Applicant will review Natural England's comments and, if appropriate, provide further clarification in the update to this note at Deadline 5.</p>
24	11. GW SPA RTD	101	<p>Natural England considers that, depending on the approach taken to calculating the area impacted, somewhere in the range of 20.63% to 42.01% of the Greater Wash SPA is subject to displacement impacts due to SEP in combination with existing OWFs. In light of the conservation objectives for the Greater Wash SPA, Natural England consider that, whilst SADEP's contribution to these impacts is minimal, AEOI on the red- throated diver feature at the Greater Wash SPA cannot be ruled out due to in combination displacement causing a significant reduction in the functional extent of the SPA available, which will modify the distribution of birds within those sites.</p>	<p>We consider that adverse effects from the operational array would be avoided were all turbines to be located at least 10km from the SPA.</p>		<p>See response at ID 1 of Table 5.</p>
25	GW SPA common scoter		<p>Natural England notes that common scoter is a qualifying feature at Greater Wash SPA but has not been included in the RIAA for Greater Wash SPA.</p>	<p>Submit LSE assessment for common scoter at Greater Wash SPA</p>		<p>Noted. The Applicant has provided the LSE screening assessment for common scoter in the HRA Screening Matrices (Revision B) (Tracked) [document reference 5.4.2.1] at Deadline 4.</p>
26	12. GW and NNC SPA Sandwich Tern	Table 12-5	<p>Natural England notes the in-combination total is limited to windfarms within the foraging range of NNC SPA. This doesn't follow the standard approach to assessing impacts outside the breeding season, in that Natural England recommends the use of the BDMPS (Furness 2015) to establish which windfarms should be included in a cumulative or in-combination assessment. In the case of Sandwich Tern breeding at NNC SPA, this would include all windfarms within the UK North Sea and English Channel. Natural England accepts that presenting a full in combination assessment, including all windfarms within the UK North Sea and English Channel, would be extremely challenging (as many would not include CRM for Sandwich tern, because they are not present in sufficient numbers to have been screened in for these projects), and that in this instance, where a</p>	<p>No further action needed.</p>		<p>Noted.</p>

NE Ref	Section	Para/ Table	Natural England's Concern	Natural England's Recommendation	Risk	Applicant response
			<p>conclusion of AEOSI in combination has been agreed, it is judged acceptable to present the in-combination figures limited to the projects that have the key impacts. However, it is worth noting that this means a certain proportion of birds, impacted by windfarms further afield in the non-breeding season will not be included in the impact assessment. This omission, though driven by the lack of available data, does result in an unquantified under-estimate of in-combination sandwich tern mortality at NNC/GW SPA.</p>			

Table 7 Applicant's Response to Natural England's Comments to 14.28 Auk Construction Phase Displacement Assessment (EIA Context) Technical Note [REP2-049].

NE Ref	Section	Para / Table	Natural England's Concern	Natural England's Recommendation	Risk	Applicant Response
1	3.2 Razorbill	Table 3.2	It is assumed that 'mean abundance' refers to the combined annual 'mean of peak' per season. We note that the mean abundance for DEP is presented as 5246 birds, whereas in the recently submitted Apportioning and HRA update note abundance is presented as 5829	Natural England advises to check razorbill numbers presented and correct if necessary.		The Applicant confirms that the 'mean abundance' values refer to the combined annual 'mean of peak' per season. The value of 5,246 is a typographic error. However, the Applicant confirms that the predicted mortality range presented for DEP in Table 3-2 of [REP2-049] (i.e. 9-20 birds) is based on the correct abundance value (5,829). The conclusions of the assessment presented in Section 3.2 of [REP2-049] are therefore correct, and the Applicant does not, therefore, propose to update this document.