The Planning Act 2008

Sizewell C (SZC)

Planning Inspectorate Reference: *EN010012*

Deadline 8 – 24 *September 2021*

East Suffolk Council comments on Deadline 7 submissions from the Applicant

East Suffolk Council 20026200

Table of Contents

Introduction

This submission at Deadline 8 provides ESC's comments on selected submissions made by the Applicant at Deadline 7.

The ExA will note that there are a number of references to documents and changes that are expected to be submitted by the Applicant at Deadline 8. As Deadline 9 (30 September) is less than 1 week after Deadline 8 (24 September), ESC will not be able to respond to any Deadline 8 submissions at Deadline 9. We will endeavour to submit our final comments at Deadline 10 (12 October).

2.5 Main Development Site - Permanent and Temporary Beach Landing Facility and SSSI Crossing Plans - Plans Not For Approval - Part 1 of 2 - Revision 3.0 [REP7-004 and REP7-005]

Introduction:

Presented in table form, this document constitutes ESC's review of the Applicant's Permanent and Temporary BLF and SSSI Crossing Plans submitted at Deadline 7. The review is confined to the subject matter of the impacts of the proposed structures on coastal processes and morphology.

The table comprises:

- First column: the relevant page number (document, not pdf page);
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In Column 5 the requested action from the Applicant takes one of the following forms, or a combination thereof:

- Clarification
- Confirmation
- Further information.
- Explanation

Pg. No.	**Section Ref.**	**Relevant Text / Illustration**	**Observations and Concerns**	**Requested**
4	*DRW-100202 Perm BLF*	*Green line – assumed indicatve existing beach profile.*	Is the existing beach profile accurate for this chainage?	Confirmation.
4		*Barge grounding platform and restraints*	Is the platform a concrete mattress?	Confirmation.
4		*Tracks / Pathways across Hard and Soft Coastal Defence.*	Are these permanent engineered structures that could compromise the erodibility of the SCDF or otherwise act as a block to sediment movement to seaward of the HCDF?	Confirmation there are no hard structures within the SCDF envelope.
4			How will the BLF affect or be affected by construction of an Adaptive HCDF	Explanation.
5	*DRW-100203 Temp BLF*	*Piles within Hard and Soft Coastal Defence.*	Will the piles interfere with the Hard and Soft Coastal Defence design and construction?	Explanation of whether the piles will be extracted or cut? Explanation of the level to which the temporary BLF piles be removed?

Previous ESC feedback was submitted at REP6-032 and is still valid.

6.13 Additional Ecology Survey Reports (September 2021) Parts 1 and 2 (including Confidential Surveys) [REP7-027 and REP7-028]

Introduction:

Presented in table form, this document constitutes ESC's review of the Applicant's Additional Ecology Survey Reports submitted at Deadline 7.

The table comprises:

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Pg. No.	Section Ref.	*Relevant text / illustration*	Observations and concerns	Requested:
Con. Part 1 pg. 4	Appendix A	*2021 Bittern Survey Report (Confidential)*	The results of this survey are noted. As they relate to a species associated with a statutory designated site, we defer comment to Natural England.	N/A
Con. Part 1 pg. 10	Appendix B	*2021 Barn Owl Survey Report (Confidential)*	The results of this survey are noted. ESC has no further comment to make on this topic.	N/A
Part 1 pg. 11	Appendix C	*2021 Aquatic Invertebrate Survey Report*	The submitted aquatic invertebrate survey information is noted. ESC defers detailed comments on these survey results to Natural England and the Environment Agency. It is noted that paragraph 2.1.3 of the report states that surveys are also be undertaken in September 2021, it is queried whether the results of these will be submitted to the Examination before it closes?	Confirmation of whether the results of the surveys will be submitted before the close of the Examination.

Part 1 pg. 62	Appendix D	*2021 Associated Development Site Great Crested Newt Survey Report*	The results of the great crested newt surveys are noted. ESC defers detailed comment to Natural England on these as they relate to the requirement for protected species licences. Paragraph 3.3.4 of the report states that on the Sizewell Link Road route 41 ponds had GCN presence and 15 have assumed presence. The paragraph then goes on to state that this is a total of 55 GCN ponds within 500m of the SLR, of which 17 contained a 'Medium' population, 31 a 'Small' population and 9 had an 'Unknown' population. There seems to be some confusion over pond numbers in this paragraph. The first numbers indicate that there are 56 GCN ponds (41+15) but the text says that there are 55, the populations description then describes 57 ponds (17+31+9). Table 3.5 lists 57 ponds with identified or assumed GCN presence. This should be clarified to remove any confusion over the conclusions reached.	Clarify total GCN pond numbers in section 3.3 (Sizewell Link Road).

Part 1 pg. 109	Appendix E	*2021 Two Village Bypass Preliminary Bat Roost Assessment Report*	The results of this survey are noted. ESC has no further comment to make on this topic.	N/A
Part 1 pg. 155	Appendix F	*2021 Bat Crossing Point Surveys Report 1*	It is noted that this is the first of two reports with the second not timetabled for submission until Deadline 9, this is very close to the end of the examination (noting that the timing for Deadline 10 has now been revised) and does not allow Interested Parties to make any comments which can be responded to by the Applicant. 3 (Methods) – Paragraph 3.1.4 identifies the triggers used for the requirement for further surveys, whilst we agree that the presence of rare species (such as barbastelle) is a suitable trigger, it is not clear on what basis the values for the other two triggers have been selected. Justification as to why these values have been selected should be provided.	Provide justification for the criteria used to trigger further surveys. Provide details of which surveys suffered equipment failure. Provide full survey results (species and numbers of passes) so that comparisons of crossing points can be made.

			3.3.1 – One of the limitations of the surveys is stated as being the failure of bat detector equipment on a "small number of surveys", however no further detail is given on which surveys these were, which crossing points they relate to or whether the same crossing point(s) were affected for both surveys. Without this information there is a degree of uncertainty over the results presented and the selection of crossing points to be taken forward for further survey. Clarification on this should therefore be provided so that it can be confirmed that equipment failure did not significantly impact on the conclusions drawn. Also, the paragraph states that the detection radius of the bat detector equipment used was great enough that the failure of one of the two detectors would not matter (as bats at both survey points would be picked up by the one detector). We query whether	

			this would actually be the case for all bat species given the known differences in detection distances between them (i.e. some bat species echolocate more quietly than others and so are less detectable), and whether this may have resulted in less bat passes being recorded than actually occurred. 4 (Table 2) – We query whether the results table includes the survey results for all three criteria, as the third criteria (more than 100 bat passes) is not listed? The report also does not include the survey results data (i.e. the number of calls or species recorded at each crossing point) which makes consideration of the conclusions presented more difficult. We request that the full survey results are included in Report 2 to address this as without this information it is impossible to compare bat activity between crossing	

			points to see the differences in use and species composition recorded. Given the apparent importance of many of the identified crossing point locations for bats, it is essential that the design of the roads includes adequate measures at these locations to retain bat crossing at safe heights.	
Part 1 pg. 175	Appendix G	*2021 Two Village Bypass Bat Backtracking Survey Report 1*	It is noted that this is the first of two reports with the second timetabled for submission at Deadline 8,.ESC will provide comments on the final report at the next achievable Deadline following submission. The results presented in Report 1 are noted. Although no roosts were confirmed by the survey work, as expected there is an indication that various species of bat are likely to be roosting in all three of the woodland areas surveyed.	Clarify whether the description given in Table 6 is correct.

			Table 6 – We also note that the first row of Table 6 states under 'foraging' that "*Substantial barbastelle foraging around approx. location TM 46455 64502 (crossroads between Hilltop Covert and Goose Hill).*" This is confusing as the location description and grid reference given relate to the Main Development Site and not Foxburrow Wood. This must be clarified as, at present, the results presented do not appear to wholly relate to the site being assessed.	
Part 2 pg. 4	Appendix H	*2021 Two Village Bypass Dormouse Survey Report 1*	The results presented in this report are noted. We are pleased to see that footprint tunnels have been deployed as a survey technique as well as nest tubes. However, from the report is unclear whether dormouse surveys are continuing. As currently presented, insufficient survey effort has been undertaken to confirm likely absence of dormice based on published best	Confirm that surveys will be continued until sufficient survey effort has been undertaken.

			practice survey methodology (Bright, P., Morris, P. and Mitchell-Jones, T. (2006). *The Dormouse Conservation Handbook (2nd edn.)*. English Nature, Peterborough).	
Part 2 pg. 17	Appendix I	*2021 Saxmundham to Leiston Branch Line Ecology Walkover Report*	The results and conclusions of this assessment are noted. ESC has no further comment to make on the information provided.	N/A
Part 2 pg. 131	Appendix J	*2021 Northern Park and Ride Breeding Bird Survey Report*	The results of the survey are noted, of particular interest is the record of a pair of breeding woodlark within the site.	N/A
Part 2 pg. 150	Appendix K	*2021 Southern Park and Ride Breeding Bird Survey Report*	The results of this survey are noted. ESC has no further comment to make on this topic.	N/A
Part 2 pg. 170	Appendix L	*2021 Freight Management Facility Breeding Bird Survey Report*	The results of this survey are noted. ESC has no further comment to make on this topic.	N/A

6.18 Fourth Environmental Statement Addendum Volume 1: Main Text [REP7-030]

Introduction:

Presented in table form, this document constitutes ESC's review of the Applicant's Fourth Environmental Statement Addendum submitted at Deadline 7. The table comprises:

- First column: the relevant page number (document, not pdf page);
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- Clarification
- Confirmation
- Further information.
- Explanation

Ecology

Pg. No.	Section Ref.	*Relevant text / illustration*	Observations and concerns	Requested:
75	2.9.21	*Main Development Site – Bats.*	ESC notes that the Applicant considers that the impact on barbastelle bats as a result of habitat fragmentation has been reduced from Moderate Adverse, Significant to Minor Adverse, Not Significant through the dark corridors secured in the updated Lighting Management Plan [REP7-020]. Whilst we welcome the delivery of these corridors being secured, we reiterate our previous concern (as at [REP1-045]; [REP5-138] and [REP7-114]) that both construction noise and construction lighting (as well as vegetation removal) combine to create the fragmentation impact and that in the absence of adequate control on high frequency construction noise the impact may still exist to such a degree as to be considered to be Significant. We note that at ISH10 the Applicant acknowledged the potentially significant impacts which could arise from construction noise and committed to including control measures for these as part of the CoCP (paragraph 1.4.35 of REP7-069). As highlighted in our comments on the CoCP elsewhere in this submission, these controls do not appear to be included and therefore we consider that this issue remains outstanding. We do not therefore consider that it is correct to reduce the construction impact on barbastelle bats from habitat fragmentation	Include adequate high frequency noise control measures in the CoCP before reducing the impact of fragmentation on barbastelle bats from Moderate Adverse, Significant to Minor Adverse, Not Significant.

			from Moderate Adverse, Significant to Minor Adverse, Not Significant at this time. ESC understand that an updated CoCP will be submitted at Deadline 8 to address this matter.	
156	Table 3.1	*Chapter 3 – Desalination.*	ESC agrees with the conclusion presented that the proposed desalination plant will not alter the terrestrial ecology baseline or give rise to any terrestrial ecology impacts not already assessed in the relevant ES documents. ESC therefore agrees that terrestrial ecology is screened out of further assessment.	N/A

Environmental Protection

All extracts from the *Initial Statement of Common Ground*, including page, section number, text and footnotes etc. are shown in *italics* in the first three columns, including references elsewhere as appropriate.

In Column 5 where further action is requested from ESC this generally takes one of the following three forms, or a combination thereof:

- Clarification
- Confirmation
- Further information.
- Explanation

Where a response is provided for comment only and no further advice is specifically requested, this is indicated using a hyphen (-).

Pg No.	Section Ref.	*Relevant Text / illustration*	Observations and Concerns	Requested:
Chapter 2 Additional Information				
ii. Existing Roads				
22-23	2.6.9 – 2.6.12	Changes in predicted effects: *It can be seen from Table 2.6 that the updated traffic data are predicted to reduce the previously assessed changes in road traffic noise impact by up to 0.3dB or increase those previously assessed changes in road traffic noise impact by up to 1dB.* *If the updated traffic data were to be used to determine the changes in road traffic on existing roads, the following roads would have a change in the significance of effect:* *In 2023:* *− B1122(N)* *− B1122 through Theberton* *− B1122 north of Sizewell C access* *In 2028 Typical and Busiest Days* *− B1122(S)* *In all instances, the significance of the effect would change from 'not significant' to 'significant' in the daytime period in an EIA context, as a result of the updated traffic data.*	ESC note that the updated traffic data result in an increase in predicted noise levels along the B1122 which albeit small, change the impacts the significant of the effects from 'not significant' to 'significant'.	N/A

23	2.6.13	Increased noise mitigation offer: *In general terms, where properties meet the qualifying criteria, they will be eligible for noise insulation, under the Noise Mitigation Scheme (Doc Ref. 6.3 11H(C)). However, SZC Co. has committed to providing insulation for all residential properties fronting the B1122, irrespective of the outcome of the refreshed assessments that form part of the Noise Mitigation Scheme. Properties fronting the road links identified as likely to have new significant adverse effects, in an EIA context, will therefore benefit from the insulation provided by the Noise Mitigation Scheme (Doc Ref. 6.3 11H(C)).*	ESC welcomes the proposal to extend the offer of insulation in the Noise Mitigation Scheme to all properties fronting onto the B1122 and look forward to the Applicant publishing details of the specific properties include within this offer. Further to this, ESC welcomes the ongoing discussion of proposals for resurfacing the B1122 with quieter road surface (noting that road traffic noise is the responsibility of the local highway authority).	
iii. Proposed Roads				
25	2.6.21	Changes in predicted effects: Notwithstanding the potential for a shift in impact categories, the numbers set out in Table 2.7 suggest that the updated traffic data for the proposed roads will not result in a worse impact than is set out in the submitted assessments.	This is noted by ESC.	N/A
c) Updated assessment – rail noise assessment				
27	2.6.39	Consultations on Rail Noise Barriers: *The supplemental noise assessment and update for the park homes at Saxmundham acknowledged that any proposed barrier, whether on Network Rail land, or on land owned by Whitearch Park, would be subject to discussion with the relevant authorities, including Network Rail, East Suffolk Council and Benhall and*	ESC expects that the final Rail Noise Mitigation Strategy which is submitted for approval (per DCO Requirement 25) will include details of specific noise barriers in specific locations, confirmed following appropriate discussion and consultation with relevant stakeholders, and *"subject to the necessary*	N/A

		Sternfield Parish Council, the owner and residents at Whitearch Park, and subject to the necessary permissions and further assessment of other potential environmental effects, prior to any decision whether or not to install any barriers.	*permissions and further assessment of other potential environmental effects"*. Failing the possibility of including specific barriers at this stage, ESC expects the Applicant to include a defined process of further assessment and exploration of options in the RNMS along with a firm commitment to deliver barriers at locations that are found to be suitable and the acoustic benefit worthwhile.	
27	2.6.40	Network Rail Position on Noise Barriers: *Since the targeted consultation was undertaken, Network Rail confirmed that noise barriers will not be permitted on their land, and therefore the barrier assessed along the edge of the railway embankment would no longer be longer viable. A barrier remains possible for the northern half of Whitearch Park, on land outside of Network Rail's ownership.*	ESC notes the Applicant's point regarding Network Rail's updated position. ESC is not aware that Network Rail have formally confirmed this position. The Applicant's initial Statement of Common Ground with Network Rail [REP2-074] states that acoustic fencing could be supported by Network Rail if it was at the Applicant's cost. Revision 2.0 of the same Statement of Common Ground [REP5-095] does not mentioning acoustic fencing. ESC request that any updated position is formally confirmed, fully explained, and justified by Network Rail.	Clarification
Chapter 3 Proposed Change 19				
22-23	3.5.2 – 3.5.6	Relevant Changes	The descriptions of the additional sources of noise and vibration associated with the construction and operation of the desalination plant described by the Applicant are noted by ESC and considered reasonable.	

24-25	3.5.11 – 3.5.15	Construction of temporary desalination plant *The effect of directional drilling from the two locations associated with the Proposed Change 19 has been considered in terms of whether the previously-assessed construction noise levels would be affected.* *On the basis that the directional drilling may be undertaken 24 hours a day, the noise levels at the receptors around the main development site have been calculated to determine whether the previously-assessed construction noise levels are likely to change*. *The effect of the directional drilling has found that:* • *during the daytime, the previously-assessed construction noise levels are not predicted to change;* • *during the night-time, the previously-assessed construction noise levels at the receptor Rosery Cottages (Receptor 19 on Figure 11.1 in Volume 2, Chapter 11 of the ES [APP-211]), are predicted to increase by up to 0.4dB;* • *The predicted changes in the previously-assessed night-time construction noise levels at all except three of the remaining receptors are predicted not to change, with predicted changes of up to +0.1dB at four receptors* *None of these changes will result in a change to the previous assessments, in terms of the magnitudes of*	This is noted and accepted by ESC.

		impact, the effect categories and the significance of effects. *The effect of the construction of the Proposed Change 19 will not alter the findings of the assessment set out in Volume 2, Chapter 11 of the ES [APP-202]*	
25-26	3.5.16 – 3.5.22	Operation of temporary desalination plant *The operation of the Proposed Change 19 has been considered for both of its proposed locations, on the basis of it being powered by 2 no. diesel generators in its initial location, and by a connection to the electricity grid in its TCA location. In both locations, the pumps set out in section 3.5 b)* *are included.* *The effect of the Proposed Change 19 in its initial location has found that:* • *during the daytime, the previously-assessed construction noise levels are not predicted to change;* • *during the night-time, the previously-assessed construction noise levels at the receptor Rosery Cottages (Receptor 19 on Figure 11.1 in Volume 2, Chapter 11 of the ES [APP-211]), are predicted to increase by 0.5dB;* • *the predicted changes in the previously-assessed night-time construction noise levels at all except ten of the remaining receptors are predicted to*	This is noted and accepted by ESC. ESC notes that where construction noise levels (including noise from the operation of the proposed desalination plant) are expected to exceed the trigger levels in the NMMP the Applicant will be required to demonstrate through a Bespoke Mitigation Plan that Best Practical Means will be employed to control construction noise levels to a minimum. In the example of the desalination plant, ESC would expect this to include the use of containerised pumps, as already noted by the Applicant.

		be 0dB, with predicted changes of +0.2dB at three receptors and +0.1dB at seven receptors. *None of these changes will result in a change to the previous assessments, in terms of the magnitudes of impact, the effect categories and the significance of effects.* *The effect of the Proposed Change 19 in its location within the TCA has found that:* • *during the daytime, the previously-assessed construction noise levels are not expected to change;* • *during the night-time, the predicted changes in the previously-assessed construction noise levels at all except 15 receptors are predicted to not change, with the predicted changes of +0.2dB at three receptors and +0.1dB at 12 receptors.* *None of these changes will result in a change to the previous assessments, in terms of the magnitudes of impact, the effect categories and the significance of effects.* *The effect of the operation of the Proposed Change 19 would not alter the findings of the assessment set out in Volume 2, Chapter 11 of the ES [APP-202], irrespective of whether it is located in its initial position, or at its proposed location within the TCA.*	

		The outcomes are achieved even though the pumps in particular are likely to be quieter than assumed in this assessment, due to their containerisation	

Landscape

ESC notes that landscape and visual impact matters have been scoped out of any further assessment in respect of the temporary desalination plant. This would seem to be reasonable given the scale and extent of other simultaneous activities both on the main construction site and the temporary construction laydown area should re-location be required. ESC has asked to be notified when re-location of the desalination plant takes place, and it is understood that this is acceptable to the Applicant.

6.3 Volume 2: Main Development Site – Chapter 5 – Description of the Permanent Development – Appendix 2A of the Environmental Statement: Drainage Strategy – Tracked changes version – Revision 3.0 [REP7-018]

ESC notes and welcomes the updated version of the Drainage Strategy and that it is now referred to as no longer being an 'outline' strategy.

The discharge of Requirement 5 of the draft DCO which is currently proposed to be discharged by ESC in consultation with others. ESC agrees that it should be the discharging authority in respect of this Requirement.

As local planning authority, ESC is frequently the determining authority for large scale proposals, an example of which includes the proposals for the relocated facilities at Sizewell B station, the most recent application being DC/20/4646/FUL, referred to by the Applicant as Relocated Facilities 2.

This application, similar to the DCO proposal, was a hybrid application with some elements included in detail and others in outline with detail (reserved matters) to follow later.

At the request of the Lead Local Flood Authority (LLFA), SCC, a condition was applied to that consent which stated the following:

15. FULL AND OUTLINE:

Prior to the commencement of the relevant part of the development (other than Permitted Preparatory Works as defined in Informative 1) a surface water drainage scheme for the site, based on sustainable drainage principles and an assessment of the

hydrological and hydrogeological context of the relevant part of the development and infiltration testing, must be submitted to and approved in writing by the Local Planning Authority, in consultation with the Environment Agency and Lead Local Flood Authority. The scheme shall be implemented, maintained and managed in accordance with the approved details.

Reason: To prevent the increased risk of flooding, to improve and protect water quality, improve habitat and amenity, and ensure future maintenance of the surface water drainage system.

This condition was discharged in part (for the area of the development that it was submitted in relation to) by ESC in September 2021 following consultation and agreement by the Environment Agency (EA) and the LLFA.

Given the sensitivities of the Sizewell C locations, in particular the Main Development Site and the potential implications for ecology and biodiversity as well as surface water flooding, ESC consider that they are best placed as the experienced authority in dealing with such discharging matters. It is therefore appropriate that Requirement 5, as drafted, is retained in the DCO order as made to enable ESC to be the discharging authority in relation to foul and surface water drainage in consultation with the EA, East Suffolk Internal Drainage Board, Natural England and the LLFA.

As explained at ISH11

As to the appropriate discharging authority under DCO Requirement 5, ESC strongly supports the current drafting which identifies ESC as the discharging authority in respect of foul and surface water drainage for the following reasons:

1. *As Local Planning Authority, ESC is extremely well versed in managing technical input from a number of different bodies.*
2. *A number of organisations have an interest in this matter, including the EA, the IDB, Natural England and SCC. ESC is best placed to 'hold the ring' and to reconcile the views of those parties together with any other relevant matters, such as landscape and ecological considerations.*
3. *Requirement 5 addresses both foul and surface water drainage. ESC agrees that those matters should be considered together, rather than having separate drainage strategies approved by different authorities, to ensure that a comprehensive strategy is delivered.*
4. *ESC is the enforcement authority responsible for securing compliance with the approved foul and surface water drainage plans and it is sensible in those circumstances for ESC to approve the detailed water drainage plans.*

ESC welcome the Applicant's approach to following industry standards, guidance and best practice and look forward to working with the Applicant and the other bodies listed to ensure an appropriate final drainage strategy for each element of the site – associated development, construction, and permanent development, is reached.

6.3 11H Volume 2: Main Development Site - Chapter 11 - Noise and Vibration - Appendix 11H of the Environmental Statement: Noise Mitigation Scheme - Revision 4.0 [REP7-022]

Introduction:

Presented in table form, this document constitutes ESC's review of the Applicant's Appendix 11H of Vol. 2 MDS Ch. 11 Noise and Vibration submitted at Deadline 7.

The table comprises:

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Pg No.	Section Ref.	*Relevant Text / illustration*	Observations and Concerns	Requested:
1.2 Refreshed Noise Assessments and Property Referencing				
2	1.2.3	Refreshed Assessments: *"SZC Co. shall submit a phasing plan setting out details of the proposed phases for the completion of the refreshed noise assessments to ESC for its approval. It is anticipated that the refreshed noise assessments will be provided in phases broadly matching the order in which those elements of the SZC project are expected to give rise to eligibility for noise insulation or temporary rehousing under this Noise Mitigation Scheme."*	Where road traffic is the primary noise source presumably these assessments will be provided to SCC, who as the Highways Authority are statutory consultees on traffic noise. The wording needs to be amended to reflect this.	Clarification of the wording to confirm that road traffic noise assessments will be provided to SCC
1.6 Eligibility Criteria				
Table 1.1 Criteria for eligibility for insulation				
13	Table 1.1	*Insulation for rail noise*	Properties subject to noise between 60dB LAmax and 70dB LAmax (LOAEL and EIA significance) would have to keep windows closed to achieve the internal 45dB LAmax and meet the WHO sleep disturbance criteria. The only way to fully avoid that happening would be to provide every property within that bracket with mechanical ventilation so they would have the option to keep their windows closed during warmer summer months to reduce the rail noise.	-

			On balance, ESC consider the Applicant's sleep disturbance assessment to be justified however we would maintain that the preference would be that the NMS would be implemented at LOAEL or that consideration be given to a reduced NMS to provide mechanical ventilation between LOAEL and EIA significance as discussed at ISH12 (see ESC's written summary of oral case submitted at this Deadline).	
13	Table 1.1	*Insulation for operational plant noise*	ESC previously queried RFI55, [REP6-032] the circumstances in which the NMS thresholds for operational noise might be expected to be applied without operational noise limits having been breached. The Applicant has acknowledged in Appendix 11B of the SOCG between ESC and the Applicant [REP7-093] that amendments could be made to the NMS to clarify this and that there is no need to provide insulation due to plant noise from AD sites because plant noise limits for these are secured through the Associated Developments Design Principles document [REP2-041], which is itself secured through Requirement 20(3) of the draft DCO. However, ESC note that the operational noise in Table 1.1 have not been amended in response. While ESC do not consider this essential, because operational plant noise from either the AD sites or the power station will not be permitted to reach the thresholds in the NMS in any case, it remains unclear why it was considered necessary to include this in the NMS.	Clarification requested.
13	Table 1.1	*Insulation for construction noise*	Given the prolonged period of construction works on the Main Development Site, ESC have previously requested that the Applicant consider provided insulation against construction noise at lower thresholds than those set out in the Table 1.2 of the NMS. This remains ESC's position.	N/A

N/A	N/A	Properties fronting the B1122	Section 3.4.8 of the Appendix 11B: the Applicant's Second Set of ESC Request for Information Responses states: *"SZC Co. also proposes to offer insulation under the Noise Mitigation Scheme [REP6-015] to all properties fronting the B1122 between Yoxford and the site, irrespective of whether they meet the qualifying thresholds or not. This will be secured through the Noise Mitigation Scheme [REP6- 015]."* This is welcomed by ESC but the change has yet to be included in the current Noise Mitigation Scheme.	Confirmation of the noise insulation offer in the Noise Mitigation Scheme

6.3 Lighting Management Plan – Clean Version – Revision 2.0 [REP7-020]

Introduction:

Presented in table form, this document constitutes ESC's review of the Lighting Management Plan submitted at Deadline 7.

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Ecology

Pg. No.	Section Ref.	*Relevant text / illustration*	Observations and concerns	Requested:
31	1.3	*Construction Lighting Management Plan.*	ESC welcome the amendments made to section 1.3 of this document following our previous written and oral comments on the need for better identification and control of the required dark and low light areas as part of the necessary bat mitigation measures. From the information provided in section 1.3 and Figure 2B.3 it appears likely that adequate dark corridors for bat commuting can be maintained along Bridleway 19, the SSSI Crossing and through the Temporary Construction Area (TCA) (via the Water Management Zones (WMZs)). The only area of concern where this may not be achieved is at the southern end of Bridleway 19 were the route runs between the Site Entrance Hub and the Temporary Construction Area. Here the mapped dark corridor is relatively narrow and is crossed by two access roads. Careful implementation and monitoring of construction lighting will therefore be required in this area to ensure that a sufficiently wide dark corridor is maintained.	Careful implementation and monitoring of construction lighting at the southern end of Bridleway 19 to ensure a sufficiently wide dark corridor is maintained.

			It is also noted that a low light area is to be maintained along the northern edge of Kenton Hills and on the northern, southern, and western boundaries of Ash Wood. Again, this is welcomed as these areas are important for foraging and commuting bats and are also in close proximity to known roosts.	

Environmental Protection

Relevant Text / illustration	Observations and Concerns	Requested:
General Comment on the Lighting Management Plan	Control, prevention and enforcement of light "Nuisance". The Lighting Management Plan does not appear to cover the event that a complaint of light nuisance is received by the Applicant either directly from residents or via ESC. As it is likely that statutory authority will be removed by this DCO the Lighting Management Plan should make provision for dealing with issues relating to lighting should they arise during construction and operation. For the avoidance of doubt this comment relates to light that would amount to a statutory nuisance as opposed to light pollution or sky glow which should be minimised via good design principles at the outset. It is accepted that lighting is necessary during both construction and operation of Sizewell C for a variety of reasons and some of these reasons, principally Health and Safety, may take precedence over matters of nuisance in terms of legislative hierarchy where justified, however the Applicant will still be expected to make best endeavours to resolve such issues	Applicant to make provision for dealing with complaints related to lighting.

	that arise where it is possible to do so without unreasonably compromising factors such as Health and Safety and this process should be detailed in the Lighting Management Plan.	

8.11 Code of Construction Practice (CoCP) [REP7-037]

Introduction:

Presented in table form, this document constitutes ESC's review of the Code of Construction Practice submitted at Deadline 7.

The table comprises:

- First column: the relevant page number (document, not pdf page);
- Second column: a reference (section, figure or table number);
- Third column: relevant source document extract (text or Figure snapshot)
- Fourth column: our observations and concerns on the cited extract
- Fifth column: our requested action upon the Applicant.

All extracts from the Drawings, including page, section number, text and footnotes etc. are shown in *italics* in the first three columns, including references elsewhere as appropriate.

In Column 5 the requested action from the Applicant takes one of the following forms, or a combination thereof:

- Clarification
- Confirmation
- Further information.

- Explanation

Ecology

Pg. No.	Section Ref.	*Relevant text / illustration*	Observations and concerns	Requested:
75	Part B, Table 6.1	*Control measures to mitigate potential impacts - bats*	The CoCP still does not include any measures to control noise above the identified thresholds where impacts on bats are considered likely to occur, in the most sensitive parts of the site. Sensitive areas include the proposed dark corridors and the boundaries of the site (particularly the southern site boundary alongside Kenton Hills and the boundaries adjacent to Ash Wood). As discussed at ISH10 the Applicant recognises the significant impacts which noise could have on bats and has committed to control this through measures in the construction plans (paragraph 1.4.35 of [REP7-069]). These controls must therefore be included in the CoCP.	Include appropriate measures in the CoCP to control works with noise levels predicted to be above the identified bat impact threshold. It is understood that the Applicant will submit an updated CoCP addressing this point at Deadline 8.

Environmental Protection

All extracts from the *Initial Statement of Common Ground*, including page, section number, text and footnotes etc. are shown in *italics* in first three columns, including references elsewhere as appropriate.

Pg No.	Section Ref.	*Relevant Text / illustration*	Observations and Concerns
Code of Construction Practice Part A: Project Wide Controls			
15	3.1.38	Complaints handling: *All complaints received by SZC Co. will be logged, with the details of the complaint and contact details of the*	These clarifications are welcomed by ESC.

		complainant recorded. The complaint shall be acknowledged in writing, by email, or by telephone, within a reasonable period after the complaint has been made, but within two working days. The acknowledgement will contain details of the next steps to be taken. Details of all received complaints will be promptly communicated to ESC, or other statutory bodies such as the Environment Agency as may be appropriate, subject to any personal data being treated in accordance with SZC Co.'s privacy notice.	
17	3.1.47	Liaising with Relevant Authorities: *"Complainants may also contact the relevant local authority and other statutory bodies e.g., the Environment Agency. SZC Co. expects that each body will discharge their statutory duties with respect to received complaints in line with their own processes; SZC Co. will provide whatever assistance is appropriate to assist the discharge of their duties to resolve the complaints."*	
Code of Construction Practice Part B: Main Development Site			
17	3.1.3	Noise Monitoring and Management Plan: "A Noise Monitoring and Management Plan (NMMP) will be prepared by SZC Co. that will set out the proposed monitoring and management for noise at the main development site. The NMMP will be submitted to and approved by ESC before relevant construction works commence"	ESC has submitted comments on the draft NMMP elsewhere in this document.
22	Table 3.2	Construction noise thresholds	Given the extended duration of the construction works, ESC's position has until recently been that the construction noise

			thresholds in the CoCP should be lowered and aligned with the criteria in Annex E5 of BS5228-1 for long projects involving substantial earth moving works, or other equivalent criteria which also recognise the increased sensitivity of evening periods (19:00 to 23:00). However, following recent discussion with the Applicant, ESC has agreed that appropriate controls (including more stringent controls in the evenings) can be secured via the NMMP and Bespoke Mitigation Plan process provided a number of requested changes are made to the draft NMMP. This is discussed in greater detail in ESC's responses to the Applicant's Written Submissions responding to ISH8 which is covered elsewhere in this document.
Code of Construction Practice Part C: Main Development Site			
18	3.2.1 and 3.2.2	Construction noise thresholds: *The noise thresholds for construction activities undertaken at the Associated Developments sites will vary according to local noise conditions, as described in Section E.3.2 in Annex E of BS 5228-1: 2009+A1: 2014.* *The appropriate noise thresholds for each Associated Development site will be set out in the Noise Monitoring and Management Plan for that site.*	ESC agrees that the Construction noise thresholds set out in Section E.3.2 in Annex E of BS 5228-1: 2009+A1: 2014 are appropriate for AD sites. ESC's expectation is that the construction noise thresholds in the NMMPs for AD sites for will be aligned to these figures.

Air Quality

Table 4.1, it is mentioned that an action level of 0.5g/m^2/day dust deposition will be used to trigger dust event reporting to the Environment Review Group. ESC requests that the dust deposition alert level is changed to 0.2g/m^2/day to align with the 0.2g/m^2/day alert level threshold

identified in section 4.41 of the Institute of Air Quality Management's Guidance on Monitoring in the Vicinity of Demolition and Construction sites. It is understood that this change is being made by the Applicant and will be included in the version submitted at Deadline 8.

Table 4.1, page 32 states '*The use of stationary generators will be minimised through the provision of site electrical power and use of alternative supply sources where possible.'* It is welcome to see a commitment to the introduction of mains electrical power *where possible* but ESC would like to see a commitment to provide and use electrical site power at *the earliest opportunity*. In the SoCG ESC have requested additional information that will be submitted at Deadline 8, regarding further details on steps to achieve mains electricity deployment in relation to the construction programme. ESC wishes to understand if mains electricity will be adopted at the earliest opportunity.

4.1.3, page 27 Part B and 22 Part C states *'Further details of dust monitoring and management will be set out in a Dust Monitoring and Management Plan (DMMP) that would be prepared before relevant construction works commence. The frequency, methods and indicative locations for dust monitoring would be agreed with ESC through the DMMP. The DMMP would be submitted to ESC for approval and would be implemented as agreed.'* The commitment to the DMMP is welcome but ESC would like the following amendments: 'Further details of dust monitoring and management will be set out in a Dust Monitoring and Management Plan (DMMP) that would be prepared **and agreed with ESC before CEMPs are finalised and before relevant construction works commence**. The frequency, methods and indicative locations for dust monitoring would be agreed with ESC through the DMMP. The DMMP would be submitted to ESC for approval and would be implemented as agreed.'

8.12 Mitigation Route Map Rev. 5 [REP7-039]

Air Quality comments: Reference MDS-TE22, it is stated in MDS-TE22 that the DMMP will be completed prior to construction works starting, this is welcome. It is requested that other references to DMMP, in the CoCP and Mitigation Route Map mirror comments that the DMMP will be agreed with ESC prior to construction works. Further to this, it is also requested that the sentence is updated to highlight that the DMMP will be completed prior to the CEMPs and will form the basis of its dust mitigation.

MDS-T8 and MDS-T13, References are made to pedestrian crossings on B1122 and A12 but not on the potential impact on air quality – discussion is ongoing between the Applicant, SCC and ESC as to how to assess and monitor the impact on air quality and review the crossings if required.

8.3 Associated Development Design Principles - Tracked Changes Version - Revision 3.0 [REP7-034]

Page 3 - Table 2.1 General Design Principles: General Design Principle 1 has been amended from the past tense to the present tense in respect of the site layout optimising overall land take. That is, optimisation remains ongoing. This amendment makes sense given that the design of the Associated Development is not fixed in the past.

Page 3 - Table 2.1 General Design Principles: General Design Principle 1 has been amended to delete the reference to temporary land requirements, meaning that this principle, instead of being specific, is now general across the Associated Development proposals. This amendment to generalise the design principle is appropriate.

Page 6 – Table 3.1 Northern Park and Ride (Darsham) Design Principles: Building Design Principle 6 has been amended to detail specific acoustic standards for all mechanical services plant in place of generalised text about noise emissions being reduced to acceptable limits. These limits are now specified. ESC welcomes the inclusion of detailed specific acoustic standards for all mechanical services plant.

Page 7 - Table 3.1 Northern Park and Ride (Darsham) Design Principles: Landscape Design Principles 6 and 7 have been amended to add in 'species-rich' in front of 'hedgerows' in the text here about boundaries. ESC welcomes the addition of 'species-rich' in the description as it clarifies that these hedgerows will not be single species and ecologically, it is an improvement over 'hedgerows'.

Page 8 – Table 3.1 Northern Park and Ride (Darsham) Design Principles: Sustainability Principle 2 has been amended in respect of the provision of electric vehicle charging spaces.

Page 10 – Table 3.2 Southern Park and Ride (Wickham Market) Design Principles: identical changes in respect of acoustic standards, hedgerows and electric vehicle charging spaces to the Northern Park and Ride Design Principles have been made here also.

Page 13 – Table 3.3 Freight management facility Design Principles: identical changes in respect of acoustic standards, hedgerows and electric vehicle charging spaces to the Northern and Southern Park and Ride Design Principles have been made here also.

Page 17 – Table 3.4 Two village bypass Design Principles: General/Masterplanning Principle 6 has been amended to include wording about having regard to the feasibility of using quiet road surfaces.

Page 20 – Table 3.5 Sizewell link road Design Principles: General/Masterplanning Principle 6 has been amended in the same way as for the Two Village Bypass in respect of quiet road surfaces.

Page 22 – Table 3.5 Sizewell link road Design Principles: Landscape Design Principle 2 has been amended to add in 'native hedgerows' to substitute for 'hedgerows' for planting along the SLR route; and to delete reference to including the use of elm hedgerows which we had previously objected to, and this is welcomed.

Page 28 – Table 3.8 Rail improvements Design Principles: Landscape Design Principle 5 has been amended to add in 'species-rich' in front of 'hedgerows' proposed for planting along the B1122. ESC welcomes the addition of 'species-rich' in the description as it clarifies that these hedgerows will not be single species and ecologically, it is an improvement over 'hedgerows'.

8.3 Associated Developments Design Principles [REP7-035]

Introduction:

Presented in table form, this document constitutes ESC's review of the Associated Developments Design Principles submitted at Deadline 7. Please also note comments made at ISH13 in our written summary of oral case submitted at this Deadline relating to light spill and planting to reduce lighting impacts.

The table comprises:

- First column: the relevant page number (document, not pdf page);
- Second column: a reference (section, figure or table number);
- Third column: relevant source document extract (text or Figure snapshot)
- Fourth column: our observations and concerns on the cited extract
- Fifth column: our requested action upon the Applicant.

All extracts from the Drawings, including page, section number, text and footnotes etc. are shown in *italics* in the first three columns, including references elsewhere as appropriate.

In Column 5 the requested action from the Applicant takes one of the following forms, or a combination thereof:

- Clarification

- Confirmation
- Further information.
- Explanation

Pg. No.	Section Ref.	*Relevant text / illustration*	Observations and concerns	Requested:
22	Table 3.4	*Two Village Bypass Landscape Design Principles, row 6.*	Bat box provision must be in accordance with the ratios provided in the Draft Bat Method Statement [REP7-080].	Ensure ratio of bat box provision is in accordance with the Draft Bat Method Statement.
26	Table 3.5	*Sizewell Link Road Landscape Design Principles, row 7.*	Bat box provision must be in accordance with the ratios provided in the Draft Bat Method Statement [REP7-080].	Ensure ratio of bat box provision is in accordance with the Draft Bat Method Statement.
Various	Various	*Updated references to "species-rich hedgerows".*	The text updating hedgerow planting to species-rich hedgerow planting is welcomed.	N/A

9.12 Preliminary Design and Maintenance Requirements for the Sizewell C Coastal Defence Feature - Revision 3.0 [REP7-101].

Introduction:

Presented in table form, this document constitutes ESC's review and findings of the Applicant's report 9.12 Preliminary Design and Maintenance Requirements for the Sizewell C Coastal Defence Feature - Revision 3.0 [REP7-101]. The review is confined to the subject matter of the impacts of the proposed coastal defence structures on coastal processes and morphology. In particular, the Review considers the sufficiency of the information provided in Revision 2.0 [REP3-032] and highlights any particular aspects where clarification, confirmation or further information is sought.

The table comprises:

- First column: the relevant page number (document, not pdf page);
- Second column: a reference (section, figure or table number);
- Third column: relevant source document extract (text or Figure snapshot)
- Fourth column: our observations and concerns on the cited extract
- Fifth column: our requested action upon the Applicant

All extracts from Revision 2.0 (B), including page, section number, text and footnotes etc. are shown in *italics* in the first three columns, including references elsewhere as appropriate.

In Column 5 the requested action from the Applicant takes one of the following three forms, or combinations thereof:

- Observation
- Clarification
- Confirmation

- Further information.
- Explanation

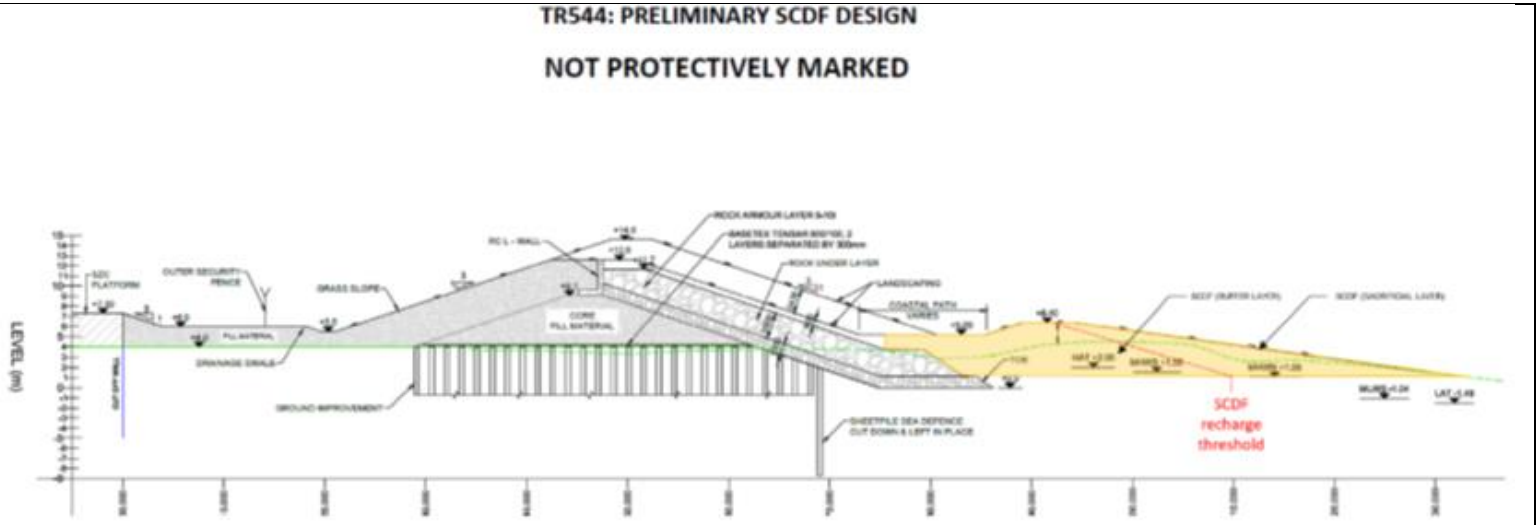
Pg. No.	**Section Ref.**	***Relevant Text / Illustration***	**Observations and Concerns**	**Requested**
2	ES	*BEEMS Technical Report TR545 model results support the coarsening of SCDF sediments, highlighting performance improvements (less erosion and therefore reduced maintenance and recharge requirements) of 7 – 23% for very coarse pebbles (modelled as 40 mm diameter) compared to the modal medium pebbles at Sizewell (modelled as 10 mm diameter), over the operation phase.*	The reduced mobility will reduce the capacity to feed longshore transport (feeding natural beach) and retard the rate of retreat compared with the (otherwise) natural grade beach, gradually causing a mismatched alignment and an impedance to natural littoral drift.	On the face of it, this does not appear to recognise the need for continuity of the natural longshore transport corridor. Further information is needed to justify this approach whilst not adversely affecting coastal geomorphology. *The query remains outstanding, though we understand through further discussion with the Applicant that there is a likely move towards using native beach material.
3	ES	*An important benefit of the SCDF design (and soft defences in general) is its adaptability to future pressures and real-world performance – that is, the specifications and triggers in the*	This is a strong argument to retain use of a native beach composition in the sacrificial part of the SCDF (at least).	Given the precautionary approach taken to SCDF degradation assessment and the infrequent maintenance

		CPMMP can, and indeed will, be adjusted relatively easily according to environmental conditions and performance, thereby accounting for any uncertainties in SCDF response or future pressures (e.g., sea level rise).		actions identified by it, explain why use of native material in the sacrificial layer is not an appropriate choice. Query remains but see * in 2 ES above.
3	ES	*The risk of HCDF exposure can be effectively mitigated using a well-designed internal cobble layer (initially proposed in Version 1 (Option B)). The aim of a cobble layer being considered is to increase erosion resistance if the fronting SCDF pebbles were fully removed (unlikely during the operation phase).*	Large cobbles are unlikely to prevent exposure of the HCDF in the case that they are exposed to storm conditions for which the 6 to 10 tonne HCDF armour layer was designed. There appears to be a misconception that the overriding objective is to prevent exposure of the HCDF. The objective, from a coastal processes perspective, is to maintain the natural sediment corridor across the installation frontage. If the active shore profile intercepts (exposes) the HCDF then interference with the sediment transport will occur, affecting both updrift and	Please address the misconception regarding exposure of the HCDF, and provide further information on the need for this cobble layer if it is considered unavoidable (e.g. for safety). It is understood that the decision to adopt the cobble layer rests with the structural designers (Atkins). This item is reserved until then.

			downdrift areas. Adding another ~5m of large cobbles to the HCDF would seem to hasten the time to this unwanted occurrence by shifting the barrier seawards. Should it be an intent that a (collapsible) cobble layer is a contingent scour protection measure to prevent/delay toe exposure, then that could have been effected less intrusively by sinking the toe to a greater depth in the first place. It has been advised by Cefas that this is definitely not the intent.	
14	ES	*Operation and early decommissioning phases Preliminary, highly conservative beach-erosion modelling (Phase 1; BEEMS Technical Report TR531) and volumetric analysis of the SCDF design show that it is substantially larger than that required to withstand erosion from 2 – 3 severe1 sequential storms, even along sections where the SCDF is smallest, throughout the operation phase. The 6.4 m ODN SCDF crest height would be 1 – 2.4 m above the present,*	Section 3.1.2 p46 says "*XBeach sand 2D (Sections 3.1.2.2 and 3.1.2.3). Subsequent to BEEMS Technical Report, the XBeach model calibration was refined to give more accurate results (though still conservatively over-predicting erosion).* This overprediction must result in outsizing the shingle grade to	This is a significant issue. Clarification is sought regarding the balance between calibration and conservatism (same would apply when native sediment is used).

		unbreached, shingle ridge crest at Sizewell C, which is substantially greater than predicted sea level rise (SLR) in 2099	achieve a particular outcome. Further to this the design shingle grade is coarsened intentionally to minimise the recharge frequency. Coarsening the shingle and raising the height of the SCDF crest are bound to reduce its potential to erode or roll back. However, same measures are going to increase the potential for the SCDF to retreat more slowly than the natural beaches on either side, thus leading to receded shorelines, with potentially negative consequences on the ambient longshore transport regime. This concern may be ameliorated if, as noted in*2 ES the native beach material is used. However, this will only apply to the shingle behaviour and not the impact of the increased volume and height	Further information and evidence is sought on how receded shorelines are to be avoided/managed in respect of the eventual outflanking of HCDF by the SCDF, in particular regarding avoidance of the interruption to the natural (across frontage) longshore transport regime. Note: Following suggestions from ESC, the Applicant is receptive to the undertaking of calibrated longshore transport modelling which should help to identify the propensity for interruption of the sediment transport corridor, and put into better context now, the viability and likely need for secondary mitigations in the future.

			of the SCDF relative the equivalent normal beach features.	
14		***Operation and early decommissioning phases*** *Version 1 of this report (submitted at Deadline 2 of the Sizewell C DCO Examination) proposed coarsening the SCDF sediments……This is in line with UK experience and guidance and is intentionally designed to increase sediment retention and therefore prolong longevity of the SCDF, however the particle-size has not yet been finalised and will be subject to consultation with the Marine Technical Forum.*	ESC would welcome an explanation of whether it is usual to recharge a finite length of beach with shingle that is uncharacteristically coarser than the "native" beach material on either of it.	Explanation of whether it is usual to recharge finite length of beach with shingle that is uncharacteristically coarser than the native beach material. Please also refer to 2 ES above.

5 13	Fig. i	 Figure i: Schematic cross-section of the hard and soft coastal defence feature (HCDF and SCDF). The SCDF (yellow) is conceptually divided into two volumes, separated by the dividing SCDF recharge threshold (as the threshold is volumetric, the line is shown for illustrative purposes only, i.e., many different beach profile shapes can produce the threshold volume). The SCDF buffer layer (whose volume is V_{buffer}) sits to landward and is not intended to be exposed, whilst the SCDF sediment to seaward is sacrificial (V_{sac}) and would be replenished once the recharge threshold has been reached. The dashed green line running through the yellow SCDF is the present-day topographic cross-section.		
18			Accepting that the diagram is a schematic, it nevertheless raises a number of questions: The HCDF structure appears to be drawn to natural scale, e.g. with a 1:3 seaward slope. Equally the	Clarification sought, preferably by production of a more realistic illustration that uses natural scale throughout.

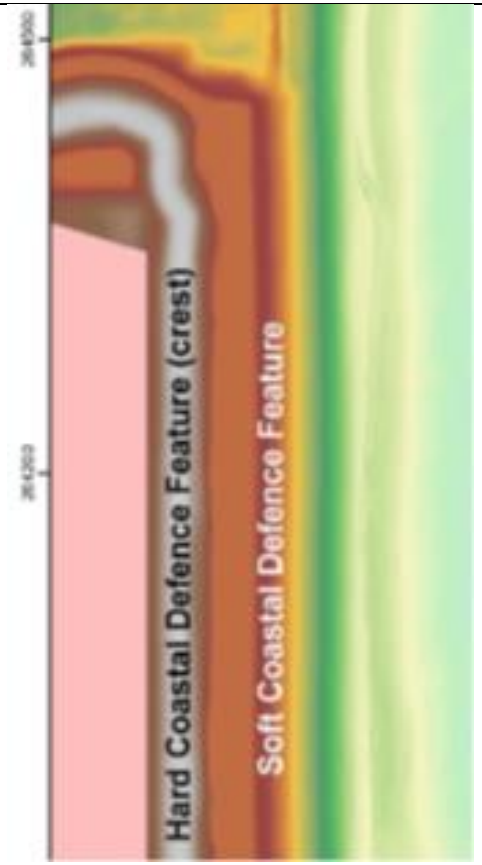
			seaward face of the Sacrificial layer at ~1:7 is not unreasonable. The principle of "volume definition" is reasonable but the schematic is misleading in respect of the implied SCDF threshold (even with the caveat): There is no consideration in report of SCDF viability with adapted HCDF profile Two points in relation to "landscaping": The coastal path runs beneath the landscaping. The landscaping runs over the crest at a thickness of 2m (or 2.9m if the unlabelled layer beneath it is also landscaping). If not removed before the HCDF becomes an active defence, this material could seriously affect the hydraulic performance of the HCDF (run up and overtopping).	This diagram will be changed (re. Applicant/ESC meeting 10.09.2021). Query and connected comments are withdrawn. Clarification on the location of the landscaping in relation to the coastal path. Further information regarding long term future management of the landscaping layer. Except where noted, the above points apply to the Revision 3.0 version of the report.

20	*1.1*	*To maintain resilience and minimise the disturbance associated with recharge events, the SCDF will include several erosion resistant features:* • *a large volume;* • *high crest;* • *coarse particle sizes; and* • *surface vegetation.*	We feel that this is missing a very important **objective**, which is to: • avoid any negative impact on the coastal processes, in particular that due to interruption of longshore sediment transport, be that due to exposure of the HCDF, or misalignment of the SCDF in relation to the shorelines to north and south, or any other related cause.	An revision is requested to include an additional objective regarding coastal processes (please see column to the left).
22	*1.3*	***Changes in Version 3*** *The southern extents of the BLF that overlap with Sizewell B (an extension of 70 m with a rounded end that was not included in Versions 1 and 2. The most southerly 200 m of the HCDF changes angle from the main frontage of the HCDF, with the most seaward toe position ~26 m more seaward than previously used in this report.*	This represents a significant incursion of the hard defence, and, as is described later in the report, a seaward incursion of the SCDF. This is contrary to ESC's objective for the HCDF to be moved landward to minimise the risk of significant negative impacts.	Is the overlap of the Sizewell C HCDF with Sizewell B only required while Sizewell B is operational? If so, could the Sizewell C HCDF line be moved or modified, i.e. shortened and/ or moved landward to align with the remaining northern part, as part of Sizewell B decommissioning?

22	*1.3*	*However, the lowest initial SCDF volumes was measured as 105 m3/m at the southern endpoint, although these volume measurements are artificially low, and will be larger once the SCDF has been fully updated. Historically this is a stable area of shoreline.*	The suggested stability of this area appears to be linked to the beneficial effect of the Sizewell B outfall salient on the shoreline immediately landward of it that is temporary. It is therefore unreasonably optimistic to imply that this section of shoreline is less prone to future change than elsewhere.	If the relative stability of the southern HCDF frontage is linked to the temporary beneficial effect of the Sizewell B salient this should be acknowledged in the text.
6	1.9 Introduction	*Its large (c. 210,000 m3) sedimentary mass is designed to avoid disruptions to longshore transport and the impacts to local beaches which, in its absence, would eventually occur if the landward Hard Coastal Defence Feature (HCDF) were to be exposed Its intended purpose is to release sediment into the coastal system when eroded by waves.*	It should also be noted wherever relevant that *disruptions to longshore transport and the impacts to local beaches* could also result from differential retreat of the SCDF with respect to that of adjacent shorelines (N and S of the installation).	Clarification in the report to the highlighted matter.
6	1. Introduction	*As the SCDF is designed to avoid the impacts of HCDF exposure during the construction and decommissioning phases, it is defined as embedded (primary) mitigation.*	Further to including the operational period, this statement should be extended to minimising the impact of a misaligned shoreline following landward retreat of the SCDF (active beach) intercept with and	Clarification in wording sought in respect of the modified comment.

			beyond the HCDF. In effect this means the same as HCDF exposure.	
7	1.1	*Unlike hard defences, which are immobile and tend to reflect wave energy during storms (causing enhanced scour and sediment loss), soft defences work with nature, dissipate energy, supply additional sediment to coastal systems (in the case of the SCDF and beach recharge in general) and therefore benefit local shorelines.*	It is not clear at what point the sediment size used in a soft defence warrant the description `hard'. The cobble layer in the SCDF (V1 option B) appears to have a 'hard' defence design purpose.	Clarification sought as to how the SCDF cobble layer can be considered to function as a SCDF element and not as an extension of the HCDF.
7	1.1	*…the SCDF will include several erosion resistant features:* • *a large volume* • *high crest* • *coarse particle size* • *surface vegetation*	These erosion resistant features would reduce natural shoreline retreat, and limit sediment yield to adjacent shorelines N and S of the installation. This would appear to be a recipe for differential retreat of the SCDF with respect t to that of the adjacent shorelines [REP7-045] (Deadline 7 Submission - 9.31 Storm Erosion Modelling of the Sizewell C Soft Coastal Defence Feature using XBeach-2D and XBeach-G - Revision 2.0). Thus, potentially creating a partial	Further information sought on how differential retreat of the shorelines of a ruggedised SCDF is to be managed. See 2 ES above.

			blockage to natural longshore transport Earlier reporting [APP-311] (6.3 Volume 2 Main Development Site Chapter 20 Coastal Geomorphology and Hydrodynamics) made reference to "beach grade sediment". The Applicant appear to have gone away from this principle in favour of ruggedised SCDF parameters as per bullets to left. Potentially this is a retrograde step as far as the design requirement to maintain a sediment transport corridor goes (for the reasons mentioned in above para.).	Further information sought on the merits of a ruggedised SCDF (e.g. economy in recharge measures) vs a potentially negative impact on coastal processes. See 2 ES above.
10	2.1	*However, in the very unlikely event that the HCDF is exposed as a result of a sequence of very severe storms in rapid succession without the opportunity to recharge, the HCDF would protrude partly or wholly through the beach face and introduce an artificial obstruction to longshore shingle* transport until the SCDF was recharged…..*The SCDF is designed to avoid such	Presumably, so also could a shoreline that has been misaligned due to differential retreat of the SCDF with respect to the adjacent shorelines to N and S.	Clarification sought on the intent of the statement and its application to both HCDF exposure and a misaligned shore.

		impacts by maintaining a blockage-free transport corridor between the HCDF and the sea.		
16	2.3.1	• *an initial seaward slope of approximately 8.3° (1:7) down to the active beach face (the slope is expected to change as coastal processes naturally rework the beach profile).*	It is not clear how the slope change (Steepen due to coarseness of material used and uneven uprush/backwash	State how the seaward slope is expected to change.
17	Fig. 6		The colour contours clearly show how the SCDF would wrap around the north end of the HCDF, turning westwards / landwards at the end of the developed site. Clearly from the safety perspective, the coastal defence cannot be allowed to be breached should shoreline retreat progress up to and beyond the HCDF (outflanking). Were this situation to arise then continuity of natural longshore transport towards Thorpeness would be interrupted (notwithstanding secondary mitigation).	Please clarify/comment on the how this situation might develop and be countered if/when the situation occurs. Please refer to 2 ES above.

20	2.3.2	*Overtopping per se is not of direct concern for the functioning of the SCDF, since its purpose of avoiding disruption to longshore shingle transport due to HCDF exposure will not be affected. However, overwashing of quantities of sediment sufficient to alter or mobilise the crest could lead to breaching and affect the integrity and maintenance frequency of the SCDF. To mitigate this, the crest elevation should be high enough to avoid heavy overwashing.*		Explain how breaching of the SCDF crest will affect the SCDF integrity and maintenance frequency. Will Vbuffer include a condition for retention / reconstruction of the designed crest height and width?
20	2.3.2	*(SLR) predictions early in the SZC's decommissioning phase (209925), which are: 0.55 – 0.83 m RCP4.5 (intermediate emissions scenari0, and 0.78 – 1.14 m RCP8.5 (worst-case climate emissions scenario*	Different emissions scenarios.	Clarification of why RCP 8.5 is not used in both scenarios?
22	2.4.2	*Option A uses very coarse pebbles (32 – 64 mm diameter; see the modelled 40 mm results in Section 3.1.2.4), which are at the coarse end of the native particle-size distribution, to prolong the longevity of the SCDF (see Figure 4A).*	At 32-64mm diameter this material has come a long way from the original concept which referred to beach grade material. Whilst the material would provide good longevity, it is not clear how well would it perform in yielding sediment to the adjacent shores. Both are design criteria.	Further information sought in addressing the merits of SCDF sediment size in terms of both longevity and sediment yield performance.

28	*3.1.1.2*	*Using the peak 10-year retreat rate (2.23 m/yr) as a preliminary worst case by assuming it persists across the station life rather than cyclical behaviour, and applying Vsac,mon = 42 m3/m as before,* ***gives a recharge interval (RI) of 7 years.*** *Although there is no persistent historical trend at SZC and noting the 2.23 m/yr rate is worse than the average and peak rates of erosion at the S1B5 erosion hot spot (between SZC and Minsmere Sluice; 1.01 and 2.07 m/yr respectively), the total recharge requirement would be c. 270,550 m3 across the operation phase.*	Consideration of how a retreating baseline shoreline profile will affect the function, management, and viability of the SCDF is a key issue for ESC. The report does not appear to include information on how assessment of this risk has been integrated with storm loss impacts. We are also concerned at the disparity between worst case shoreline change assumptions included in this report, i.e. 1.01 to 2.23m/yr, and those in the Design Report i.e. 20-40m total over the station life (assumed 120 years) giving a max rate of 0.33m/yr. We have made similar comments in our feedback on the Design Report.	Clarify where in the report there are RI forecasts that integrate the impacts of both shoreline retreat and storm losses. Add forecast eroded baseline beach profiles, extrapolated to years 2050, 2080, 2110 and 2140 to all drawings that are relevant to the assessment of SCDF management. This is necessary to demonstrate how a retreating baseline shoreline will affect SCDF degradation and replenishment actions.
31	3.1.2.2 Also 3.1.2.4	***XBeach 2D storm erosion modelling (sand) – sea level rise cases*** *XBeach 2D sand modelling simulates cross-shore and alongshore hydrodynamic and morphodynamic processes to estimate the storm erosion during storms.*	As a sand model, XBeach will overestimate both cross-shore and longshore movement/changes, with respect to coarser material (pebbles, cobbles), as would appear to be the design intent.	Further explanation sought on the method of assessing longshore sediment yield from coarser (than sand) SCDF material, and its performance in respect of

		XBeach-Gravel and the effect of particle size on recharge intervals – BEEMS Technical Report [REP7-045] *The behavioural differences between the sand and gravel models are illustrated by erosion rates of 159 - 464% times greater in the sand model (D50 = 0.8 mm) compared to the smallest particle size used in the gravel model (D50 = 2mm).*	As it is the only model representing longshore transport how is the more sluggish movement of shingle/cobbles addressed. This concerns the objective to provide sediment yield to the adjacent shores, which would be much reduced when considering coarse shingle compared to sand.	sediment feed to adjacent shores. See also 2 ES above.
35	3.1.2.3	***XBeach 2D storm erosion modelling (sand) – receded lateral shorelines*** *In addition to the effect of sea level rise (Section 3.1.2.2), misalignment between the maintained SCDF shoreline and a future, naturally eroded, adjacent coast could further increase erosion pressure on the SCDF. To consider the effects of such lateral shoreline recession on the SCDF, a potential post-decommissioning shoreline38 was converted into digital bathymetry for XBeach 2D modelling (see BEEMS Technical Report TR545). The expectation was that gradients in longshore transport during storms would preferentially erode the SCDF at its north and / or south*	The focus (as throughout) is on the pressure on the SCDF, with only passing mention of the adjacent shorelines, in this case in respect of localised sediment yield. The impact of misaligned shorelines needs to be given prominence in the report in terms of mitigation; i.e. elimination of any step change in alignment due to the ruggedisation of the SCDF which could act as a barrier to longshore transport.	Further information sought on the triggers, timing, methods and scope of secondary mitigation to offset the impact of misaligned shorelines (SCDF with respect to adjacent shores N and S).

		extents, increasing the likelihood of localised recharge.	Recent discussions between SZC Co./ESC have considered this matter with a view to secondary mitigation (most likely beach nourishment) being applied to overcome the concerns as to shoreline misalignment.	
39	3.1.2.4	*Overall the conclusions from this modelling indicate that the coarser SCDF composition proposed in Sections 2.4.2 and 2.4.3 will increase the longevity of the SCDF and reduce recharge frequency.*	An alternative interpretation is that use of native material as mitigation is shown to be viable and effective in delivering the competing objectives of HCDF protection and longshore transport continuity. Also, the predicted frequency of interventions is not unduly onerous. It must not be overlooked that SCDF management is a burden that SZC Co. must bear to mitigate the disruption that the seaward HCDF location will cause.	Explain why the alternative interpretation of the report findings shown opposite is not correct. Explain why in the report the priority for SCDF performance is deferred intervention and not continuation of natural longshore processes.

41	Table 3	Table 3: The results from the XBeach sand 2D and X-Beach G 1D modelling, showing the sediment losses (and resultant RIs DDM applied in brackets in years) under different conditions. The particle sizes D_{50} = 10mm and 40mm were chosen to represent the mode and coarser end of the native sediment size at SZC respectively. The D_{50}= 0.8mm used XBeach 2D sand modelling is the recommended maximum particle size. **Model Conditions** / **Present Day SLR sediment losses (m^3/m)** / **2069 SLR sediment losses (m^3/m)** / **2099 SLR sediment losses (m^3/m)** / **2099 SLR, Receded Shoreline sediment losses (m^3/m)** 2D 8/E storm — Mean Loss: 17.0 (106 years) / 23.0 (78 years) / 28.0 (64 years) / 44.0 (40 years) 2D 8/E storm — Mean and 1 STD Loss: 23.5 (77 years) / 32.6 (56 years) / 39.0 (46 years) / 62.8 (28 years) 2D 8/E storm — Maximum Loss: 28.2 (64 years) / 38.0 (47 years) / 45.2 (40 years) / 82.0 (22 years) 1D 1:20 year Hs storm — D_{50}= 0.8mm (XBG): 29.9 (20 years) / (not modelled) / 37.0 (16 years) / (not modelled) 1D 1:20 year Hs storm — D_{50} = 10 mm (XBG): 4.6 (130 years) / (not modelled) / 14.3 (42 years) / (not modelled) 1D 1:20 year Hs storm — D_{50} = 40 mm (XBG): 4.3 (140 years) / (not modelled) / 11.6 (52 years) / (not modelled)	The analysis is based around two previous storm events/sequences. Further development of the design needs to include a greater range of conditions including events with higher return periods. This is acknowledged in the report. What would equivalent loss and RI results be for the neighbouring shores to north and south, of the SCDF frontage? Outcomes need to be aligned with other practical considerations. What would be likely maximum/minimum intervals between recharges.	Further information on the design conditions to be taken forward to design. Further equivalent information regarding adjacent shores. Clarification on rationalising the results in recognition of other practical factors.
44		*The large SCDF volume, relatively low number of calculated recharge events and relatively small recharge volumes (based on conservative measures) indicate that the SCDF is viable across the operation phase of the station and that the risk of HCDF exposure during this phase is very low.*		Please confirm that the site lifetime investment plan includes an allowance for all mitigation arising from the CPMMP including SCDF replenishment of the nature described but not limited to

				the frequency / volume stated in this report. If there are constraints on mitigation investment, please declare them.
45		*The specifications and triggers in the CPMMP can be adjusted to reflect environmental conditions and performance, thereby accounting for any uncertainties in SCDF response or future pressures (e.g., sea level rise) as part of a structured Adaptive Environmental Assessment and Management process*	The specification and triggers will clearly be necessary. However, a major factor in the design is bound to be selection of the sediment grading(s). This will need to provide the necessary buffer between the seaward shore and the HCDF, and provide sufficient longshore feed to sustain the shorelines to N and S. The present report does not address the latter, instead, illustrating the potential for recessed adjacent shorelines in Figure 13 (more clearly illustrated in [REP7-045] (Deadline 7 Submission - 9.31 Storm Erosion Modelling of the Sizewell C Soft Coastal Defence Feature using	Further information needed on the rationalisation of the sediment grading in the light of competing factors (recharge intervals vs need to maintain a sustainable supply of (beach grade?) sediment to adjacent shores. Further information on the avoidance of recessed shores including application and likely frequency of secondary mitigation. Comments retained but might be alleviated in line with the outcome from the 2 ES note above.

			XBeach-2D and XBeach-G - Revision 2.0). The report does not thoroughly address the impact this would have on coastal processes. This is a major omission.	
41	*4.1*	*The sand model overpredictions of erosion contribute to a conservative estimation. The results of modelling reported in this version 3 report has considered the decommissioning phase and the conclusions about SCDF viability are not expected to change with further modelling.*	As commented on elsewhere, this "overprediction" is presumably managed by selecting an SCDF sediment grade (and height) that counters the conservatism (i.e. a sediment grade to sustain it), which is due to uncertainties in the modelling.	Clarification sought.
60	*Tbl 4*	*In the 1D 1:20 yr storm D50=10mmm case Sediment losses under the 2140 SCDF case are 15.5m3/m and under the 2140 Adaptive case are less at 13/1m3/m.*	One would have expected the Adaptive profile losses to be greater owing to the more exposed seaward location.	Whilst an explanation has been provided on page 68, clarification is sought as to whether this apparent anomaly raises questions on model output accuracy
60	*4.2*	*The SCDF has not been remodelled to run parallel with the updated HCDF and does not extend as far south – the consequence is that the results presented in this section have a lesser*	If the SCDF location is amended to be parallel with the splayed HCDF it will move 26m further seaward and will therefore probably suffer higher rates of	Will the SCDF seaward line over the southern part extend to seaward of the MHWS contour?

		volume than they should over the southern 70m and so are volumetrically conservative –	erosion losses in storms and be more prone to chronic losses from retreating shorelines. It is understood that in the previous SCDF design condition the target was for its seaward edge to run on the MHWS line.	
64	*4.3.1*	*The adaptive HCDF revetment would be overlaid on the previous revetment, and the toe section extended seaward by 17 m to a lower level (-1.5 m ODN) level (Figure 19) as stated in Sizewell C Coastal Defences Design Report [REP2-116].*		Is a toe level of -1.5m ODN still appropriate for the Adaptive HCDF southern extent that is now 26m further seaward than when the Design Report was drafted?
71	*5*	*<u>Coarsening of the SCDF sediments would further improve the performance of the SCDF</u> (either from the outset or subject to examination of real-world performance) by increasing erosion resistance. In particular, the performance of the 40 mm diameter sediment (relative to 10 mm sediments) improved performance by up to 23% with increasing sea level, suggesting that coarsening particle size may be an important design factor when considering the higher sea levels associated with the decommissioning*	Coarsening of SCDF sediment will improve some aspects of SCDF performance, i.e. frequency of maintenance, and be to the detriment of others e.g. the creation of a consistent sediment release and distribution potential, notably at the SCDF / unprotected shoreline interfaces.	Please ensure that references to the potential impacts of coarse sediments are balanced over the range of design objectives.

		phase. A well-designed cobble layer could also effectively counter the increased risk of HCDF exposure during the decommissioning phase. An examination of current literature combined with the modelling show that the cobble layer would be very difficult to erode if exposed. For example, modelling results indicate that there was no volumetric loss of cobbles under 2020 and 2069 sea level predictions and only 2.5 m3/m under the forecast 2099 sea level		
72	*5*	*Further work required to refine the SCDF's coastal processes design ……..includes:*	The ESC feedback on [REP7-101] (Deadline 7 Submission - 9.12 Preliminary Design and Maintenance Requirements for the Sizewell C Coastal Defence Feature - Revision 3.0) and [REP7-045] (Deadline 7 Submission - 9.31 Storm Erosion Modelling of the Sizewell C Soft Coastal Defence Feature using XBeach-2D and XBeach-G - Revision 2.0) includes several requests for further work to be added to the list in this part.	Please clarify which points raised by ESC will result in additional action under these reports.

As discussed at ISH11, the material size for the construction and recharge of the Soft Coastal Defence Feature (SCDF) needs to be within the range which occurs naturally on the current beach. Material at only the upper end of the natural range is unlikely to be able to support the

shingle flora for which the area is nationally important, and therefore changing the material size could lead to a loss of this important habitat (for which the Suffolk Shingle Beaches County Wildlife Site is designated). A commitment to the size of the shingle material used for SCDF construction and recharge should be included within the relevant plan.

9.31 Storm Erosion Modelling of the Sizewell C Soft Coastal Defence Feature using XBeach-2D and XBeach-G - Revision 2.0 [REP7-045]

Introduction:

Presented in table form, this document constitutes ESC's review and findings of the Applicant's report 9.31 Storm Erosion Modelling of the Sizewell C Soft Coastal Defence Feature using XBeach-2D and XBeach-G - Revision 2.0 [REP7-045].

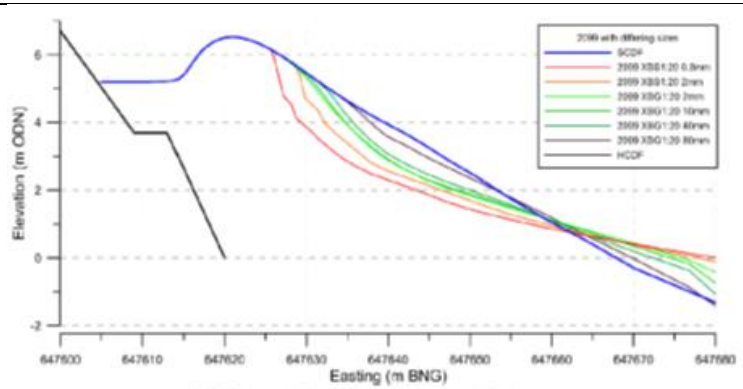
The table comprises:

- First column: the relevant page number (document, not pdf page);
- Second column: a reference (section, figure or table number);
- Third column: relevant source document extract (text or Figure snapshot)
- Fourth column: our observations and concerns on the cited extract
- Fifth column: our requested action upon the Applicant

In Column 5 the requested action from the Applicant takes one of the following forms, or combinations thereof:

- Observation
- Clarification
- Confirmation
- Explanation
- Further information.

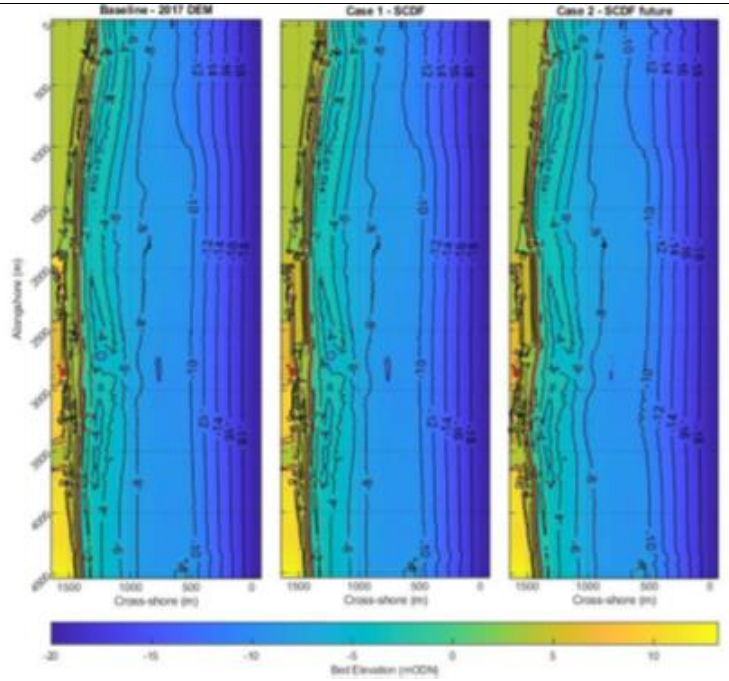
Pg. No	***Ref.***	***Relevant Text / Illustration***	**Observations and Concerns**	**Requested:**
2	*Summary of Purpose etc.*	*The scenarios modelled in the 1D grain size sensitivity tests indicate that using a larger particle size for the SCDF will increase its resilience to wave erosion arising from storms (see VAS Figure 1). Using very coarse sand/fine pebbles (D50 = 2 mm) resulted in 3-6 times less volumetric erosion of the SCDF (above 0 m ODN) than coarse sand (D50 = 0.8 mm), while medium pebbles (D50 = 10 mm) resulted in 3-9 times less SCDF erosion, and very coarse pebbles (D50 = 40 mm) resulted in 3-12 times less SCDF erosion. Although the design has not been finalised, it is considered most likely that the sediment used to construct and recharge the SCDF will be approximately in the 10 – 40 mm range, as this coincides with the native particle size distribution. Fine cobbles (D50 = 80 mm) show a dramatic increase in erosion resistance, with 18-35 times less erosion of the SCDF predicted than with coarse sand.*	Whilst the approach would appear to economise on SCDF recharge campaigns, it would not necessarily work so well for continuity of the longshore sediment transport corridor across the frontage, should the natural corridor be held back at the SCDF whilst the shoreline continues to retreat more rapidly on either side of it. i.e., effectively acting like a groyne.	Further information is sought on the impacts of differential migration of the SCDF alongside that of the shoreline to either side of it. *The query remains, though we understand through further discussion with the Applicant that there is a likely move towards using native beach material for the SCDF.
2	*Summary of Purpose etc.*	*The wave runup heights from the modelled storms indicate that the proposed SCDF feature is resistant to overtopping for nearly all of the cases investigated.*	For a shingle beach to roll back it must be overtopped such that sediment is transferred from the seaward face to the landward face. This could be a further inhibitor to the natural migration of the SCDF in	Allied to above note, further information requested on the impact on the coastal processes of having an unnaturally high SCDF.

			relation to the natural shoreline.	
3	*Summary of Purpose etc Vas Fig. 1*	 VAS Figure 1: Erosion sensitivity to particle size.	The example shows only erosion (cliffing) of the SCDF sea face and deposition lower down the slope. Because the v/h dims. of the diagram are distorted (for visualisation purposes), they do not readily convey the actual slope and shape. A stretched profile (closer to natural scale) to demonstrate this is reproduced below. All the eroded shingle, is transported down the slope with no up-slope (shingle) deposition.	It is noted that the subject is dealt with later in the report. However, this is an important factor as the process of erosion / deposition is key to the landward migration of the SCDF relative to that of the natural beach. Clarification/explanation sought regarding the illustrated behaviour of the SCDF, and the impacts this might have on differential retreat (SCDF vs natural beach).
12	*Executive Summary*	*To prevent HCDF exposure by progressive, unmitigated, natural erosion, the SCDF would be maintained or 'topped up' (primarily by recharge) once the beach volume reduces to a threshold value, which will be set in the Coastal Processes Monitoring and Mitigation Plan (BEEMS Technical Report [AS-237]).*	Prevention of exposure of the HCDF is not the only objective. It is required to maintain the natural sediment corridor across the installation frontage. Exposure of the HCDF would obviously be a further hindrance to achieving this, but it is not the sole factor.	Observation: please recognise and acknowledge the broader objectives of the scheme.

12	*Executive Summary*	*The calibrated XBeach-S 2D model[1] is used to investigate how present and future conditions affect SCDF erosion during severe storms.* *1 XBeach-S is a sandy beach erosion model that has both 1D (i.e., a beach profile) and 2D (i.e., a beach area) versions.*	Noting that a "G" version of the model is also applied and described later in the report, this is an important aspect of the work with significant implications for the functionality of the SCDF. The report is very focussed on the model processes, which it describes very well. What matters is how this work translates into satisfying the design objectives. Report should draw on a Design Basis for the project, and be clear on how objectives are satisfied, in particular the non-interruption of sediment transport across the frontage, and the avoidance of exposure of the HCDF structure.	Observation and plea for report to provide greater focus on the broader objectives.
12	*Executive Summary*	*The modelling also considered a future severely receded shoreline adjacent to Sizewell C (north and south), based on the postulated shoreline at or toward the end of the decommissioning phase without an increase in sediment supply.*	This suggests that the adjacent shorelines have retreated relative to the SCDF. Such a case would suggest that the battle is lost with respect to maintaining the sediment transport corridor which	Clarify the relevance and significance of this statement and explain how such a situation would not be damaging in terms of maintaining

			would become partially obscured by the SCDF itself.	sediment transport across the frontage.
19	*Executive Summary*	*Under the modelled storms with RCP4.5 SLR conditions (the RCP scenarios used for the operation model runs) the HCDF is not exposed during the decommissioning phase nor is the SCDF crest height reduced, showing the SCDF is still robust during the operational phase.*	It is not clear how this resilience fits with the adjacent less resilient shoreline. i.e. does it lead to shore misalignment, and hence a potential blockage to longshore transport.	Text to explain the broader consequences for coastal processes, and not to confine discussion to the structures.
15	*1.1*	*The SCDF is a maintained and volumetrically enlarged beach seaward of the hard coastal defence feature (HCDF) that is designed to prevent exposure of hard coastal defences (BEEMS Technical Report [REP7-101]).*	See table entry for p.12 above	See table entry for p.12 above. Please refer to previous column.
15	*1.1*	*This report develops further 1D and 2D sand models using XBeach Sand (herein, 'XBeach-S') as well as a 1D XBeach gravel model (herein, 'XBeach-G').*	Implies there is no 2D XBeach-G. Is this due to inability to model mixed beach longshore?	Please advise/confirm that the model is unable to model mixed beach lonsghore. ESC has advised the Applicant to consider other models.
17	*2.1*	*XBeach-S includes formulations for bed load and suspended load sediment transport, whereas XBeach- G only includes bed load formulations because suspended load transport is negligible at gravel beaches.*	It is not clear the extent to which the stated (G model) compromise affects the predicted cross-shore movement of shingle given	Clarification sought on important point.

			that short lived suspension of (small) shingle can/does occur during the energetic (forward) wave breaking process, whilst becoming minor/negligible in the post broken draw down (a process by which the shingle beach can rebuild/advance over time). i.e. it's not nil.	
19	*2.2.1*	*… and therefore it is expected that some degree of 'outflanking' may occur at the southern and northern ends of the SCDF in future. This is because the natural coastline either side of the SCDF would be free to retreat landward with sea level rise… while the maintained frontage of the SCDF would not retreat landward. The expected result is therefore a shoreline that bends inland at the northern and southern ends of the SCDF in future.*	In such a case the outflanked part of the SCDF would become an obstruction to sediment transport – in short, a similar effect to that of the exposed HCDF. This is undesirable and undermines the basic objective of maintaining natural sediment transport across the frontage.	Further information is sought to explain how an outflanked SCDF would not interfere with natural sediment transport along the frontage. And, if so, then how it would be mitigated

20	*Fig. 2.1*		Case 2 shows that part of the longshore transport corridor up to > -2mODN is obscured by both the HCDF and the SCDF (forming a bay to the north). The shore contours appear to be unchanged across the frontage whereas they have migrated landwards within the bays either side of the HCDF frontage (Cases 1 and 2). In a future recessed shoreline scenario one might expect the seabed to deepen / retreat evenly across a headland. This would lead to an increase in erosion pressure over the SCDF frontage to match that occurring in the recessed bays to N and S of it and is likely to produce a less favourable outcome in terms of RI.	Clarification of what the figure shows and the implications of it for continuity of longshore transport. Explain why the recessed seabed contours that have been applied to N and S of the SCDF should not also be applied over the SCDF in order to assess the impact on the SCDF of a future recessed shoreline.
21	*2.2.2.1*	*9 days of low wave conditions were removed from the middle of the 26 day forcing timeseries (Figure 2-3.) to make computation of the three storm peaks feasible, including only periods where wave height remained > 1 m. Removal of these periods is expected to have minimal*	Why was this data removed? What would have been the impact on the result if left in? +/- In terms of precautionary approach, should an allowance	Further information sought.

		impact on the final predicted beach morphology as beach evolution under such conditions is small.	have been included to cover the missing waves?	
24	*2.3*	*Due to the mobilisation time (under COVID rules 9), storms with predicted wave heights above 2 m for a duration of 12 hours were targeted.*	The reasoning is noted. The footnote does not quite explain the rationale for omitting conditions below 2m though. In terms of precautionary approach, ESC questions whether an allowance have been included to cover the missing waves	Clarification/further information sought.
28	*2.3.4*	*In the measured data, conspicuous berm/ridge build up is visible at places on the supra-tidal beach (Figure 2-5 to Figure 2-8), in addition to beach erosion on the intertidal profile. This is a typical response seen on beaches with coarse material (…..) but is not reproduced by the calibrated XBeach-S model, which is not expected to recreate the behaviour of the coarsest particles at Sizewell.*	This is evidence of the matter referred to earlier in this review.	Provide further information regarding the suitability of the model assumptions/running parameters in relation to the actualised behaviour of the shingle beach (and postulated SCDF).
33	*Figs. 2.5-2.8*	(Figs not reproduced here)	On the face of it, the models do not follow the RPA differences so well, being contradictory in some respects.	Further information sought regarding the comments to left.

			This might be due in part to the missing wave sequences when Hs fell below the cut off value or limitations in the calibration where sand models are adapted to represent mixed beach/shingle behaviour	
36	*2.4.2*	*Forcing Conditions….* *A single storm scenario was used for the 1D grain size sensitivity simulations. The forcing conditions for the1-in-20 year NE event (Section 2.2.2) were used, including the same water levels, and UKCP18 RCP4.5 sea level rise scenarios for 2021, 2069, and 2099*	UKCP18 RCP8.5 was used as a worst-case in Deadline 7 Submission - 9.12 Preliminary Design and Maintenance Requirements for the Sizewell C Coastal Defence Feature - Revision 3.0 [REP7-101].	Why was RCP8.5 not used here?

<table>
<tr>
<td>37

43</td>
<td>Table 2-3</td>
<td>Table 2-3. 2D model scenario summary.
<table>
<tr><th>Scenario</th><th>Description</th><th>Model Domain</th><th>Storm</th><th>SLR Year</th><th>SLR correction (m)</th></tr>
<tr><td>10</td><td>BfE storm, E, present SL</td><td>SCDF DEM</td><td>BfE</td><td>2018</td><td>0.000</td></tr>
<tr><td>2</td><td>1-in-20 year storm, NE, present SL</td><td>SCDF DEM</td><td>NE</td><td>2021</td><td>0.007</td></tr>
<tr><td>4</td><td>1-in-20 year storm, SE, present SL</td><td>SCDF DEM</td><td>SE</td><td>2021</td><td>0.007</td></tr>
<tr><td>13</td><td>BfE storm, E, 2069 SLR</td><td>SCDF DEM</td><td>BfE</td><td>2069</td><td>0.413</td></tr>
<tr><td>14</td><td>BfE storm, E, 2069 SLR</td><td>SCDF-future DEM</td><td>BfE</td><td>2069</td><td>0.413</td></tr>
<tr><td>15</td><td>1-in-20 year storm, NE, 2069 SLR</td><td>SCDF DEM</td><td>NE</td><td>2069</td><td>0.400</td></tr>
<tr><td>16</td><td>1-in-20 year storm, SE, 2069 SLR</td><td>SCDF DEM</td><td>SE</td><td>2069</td><td>0.400</td></tr>
<tr><td>11</td><td>BfE storm, E, 2099 SLR</td><td>SCDF DEM</td><td>BfE</td><td>2099</td><td>0.714</td></tr>
<tr><td>12</td><td>BfE storm, E, 2099 SLR</td><td>SCDF-future DEM</td><td>BfE</td><td>2099</td><td>0.714</td></tr>
<tr><td>5</td><td>1-in-20 year storm, NE, 2099 SLR</td><td>SCDF DEM</td><td>NE</td><td>2099</td><td>0.701</td></tr>
<tr><td>7</td><td>1-in-20 year storm, SE, 2099 SLR</td><td>SCDF DEM</td><td>SE</td><td>2099</td><td>0.701</td></tr>
<tr><td>6</td><td>1-in-20 year storm, NE, 2099 SLR</td><td>SCDF-future DEM</td><td>NE</td><td>2099</td><td>0.701</td></tr>
<tr><td>8</td><td>1-in-20 year storm, SE, 2099 SLR</td><td>SCDF-future DEM</td><td>SE</td><td>2099</td><td>0.701</td></tr>
</table>
</td>
<td>These parameters match those used for the calibration/validation runs.

Are these test runs for the purposes of design?
If so, why are the conditions not extended to more/different JP extreme conditions than 1-in-20 years?</td>
<td>Clarification or further information sought.

Confirmation is required that parameters are for calibration/validation only.</td>
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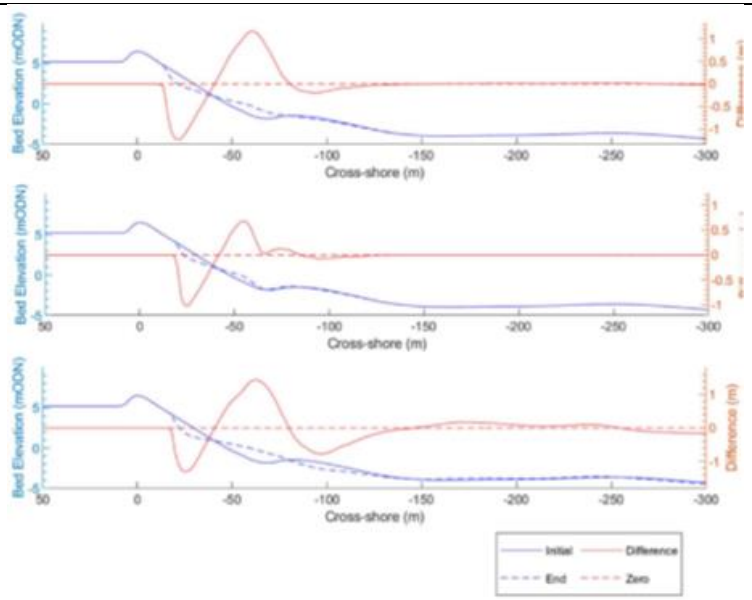
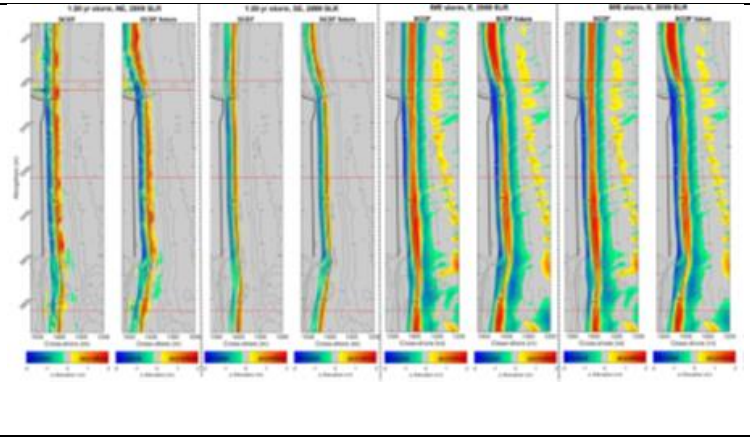
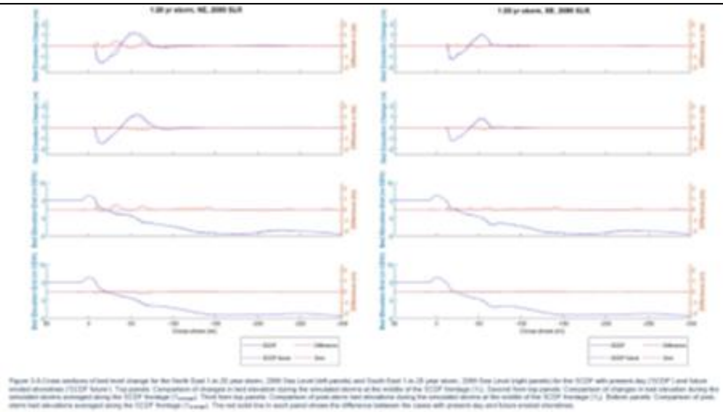
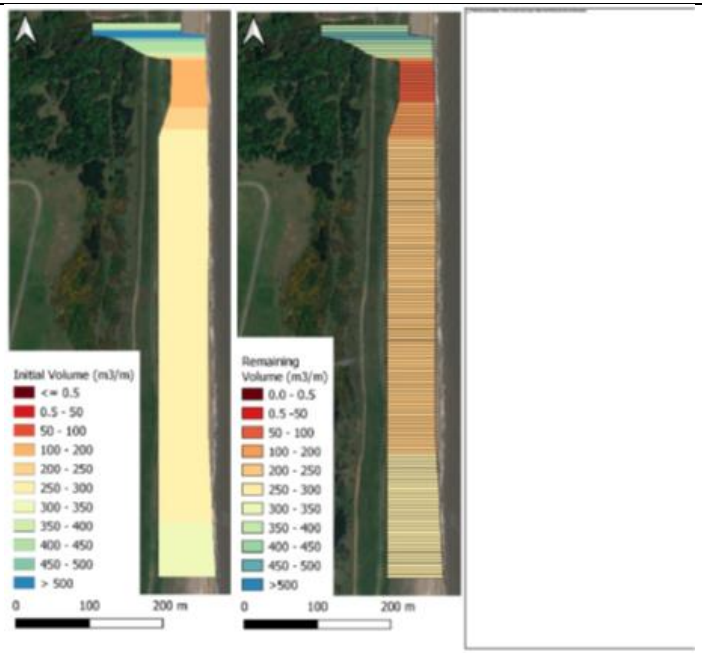
<tr>
<td>45</td>
<td>2.5.2</td>
<td>The Adaptive Design is larger than the original HCDF, with a higher overall crest height and the HCDF toe more seaward. As a result, the SCDF crest, associated with the Adaptive Design only, is pushed seaward by ~17 m. A comparison of the 1D profile used in the XBeach-G runs is shown in Figure 2-11.</td>
<td>Whilst much of this additional length is below normal bed level, it constitutes a further significant incursion on the shoreline if exposed.</td>
<td>Observation.</td>
</tr>
<tr>
<td>45</td>
<td>Fig 2.10</td>
<td></td>
<td>Is it proposed to build an adaptive profile over the full extent of the original HCDF at the north and south extents as shown in Figure 2.10?</td>
<td>Please confirm either that all parts of the HCDF will be Adapted or, if not all, illustrate the intentions on a plan.</td>
</tr>
</table>

			At the southern end of the HCDF the Adaptive profile toe will have moved 26m + 17m = 43m further seaward than the previous HCDF design proposal placing the rock foundation much closer to the future retreating shoreline and increasing the risk of undermining.	Please advise what will be the rock foundation level of the Adaptive profile (previously -1.5m ODN) at the southern end in the more seaward location.
45	*2.5.2*	*The two main changes are the paring back of the BLF abutment to the north and the deviation of the last 200 m of the southern end of the HCDF away from the main line of the HCDF. The new HCDF is also 70 m with a rounded end. <u>The position and crest elevation of the SCDF remain unchanged as a result of the HCDF changes</u>.*		Provide a drawing to illustrate how the SCDF crest, toe position and slope has changed over the southern splay from the previous detail.
45	*2.5.2*	*The new HCDF design is included in the decommissioning model runs. The models runs associated with the operational phase will be revisited in the next version of this report. <u>However, the design changes will not affect the conclusions of the results presented in Sections 3.1 to 3.3 as the SCDF has not changed location.</u>*	Under the new HCDF plan position at the southern end, the SCDF is moved much closer to the MHWM. This change will affect SCDF erosion potential at this location and may also impede sediment movement across the new southern headland.	Please include in future studies an investigation of how the now more advanced southern headland, that includes a maintained SCDF, will affect sediment movement across it.

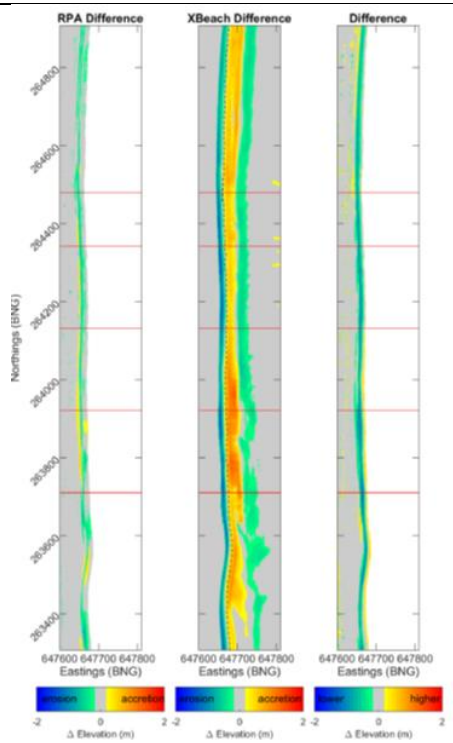
40 *49*	*3.1.1* *Fig. 3-1*		The figures are very well presented. It would be useful to remind the reader of all the relevant key parameters applying to these run plots. In particular what grain size is being used. Same applies elsewhere. It is otherwise assumed to be a sand grade, judging by the form of erosion. It would help to match up the figures with the respective Scenarios as presented in tables 2-3 and 2-4.	Clarification on parameters sought – see to left.
48	*Fig. 3-7*		The results show an uncomfortable situation in the eighth panel where erosion is apparent right upon the HCDF. Even the SCDF is not encouraging in this respect. With a shore which is more retracted to the north, this would suggest the exposure of a hard point with potential to interrupt littoral drift.	Further explanation required. Observation: analysis and figure to be updated.

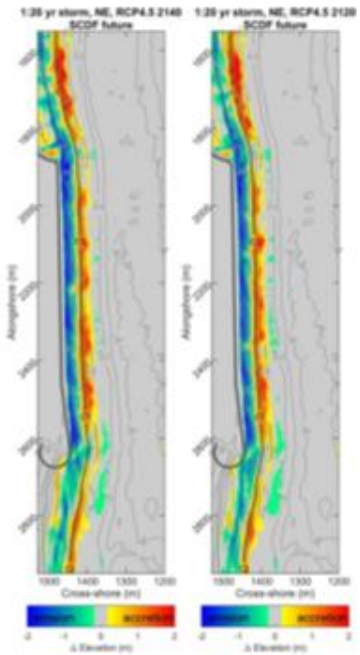
57			It is acknowledged that the protuberant north point on the HCDF has been brought into alignment with the main trunk of the HCDF but this has not been updated in the present analysis/figure. Nor has the now more protracted south feature.	
49 *58*	*Fi. 3.8*		The caption reads thus: *3-8.Cross sections of bed level change for the North East 1-in-20 year storm, 2099 Sea Level (left panels) and South East 1-in-20 year storm, 2099 Sea Level (right panels) for the SCDF with present-day ('SCDF') and future eroded shorelines ('SCDF future'). Top panels: Comparison of changes in bed elevation during the simulated storms at the middle of the SCDF frontage (Y2). Second from top panels: Comparison of changes in bed elevation during the simulated storms averaged along the SCDF frontage (Yaverage). Third from top*	The change profiles as highlighted show essentially nil change between the present day and future cases (both with SCDF). Although depicting some change it is also negligibly small for the NE storm. Please clarify how this can be so. It would be far preferable for the whole document to brought up-to-date, rather than in a piecemeal way. Convenient for the writer but very confusing for the reader.

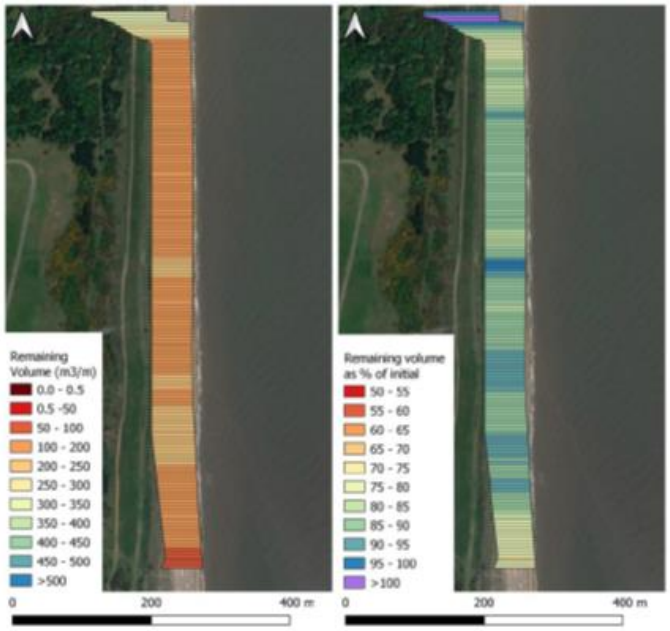
			panels: Comparison of post-storm bed elevations during the simulated storms at the middle of the SCDF frontage (Y2). Bottom panels: Comparison of poststorm bed elevations averaged along the SCDF frontage (Yaverage). The red solid line in each panel shows the difference between the cases with present-day and future eroded shorelines.	

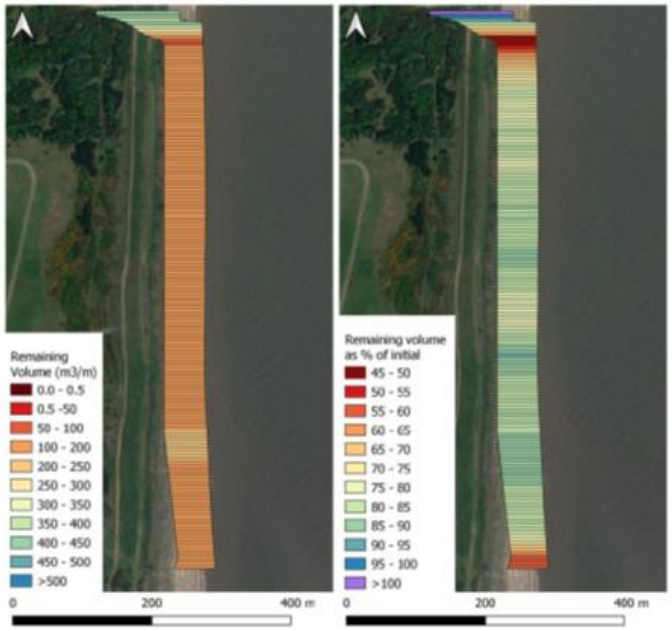
54 *63*	*Fig. 3-12*	 igure 3-12: Volumetric map of the SCDF frontage (above 0 m ODN), pre-storm (left), and remaining pos torm beach volume (middle) and percentage (right) for the worst-modelled storm scenario: BfE event, 20ft SLR, with future eroded shoreline position. The 5 m polygon bins visible in the middle and right panels wa sed to calculate volumetric changes over the SCDF frontage for all 2D simulations run (Table 3-1).	The model clearly shows a marked loss of volume at the "bulge" in the HCDF. Recent discussions held between ESC and SZC Co. on this matter have concluded that the "bulge" will be moved back so as to create a linear uninterrupted frontage. The attached diagram makes clear the benefit of this both in terms of economy in maintenance (SCDF recharge), and reduced/latent risk of impact of an exposed SCDF.	Observation open to further clarification. Observation: the plan shape is now outmoded. Please bring whole report up-to-date and reissue for comment.
64	*4.3.2*	*Particle size…* *The increased runup height and decreased erosion predicted in the D50 = 2-80 mm XBeach-G simulations compared to the D50 = 0.8-2 mm XBeach-S simulations illustrates the importance of considering processes relevant to steeper beaches with coarse grains.*	Coarser grains (80mm) will yield a steeper, more reflective beach, with potentially greater wave run-up than a sandy shore.	Comment on how a steeper than native beach may impact upon: Sediment transport potential, Public access, Habitat value.
66	*4.6.2*	*While the SCDF is predicted to be resilient to erosion under the modelled storm events, overtopping may occur if finer particles (D50 ≤ 2 mm) are used to construct the SCDF. It is recommended that further wave*	We agree with the highlighted section being followed through, not just for overtopping but for other	Further information is sought on the Design Basis for carrying this work through to a design

		overtopping analysis is undertaken for the SCDF design, including a range of combined wave events and water levels (e.g. at least 1-in-50 year and 1-in-100 year return periods), either using a 1D XBeach-G model(phase-resolving) or using empirical wave runup formulae from the literature appropriate to gravel beach settings (Poate et al., 2016). Such assessment may, for example, identify that a higher SCDF crest height is required to ensure resilience of the SCDF crest to overtopping/overwashing under extreme combinations of waves and water levels.	considerations, in particular, DESIGN. The pre-set conditions for this report endeavoured to simulate actual events. For design purposes a greater range of conditions combining to yield return periods of 1 to 100 years, and greater (as may be required by nuclear safety regulators). Another condition that might be replicated is that of the 1953 storm surge.	standard, suitable for the circumstances (nationally important asset / nuclear infrastructure).
69	*Conc's*	*With the receded shoreline, sediment eroded from the SCDF was predicted to feed the beach areas immediately north and south of the SCDF, but further modelling of multi-decadal longshore transport and shoreline change would be required to better understand the cumulative influence of the SCDF on the adjacent shorelines.*	This would appear to be a worthwhile extension to the modellers work, together with examining a broader range of design case parameters (from design basis)	For additional information regarding advice, please refer to left hand column.

30	*Fig. 2.5*		The RPA Differences (pre and post storm) shows a narrow yellow band at the landward side, consistent with a small landward migration of sediment. This does not appear in the XBeach Difference, thus highlighting again the sand like behaviour of the modelled sediment as distinct from the coarser sediment in the Xbeach case. Confusing headings - would be useful to make clear what is different from what.	Observation.
71	*3.4*	The inclusion of the HCDF line in Figure 3-17 is stylistic only and the HCDF is not included in the model domain as a hard non-erodible feature. The inclusion of the SCDF in the model domain used is the same as that in Section 3.1.2. As such, it has not been amended for the extra 70 m of the new HCDF as the designs were not available when the modelling commenced.	Further explanation is sought.	Clarification

73	*Fig. 3.17*	 Figure 3-17: 2D change in bed elevation (coloured areas) along the SCDF frontage over the two modelled storm events with the SCDF-with future receded shorelines. Contour lines show starting bed elevation (m ODN), with 0 m contour line shown in bold for reference. The thick line on the supratidal beach represents the approximate location of the HCDF toe.	What impacts would these beach plan shape scenarios have on the natural longshore sediment transport regime? How would any negative effects be mitigated?	Further information sought on the impact of the realigned shore on sediment transport. Ditto Fig. 2.19

77	*Fig. 3.20*	 Figure 3-20. Volumetric map of the SCDF frontage (above 0 m ODN), remaining post-storm beach volume (left) and percentage (right) for the 1:20 year NE storm with RCP4.5 SLR 2140, with future eroded shoreline position. The 5 m polygon bins visible in the middle and right panels were used to calculate volumetric changes over the SCDF frontage for all 2D simulations run (Table 2-5).	Remaining volume appears to be rather more acute at the southern end.	Comment on observation to left in terms of risk and reserve.

78	*Fig. 3.21*	 Figure 3-21. Volumetric map of the Adaptive Design frontage (above 0 m ODN), remaining post-storm beach volume (left) and percentage (right) for the 1:20 year NE storm with RCP8.5 SLR 2140, with future eroded shoreline position. The 5 m polygon bins visible in the middle and right panels were used to calculate volumetric changes over the SCDF frontage for all 2D simulations run (Table 2-5).	This shows a very different picture to the non-Adaptive design, with severe erosion potential at the north end. What mitigation measures will be applied, and what impact will these have on the natural coastal process (LST) regime. Clarify/confirm the SCDF shingle grading being applied.	Further information sought of the implications (for mitigation) of the Adaptive Design.
85	*4.5*	In all simulations with a receded future shoreline, enhanced storm erosion is predicted to occur at the northern and southern tips of the SCDF frontage as a result of the receded shoreline. Wave and current plots in Appendix E indicate that this is associated with localised wave focussing at the lateral tips of the SCDF frontage where the changes in shoreline orientation occur, as well as gradients in longshore sediment transport associated with changes in the orientation of the shoreline. This suggests that any future recharge of the SCDF may require greater volumes of sediment, or more frequent interventions, at each end of the SCDF if the adjacent shoreline becomes highly receded (i.e., as modelled). The simulations indicate that this extra eroded sediment would contribute to accretion north and south of the SCDF to some degree, but to properly quantify the magnitude of this effect and its contribution to long-term shoreline evolution adjacent to the SCDF would require longshore transport modelling over multi-annual timescales.	The concluding line suggests a reluctance to embrace the challenge. Put another way: 1. what will the impact of this receded shore alignment be on longshore sediment transport	Further information, and modelling and mitigation regarding the impact of the receded shoreline on longshore sediment transport.

			2. how will it be mitigated. Presumably, this does not require multi annual transport modelling, rather to take the shore alignment as given, and model it as it is.	
85	*4.5*	*Sensitivity - Effect of eroded shorelines on SCDF erosion*	As mentioned earlier in reference to section 2.5.2, the modelling should adopt a precautionary approach and consider the possibility that under a future shoreline scenario the seabed in front of the SCDF will be lowered / retreated. It is unrealistically optimistic to assume that current bathy will prevail unchanged to 2140. The consequences of such a change over the SCDF are likely to increase losses from storms and introduce other more chronic losses.	Explain why use of an unchanging bathymetry to seaward of the SCDF is appropriate when assessing potential SCDF losses up to 120 years into the future. Explain why consideration of this possibility has not been included as a sensitivity item.

9.68 Draft Noise Monitoring and Management Plan - Main Development Site - Revision 2.0 [REP7-048]

Introduction:

Presented in table form, this document constitutes ESC's review of the draft Noise Monitoring and Management Plan – Main Development Site submitted at Deadline 7.

The table comprises:

- First column: the relevant page number (document, not pdf page);
- Second column: a reference (section, figure, or table number);
- Third column: relevant source document extract (text or Figure snapshot)
- Fourth column: our observations and concerns on the cited extract

All extracts from the *Initial Statement of Common Ground*, including page, section number, text and footnotes etc. are shown in *italics* in first three columns, including references elsewhere as appropriate.

Pg No.	Section Ref.	*Relevant Text / illustration*	Observations and Concerns
1 Introduction			
1	1.1.5	Post consent approvals *"This Draft Noise Monitoring and Management Plan (NMMP) has been submitted to the Examination to set out how the details anticipated by paragraph 3.1.3 of the CoCP Part B (the main development site) (Doc Ref. 8.11(D)) would be discharged. As set out in the CoCP Part B, the final NMMP for the MDS will be submitted to ESC for approval. Construction works will not be commenced until the NMMP has been approved by ESC and the construction works will then be undertaken in accordance the*	The Applicant's clarification on the proposed post consent approval process for the various Noise Management Plans is welcomed by ESC. Specific comments on the proposed Bespoke Mitigation Plan process are detailed below. ESC have engaged positively with the Applicant on this matter and based upon amendments to the NMMP suggested by ESC being implemented as agreed we have accepted the NMMP and the Bespoke Mitigation Plan process as an acceptable means to control site noise and vibration in lieu of Section 61 of the Control of Pollution Act 1974. Enforcement, should it be necessary, will be via the DCO or via Section 60 of the Control of Pollution Act 1974.

		approved NMMP. A separate NMMP will be prepared and submitted to ESC for approval for each of the Associated Development Sites, pursuant to paragraph 3.1.3 of the CoCP Part C."	
2	1.3.2	Revised assessments: *An updated noise assessment of the construction works will be undertaken as part of the implementation of the Noise Mitigation Scheme (Doc Ref. 6.3 11H(C)), which is secured by the Deed of Obligation (Doc Ref. 8.17(F)). This work will include a review of the NMMP and will confirm if updates to the NMMP are required. Any amendments to the NMMP will be submitted to ESC for approval, as set out in paragraph 1.2.2 above, as the works progress*	ESC welcomes this clarification from the Applicant.
4	2.2.1	Roles and responsibilities - SZC Co. Site Environmental Lead:	ESC requests the following obligation for the Applicant's Site Environmental Lead (5th bullet – new words underlined): Undertaking investigations in relation to noise level exceedances and to investigate any complaints received by the project in relation to noise and vibration issues, <u>including assessment of contractors' compliance with approved Bespoke Mitigation Plans, and taking appropriate enforcement action against contractors found to be operating in breach of any requirement of a Bespoke Mitigation Plan.</u>
10	4.4.1	Trigger Thresholds for Bespoke Mitigation Plans:	ESC requested that an additional trigger threshold be introduced to the evening period (19:00 – 23:00) at a level of 50 dB *LAeq,4hrs to* recognise the increased sensitivity of evening periods, after further positive discussion it is ESC's

		Where it is anticipated that the construction works will exceed free-field noise levels of either 55dB LAeq,16hrs (daytime) or 45dB LAeq,8hrs (night-time), or the vibration thresholds stated in Table 4.2, despite the use of best practicable means, a bespoke mitigation plan will be submitted to ESC for approval.	understanding that this has been accepted by the Applicant and is included in their revised documents to be submitted at Deadline 8.
10	4.4.2	Approval period: *"Details of works likely to require a bespoke mitigation plan and a draft of the plan shall be provided to ESC at least 28 days prior to the start of the works, to include proposed method statements, likely noise or vibration levels at the closest sensitive receptors, proposed mitigation, and a scheme for notifying local residents. The purpose will be to agree measures to reduce noise as far as reasonably practical for particularly noisy activities. If appropriate, the bespoke mitigation plan can include revised noise thresholds"*	ESC welcomes the change from 14 to 28 days in line with the determination process for S.61 applications.
10	4.4.3	Construction noise limits: *"As the Bespoke Mitigation Plans will be agreed, monitored and enforced and their purpose will be to determine the best practicable means of delivering the construction activity, it will not normally be*	ESC welcomes this statement and actively support the proposed collaborative approach of controlling noise and vibration from construction activity. However, the possibility of break-down of collaboration between the Applicant (or their sub-contractors) and ESC cannot be ignored. For this reason, ESC maintains that the process must have a clearly defined, legally binding and time limited backstop enforcement path via Section 60 of the Control of Pollution Act 1974 as well as under the DCO.

		appropriate to include finite noise limits in the plans. Nevertheless, the parties recognise that ESC must have the ability to monitor the effect of the work and require adjustments to working practices in the event that adverse effects exceed those anticipated. For this purpose, indicative limits may be appropriate and it is intended that close working between the parties will enable corrections to be made to working practices to ensure that the objectives of the Bespoke Mitigation Plan are achieved."	
10	4.4.4	Enforceability: *"Each Bespoke Mitigation Plan would be approved pursuant to Requirement 2 of Schedule 2 of the Draft DCO (Doc Ref. 3.1(G)). Any breach or noncompliance with measures set out in the Bespoke Mitigation Plan would therefore be enforceable under the DCO. The parties also recognise that DCO does not remove ESC's powers under section 60 of the Control of Pollution Act 1974."*	ESC requests that the following wording is added to this statement: *Section 60 authorises ESC to serve a notice imposing requirements as to the way in which works are to be carried out in order to control noise on construction sites, which is subject to a right of appeal by the recipient. A person who contravenes any requirement of a section 60 notice without reasonable excuse shall be guilty of an offence. Where the requirements of a section 60 notice reflect the measures set out in a Bespoke Mitigation Plan, those requirements would therefore be enforceable under section 60 of the Control of Pollution Act 1974 as well as under the DCO.*
10 - 12	4.5	Dispute resolution process	ESC welcomes the Applicant's addition of a dispute resolution process and recognises the advantages of this approach as a first step to resolving disagreements over the terms of a Bespoke Mitigation Plans as opposed to seeking resolution via the magistrates' courts. Specifically, ESC welcomes the option of the appointment of an independent expert to assist if disagreements of a technical nature were to arise.

			ESC also requests that the following wording is added to the document for clarity "Work will not commence until a Bespoke Mitigation Plan has been approved or in the case of a dispute where that dispute has been resolved." ESC note that in the unforeseen event that the dispute resolution process failed, the option to serve a notice under Section 60 of the Control of Pollution Act 1974 would still be available.
13-15	5	Site specific controls	The site-specific controls are in line with the measures expected for the main development site. ESC's expectation is that this section of the document will be reviewed as part of the approval process for the final NMMP for main development site (and equivalent processes for the AD sites).
17-21	6	Noise and vibration monitoring	ESC consider that Section 5 of the draft NMMP sets out an appropriate generic methodology for noise and vibration monitoring. ESC's expectation is that noise and vibration monitoring will be targeted towards specific areas and activities of potential concern which will be agreed as part of the approval process for the final NMMP for main development site (and equivalent processes for the AD sites).
22	7.1.1	Complaints handling procedure Section 3 of the CoCP Part A sets out the proposed communication, community and stakeholder engagement arrangements, including a complaints handling procedure, that will be applied throughout the construction period.	Following earlier discussion about complaints handling and the recent changes to the CoCP made by the Applicant, ESC are now satisfied with the wording of Section 3 of the CoCP Part A.

9.71 Responses to the ExA's Second Written Questions (ExQ2) Volume 1 - SZC Co. Responses - Revision 1.0 [REP7-056]

Introduction:

Presented in table form, this document constitutes ESC's review of the ExA's second written questions vol. 1 submitted at Deadline 7.

The table comprises:

- First column: the relevant page number (document, not pdf page);
- Second column: a reference (section, figure, or table number);
- Third column: relevant source document extract (text or Figure snapshot)
- Fourth column: our observations and concerns on the cited extract

All extracts from the *Initial Statement of Common Ground*, including page, section number, text and footnotes etc. are shown in *italics* in the first three columns, including references elsewhere as appropriate.

Noise and Vibration

Section Ref.	*Relevant Text / illustration*	Observations and Concerns
NV.2 Noise and Vibration		
	Construction Noise Thresholds	There remain disagreements between ESC and the Applicant over the suitability and application of the guidance in Annex E.5 of BS5228-1. However, there has been significant progress between ESC and the Applicant following ISH8 and ESC's understanding is that the following points are now agreed by both parties: • That there is an increased sensitivity to construction noise in the evening period (19:00 to 23:00) in comparison to conventional daytime working hours.

		• The adoption of lower thresholds at which the Bespoke Mitigation Plans are triggered provides an acceptable method of managing construction noise below the EIA significance thresholds set out in the ES as an alternative to lowering the thresholds within the CoCP. • In the case of the main development site, setting a construction noise criterion in relation to background noise levels would add unnecessary complexity and ambiguity to the process and would be overly onerous in comparison to the night-time thresholds. On this basis, ESC and the Applicant have agreed in principle that the trigger levels in Section 4.4.1 of the NMMP for the main development site should be adjusted to include a 50 dBA evening trigger level to recognise both the increased sensitivity of the evening period and extended duration of the works at the main development site. This, and ESC's other suggested amendments to the Draft NMMP, are submitted separately at Deadline 8. Should these be accepted, ESC considers that the construction noise levels around the main development site can be adequately controlled via the NMMP (and associated processes) and therefore that the thresholds in the CoCP can remain aligned to the ES significant thresholds. In this instance, the remaining disagreements between ESC and the Applicant over the suitability and application of BS Annex E.5 of BS5228-1 in this context become immaterial.
NV.2.1	Saturday Afternoon working at the Associated Development Sites	ESC's expectation is that any consideration of working on Saturday afternoons would be addressed as part of the approval process for Bespoke Mitigation Plans. Where working is proposed on Saturday afternoons (or other more sensitive periods) the Applicant will be required to demonstrate to ESC that this is strictly necessary for the timely delivery of the project or otherwise of sufficient benefit to the wider community. ESC is requesting a notification process be written into the CoCP.

NV.2.2	Quiet Road Surfacing	Quiet Roads are within the remit of the Local Highways Authority and so ESC defers to them.
NV.2.3	Rail Noise Mitigation Scheme	ESC notes that, in principle, Requirement 25 would prevent night-time train activity unless a Rail Noise Mitigation Strategy (RNMS) is submitted to and approved by ESC and that this therefore should ensure the RNMS is deliverable. Following detailed discussion with the Applicant, it has now been agreed that the time limit in Requirement 25 (3) is not required and will be removed. ESC has agreed with the Applicant that the possibility of using rail noise barriers is included in the draft Rail Noise Mitigation Scheme to ensure that the policy aim of *'mitigating and minimising'* rail noise and vibration effects above LOAEL is achieved.
NV.2.4	Rail Noise	ESC's position on Requirement 25 is summarised above.
NV.2.5	Operational Noise	(i) ESC's position in relation to the suitability and justification of an operational noise limit has been well explained and it set out in more detail elsewhere at D8, particularly in response to the Written Summaries of Oral Submissions made at ISH 8 [REP7-068] and Written Submissions Responding to Actions Arising from ISH 8 [REP7-071]. In summary, it remains ESC's position that an operational noise limit for the power station is necessary, to ensure that the final design (and therefore the operational noise output) of the power station is controlled. ESC also maintain that the WHO Night Noise Guidelines for Europe (2009) are not an appropriate basis for a noise limit (based as they are on research into transportation noise) and also that there is no established basis for the Applicant's stated equivalence between 40 dB L_{night} and 45 dB $L_{Aeq,1h}$. ESC also maintains that a rating level limit would ensure that tonal components of the noise would be considered. ESC disagrees that noise limits based on rating levels are inappropriate and/or imprecise, and

		the use of rating level noise limits is well established in planning terms, notwithstanding the particular and specific design requirements of a nuclear power station. The Applicant provided additional information at Deadline 7 in Appendix C of the Written Submissions Responding to Actions Arising from ISH 8 [REP7-071], which details acoustic analysis of the predicted operational noise levels at a single receptor. ESC believe that any such analysis should be more robust than this, but welcomes the additional information, nonetheless. This technical report concludes that modifications to many individual items of plant would be required in order to reduce operational noise by even 1 dB. ESC acknowledges this but remains unclear as to why this is impractical, and in particular of the justification of the Applicant's statement that this is the *'quietest possible design'*. In their response to ExQ2 NV.2.5, the Applicant states that *"aspects of the power station design already include noise attenuation, such as the use of safe-change type HEPA filters in classified HVAC system exhausts"*. This is an example of the type of engineering explanation that ESC has previously requested. Were further detail provided regarding the engineering measures in place to ensure that this is indeed the quietest possible design, then ESC would expect to feel reassured enough to accept this, and by extension to accept an operational noise limit based on what could practicably and reasonably be achieved, even if this was significantly higher than preferred (e.g., 45 dB $L_{Aeq,8hrs)}$. This discussion is expected to take place in advance of formalising our final position on this in the Statement of Common Ground at Deadline 10.
NV.2.8	Rail Noise Mitigation	(i) As stated in response to NV.2.3, it remains ESC's position that both track upgrades to the East Suffolk Line and rail noise barriers (where suitable and where the benefits are evident) should be part of the RNMS, to ensure that the RNMS meets the policy aim of *'mitigating and minimising'* potential

		adverse rail noise and vibration effects above LOAEL. It is anticipated that the draft RNMS will be revised to include this. (ii) ESC has maintained that all forms of mitigation should be thoroughly explored and considered, including barriers where suitable and where the benefits are evident. The Applicant continues to explore the potential for noise barriers, and we were looking forward to continued discussion to explore sites where these would be possible with both The Applicant's and Network Rail's support. However, the latter has now apparently withdrawn that support which changes the nature of discussions. That said, ESC are hopeful that there is still time to explore the opportunity of barriers on land outside of Network Rails ownership with the Applicant and look forward to doing so as soon and as quickly as possible. ESC understand that the aim is for this process to be written into the draft RNMS. ESC's preference would be that the final RNMS (to be submitted to and approved by ESC) would include details of specific barriers in specific locations, after appropriate technical and planning consideration and in consultation with landowners and other stakeholders. However, ESC welcomes the ongoing process as a solution and the commitment to delivery of such mitigation that is found to be suitable and worthwhile, and this is currently the subject of positive discussion with the Applicant. There is an issue that properties subject to noise between 60dB LAmax and 70dB LAmax (LOAEL and EIA significance) would have to keep windows closed to achieve the internal 45dB LAmax and meet the WHO sleep disturbance criteria, the only way to fully avoid that happening would be to provide every property within that bracket with mechanical ventilation so they would have the option to keep their windows closed during warmer summer months to reduce the rail noise.

		On balance ESC would consider the Applicant's sleep disturbance assessment to be justified. However, ESC maintain that the preference would be that the NMS would be implemented at LOAEL or that consideration be given to a reduced NMS to provide mechanical ventilation between LOAEL and EIA significance as discussed at ISH12.
NV.2.9	Rail Noise Mitigation	(ii) ESC consider that barriers should be included in the RNMS where suitable and where the benefits are evident. The RNMS is to be approved by ESC post-consent (if consent is granted) and would contain all deliverable mitigation proposed by the Applicant. It is envisaged that the good dialogue that has existed between us up until now would continue and that the Applicant would continue to explore and consider all areas of rail noise mitigation (including barriers) for inclusion in the final RNMS to be approved by ESC. Where it is fully justified by the Applicant that mitigation cannot be delivered ESC would accept that position. ESC would like to see a commitment to continue exploring what can be included in the RNMS beyond the examination so that the final document truly represents what can be achieved, including specific barriers in specific locations (where suitable and where the benefits are evident). Discussions during this process will be crucial to ensuring that all appropriate mitigation has been considered and subsequently secured by the RNMS. The RNMS would then be approved by ESC on this basis.
NV.2.10	Noise and Vibration from Rail Freight	ESC has reviewed the responses supplied by the Applicant and is satisfied that this information answers the outstanding queries related to noise and vibration from rail freight.

Air Quality

AQ.2.4 (i) It is acknowledged that the Applicant will work with ESC and SCC to define what a "community/local supplier" is.

AQ.2.4 (iii) ESC does not agree that ongoing achievement of air quality objectives (AQOs) is not dependent on the number of HDVs which meet the highest emission standards. There is considered to be a risk that NO_2 contribution will cause an exceedance if no vehicles meet the Euro VI standard or there is a very low uptake. However, the 8% cap on non-Euro VI compliant HDVs is considered a sufficient control to ensure no significant risk of AQO exceedances.

AQ 2.5 iii – ESC is not in agreement with the Applicant that lack of control on emission standards will not change impact significance conclusions. There is a large amount of uncertainty around the location of NRMM and consequently the distance to sensitive receptors. However, the inclusion of a design principle in the CoCP to achieve a minimum NRMM stage IV emission standard and placement away from sensitive receptors provides guidelines to avoid circumstances that could cause significant air quality impacts.

9.71 SZC Co Responses to ExQ2 Volume 1 Part 4 [REP7-053]

Part 4 – HE.2 Historic Environment (terrestrial and marine):

HE.2.7 – Two Village Bypass: Farnham Manor. ESC's only comment here in response to the Applicant's answer to the ExQ2 question is that it is ESC's view that the immediate surroundings of the Hall referred to at the end of the first paragraph self-evidently include the area of the proposed bypass route. The ability to appreciate some of the architectural interest of the Hall and its associated group of buildings is available from the existing public footpath to the east of the Hall. It is difficult to fully understand the architectural value of any building without also understanding its context, particularly where that building originated as a farmhouse in a farmed landscape. The response here that attempts to disassociate architectural value and context is not one with which ESC agrees.

HE.2.10 – Enhancement to Proposed Mitigation Schemes. These mitigation schemes are landscape-led, although they are also designed as mitigation for heritage asset impacts arising from the development of road and road infrastructure within their setting. With specific respect to Abbey Cottage (item (ii)), ESC notes the points made here in confirmation that the access road to the MDS will be reduced at the completion of the construction period; the planting scheme and verge treatments will be designed to reflect the rural surroundings of the scheme; and that the access route will not be lit during the operational period. ESC considers that these points acknowledge some of the sensitivities around the new access road and roundabout in close proximity to the Grade II listed Abbey Cottage and are welcomed.

Part 4 – Landscape, Visual Effects and Design:

LI.2.2 – Design Council - Additional Design Review. It is correct of the Applicant to state here that ESC has not called for a further project-wide design review, given that the most recent review undertaken by the Design Council was completed less than two years ago (28.11.19). It is interesting to note here the views of the Applicant that ESC and SCC's joint LIR [REP1-045] outlined a sound understanding/appreciation of the proposed design and its contextual response.

LI.2.5 – Design Guardianship Role. ESC is uncertain what the Design Governance Framework referred to in the Applicant's response to this question. ESC has queried the Design Governance Framework with the Applicant who have clarified this term was erroneously included and it is intended to refer to the Design Review Panel. Moving forward, ESC would welcome greater clarity and precision from the Applicant in respect of terminology, i.e., the design guardianship role and design review panel, in light of the erroneous inclusion of design governance framework.

ESC welcomes and supports the use of this design review process which the Applicant has now committed to in the Deed of Obligation.

LI.2.13. – Turbine Halls and Operational Service Centre. ESC supports the proposed inclusion of additional wording to Design Principle 56 in the Design and Access Statement in respect of the cladding to the Turbine Halls as set out in the Applicant's response. The additional wording could be somewhat clearer: with whom will the material be agreed, as stated here? The panel profile will be agreed with ESC in the new wording, but it should be clear that the material will be also agreed with ESC, if that is what is intended.

LI.2.14. – Interim Fuel Store. ESC supports the proposed inclusion of additional wording to Design Principle 57 in the Design and Access Statement in respect of the design of the Interim Fuel Store. There is a conflict between the response here which states that the final Design and Access Statement will be submitted at Deadline 9, and the responses to LI.2.13 and LI.2.26 which state that the final DAS will be submitted at Deadline 10 – if the Applicant could confirm which please.

LI.2.25 – Design and Access Statement – Accommodation Campus Design Principles. ESC can confirm that no further amendments to the Accommodation Campus Design Principles are necessary in relation to our previous comments.

LI.2.26 - Design and Access Statement – Accommodation Campus Design Principles. The Applicant's response here states that there is a there is a 'commitment from the Applicant to enter into an agreement on a design governance framework to provide reassurance on the delivery of good design and the use of a design review panel'. As stated on answer LI.2.5 above, the Applicant has clarified the reference to the Design Governance Framework is erroneous and should instead refer to the Design Review Panel. ESC welcomes the role and use of the Design Review Panel.

ESC supports the proposed amended wording to Accommodation Campus Design Principle 13 as put forward by the Applicant here in response, as it now includes for the discussion and agreement of the building colour palette with ESC – which is what the ExA is seeking via their question, in effect, and which will, thereby, mirror ESC's role in respect of similar agreement for the Turbine Halls. (Currently DP13 does not refer to ESC or ESC's agreement).

LI.2.37 – Sizewell Link Road – Pretty Road bridge design. ESC notes the submission of one new visualisation of the proposed Pretty Road bridge design. ESC notes that the ExA in their question to the Applicants did ask for more than one such visualisation.

9.71 Responses to the ExA's Second Written Questions (ExQ2) Volume 3 - Appendices - Revision 1.0[REP7-057]

Appendix 3B – Agreed Housing Fund Approach:

Appendix 3B was discussed at ISH12 and ESC's written summary of oral case summarises our position. ESC can confirm that we agree with the approach towards contingent and non-contingent payments from the Housing Fund and the sums to be appended to each of those elements is agreed. We welcome that Applicant confirming at 1.1.15 that providing for a Housing Contingency Fund 'does not in any way diminish the Project's commitment to providing the Project Accommodation'. ESC consider the Housing Contingency Fund to be a last resort, our preference is for the Project Accommodation (caravan park at the LEEIE and accommodation campus) to be provided in a timely manner as proposed in the Implementation Plan.

In addition to the reasonable endeavours and contingency fund, the Applicant has committed to a requirement in the Deed of Obligation to have completed the caravan park within 3 months of the Workforce Survey reporting more than 850 non-home based workers [REP7-057 at paragraph 1.5.18]. That requirement should be included in the Deed or Obligation or the DCO. An equivalent requirement should be included in the Deed or the DCO, obliging the undertaker to deliver the accommodation campus by certain trigger points.

In the event that the caravan park and/or campus are not completed by the specified triggers, the undertaker will be obliged to make the agreed financial contributions through the contingency fund, but it should be clear that the payment of that fund will not release the undertaker from the continuing obligation to deliver the caravan site and accommodation campus.

ESC has noted the ExA's concern that there may be a time-lag in reporting of non-home-based workers and being able to implement the Housing Contingency Fund. In reality, ESC expects to be in regular contact with the Applicant during the construction process particular with regards to whether the Implementation Plan is progressing as expected. The Deed should include an appropriate mechanism and strategy for dealing with any likely delay in the delivery of the accommodation to allow for advance planning for temporary alternative measures, until such time as the accommodation is provided by the undertaker.

Expenditure of the Housing Fund Contingent and non-contingent elements are expected to be monitored and agreed through the Accommodation Working Group.

Appendix 4B – Concrete Dome – Example Photos:

The titling of the two example photographs here does not appear to be accurate, it is not clear which dome is the French or American example.

Without any accompanying explanatory text by the Applicant, it is difficult to tell what we are meant to understand from these photographs. This does limit their usefulness.

9.73 Comments at Deadline 7 on Submissions from Earlier Deadlines and Subsequent Written Submissions to ISH1-ISH6 - Appendices Part 1 of 3 - Revision 1.0 [REP7-061]

Page 14 – 2.10 Main Development Site Design and Access Statement: paragraph 2.10.2. ESC notes the Applicant's confirmation that the final version of the DAS will be updated to reflect the current status of Special Landscape Areas. Deadline 10 is quoted here for the final version of the DAS. This was a point that ESC had made as part of our Deadline 6 submission [REP6-032], and it is welcomed to see it acknowledged.

Page 14 – 2.10 Main Development Site Design and Access Statement: paragraph 2.10.3. ESC confirms that we understand that the detail of the panel profile and colour of the Turbine Halls' cladding will all be agreed with ESC as part of pre-submission discussions.

Page 27 – 2.18 Comments on Councils' Local Impact Reports: d) Chapter 12 Historic Environment: paragraph 2.18.8. ESC welcomes seeing the inclusion of our suggestion here for the nature of the enhanced interpretation proposed as part of the Applicant's contribution to the National Trust for their Coastguard Cottages at Dunwich Heath. ESC understands that it has been agreed by the National Trust and will be taken forward.

Page 77 – 4.5 Issue Specific Hearing 5: paragraph 4.5.1. The draft Deed of Obligation will ensure engagement of the RIBA Suffolk Design Review Panel by the Applicant as part of the discharge of requirements process through ESC. ESC welcomes and supports the integral use of independent design review that has now been committed to by the Applicant.

9.73 Applicant's Comments at Deadline 7 on Submissions from Earlier Deadlines and Subsequent Written Submissions to ISH1-ISH6 [REP7-061]

Introduction:

Presented in table form, this document constitutes ESC's review of the Applicant's Comments at D7 on Submissions from Earlier Deadlines and Subsequent Written Submissions to ISH1-ISH6 submitted at Deadline 7.

The table comprises:

- First column: the relevant page number (document, not pdf page);
- Second column: a reference (section, figure or table number);
- Third column: relevant source document extract (text or Figure snapshot)
- Fourth column: our observations and concerns on the cited extract

All extracts from the Drawings, including page, section number, text and footnotes etc. are shown in *italics* in first the three columns, including references elsewhere as appropriate.

Pg. No.	Section Ref.	*Relevant text / illustration*	Observations and concerns
16	2.5	*SSSI Crossing plans.*	The amendment to the design of the construction phase SSSI Crossing structure to remove the drainage pipe and therefore increase the height between the ground and the soffit is welcomed.

16	2.6	*Two Village Bypass Plans for Approval and Plans Not for Approval.*	The Applicant's comments on securing bat 'hop-overs' within the design of the Two Village Bypass are noted and understood. An updated version of the Associated Development Sites Design Principles [REP7-035] has been submitted at Deadline 7 and separate comments on this document are provided in our Deadline 8 submission.
17	2.7	*Sizewell Link Road Plans for Approval and Plans Not for Approval.*	The Applicant's comments on securing bat 'hop-overs' within the design of the Sizewell Link Road are noted and understood. An updated version of the Associated Development Sites Design Principles [REP7-035] has been submitted at Deadline 7 and separate comments on this document are provided elsewhere in this Deadline 8 submission.
20	2.11	*Two Village Bypass Landscape and Ecology Management Plan (LEMP).*	The Applicant's intention to submit an updated Two Village Bypass LEMP at Deadline 8 is noted. ESC will respond to this at the next appropriate Deadline necessary. It is assumed that paragraph 2.11.2 should refer to the Two Village Bypass LEMP rather than the Sizewell Link Road LEMP (which is covered in section 2.14).
22	2.14	*Sizewell Link Road Landscape and Ecology Management Plan (LEMP).*	The Applicant's intention to submit an updated Two Village Bypass LEMP at Deadline 8 is noted. ESC will respond to this at the next appropriate Deadline as necessary.

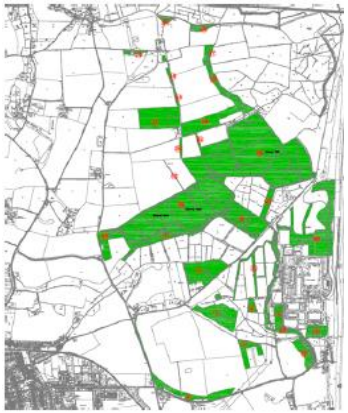
24	2.18	*Wet Woodland Strategy.*	The Applicant's response to Natural England's comments are noted. ESC defer to Natural England on this matter.
25	2.19	*Fen Meadow Reports.*	The Applicant's intention to submit Fen Meadow Report 2 at Deadline 8 is noted. ESC will respond to this at the next appropriate Deadline as necessary.
25	2.23	*Terrestrial Ecology Monitoring and Mitigation Plan (TEMMP).*	The Applicant's intention to submit an updated TEMMP at Deadline 8 is noted. ESC will respond to this at the next appropriate Deadline as necessary.
26	2.25	*Main Development Site Bat Roost Survey.*	The Applicant's intention to submit a response to ESC's Deadline 5 comments [REP5-138] on this survey is noted. ESC will respond to this at the next appropriate Deadline as necessary.
32	2.18	*c) Comments on Council's Local Impact Report – Ecology and Biodiversity.*	The Applicant's statement in paragraph 2.18.5 that an update Reptile Mitigation Strategy is provided at Deadline 7 is noted. The document referenced in the paragraph is understood to be the Estate-wide Management Plan (EWMP) [REP7-076]. Comments on this document are provided separately in this Deadline 8 submission.

			With regard to paragraph 2.18.6, our response to the Applicant's comments on bat impacts (as set out in Appendix E) are provided separately below.
42	2.19	*h) Appendix Q: Potential combined impact of the MDS and SLR on bats.*	The Applicant's comments in paragraph 2.19.14 in relation to the provision of details on bat 'hop-overs' are noted. ESC understands that an updated SLR LEMP will be submitted at Deadline 8 which will include details on bat 'hop-overs'. ESC will provide comment on this document at the next appropriate Deadline.
58	3.2	*Responses to Submissions at Earlier Deadlines – East Suffolk Council and Suffolk County Council.*	3.2.7 – ESC notes that the rationale for the provision of the Farmland Bird Mitigation Fund is provided in Appendix I. Comments on this appendix are provided below.
82	4.7	*Additional Written Submissions Arising from Issue Specific Hearings – Issue Specific Hearing 7.*	The Applicant's intention to submit updated SSSI temporary land take figures at Deadline 8 is noted. ESC will respond to this at the next appropriate Deadline as necessary.

9.73 Applicant's Comments at Deadline 7 on Submissions from Earlier Deadlines and Subsequent Written Submissions to ISH1-ISH6 Appendices Part 1 - Appendix E [REP7-060]

The righthand column in the table below provides a response from ESC on the continuing discussions which are taking place between the Applicant and ESC in relation to impacts on bats.

LIR Comment	Applicant's Response	ESC Response to Applicant's Response at D5	Applicant's Response 23/8/21	ESC Response to Applicant at D8
Construction - Habitat Loss (Roosts)*: It is understood that the assessment of impacts on bat roosts as a result of direct loss of habitat during construction is based on consideration of the total roost resource available vs that which will be lost during construction. Whilst the Councils understand the principle of this approach, we are concerned that no quantification of the total roost resource available on the wider Sizewell Estate is included. In the absence of this we do not consider that the assertion that, following mitigation, the loss of roosting habitat will only result in a Minor Adverse,*	A roost resource approach to the assessment of roost loss has been taken within the assessment. This is outlined in **Volume 2**, **Chapter 14** of the **ES** [AS-033] and **Appendix 2B** of the **ES Addendum** [AS-208]. This recognises the fission/fusion roosting ecology (frequent roost switching) demonstrated by many woodland bat species, in particular barbastelle bat. Overall, the amount of roosting resource to be lost is a small percentage of the resource within the	As set out in the LIR, ESC understands the roost resource approach to assessing roost habitat loss which the Applicant has used in the EIA. However, as described in the LIR, our concern remains that the survey data used to inform this assessment only draws on surveys undertaken within (or very close to) the order limits and trees and woodland outside of this area but within the wider Sizewell Estate were not assessed for the contribution that they make to the whole available roost habitat resource for each bat population.	This issue was discussed at the meeting on 04/08/2021 and 24/8/2021 There is in principle agreement between parties that replacing the roost resource being lost as a result of construction with roost mitigation features being made available within the wider Sizewell Estate, is an acceptable approach to maintain bat favourable conservation status of the relevant bat species in respect of roosting provision. The replacement of the roost resource will be undertaken prior to and	As recognised in the Applicant's Deadline 7 response, following discussion on this matter ESC agrees with the mitigation approach identified subject to a review of the bat mitigation licence information submitted at Deadline 7. Comments on the licence documents are included separately in our Deadline 8 submission. ESC are broadly satisfied with the potential roost feature mitigation measures put forward in the draft Method Statement, however we query the timescale for delivery of some of the replacement features as these are not scheduled for delivery

Not Significant impact on all bat IEFs can be evidenced. Even with the implementation of mitigation measures (primarily the installation of bat boxes) there is no demonstration that an equal or greater roosting resources is available to all bat species roosting on or adjacent to the development area. *With regard to Goose Hill, the area of greatest woodland loss, the conclusions on roost resource presented in the ES and Updated Bat Impact Assessment appears contradictory. Section 5.3.5 of the Updated Bat Impact Assessment [AS-208] notes that potential roosts of barbastelle (and*	Sizewell Estate. Within the estate, 165.65ha of woodland managed (the location of the managed woodlands in the baseline state are presented in the image below) and 70.23ha of vegetation is to be removed. The 70.23 ha includes scrub vegetation, scattered trees and hedgerows which are not included within the figure of 165.65ha for the managed woodlands. 	The area of SSSI wet woodland to be lost has also not been surveyed so, notwithstanding the comments below, the consideration of roost resource loss within the Order Limits is incomplete. The assessment provided, and the Applicant's response to the LIR, assume the roost habitat suitability of the retained and surrounding habitats, it does not quantify them. Only the potential roost resource to be lost has been (incompletely) quantified, but the absence of assessment of the wider retained trees and woodlands means that a quantitative comparison of potential roost resource loss/retention is not possible. The assessment	during the construction phase. As a dynamic habitat, ground level assessments of impacted woodland areas will be undertaken to re-assess trees and number of potential roost features (PRFs) prior to construction activities. Trees with PRFs will be climbed/inspected immediately prior to felling and any bats relocated. Such activities will avoid the maternity and hibernation period. The approach to roost resource loss, proposes a ratio of bat roost replacement (using boxes, reclaimed PRFs and/or veteranisation) to each PRF or known roost being lost. This ensures a continuity of available	until late in the operational lifetime of the power station. This leaves a significant time lag between PRF loss and PRF replacement (with as many as 191 of the 407 proposed replacement PRFs affected) which is not acceptable. Greater use of replacement PRFs other than bat boxes (e.g. totems/monoliths, translocations of existing roost features and veteranisation of existing trees) should be used to provide more replacement PRFs in the early years of the project. Whilst the principle of the roost mitigation approach is now agreed, ESC maintain that no full assessment of roost resource availability on

noctule) have been recorded in Goose Hill. It is additionally noted that Section 8.7.13 of the assessment suggests that there were thought to have been pipistrelle roosts within Goose Hill plantation in 2020. Section 5.3.6 then states that, "Several locations on and close to the site boundary have significant numbers of trees with roosting potential for bats, including (…) Goose Hill (…).". The paragraph notes the principal locations of trees with potential for roosting within the plantation and comments on the lack of suitability of large parts of it due to the (young) age of the trees. This is restated (in part) in Section 8.3.13. In 5.3.7, however, it is stated that	Of the 70.23ha of vegetation to be removed, the majority is in Goose Hill plantation woodland, a largely coniferous plantation with homogenous area of managed pines. These offer limited roosting resource, as stated in **Volume 2**, **Chapter 14** of the **ES** [AS-033] and **Appendix 2B** of the **ES Addendum** [AS-208]. Conifer plantations generally have fewer potential roost features compared to broadleaved woodland and the vast majority of trees within the Goose Hill Plantaion Woodland area are of negligible or low value to tree roosting bats.	presented instead relies on professional judgement based on the retained habitat types (vs those to be lost). With regard to the Applicant's statement that "*The ES does not state that there is no roosting potential in Goose Hill. Moreover, the surveys conducted to date were not intended to identify every feature that a bat has ever or will ever roost in, this would show a misunderstanding of the ecology of woodland roosting bats*", it appears that the LIR paragraph on this matter has been misunderstood. The LIR does not claim that the ES states that there is no roosting potential in Goose Hill, instead it	roost resource throughout the construction period. Replacement PRFs will be provided in the known home ranges of the bat populations affected (informed by radio tracking data) and in areas that will not be affected by short or long term impacts from the Sizewell C Project. Text from an email for Natural England is presented below explaining the approach (sent by Sonya Gray, Natural England Wildlife Management Lead Adviser). *"The level of mitigation/compensation will need to be enough to*	the wider Sizewell Estate has ever been made. Despite this, on the whole, adequate mitigation requirements can be calculated on the information available. The only exception to this is for potential roost feature loss in the area of the SSSI Crossing where the required surveys have not yet been undertaken. It is essential that a survey of this area is carried out to inform the level of mitigation required. ESC understands that these surveys are currently underway. Natural England's comments on the level of roost mitigation/compensation required under the licence is noted. ESC

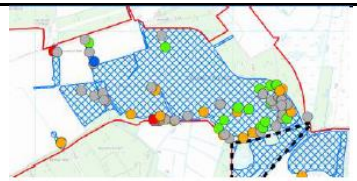
Goose Hill offers "minimal roosting resource for bats." The 2020 reports are cross referred in providing an evidence base for this assertion, which is not subject to qualification. Section 8.3.9 further notes that conifer plantation, such as that principally present within Goose Hill, is sub optimal for roosting barbastelle, providing, "limited availability of roost features.". Figure 2.9.B.1 appears to show a barbastelle roost in Hilltop Covert, which forms the western block of the Goose Hill plantation (this is separated from Kenton Hills by an access track). However, this location is referred to as being in Kenton Hills in 8.3.50 of the bat assessment, and	Taking the habitat approach to bat roosting habitat and the quantification of the available roosting resource, the mitigation will ensure no detrimental effect to favourable conservation status of barbastelle and other species that rely on tree roosts. Taking this approach into context with the roost resource available in retained areas of woodland and areas outside the development areas (e.g. Minsmere), it is considered that the roost loss impact following mitigation is minor adverse. With regards to the statement in the relation	queried the apparent difference in value assigned to the importance of these roosting habitats in different parts of the ES. ESC notes that in relation to this the Applicant has submitted a further survey report at Deadline 3 which provides further assessment of the trees with bat roost features present within the Main Development Site Order Limits. We have provided separate comments on this survey as part of our Deadline 5 response; however, we do not consider that the submission of this information changes our above comments in relation to how the principle of roost resource assessment has been undertaken. Also, in	*mitigate and compensate for the maximum impact of the licensed activity. Due to the uncertainty around roost loss, and to ensure compensation is provided for a worst case scenario, the minimum ratio of what replacement roosting features should be provided for potential roosts/ new roosts found is:* *1:1 potential roosting features* *2:1 low status roost of common species* *4:1 maternity roosts of common species* *4:1 low status roost of Annex 2 species* *Maternity roost of Annex 2 species would need to*	defers this matter to Natural England as the licensing authority.

as being in Nursery Covert (Nursery Covert is the eastern part of Kenton Hills, so these references are not necessarily incompatible. It is less apparent why the roost is shown north of the track, and where Kenton Hills is considered to extend to if the roost is considered to be in Kenton Hills) in Table 8.21. *The ground level tree roost assessment completed by Arcadis in 2020 concluded that there were 104 trees within Goose Hill that offered medium roosting potential for bats, and a further seven with high roosting potential. The statement in Section 5.3.7 (that there is minimal roosting resource for bats)*	to the roost resource in Goose Hill: "*The ground level tree roost assessment completed by Arcadis in 2020 concluded that there were 104 trees within Goose Hill that offered medium roosting potential for bats, and a further seven with high roosting potential. The statement in Section 5.3.7 (that there is minimal roosting resource for bats) does not therefore appear to accord with this finding, particularly in the absence of details of the wider roosting resource available in the area, and it is unclear what the quoted statement in 8.3.9 means in this context."*	relation to the Applicant's statement that "*the surveys conducted to date were not intended to identify every feature that a bat has ever or will ever roost in, this would show a misunderstanding of the ecology of woodland roosting bats"*, ESC has never suggested that this is the case. However, in order for each tree's roost potential to be categorised in accordance with published best practice guidance (Collins, J. (ed). (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London) an assessment of potential roost features (PRFs) present has to be made and this is what is referred to in the LIR.	*be covered by a separate licence."* Roost mitigation (including direct and indirect impacts) will be secured via Natural England bat mitigation licence which has been submitted to Natural England and into examination at Deadline 7 (Doc Ref. X).	

does not therefore appear to accord with this finding, particularly in the absence of details of the wider roosting resource available in the area, and it *is unclear what the quoted statement in 8.3.9 means in this context. Overall, the Councils consider that there is insufficient evidence to support the ES conclusion that roost loss (following mitigation) will result in only a Minor Adverse, Not Significant adverse impact on all bat IEFs. Dependent on the roost resource available in the wider area and the actual number of known roosts or suitable roost trees to be lost, the actual impact for some bat IEFs may be significantly greater (even up to Moderate Adverse,*	The ES does not state that there is no roosting potential in Goose Hill. Moreover, the surveys conducted to date were not intended to identify every feature that a bat has ever or will ever roost in, this would show a misunderstanding of the ecology of woodland roosting bats. The assessments identified "*104 trees within Goose Hill that offered medium roosting potential for bats, and a further seven with high roosting potential*", and it is the word potential that is important. These trees are in an area with thousands of trees, and the proportion of trees within this area that have any roosting potential is extremely low.			

Significant dependent on the particular IEF). *Overall, the Councils consider that there is insufficient evidence presented to support the ES conclusion that roost loss (following mitigation) will result in only a Minor Adverse, Not Significant adverse impact on all bat IEFs. Dependent on the roost resource available in the wider area and the actual number of known roosts or suitable roost trees to be lost, the actual impact for some bat IEFs may be significantly greater (even up to Moderate Adverse, Significant dependent on the particular IEF).*	Furthermore, additional quantification of the available bat roosting resource being affected by the scheme has subsequently been established through ground and aerial inspections of trees in 2021, building on previous datasets. Within this assessment, all trees with moderate or high roosting potential were climbed and inspected (with the exception of the trees in the SSSI triangle that could not be accessed and trees that were not possible to climb) to positively ascertain the number and value of the roosting features to be lost. It was ascertained that, of the trees initially identified from the ground as having			

	roosting potential, once climbed many of these features were not suitable for bats. In total, within Goose Hill Plantation woodland, only 14 trees were found when climbed with moderate roosting potential and 1 tree with high roosting potential (within the areas of woodland to be removed). The location of these trees is presented in the image below (red dots are high roosting potential, orange dots are moderate roosting potential, green dots are low roosting potential, and grey dots are negligible roosting potential).			

	 The replacement of roost resource under the mitigation proposals can be guaranteed as the placement of bat boxes is tied to the features to be lost and secured via way of the protected species licence. Appropriate replacement ratios for mitigation potential roost features will be agreed with a minimum of 1:1 replacement, with up to 3:1 replacement for high potential roost features. The mitigation approach will include a combination of bat boxes (cavity and crevice designs), reclaimed potential roost features from felled trees			

	and veteranisation of retained trees.			
In addition to the above, a number of tree roosts have been identified along the northern edge of Kenton Hills. Whilst it is stated in the assessment that these are retained, some figures appear to show them conflicting with the bund to be constructed along this edge. It therefore appears that these trees may also be at risk and that these roosts could potentially be lost which would further increase the impact on bat *IEFs.*	Within the DCO application, no woodland removal along the north of Kenton Hills is required. The bund can be constructed without the need to remove trees (tree removal presented below in blue).  The presentation of the bund within this area is likely due to the indicative nature of the plans referred to showing the approximate locations of bunds etc. These plans do not have the same spatial accuracy as the drawings used to inform the	The Applicant's confirmation on this point is noted and welcomed.	N/A no response required.	Matter resolved; no response required.

	required vegetation removal.			
The geographical location and importance of Goose Hill to foraging and commuting barbastelle and Natterer's bat, and the impact of the loss of much of the area will have been a consideration in concluding a significant adverse effect on barbastelle as a result of habitat fragmentation. However, the evidence provided with regard to both species indicates it may *well also comprise a locally important foraging area for the respective populations, particularly breeding female barbastelles. In the absence of definitive evidence of how the area is used by*	It is recognised that all woodland habitat provides a foraging resource to barbastelle and other bat species. Goose Hill is also considered a commuting corridor for barbastelle bats. It is considered that the most significant impact will occur during the construction period. To address these impacts further foraging habitat will be created in the retained woodland areas in particular conifer plantations where glades, and rides will be created (in Kenton Hills) to provide edge habitats which is selected by barbastelle and other bat species. This approach	Whilst the proposed submission to the examination of an Estate-wide Management Plan (EWMP) detailing further areas to be managed as bat foraging habitat is noted and welcomed, it must be ensured that these areas not only have connectivity to new and retained roosting and commuting habitat, but also that they are adequately protected from construction impacts such as those arising from noise and lighting. We will provide further comment on this matter at the appropriate Deadline once the EWMP has been submitted and reviewed.	The lighting modelling provides for light levels of 0.01lux in the bat dark corridors and adjacent to important bat areas which exceeds the darkness requirements recommended by general bat/lighting guidance and other rare species-specific guidance (Trowbridge Bat Mitigation Strategy for Annex II bat species). It is agreed in principle that the lighting levels proposed for bat sensitive areas (dark corridors and adjacent roost woodlands) are acceptable and that the parameters can be secured within **the Lighting Management Plan** (Doc Ref 6.3 2B (A)).	As recognised in the Applicant's Deadline 7 response, ESC agrees with the light level thresholds put forward for the dark corridors. We also agree that, in principle, the thresholds can be secured via the Lighting Management Plan. It is noted that an updated Lighting Management Plan [REP7-020] has been submitted at Deadline 7. ESC's comments on this plan are submitted elsewhere in our Deadline 8 submission, however we agree with the mitigation measures it secures. With regard to construction noise, as stated by the Applicant,

different bat species throughout the year, but following the evidence which is available, a precautionary approach needs to be taken. This should be that the area does form an important *foraging area of barbastelle and Natterer's bats for at least part of the year. The Councils consider that this is particularly around the breeding season when female bats will be foraging closer to their maternity roosts, and the area may also be important for newly-volant bats (those just beginning to fly).*	will be explained further in an Estate-wide management Plan (EWMP) which is being developed which will further explain the habitats across the EDF Energy estate and explains how these will be managed. The EWMP will be submitted to examination. Three large dark corridors will also be retained within development area during construction as shown on the indicative lighting plans. These corridors will ensure bats have the ability to commute from roosting grounds in the north and foraging areas to the south, whilst dark boundaries will also	With regard to the three proposed dark corridors, it is noted that the Applicant has submitted additional lighting modelling at Deadline 3. Comments on this modelling are provided as part of our Deadline 5 submission and in the *Construction - Disturbance (Lighting) section* below.	Where lighting initially exceeds agreed levels, mitigation including cowling, fencing and removing light sources close to bat sensitive areas will occur to achieve the target lighting levels. The noise modelling takes a precautionary approach (worst case). As presented in **Annex B**, the noise emitters in each of the areas used to model the maximum noise levels are largely mobile plant and machinery. • In Phase 1, in the vicinity of the Bridleway 19 retained commuting route, it is excavators in the earthworks compound A and Plaza/campus area	ESC agree that control of noisy operations to prevent impacts on bats is best achieved through the establishment of spatial, temporal noise thresholds as part of the CoCP. ESC notes that an updated CoCP has been provided at Deadline 7, however this does not include the necessary noise controls. ESC understands that the Applicant intends to submit an updated CoCP include the required controls at Deadline 8.

	ensure bats can move around the boundaries of the development.		which generate the noise identified in the contour plan. • In Phase 2, in the vicinity off Bridleway 19, it is the stripping / site prep east of the bridleway and the stockpiling and the plaza campus excavation that creates the noise modelled. • In Phase 3+ and beyond, it is the excavators in the stockpile area and the bowsers in the borrow pit area that generate the noise modelled in the contours in the vicinity of Bridleway 19.	

			Due to the nature of large-scale construction activities, it is not possible to predict the exact movements of the plant over the construction period. However potential impacts can be identified and managed. As such, a management approach is agreed in principle to be as the most effective method to manage/avoid noise impacts on sensitive bat areas. Spatial, temporal related noise thresholds will be established to identify working areas and times of the year that will be avoided. The approach will be outlined in an update to the Code of Construction Practice (CoCP) (Doc Ref. 8.11(D)).	

			In addition, as outlined in the **TEMMP** [REP5-088], there is potential for unforeseen impacts from the noise generated, and monitoring is outlined to identify these impacts and address them.	
Following this precautionary approach, it is not clear that there is robust data presented in the application to confirm that habitat creation has (or will) offset the reduction in foraging resource *currently available. As a result, it would be more robust to conclude a residual significant effect on both species rather than conclude a Minor Adverse, Not Significant effect.*	Bats are mobile species and will seek out new roosting and foraging and roosting area where they are created. There are numerous examples of recently created habitats being used by barbastelle bats in fragmented agricultural landscapes. As stated above, in the construction phase there will be loss of 70.23 ha of woodland and scrub vegetation. As stated in **Appendix 2B** of the **ES**	Whilst it is acknowledged that bats are mobile and, to varying degrees, inquisitive species, they can also be very site (particularly roost site) faithful. Although "*there are numerous examples of recently created habitats being used by barbastelle bats in fragmented agricultural landscapes*", the role these habitats will be playing in supporting particular barbastelle populations is potentially much more complex than can be determined by simple consideration of	Foraging habitat preference is primarily based Zeale, Davidson-Watts and Jones (2012). In addition to the radio tracking surveys relating to the scheme, other grey literature relating to habitat use of barbastelle bats from Norfolk, Herts, Lincs and Cambs has also been used to inform the assessment of foraging habitat provision. The 49ha Aldhurst Farm habitat creation will provide preferred foraging habitat for	The Applicant's intention to secure bat foraging habitat mitigation as part of the Estate-wide Management Plan (EWMP) is understood. The principle of doing this is agreed. It is noted that the EWMP has been submitted at Deadline 7 [REP7-076], however, this plan does not appear to include the creation of new bat foraging habitat as a mitigation measure. ESC considers that this must be added to the EWMP

Construction - Habitat Fragmentation: The ES concludes that, with the exception of barbastelle, subject to the implementation of the identified mitigation measures the impact on bat IEFs from habitat fragmentation will be Minor Adverse, Not Significant. For barbastelle the conclusion is that there will be a Moderate *Adverse, Significant impact. It is noted that the changes to the project (including the revised SSSI Crossing design and the proposed inclusion of a vegetation link across the Temporary Construction Area between Kenton Hills and Ash Wood) have not altered the Applicant's*	**Addendum** [AS-208], once the construction phase is complete, there will be a significant increase in the availability of foraging habitats of bats. Approximately 250 ha of arable land is being or has been repurposed – the majority of which will be used for creation of habitat types suitable for foraging bats. This will include dry sandlings grassland (a mosaic of grassland, trees and heathland), heathland and shrub, and wetland and woodland habitats. Table 8.6 in the chapter presents the habitat availability for each of the habitats of value for the species present. The most important element of the mitigation	presence/absence in an area. The "repurposing" of arable land to semi-natural habitats post construction will in principle allow the creation of a significant amount of habitat suitable for foraging bats, albeit this will take a considerable amount of time to fully establish. However, this needs to be both adequately secured as part of the DCO (such as via the OLEMP) and complimentary to the creation, retention and long-term management of other parts of the Sizewell Estate to ensure that maximum biodiversity value is achieved. ESC therefore welcomes the Applicant's	barbastelle bats including wetlands, unimproved grassland/heath, scrub and trees. In addition, 0.7 ha of wet woodland is being created on the northern boundary of the main development site. The reptile mitigation at studio field, will provide approximately 16ha of scrub/unimproved grassland mosaic. Furthermore, approximately 5 km of additional tree lines and rides will be created within the Kenton Hills plantations, the latter to provide immediate edge habitat creation and therefore providing further foraging habitat to barbastelle bats within	and understands that an update to address this will be provided at Deadline 8.

conclusion in relation to this.	approach to bats will be to ensure these new habitats are available to bats from the earliest opportunity. Some habitats of value have already been created. In addition, where practicable there will be some transplantation of existing trees where this is viable, the planting of new tree lines of fast growing native species and an acceptance that such mitigation is aimed at the short term with longer term mitigation such as planting of other species of tree as a second phase of mitigation. This approach will be defined explained in the EWMP which is being developed which will further explain the habitats across the EDF Energy estate and	intention to produce an Estate-wide Management Plan (EWMP) and will provide further comment on this at the appropriate Deadline. With regard to the Applicant's comment that "*the most important element of the mitigation approach to bats will be to ensure these new habitats are available to bats from the earliest opportunity*", ESC do not agree that this is the case. The proposed development has a long construction period (10 to 12 years) which will encompass multiple generations of each of the bat species recorded at the site. Therefore, it essential that sufficient roosting, foraging and	dense existing plantations. All habitat creation/improvement is being undertaken within the known home ranges of the local barbastelle population. The bat foraging habitat mitigation will be secured as part of the **Estate Wide Management Plan** (Doc Ref. 9.88).	

	explains how these will be managed. The EWMP will be submitted to examination.	commuting habitat is retained and protected during the construction period in order to ensure that these populations survive in good enough condition so that they are able to benefit from the new habitats. If this is not achieved and the existing populations (particularly of barbastelle) decline significantly, even if local extinction does not occur, then it will take a considerable amount of time (likely well into the operational life of the power station) for populations to recover to their pre-construction condition. ESC therefore consider that construction mitigation and post-construction habitat creation are equally important in protecting and enhancing bat		

		populations present in the area in the short and long term.		
Whilst the Councils agree with the conclusion in relation to the significant impact on barbastelle, we are concerned about the limited detail currently available on a number of the strategic *mitigation measures proposed. In particular, there is a lack of detail on the parameters of the retained and created habitat corridors along Bridleway 19; across the Temporary Construction Area between Kenton Hills and Ash Wood and in the SSSI Crossing area (in addition linked concerns related to noise and light are set out below). In the absence of knowing how*	As stated above, three large dark corridors will be retained within development area during construction as shown on the indicative lighting plans appended to updated **Lighting Management Plan** at Deadline 3 (Doc Ref. 6.3 2B (A)). These corridors will ensure bats have the ability to commute from roosting grounds in the north and foraging areas to the south, whilst dark boundaries will also ensure bats can move around the boundaries of the development.	The additional information submitted by the Applicant at Deadline 3 in relation to the proposed dark corridors is noted. Comments on the submitted lighting information are provided separately as part of our Deadline 5 submission and in the *Construction - Disturbance (Lighting) section* below. Although it is noted that the material submitted at Deadline 3 is a Technical Note, not an updated Lighting Management Plan. With regard to the proposed corridors, as set out in the sections below,	The approaches/methods to addressing lighting and noise mitigation is addressed above.	Comments on this matter are made in row 3 above.

these corridors will be retained, established and managed (including for example widths, vegetation type, vegetation structure) it is not possible to be certain that they will be adequate to maintain the required linkages to prevent significant adverse impacts not just on barbastelle but on other species, particularly Natterer's bat, as well. It is essential that this detail is provided so that stakeholders can be confident that the parameters set will be adequate to provide the commuting habitats required. The lack of a figure showing the proposed link between Kenton Hills and Ash Wood is considered	One of these corridors is centred on two realigned water management zones with retained and new tree plantings, which will provide a connection between Kenton Hills and the Ash Wood cottages area. This new corridor is shown on the indicative lighting plans appended to updated **Lighting Management Plan** at Deadline 3 (Doc Ref. 6.3 2B (A)). Further commentary is provided in the rows below and long-term habitat proposals are covered in the row above.	we remain concerned about the impact which high frequency construction noise will have on their functionality for commuting bats. In the absence of demonstration that they will not be significantly adversely affected by noise we do not consider that it can be certain that they will adequately perform the mitigation function required.		

particularly limiting in this respect.				
In addition to the above, the Councils do not consider the cumulative impacts from the Main Development Site (including the Temporary Construction Area) and the Sizewell Link Road have been adequately considered (please also see the ecology section of the Sizewell Link Road chapter). Both developments will require the removal of habitats suitable for foraging and commuting bats and, as the two developments connect, it is highly likely that it will be the same bat population which will experience this impact. Given that the species	Further consideration will be given to this point and a response provided at Deadline 5 if relevant.	The Applicant's comment on this matter is noted, ESC will review the information when it is submitted at Deadline 5 and respond at the next relevant Deadline.	This is presented as **Annex A** and replicated that submitted at Deadline 5 [REP5-120] .	ESC responded to the Applicant's Deadline 5 submission on this matter [REP5-120] in our Deadline 6 submission [REP6-032]. In summary, we consider that there is the potential for the habitat fragmentation which will result from the development of the MDS and construction of the SLR to combine, giving rise to a significant adverse impact on some of the identified bat IEFs (including barbastelle). It is therefore essential that the mitigation measures proposed (particularly the 'hop-overs') are adequately secured and implemented. We note the Applicant's comments

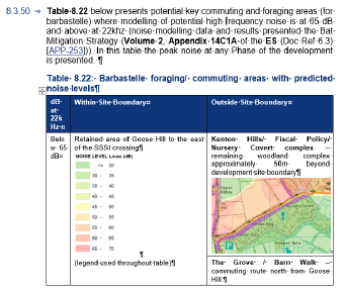
most likely to suffer from this impact is barbastelle (and to lesser extent maybe *Natterer's bat as well), this will compound the existing conclusion of a Moderate Adverse, Significant level impact and may even give rise to a Major Adverse, Significant level impact.*				on this in [REP7-061] and that updated Associated Development Design Principles [REP7-035] for the SLR have been submitted. ESC notes that the Associated Development Design Principles include bat 'hop-overs' for both the SLR and Two Village Bypass.
Construction - Disturbance (Noise): The Updated Bat Impact Assessment [AS-208] provides detail of noise modelling undertaken at 8kHz and 22kHz and assesses the likely impact on roosting and foraging/commuting bats using 8kHz for roosting and 22kHz for foraging/commuting. However, it is noted that	The following figures in the ES Addendum show where noise at both 8khz and 22khz was assessed: • **Figure 2.9.B.5** Barbastelle roosts overlaid onto projected construction noise at 8khz in Phase 1 [AS-208];	It is understood that noise at 8khz and 22khz was assessed in appendix to the ES Addendum, however the point in the LIR on the discrepancy is that this assessment was never presented in the appropriate ES or ES Addendum chapter. The difference between the assessment presented in the ES Addendum and its appendix (which included	8khz+ is considered to be the frequency at which bats may be impacted whilst roosting and 22khz+ is the frequency range likely to impact bats whilst foraging / commuting. The noise contours modelled at these frequency ranges was used to identify locations where bats may be impacted by noise.	The Applicant's comments, including acknowledgement of the typographical error between 8khz and 22khz in the ES Addendum is noted. ESC agree with the Applicant that it is through noise management protocols in the CoCP that noise

the conclusions on construction noise impacts presented in the ES and ES Addendum only refer to 8kHz and this is used for assessing both roosting and foraging/commuting impacts. The Councils consider that this is a significant discrepancy given that the ES chapter sets out the conclusions in relation to the significance of impact. The Councils agree with the noise assessment methodology set out in the Updated Bat Impact Assessment and the use of the two different frequencies. This should form the basis for the assessment presented in the ES, not the sole use of 8kHz as currently included.	• **Figure 2.9.B.6** Natterer's roosts overlaid onto projected construction noise at 8khz in Phase 1 [AS-208]; • **Figure 2.9.B.7** Brown long-eared and other bat roosts overlaid onto projected construction noise at 8khz in Phase 1 [AS-208]; • **Figure 2.9.B.8** Barbastelle roosts overlaid onto projected construction noise at 8khz in Phase 2 [AS-208];	the Updated Bat Impact Assessment) was highlighted by ESC as a potential cause of confusion in considering the overall likely impacts of the development.	As presented in the ES chapters [AS-033 and AS-208], 22khz and 8khz are used throughout – please see below: 8.2.23 → Noise modelling was used to assess the likely noise level increases at sensitive locations across the site during the peak noise periods of the works. Within **Volume 2 - Chapter 14** of the ES (Doc Ref 6.3) [AS-033], high-frequency noise modelling is utilised to inform the impact assessment, at both 22khz and 8khz. ¶ 8.2.26 → When determining the potential impact upon bats from noise, it is important to distinguish the noise that bats can hear (i.e. at which frequencies they are sensitive to noise). Bats can hear sounds at different frequencies to humans, and this varies between species, however the frequencies that bats can hear are generally 'high frequency'. For example, the brown long-eared bat, likely to be the UK species with the most sensitive hearing, indicates that they have good auditory sensitivity (less than 10 decibel (dB) Sound Pressure Level) in the range 7–55 kilohertz (kHz), with other species likely to have auditory thresholds a little higher than this, perhaps 10 kHz for *Myotis* and *Nyctalus* species. As such, the frequency of noise likely to impact bats the most is 'high-frequency', which for the purposes of **Volume 2, Chapter 14** of the ES (Doc Ref 6.3) [AS-033]) is noise at over 8kHz for roosting bats and over 22khz for foraging and commuting bats.‖ • → While there is no clear consensus, there is the potential that noise exceeding 60dB (at 8kHz) may have an effect upon bats (i.e. may delay emergence and/or cause abandonment of roosts). Therefore, noise modelling above 60dB has been applied as an indicative threshold for potential disturbance within this assessment. ¶ There is a typographical error in the addendum chapter [AS-208] where 8khz is stated as opposed to 22 khz (paragraph 8.2.60). Presented below.	impacts will be minimised and mitigated. ESC note that an updated CoCP has been submitted at Deadline 7, but that this does not include the required controls. ESC understands that the Applicant will submit an updated CoCP at Deadline 8 which will include the required construction noise controls.

	• **Figure 2.9.B.9** Natterer's roosts overlaid onto projected construction noise at 8khz in Phase 2 [AS-208]; • **Figure 2.9.B.10** Brown long-eared and other bat roosts overlaid onto projected construction noise at 8khz in Phase 2 [AS-208]; • **Figure 2.9.B.11** Barbastelle roosts overlaid onto projected construction noise at 8khz in Phase 3/4 [AS-208];		• Potential Foraging/ Commuting Disturbance ¶ 8.2.60 → The majority of studies of noise disturbance on bats relate to traffic noise. From these studies the following is inferred:¶ – Areas subject to noise levels at or below 50dB (at 22 kHz) are not considered likely to have any effect on foraging and/or commuting activities.¶ – Noise levels between 50 and 65dB (at above 22khz kHz) may have the potential to affect foraging and commuting bats. However, the literature is varied and there is evidence to suggest that bats would become habituated to noise within these parameters as several studies have shown the ability of bats to habituate to noise within these parameters and tolerate even higher noise levels. ¶ – The evidence suggested that noise exceeding 65dB (at 8 kHz) may disturb bats, result in noise avoidance and/or reduced foraging efficiency. ¶ 8.2.61 → In summary, for the purposes of this assessment, 65dB at 22khz or above is used as a threshold for potential foraging disturbance.¶ Table 8.21:- Barbastelle roosts with predicted noise levels above 60dB (during construction phase), with drawings extracted from Figures 2.9.B.5, 2.9.B.8 and 2.9.B.11 ¶ dB at 8 → | Within Site Boundary» | Outside Site Boundary» Below 60 dB | None | Areas of Kenton Hills/ Fiscal Policy/ Nursery Covert complex – woodland resource and confirmed tree roosts beyond site boundary» Above 60 dB |  | Ash Wood – (southern, western & northern boundaries) woodland resource and confirmed roosts (R3, R9, R13, R14, R26)¶ (legend used throughout)¶ Nursery covert (R11)¶ Table 8.22:- Barbastelle foraging/ commuting areas with predicted noise levels¶ dB at 22 → | Within Site Boundary» | Outside Site Boundary» Below 65 dB | Retained area of Goose Hill to the east of the SSSI crossing¶  (legend used throughout table)¶ | Kenton Hills/ Fiscal Policy/ Nursery Covert complex – remaining woodland complex approximately 50m beyond development site boundary¶ The Grove / Barn Walk – commuting route north from Goose Hill.¶ However it is through the noise management protocols to be developed in the **CoCP** that potential noise impacts will be minimised.	

	• **Figure 2.9.B.12** Natterer's roosts overlaid onto projected construction noise at 8khz in Phase 3/4 [AS-208]; • **Figure 2.9.B.13** Brown long-eared and other bat roosts overlaid onto projected construction noise at 8khz in Phase 3/4 [AS-208]; • **Figure 2.9.B.14** Key bat commuting and foraging areas (summary) overlaid onto construction noise			

	contours at 22khz or above at Phase 1 [AS-208]; • **Figure 2.9.B.15** Key bat commuting and foraging areas (summary) overlaid onto construction noise contours at 22khz or above at Phase 2 [AS-208]; and • **Figure 2.9.B.16** Key bat commuting and foraging areas (summary) overlaid onto construction noise contours at 22khz or above at Phase 3/4 [AS-208].			

	Foraging and commuting impacts from noise at 22khz was assessed, within the **Appendix 2B** of the **ES Addendum [AS-208]**, as shown below: 			
Notwithstanding the above, we are concerned that the modelling indicates that several of the retained/created habitat links to be used by foraging/commuting bats (see section on habitat	The use of noise barriers, vegetation/screening and working protocols for mobile work/noise issues will employed to reduce effects to an acceptable level where such impacts occur.	As set out in the LIR, it is ESC's understanding that Figures 2.9.B.14 to 2.9.B.16 in the within the Updated Bat Impact Assessment [AS-208] show the likely construction noise	It is agreed in principle that a noise threshold protocol can be developed as part of the **CoCP** to ensure the avoidance and reduction of noise impacts on bats	ESC agree with the Applicant that it is through noise management protocols in the CoCP that noise impacts will be minimised and mitigated. ESC note that an updated CoCP has

fragmentation above) will experience noise levels of above the threshold set for the assessment (above 65dB at 22kHz). This is particularly the case during construction phases 1 and 2. Figures 2.9.B.14 to 2.9.B.16 in the Updated Bat Impact Assessment [AS-208] show the 22kHz noise modelling outputs with important bat foraging and commuting areas overlaid. It is understood that these figures show noise modelling with the mitigation measures described in the application in place (primarily a 5m acoustic fence and/or earth bund). These appear to indicate that during all construction phases the important habitat linkages at Bridleway 19,	The approach of the Sizewell C ES is to incorporate best practice and utilise precautionary assessment of the impact from noise. Within the assessment in **Volume 2**, **Chapter 14** of the **ES** [AS-033], the impact assessment in relation to noise is considered to have applied the level of information that could be reasonably expected at this stage. The monitoring is designed to confirm the effectiveness of the best practice mitigation employed to address the effects (as such mitigation is expected to be effective), but where wider research is not entirely conclusive. Few peer reviewed studies have been	thresholds across the site after mitigation measures have been implemented. The model outputs clearly show that several of the retained/created habitat links intended as mitigation for commuting/foraging bats will experience noise levels of above the threshold set for the assessment (above 65dB at 22kHz). This is particularly the case during construction phases 1 and 2. While the Applicant's response to this point makes reference to the monitoring which will be undertaken during construction, if the modelling outputs are correct all this will do is confirm that noise levels	on a temporal and spatial basis.	been submitted at Deadline 7, but that this does not include the required controls. ESC understands that the Applicant will submit an updated CoCP at Deadline 8 which will include the required construction noise controls.

the link between Kenton Hills and Ash Wood and the SSSI Crossing area will be exposed to noise levels at or above the threshold set as being disturbing to foraging and commuting bats. Also, the north, south and west edges of Ash Wood, an area known to support a range of bat roosts including maternity roosts for barbastelle, will also experience similar noise levels during all phases, as will the northern edge of Kenton Hills during at least phase 1. Based on this modelling, and acknowledging that it presents a worst-case scenario, we have significant concerns that high noise levels in the range known to the disturbing to foraging/commuting bats	conducted specifically in relation to the impact of noise on barbastelle, however available information has been consulted. Therefore, it is considered that the proposed mitigation measures will allow impacts to be controlled, however the ES acknowledges monitoring will need to confirm the success of the implemented mitigation. This is a strength of the application approach, wherein any impacts which are not foreseeable under current understanding can be identified and addressed. The monitoring proposed in the **TEMMP** [REP1-016] for bats provides some opportunity for remedial	are above the threshold at which disturbance effects on foraging/commuting bats are considered likely to occur. Given the noise modelling outputs presented by the Applicant, ESC remains concerned that the mitigation measures proposed to address construction habitat fragmentation will not be successful because of the impacts of construction noise (bats will avoid using them due to noise disturbance). If this is the case and the mitigation measures for habitat fragmentation are less successful than predicated, then it is unclear how the conclusion that there will		

will render the strategic mitigation measures put in place to address habitat fragmentation impacts *unsuccessful. This is of particular concern for species which will rely on these linkages, including barbastelle for which a population level adverse impact is already predicted from habitat fragmentation.*	actions, e.g. to reduce noise levels, but these measures are to provide confidence that active mechanisms are in place and are secured to ensure that impacts are controlled, rather than a reliance being placed on them. The primary mechanism of noise control will be via the primary and secondary mitigation, which is secured by Requirement. The monitoring will also support any necessary modifications to mitigation that can be made to achieve or further the objectives of the mitigation strategy. Clearly updating surveys etc over time for various stages (i.e. licensing) is also appropriate, however	be no significant impacts on bat IEFs from fragmentation (with the exception of barbastelle) can be justified.		

	the overall impacts and mitigation strategy has been developed with the significant level of survey information gained to date that provides confidence in the effectiveness of the mitigation, and the assessment of no significant effect.			
The Updated Bat Impact Assessment draws on the results of monitoring at the construction of Hinkley Point C to provide demonstration that bats (including barbastelle) will continue to *use corridors around and through construction areas. Whilst the results of this monitoring are interesting, the Councils do not consider that they*	Monitoring from static bat detectors will be a key component of baseline and future monitoring of bat activity pre-during and post development. Static loggers provide a quantitative method for assessing bat activity levels at different locations over time. However, this is not the only monitoring approach	In paragraphs 8.141 to 8.148 of the LIR [REP1-045] ESC set out in detail their concerns regarding an overreliance on the use of static detectors to attempt to monitor population level impacts on bat species across the Sizewell Estate. The use of static detectors as the primary tool for this type of monitoring is considered to be flawed as, whilst they will give	The **TEMMP** [REP5-088] has been updated and a detailed monitoring programme and further baselining via Radio Tracking (RT) is proposed. The monitoring objectives of assessing changes to bat activity, population levels, use of mitigation roosts and bat responses to the construction activity (changes in homes ranges and roost locations) are agreed in	ESC provided comments on the Deadline 5 TEMMP [REP5-088] in our Deadline 6 submission [REP6-032]. We broadly agree with the bat monitoring measures now proposed, including welcoming the addition of trapping and radio tracking as part of the suite of measures. We note from [REP7-061] that an updated TEMMP will be submitted at Deadline

are directly relatable to the situation at *Sizewell. At Hinkley the habitats within the construction area are on the fringe of those relied on by that barbastelle population for* *foraging and commuting, whereas at Sizewell the affected habitats are within the core area understood to be used by the population. There is likely to be a significant difference in population responses to the loss (be it temporary or permanent) of fringe habitat when compared to core habitat. Also, we have reservations on the sole use of static detector surveys for population monitoring, particularly as static detectors have limitations on the data*	to be employed. For a landscape level response to the development, further radio tracking studies will be undertaken on the barbastelle and Natterer's bat population pre-construction, during and post construction to assess any changes in activity patterns, and overall response to the commencement of construction. Roost mitigation monitoring to assess use/uptake will also be undertaken to provide a holistic approach at both the site and landscape level.	quantifiable data, it will be limited to the number of bat passes in a particular area at a given time. Only limited information on bat behaviour is gathered by static detectors, and it is not possible to assess the numbers of individual bats present or how this relates to the overall population size/status. However, ESC notes and welcomes the confirmation from the Applicant that further advanced survey techniques (including radio tracking) will be undertaken on the barbastelle and Natterer's bat populations pre-construction, during and post construction. We would expect further	principle as the key monitoring objectives. It is also agreed that; 1. Static surveys are considered an appropriate way to monitor the bat activity levels in response to the development. Static logger monitoring is repeatable, generate large datasets for statistical analysis and modelling and as a result are regularly used on multiple large DCO projects. We are proposing to use control static loggers which can provide a three-way assessment of mitigation	8 which we hope will address the outstanding comments we set out in our Deadline 6 submission.

that they can collect and how this can be interpreted - please see the Monitoring Strategy section below for further comment on what we consider these limitations to be.		details of this to be submitted to the examination as part of an updated Terrestrial Ecology Monitoring and Mitigation Plan (TEMMP).	effectiveness, including comparisons pre and post construction, but also be able to compare bat activity against controls loggers to account for climate differences etc between years. We have also proposed this for this for bat crossing points on the SLR. 2. Direct roost monitoring of retained and mitigation roost features will be able to determine the success of roost mitigation	

			and the response of bats to construction activities. 3. Trapping and radio tracking will assess the impacts to primary affected barbastelle and natterer's bat at the landscape scale through changes in home ranges and the location of roosting foci. These three approaches combined will provide a holistic monitoring approach secured in the **TEMMP** [REP5-088].	
In addition to the above, it also remains unclear how, in practical terms,	The monitoring proposed in the **TEMMP** [REP1-016] for bats does provide	As set out above ESC considers that as currently proposed	It has been agreed in principle that noise impacts can be managed	ESC agree with the Applicant that it is through noise

unacceptable levels of noise will be defined and mitigated during construction. There appear to be potential conflicts between health and safety and further controls being implemented. At present there is nothing included in the application documentation that could be easily adapted to provide the basis for a Working Method Statement for an Ecological Clerk of Works (team). *Given the concerns set out above in relation to construction noise and the mitigation measures included to address it, the Councils consider that bat IEFs will experience impacts above the Minor*	some opportunity for remedial actions, e.g. to reduce noise levels, but these measures are to provide confidence that active mechanisms are in place and are secured to ensure that impacts are controlled, rather than a reliance being placed on them. Noise will be controlled by the measures in the CoCP [REP2-056], which is secured by Requirement. Through discussions with the Councils, further detail may be added to the TEMMP for Deadline 5.	adverse impacts from construction noise remain likely. ESC would welcome further discussion with the Applicant and would expect to see an updated version of the TEMMP submitted to the examination at a suitable Deadline.	via protocols and thresholds contained within the **CoCP** (see above).	management protocols in the CoCP that noise impacts will be minimised and mitigated. ESC note that an updated CoCP has been submitted at Deadline 7, but that this does not include the required controls. ESC understands that the Applicant will submit an updated CoCP at Deadline 8 which will include the required construction noise controls.

Adverse, Not Significant level set out in the ES. Dependent on the mitigation measures achievable, the actual night-time noise levels *generated during the works and the duration of these, it is possible that some bat IEFs may experience an adverse impact of at least a Moderate Adverse, Significant level.*				
Construction - Disturbance (Lighting): In relation to impacts arising from construction lighting, whilst the Councils note the additional modelling presented in the Updated Bat Impact Assessment, it is unclear why this has only been undertaken at parts of the site and we	The approach of the Sizewell C ES is to incorporate best practice and utilise precautionary assessment of the impact from lighting. Within the assessment in **Volume 2**, **Chapter 14** of the **ES** [AS-033], the impact assessment in relation to lighting is considered to have applied the level of	ESC notes the submission of updated construction lighting modelling at Deadline 3; however, this appears to be a Technical Note on Indicative Lighting Modelling [REP3-057], rather than an update of the Lighting Management Plan [current version submitted as [APP-182].	The lighting contours show that across the majority of the site, low light levels will be secured through lighting design and control. The contours do not account for the additional mitigation included, for example the bunds and fences, where these are implemented, the lighting levels will be	ESC agrees that in principle the required lighting thresholds can be secured via the Lighting Management Plan. ESC notes that an updated Lighting Management Plan has been submitted at Deadline 7 [REP7-020]

are concerned that this hasn't adequately considered lighting at all critical points along the corridors identified as being required to be kept dark. For example, there does not appear to be any detailed modelling of the southern end of Bridleway 19 where the site access plaza will be. Also, the modelling presented for the SSSI Crossing appears to be for the culvert and embankment option not the open span bridge and embankment option, it is therefore not possible to conclude the that the lighting strategy proposed for this area will be adequate to maintain sufficient darkness so that the area does not become a barrier to foraging and commuting bats. As set out in the Habitat	information that could be reasonably expected at this stage. As stated above, three large dark corridors will be retained within development area during construction as shown on the indicative lighting plans appended to the updated **Lighting Management Plan** at Deadline 3 (Doc Ref. 6.3 2B (A)). These corridors will ensure bats have the ability to commute from roosting grounds in the north and foraging areas to the south, whilst dark boundaries will also ensure bats can move around the boundaries of the development.	Whilst it is helpful as an indication of the degrees of lighting that can be achieved at the site, it is not clear how these thresholds are then secured in the DCO. We have provided further comments on the submitted Technical Note separately as part of our Deadline 5 submission. ESC acknowledge that from the modelling provided, based on the horizontal plane isolux plans submitted, it appears that dark corridors can be maintained along the western (Bridleway 19), and may be possible on the central (through the TCA) route and the eastern (SSSI Crossing) route, although it appears	below the currently presented thresholds (for example within Ash Wood, where light attenuation fencing is proposed). This will be secured through the **Lighting Management Plan** (Doc Ref. 6.3 2B (B)) and Natural England licence will also require that lighting impacts do not affect roosts and the avoidance of lighting impacts and/or the provision of light reduction measures.	and considers that this secures adequate mitigation measures to address our concerns on this matter. ESC also understands that the Applicant will submit an updated CoCP at Deadline 8 which will include control parameters for task specific construction lighting. This addition to the CoCP is welcomed.

Fragmentation section above, details of the parameters for these corridors need to be set out and these should include acceptable light levels. *We are also concerned that reference continues to be made to keeping areas as dark as is 'reasonably practicable' and that no parameters for acceptable light levels have been set out. This does not provide confidence that bats will be a key driver in terms of limiting / controlling light during construction. It also remains unclear how, in practical terms, unacceptable levels of lighting will be defined and mitigated during construction. There*	The monitoring proposed is designed to confirm the effectiveness of the best practice mitigation employed to address the effects (as such mitigation is expected to be effective), but where wider research is not entirely conclusive. Few peer reviewed studies have been conducted specifically in relation to the impact of lighting on barbastelle, however available information has been consulted, and there are examples / observations of barbastelles foraging 25m from street lights where vegetation screening is present (IDW pers. obs.). Therefore, it is considered that the proposed dark corridors will allow	that there may still be light spill onto the central route boundary vegetation and the embankments and entrances at the SSSI Crossing. Also, as set out above, the plans provided do not appear to be secured as part of the DCO and therefore are not fixed thresholds which can be constructed and monitored against. This is a significant concern and must be corrected so that appropriate lighting thresholds are set and secured by the DCO.		

appear to be potential conflicts between health and safety and further controls being implemented. At present there is nothing included in the application documentation that could be easily adapted to provide the basis for a Working Method Statement for an Ecological Clerk of Works (team). The absence of suitable parameters and *controls will lead to an impact on bat IEFs greater than the Minor Adverse, Not Significant set out in the ES.*	impacts to be controlled, however the ES acknowledges monitoring will need to confirm the success of the implemented mitigation. This is a strength of the application approach, wherein any impacts which are not foreseeable under current understanding can be identified and addressed. The monitoring proposed in the **TEMMP** [REP1-016] for bats provides some opportunity for remedial actions, e.g. to reduce lighting levels, but these measures are to provide confidence that active mechanisms are in place and are secured to ensure that impacts are controlled, rather than a reliance being placed on			

	them. The primary mechanism of lighting control will be via the Section 1.3 of the **Lighting Management Plan** (Doc Ref. 6.3 2B (A)), which is secured by Requirement. The monitoring will also support any necessary modifications to mitigation that can be made to achieve or further the objectives of the mitigation strategy. Clearly updating surveys etc over time for various stages (i.e. licensing) is also appropriate, however the overall impacts and mitigation strategy has been developed with the significant level of survey information gained to date that provides confidence in the effectiveness of the			

	mitigation, and the assessment of no significant effect.			
Assessment of Significance of Residual Effects*: Notwithstanding the Council's concerns set out above that construction habitat loss, noise and lighting will result in greater impacts than presented in the ES, no conclusion is drawn in the application documents on what the predicted significant residual effect of habitat fragmentation on barbastelle will mean for the population.*	The fragmentation of habitats within the home ranges of the local barbastelle population has been identified as a significant adverse effect. It is accepted that the construction phase will have the greatest level of effect, however the habitat enhancement created in the long term will be produce a beneficial effect for the barbastelle population. Fragmentation impacts during construction will be addressed through the provision of wide dark corridors at three	The Applicant's comment on this point is noted, however it remains disappointing that no conclusion is being drawn in the application documents on what the predicted significant residual effect of habitat fragmentation on barbastelle will mean for the population.	Since the original assessment of impacts on bats, further information around lighting impacts and noise mitigation has been provided. Mitigation approaches including the provision of further foraging habitats in the short term and wide dark corridors have been developed. Therefore it is considered that with the application of the following mitigation: 4. Dark corridors (i.e. artificial light intrusion no	ESC notes the Applicant's comments on this point and acknowledges that since the time of the original assessment, considerably more avoidance and mitigation measures have been added to the scheme in order to address identified impacts. Whilst these additional mitigation measures may now reduce the level of residual impact below Significant, this will not be confirmed until monitoring has demonstrated that this is the case. ESC therefore remain of the opinion

	locations to limit the distances bats will need to travel to retained and created foraging and roost areas. It is considered, based on the activity patterns of barbastelle populations elsewhere, that after a period of habituation barbastelles will continue to use foraging areas initially fragmented by the development. Whilst the mitigation developed is based on the best information available, there remains a level of uncertainty resulting in a precautionary residual significant moderate adverse effect on the local barbastelle population bat during the construction phase of the scheme.		greater than 0.01 Lux and glared appropriately shielded). 5. Noise levels being managed in line with bat sensitivities (i.e. through **CoCP**). 6. Provision of 65ha of foraging habitat and 5km of linear foraging habitat being created prior to and during construction 7. Provision of pre and during construction replacement PRFs The scheme is unlikely to have a significant residual effect on the barbastelle (and other) bats.	that the Natural Environment Improvement Fund (secured under Schedule 11 of the Deed of Obligation) should be available to address residual ecological impacts as well as landscape impacts. It is understood that the description of the purpose of the Fund allows for its use for this purpose.

For 9-12 years during construction connection of local landscape features known to be used by barbastelle will be affected, as some of these features and linking hedgerows will be within the footprint of the site and its construction area. The construction footprint will result in both east-west and north-south commuting features being lost. This is likely to result in barbastelles taking more circuitous routes to foraging areas: for males, which range considerable distances this may be sustainable; for females, which forage close to roost sites when breeding, and for volant young with limited ranging ability, this may prevent them	As outlined above the creation of large north south dark corridors will aim to address impacts of fragmentation, limiting the distances travelled by bats between roosts and foraging areas to the south. Furthermore, newly created foraging areas will provide replacement foraging sites.	The Applicant's comment on bats using newly created foraging sites is noted, however it is not clear whether the sites referred to are areas of habitat creation which have been undertaken for other species (e.g. marsh harrier and reptiles) or whether additional habitat creation for bats is proposed (which is alluded to elsewhere in the Applicant's Deadline 3 response). Clarification on this should be provided as soon as possible.	It is agreed in principle that the dark corridors will provide the most direct commuting routes for barbastelle and other bats species through the construction areas. Foraging habitat creation in the short term is as per earlier foraging habitat response.	The Applicant's comments are noted. Comments are provided separately in this ESC Deadline 8 submission in relation to the updated Lighting Management Plan [REP7-020]; updated CoCP [REP7-037] and the Estate-wide Management Plan (EWMP) [REP7-076] which address and control the necessary mitigation measures. Whilst we are satisfied with the control measures within the Lighting Management Plan, we consider that controls for noise need to be included within the CoCP and that the required bat foraging habitat creation needs to

reaching preferred areas for feeding.				be included within the EWMP. We understand that the Applicant will submit an updated CoCP and an updated EWMP at Deadline 8 which will address these issues.
If barbastelle continues to roost within the EDF Estate, there is likely to be a population level effect on the species as a result of this effective displacement of females and young bats from *foraging habitats due to the construction area representing a partial barrier to movement. Alternatively, the colony might relocate into the wider area, potentially competing with other*	The mitigation approach is to provide access to higher quality and replacement foraging habitats within the existing home ranges of the barbastelle bat population in areas unaffected by the construction. The holistic monitoring approach will assess the use of mitigation areas and be used to make	To the best of ESC's understanding, as currently submitted the development does not include the creation of areas specifically designed to provide high quality bat foraging habitat (although it is acknowledged that some of the areas of habitat creation undertaken for other species will provide improvements for foraging bats over the arable habitats previously present). It is therefore unclear what is meant by	The response to this point is as per the response provided for foraging habitat. The **TEMMP** [REP5-088] has been updated and monitoring objectives are agreed in principle.	The Applicant's comments on bat foraging mitigation (as set out in row 4 above) are noted. ESC understands the intention to secure bat foraging habitat mitigation as part of the Estate-wide Management Plan (EWMP) is understood. The principle of doing this is agreed. It is noted that the EWMP has been submitted at Deadline 7 [REP7-076], however, it does not

colonies for resources. The extent of decline might be possible to model, but how populations will respond cannot be concluded with certainty. In the very worst case, the development could result in the local extinction of the barbastelle population. The lack of conclusion on this in the ES and the Updated Bat Impact Assessment is considered to be a significant omission and effects not only consideration of the robustness of the conclusions presented but also consideration of how an adequate monitoring strategy can be designed.	adjustments to mitigation where required.	the statement that "*The mitigation approach is to provide access to higher quality and replacement foraging habitats within the existing home ranges of the barbastelle bat population in areas unaffected by the construction*". Given the impacts on bats will primarily occur during the construction phase, any replacement foraging habitats will need to be established prior to the original habitats being lost in the early stages of construction. ESC would welcome clarification on this as soon as possible so that any such areas can be assessed and their likely success as mitigation considered.		appear to include the creation of the additional foraging habitat which the Applicant has described. ESC considers that the EWMP should be updated to include creation and management of this habitat. ESC understands that an updated EWMP will be provided at Deadline 8 to address this.

		With regard to monitoring, as set out above we consider that the submitted TEMMP [REP1-016] requires updating to reflect the required changes to the monitoring strategy.		
For Natterer's bat, the assessment concludes that due to the more generalist habitat preferences of the species, the colony is likely to adapt to habitat fragmentation impacts resulting from construction, but that it will become more 'vulnerable'. It is unclear in this context whether vulnerability could result in a population-level effect as a result of additional impacts arising from the Sizewell Link	The response for Natterer's bat is the same as for barbastelle.	To the best of ESC's understanding, as currently submitted the development does not include the creation of areas specifically designed to provide high quality bat foraging habitat (although it is acknowledged that some of the areas of habitat creation undertaken for other species will provide improvements for foraging bats over the arable habitats previously present). It is therefore unclear what is meant by	The response to this point is as per the response provided for foraging habitat. The **TEMMP** [REP5-088] has been updated and monitoring objectives are agreed in principle.	The Applicant's comments on bat foraging mitigation (as set out in row 4 above) are noted. ESC understands the intention to secure bat foraging habitat mitigation as part of the Estate-wide Management Plan (EWMP) is understood. The principle of doing this is agreed. It is noted that the EWMP has been submitted at Deadline 7 [REP7-076], however, it does not

Road, for example. This, and inherent uncertainty in the conclusions regarding the magnitude of effect on the county-level important population are of significant concern. As with barbastelle, the lack of conclusion on this in the ES and the Updated Bat Impact Assessment is considered to be a significant omission and effects not only consideration of the robustness of the conclusions presented but also consideration of how an adequate monitoring strategy can be designed.		the statement that "*The mitigation approach is to provide access to higher quality and replacement foraging habitats within the existing home ranges of the barbastelle bat population in areas unaffected by the construction*". Given the impacts on bats will primarily occur during the construction phase, any replacement foraging habitats will need to be established prior to the original habitats being lost in the early stages of construction. ESC would welcome clarification on this as soon as possible so that any such areas can be assessed and their likely success as mitigation considered.		appear to include the creation of the additional foraging habitat which the Applicant has described. ESC considers that the EWMP should be updated to include creation and management of this habitat. ESC understands that an updated EWMP will be provided at Deadline 8 to address this.

		With regard to monitoring, as set out above we consider that the submitted TEMMP [REP1-016] requires updating to reflect the required changes to the monitoring strategy.		
***Bats – Conclusion**: The ES concludes that, subject to the implementation of the identified mitigation measures, with the exception of the impact of habitat fragmentation on barbastelle,* *no bat IEFs will experience construction impacts above Minor Adverse, Not Significant. For barbastelle, habitat fragmentation is considered likely to result in a construction impact at a Moderate Adverse, Significant level. For the*	The responses and further information provided above support the conclusions made in the **ES** [AS-033 and AS-208].	Whilst acknowledging the additional information, interpretation and commitment to submitting further details made by the Applicant, for the reasons set out in the sections above ESC maintain their consideration that the proposed development, as currently submitted, will have a greater impact on bat IEFs than presented in the ES. In particular, concerns remain over:	Each of the comments below (renumbered for clarity) is responded to below. Summary of agreed points (in principle) 1) Within the bat licence, replacement of roost resource approach is proposed which is tied to the loss of roosting features. The mitigation approach does not rely on existing woodland within the wider Sizewell estate to account for roost loss.	ESC notes the Applicant's comments on our overall concerns regarding impacts on bats and responds as follows: 1) The approach to roost mitigation is understood and agreed, subject to the area within the SSSI Crossing being surveyed for roost potential and mitigated accordingly. ESC provides separate comments on the submitted bat licence method statement [REP7-

reasons set out above, the Councils consider that there are a number of limitations in the assessment which undermine these conclusions. Impacts from construction habitat loss, construction noise and construction lighting all have the potential to result in impacts of greater significance than those predicted in the ES. Of additional particular concern is the fact that construction noise and lighting have the potential to adversely impact the mitigation measures being put in place to address impacts arising from fragmentation of connectivity due to habitat loss. In the absence of parameters *relating to the retained habitat corridors we do*		1. The assessment of roost resource availability pre and during construction. 2. The loss of foraging areas in Goose Hill (particularly for barbastelle and Natterer's bats). 3. The impact of construction noise on the proposed mitigation corridors. 4. The impact of construction lighting on the proposed mitigation corridors and how the required thresholds are	The approach to roost loss, which proposes a ratio of bat roost replacement (using boxes and other mitigation PRFs) which was advised by Natural England based on other organisational mitigation licences will be secured in the organisational bat mitigation licence for Sizewell. Bat roost mitigation will be provided prior to the removal of trees for which they are mitigating. This ensures a continuity of available roost resource throughout the construction period. 2) In the operational phase, extensive areas of habitat creation is proposed that will lead to an increase in overall bat	080 to REP7-085] elsewhere in this Deadline 8 submission. 2) It is understood that during the operational phase additional bat foraging habitats will be created as part of the estate wide works. It is noted that an Estate Wide Management Plan (EWMP) [REP7-076] has been submitted to detail how this will be delivered, and what other bat foraging habitat creation will be undertaken. The principle of providing this mitigation through this mechanism is agreed, however further detail is required in the EWMP to secure the additional foraging habitat creation which the Applicant has described elsewhere. ESC

not consider that it is possible to be confident that the habitat mitigation measures identified can be adequately implemented. It is the Council's opinion that the failure of these measures would result in adverse impacts for all bat IEFs (particularly foraging and commuting) of at least a Moderate Adverse, Significant level.		secured by the DCO. 5. The in-combination effects of the Main Development Site and Sizewell Link Road in relation to habitat fragmentation impacts. 6. How the proposed construction mitigation corridors are secured by the DCO. 7. The need for additional monitoring techniques to be secured in the TEMMP (as recognised by the Applicant).	foraging habitat. During the construction phase, additional areas of habitat creation are proposed, which have been added to the design since the bat impact assessment addendum was finalised. This is in addition to the habitat creation at Aldhurst Farm, the Marsh Harrier mitigation area and other areas across the wider Sizewell estate that has already occurred. 3) Noise contours provide a precautionary assessment of impacts, and due to the likely variability of construction noise it is proposed that a protocol and noise thresholds will be developed as part of the **CoCP** to avoid or reduce noise effects in bat	understands that an updated EWMP will be provided at Deadline 8 to address this. 3) Setting and controlling appropriate construction noise thresholds as part of the CoCP is agreed. It is noted that an updated CoCP has been submitted at Deadline 7 [REP7-037], however, this does not include the required measures. It is understood that an updated CoCP will be submitted at Deadline 8 which will include the required construction noise controls. 4) Setting and controlling appropriate construction

		8. Lack of detail on provision of additional bat foraging habitat as part of the mitigation package (as referenced in the Applicant's response to the LIR [REP3-044].	sensitive areas and time periods. 4) The lighting contours show that the bat sensitive areas will remain dark with levels at 0.01 lux. A dark corridor plan appended to the **Lighting Management Plan** (Doc Ref. 6.3 2B(B)) will secure the lighting parameters relating to retained and newly created bat mitigation areas. 5) The MDS will lead to the greatest fragmentation effect on bats and dark corridors will be provided o address the fragmentation effect. The SLR is not likely to present a fragmentation impact, but mitigation is proposed in the form of	lighting thresholds as part of the Lighting Management Plan is agreed. ESC agrees that the updated Lighting Management Plan [REP7-020] includes the required construction lighting control measures. We also understand that additional task lighting specific control measures will be included in the updated CoCP to be submitted at Deadline 8. 5) The need for safe bat crossing points on the SLR (and Two Village Bypass) is agreed. It is noted that an updated Associated Developments Design Principles document has been submitted at

			hop-overs to reduce chances of collision risk. 6) The dark corridors will be secured through the dark corridor plan appended to the **Lighting Management Plan** (Doc Ref. 6.3 2B(B)) 7) The **TEMMP** [REP5-088] has been updated to show the holistic approach to monitoring which will enable an assessment of any changes in bat activity and populations I response to the construction and operational phases. 8) Further details are currently being developed to provide further rides	Deadline 7 [REP7-035] which includes reference to delivering bat 'hop-overs' on the Sizewell Link Road and Two Village Bypass. Exact locations for these will need to be confirmed through the results of the Bat Crossing Point Surveys. ESC understands that this report is due to be submitted at Deadline 9. 6) Setting and controlling appropriate construction lighting thresholds as part of the Lighting Management Plan is agreed. We agree that the updated Lighting Management Plan [REP7-020] includes the required construction lighting control measures. We also understand that additional task lighting

			and glades within Kenton Hills Plantation.	specific control measures will be included in the updated CoCP to be submitted at Deadline 8. 7) ESC provided comments on the latest version of the TEMMP [REP5-088] at Deadline 6 [REP6-032]. ESC notes that an updated TEMMP is proposed for submission at Deadline 8, and we will provide comments on this at the next appropriate Deadline. 8) The Applicant's intention to provide further details on this additional habitat creation is noted, however it is not clear how or where these will be presented. The Estate-

				wide Management Plan (EWMP) may offer the appropriate mechanism to secure the necessary measures however at present it does not include the necessary detail on this. ESC understands that an updated EWMP will be provided at Deadline 8 to address this.
ESC comments on the MDS and SLR note *Paragraphs 1.3.2 to 1.3.6. - Provide further detail on bat crossings ('hop-overs') for road schemes.*			Bat hop-overs have not been systematically studied as pointed out by Berthinussen et al 2019. There is evidence that bats will cross roads at greater heights in the presence of high canopy cover or roadside embankments (Russell et al. 2009, Berthinussen and Altringham 2012b). This is confirmed by radio tracking studies of	It is agreed that the provision of bat 'hop overs' are required to mitigate the impact of the SLR on bats. ESC notes that the Applicant intends to submit an updated SLR LEMP to include this at Deadline 8. ESC will provide comments on this at the next appropriate Deadline.

			barbastelle and Bechstein's bat at the A120 Bishop's Stortford, A27 Hampshire and Horndean Hampshire, where mature vegetation occurs and is either close or closed canopy. Effects are likely to be species specific. For instance, observations of horseshoe bats show they have a tendency to drop into the road corridor Also a road corridor may encourage bat foraging increasing collision risk. However it will be important to consider traffic movements here as well, and their timing. Barbastelles on many of radio tracked studies cross roads in very open landscapes (A303 Stonehenge) but usually	ESC notes that the provision of bat 'hop-overs' are included in the for the road schemes within the Associated Developments Design Principles [REP7-035].

			after midnight. It's often the first couple of hours after dark that bats use linear features to reduce predation risk. Barbastelles are observed crossing the relatively busy B1188 at Metheringham (Lincs) at the height above vehicles at tree canopy height and on the A120 near Bishop's Stortford, the latter where the A120 bisected the roost woodland, they used both an underpass as tree canopy to cross. In one of the most cited studies of bats crossing roads (Kerth and Melber, 2009) in a forest in which a motorway passed through. Only three of 34 radiotracked Bechstein's	

			bats *Myotis bechsteinii* crossed the motorway, all using the underpass. Five of six radiotracked barbastelle bats *Barbastella barbastellus* crossed the motorway but flew over the road (21 crossings at six different sites) more often than through the underpass (16 crossings). The motorway had four to five lanes carrying an average of 84,000 vehicles/day. The underpass (5 m wide x 4.5 m high x 30 m long) was located within a motorway section surrounded by forest. Barbastelle are therefore not affected by roads as some other species, they will use underpasses and cross above the road. Other examples include	

			road mitigation monitoring of the A477 in Pembrokeshire (Davidson-Watts Ecology 2018). It is proposed and agreed in principle as part of mitigation for barbastelles (and other bats) on the SLR, that creating a hop overs with retained mature vegetation (5m+) where possible (even if transplanted trees die earlier than hoped) has the best opportunity of working. An image of an example of the proposed planting to create hop-overs are presented below. Planting/transplanting methods and design will need to be agreed with	

			the highway authority and will be focussed on the key crossing points associated with dark corridors. Such measures are to be outlined and secured within the **Sizewell Link Road LEMP** (Doc Ref. 8.3 B(B)). 	
ESC comments on the MDS and SLR note *Paragraphs 1.3.2 to 1.3.6. - Fully consider all fragmentation impacts arising from both the MDS*			As discussed on the call on 04/08/2021 and 24/08/2021, it is agreed that the main development site and Sizewell link road have different impacts and by addressing each	The Applicant's comments are noted. As set out in row 17 above ESC await the submission of the updated SLR LEMP at Deadline 8 to ensure that implementation of the necessary bat 'hop

and SLR, not just those arising from lighting			independently there is no in combination effect. The main fragmentation issue arises from the loss of habitat as a result of the Main development site and this is addressed primarily through the provision of dark corridors to ensure bat movement between the Kenton Hills and areas north of the Main development site. The Sizewell link road is unlikely to present a fragmentation impact to barbastelle bats, as this species is not considered to have barrier effects to this species. The main role of hop-over mitigation is to reduce any collision risk from the	overs' is adequately secured.

			operation of the Sizewell link road. In any case the bat populations have been assessed together in relation to loss of habitat and fragmentation. This mitigation provided addresses the impacts taken together.	
ESC comments on the MDS and SLR note *Paragraphs 1.3.7 to 1.3.11. - Reconsider use of eastern end of SLR route by bats from populations around MDS and how the presence of both the MDS and SLR will impact on them*			The response to this is presented in Annex A and replicated that submitted at Deadline 5 [REP5-120].	ESC note the Applicant's comment, however the response they refer to was made at Deadline 6 [REP6-032] in response to the document submitted at Deadline 5 [REP5-120] and therefore, it is unclear how this comment can be applicable.

				Notwithstanding that, as referenced in row 17 above, the need for mitigation for bat crossings of the SLR is agreed and we understand that further detail on this will be provided as part of the updated SLR LEMP to be submitted at Deadline 8.
ESC comments on the MDS and SLR note *Paragraphs 1.3.7 to 1.3.11. - Provide further detail on embedded mitigation required for commuting bats, particularly the proposed bat road crossings ('hop-overs').*				Whilst the Applicant has not provided a response to this point, as set out in row 17 above ESC await the submission of the updated SLR LEMP at Deadline 8 to ensure that implementation of the necessary bat 'hop overs' is adequately secured.

9.73 Applicant's Comments at Deadline 7 on Submissions from Earlier Deadlines and Subsequent Written Submissions to ISH1-ISH6 Appendices Part 3 - Appendix I [REP7-063]

The proposals for farmland bird mitigation are noted. ESC welcomes the recognition of this impact and the mitigation proposed and has no further comment to make on this matter.

9.73 Applicant's Comments at Deadline 7 on Submissions from Earlier Deadlines and Subsequent Written Submissions to ISH1-ISH6 Appendices Part 3 – Appendix N Air Quality Mitigation [REP7-063]

ESC welcomes the commitment to the DMMP. However, we would suggest the following commitments are included to the proposed contents of the DMMP – these comments have been shared directly with the Applicant and we expect to see revisions in documents published at Deadline 8:

1. The DMMP will include the following:

- Deposition dust and PM_{10} monitoring locations, methods, frequencies and duration;
- A plan showing the zoning of the Main Development Site for dust control purposes. *This will show all constraints including regions where (a) non-Stage IV/V NRMM will be excluded, (b) areas where temporary stockpiles will be excluded and (c) hard standing areas and hard surfaced roads will be used, in accordance with CoCP Part B Table 4.1 and Part C Table 4.1*;
- Detail on the proposed dust control and mitigation measures to be employed in each zone based on the risks, proposed construction activities and distances to sensitive receptors. This will specify for example where hard surfacing will be applied to haul roads and show the separation distances between emission sources and site boundaries. This can then be used by ESC and the Applicant to audit the dust control practices being applied;
- *Confirmation of the requirement to deploy electrically powered plant at the earliest opportunity;*
- Confirmation that an Action Level of *0.2g/m2/day* will be used for dust deposition rates and 190 µg/m3 as a 1-hour mean PM10 concentration to trigger dust event reporting to the Environment Review Group, (based on IAQM guidance 2018 for Construction Dust

Monitoring). Confirmation that an Alert Level of 75% of the Action Level will be used to alert contractors of the need to address dust risks and the process that the contractors would follow to review current applied mitigation and conditions at time of works and to propose additional controls as necessary to be agreed with the Applicant which would be reported to Environment Review Group as part of regular updates; and

- The approach to reporting dust *and particulate monitoring* results and corrective actions taken to ESC, which will be monthly throughout the monitoring period and reviewed through the Environment Review Group (ERG), to which ESC will be a participant.

2. Please add a note to confirm the timing of production of the DMMP, as follows. This provision should be reproduced in the CoCP:

"*The DMMP will be prepared and submitted for approval by East Suffolk Council. Contractor Construction Environmental Management Plans (CEMPs) will not be finalised and construction activities will not commence until the DMMP has been approved by East Suffolk Council.* The contractors would then prepare Construction Environmental Management Plans (CEMPs) including detailed Dust Management Plans setting out the specific measures to be implemented for the relevant works, in accordance with the CoCP and the associated DMMP for the main development site and associated development sites."

3. Please remove reference to SCC in the following sentence: 'NO_2 monitoring will continue to be undertaken by ESC / SCC at the Stratford St Andrew AQMA and other agreed locations and continue to be funded by SZC Co., to be secured through the Section 106 Agreement. Reporting of monitoring results to be through the Transport Review Group (TRG).'

4. S1.3 reference to HGVs should be changed to HDVs as required.

9.79 Written Summaries of Oral Submissions made at Issue Specific Hearing 8: Air Quality, Noise and Vibration (25 August 2021) - Revision 1.0 [REP7-068]

Introduction

This table comprises ESC's comments on Written Summaries of Oral Submissions made at ISH8: Air Quality, Noise and Vibration.

The table comprises:

- First column: the relevant page number (document, not pdf page);
- Second column: a reference (section, figure, or table number);
- Third column: relevant source document extract (text or Figure snapshot)
- Fourth column: our observations and concerns on the cited extract
- Fifth column: our requested action upon the Applicant (see below).

All extracts from the *Initial Statement of Common Ground*, including page, section number, text and footnotes etc. are shown in *italics* in the first three columns, including references elsewhere as appropriate.

In Column 5 where further action is requested from ESC this generally takes one of the following three forms, or a combination thereof:

- Clarification
- Confirmation
- Explanation
- Further information.

Where a response is provided for comment only and no further advice is specifically requested, this is indicated using a hyphen (-).

Noise

Pg No.	Section Ref.	*Relevant Text / illustration*	Observations and Concerns	Requested:
Agenda Item 2: the assessment of the noise and vibration impacts of the Proposed Development				
a) (i) Whether the potential noise and vibration impacts of the Proposed Development can be satisfactorily assessed from the information submitted by the Applicant; (ii) If not, what additional information would be required?				

2	1.3.2	Rail Noise Mitigation Strategy: *In respect of ESC's concern that the RNMS must be deliverable, Mr Rhodes observed that requirement 25 of the draft Development Consent Order (DCO) (Doc Ref. 3.1(G)) requires the Applicant to submit and have approved by ESC the RNMS before the Applicant can operate freight trains. That means that the RNMS will have to be delivered and provides the necessary protection. The Applicant had not yet received detailed feedback on the RNMS from the authorities, but if the authorities had detailed comments then the Applicant would consider and seek to address them. Mr Rhodes further explained that the Applicant had, in response to earlier questions from the Examining Authority, identified how the RNMS would be delivered and enforced, for example that track access contracts with Network Rail would provide the necessary speed limit controls, whilst SZC Co. would also embed its commitments in contracts with the Freight Operating Company (ExQ1 NV1.11) [REP2-100].*	ESC notes the Applicant's clarification that DCO Requirement 25 means that the RNMS must be delivered before the Applicant can operate freight trains. ESC agrees that this should ensure that an acceptable RNMS is delivered. This also reinforces the importance of appropriate wording for Requirement 25, a matter raised by Counsel for ESC. Comments on the current wording of Requirement 25 are provided elsewhere in this submission and have been agreed separately with the Applicant. We expected the revised drafting to be in the next version of the dDCO submitted to the ExA.	-
	1.3.3	Rail Noise Mitigation Strategy – Acoustic Barriers: *The Applicant has submitted a paper on acoustic fencing adjacent to rail lines (Appendix I to SZC's comments at Deadline 6 on earlier submissions) [REP6-024, electronic page 203], which concluded that such acoustic barriers were not in general likely to be an appropriate solution. The Applicant has since heard from Network Rail who have stated in writing in absolute terms that they will not accept the provision of acoustic barriers on their property. Network Rail*	ESC disagrees that acoustic barriers are not an appropriate solution, and the intention is to continue to engage with the Applicant on this matter to ensure that barriers are provided where they are acoustically worthwhile and where the noise reduction benefits outweigh any potential visual or other amenity impact. It is noted that the Applicant	Clarification

		explained that position to the local authorities at the regular meeting the previous week.	has agreed to provide for the potential for barriers in the dRNMS. ESC also notes the Applicant's point regarding Network Rail's updated position. ESC are not aware that Network Rail have formally confirmed this position. The Applicant's initial Statement of Common Ground with Network Rail [REP2-074] states that acoustic fencing could be supported by Network Rail if it was at the Applicant's cost. Revision 2.0 of the same Statement of Common Ground [REP5-095] does not mentioning acoustic fencing. ESC request that any updated position is formally confirmed, fully explained, and justified by Network Rail.	
3	1.3.7	Operational Noise from the Power Station: *Setting limits as a rating level is problematic in that rating levels include corrections for different acoustic character, but those are to be judged in the context of the receptor and once the power station is up and running, which cannot be reliably known in advance for the power station. A rating level for something as complex as a power station is unreasonable therefore.*	While ESC acknowledge the challenges posed by a rating level, it is not accepted that such a limit would be fundamentally unreasonable, and ESC maintain that this would be the only way to ensure that potential tonal characteristics are considered as part of operational noise control. The Applicant's own assessment acknowledges the significance of tonality for both Sizewell B and Sizewell	-

			C, so ESC consider it reasonable to request that this be part of any noise controls. Rating level limits for operational plant noise are common, although ESC note the complexity and number of individual sources in this case. Please see our other comments on this matter – we are working with the Applicant to resolve this to both of our satisfaction.	
c) Whether higher standards of protection are appropriate in light of the potential length of the construction period				
5	1.3.16	Annex E.5 of BS5228-1:2009+A1:2014 *As to the detail of the 55dB threshold, Mr Brownstone explained that Mr Bear on behalf of the authorities was wrong to suggest that a separate and lower evening threshold was required. BS5228-1:2009+A1:2014 at Annex E.5 only advises a daytime limit of 55dB and does not advise a separate evening threshold. The Applicant would set out its position on this fully in written submissions.*	This statement is not accepted by ESC. This is discussed in detail in ESC's responses to the Applicant's Written Submissions responding to ISH8 which has been submitted separately at Deadline 8.	
5-6	1.3.18	Vibration induced damage in buildings *On vibration from road traffic, Mr Rupert Thornely-Taylor for the Applicant explained that SZC Co. has thoroughly reviewed the evidence on this subject, which is a subject that has been extensively studied in the literature. There is often community concern that vibration might cause damage to buildings, but the evidence is in fact that the circumstances in which that*	ESC agrees with the Applicant that vibration induced damage to buildings is not expected to be an issue in this case. However, the expectation is that any vibration effects associated with the development can reasonably be expected to cause concern in the community. For this reason, ESC has requested the Noise Monitoring and	

		will occur are very limited. It is only really where the formation of the land underneath the road is very soft that there is risk. Imperfections in road surface may cause vibration but those can be remedied. Likewise with vibration from rail freight, popular concern as to the impact on buildings often does not reflect the evidence. On the East Suffolk Line, there is rail vibration caused by joints in the rail and certain types of rail, and the Applicant is in the process of seeking to discover where those features are in the rail line and whether they can be taken out and that source of vibration removed. In short, the Applicant is alive to the concerns in respect of both rail and road and addressing them in so far as they need to be addressed.	Mitigation Plans to include provision for vibration measurements within the reasonable investigation of complaints, where necessary to alleviate concerns of damage to affected properties.	
d) Operational noise at the MDS and traffic noise from the new road				
6	1.3.20	Operational Noise from the Power Station: *An operational noise limit was not, however, appropriate for the main power station. The power station had been designed to be as quiet as reasonably possible. It includes a large assemblage of plant and processes which are complex and highly regulated. Redesigning the power station or changing plant in order to attenuate noise further is not possible in the same way that it may be possible to select different plant at Associated Development sites for example. For that reason, a nighttime operational noise limit imposed by way of requirement, as sought by ESC, was inappropriate in principle. It would serve no purpose as the power station noise level cannot be significantly reduced. A requirement which serves no purpose*	ESC do not agree that an operational noise limit for the power station is inappropriate. The Applicant's justification for this is that the power station had been designed be as quiet as reasonably possible and that redesigning the power station or changing plant was not possible. ESC acknowledge that power stations are inherently complex, and that this might be the case. However, ESC have consistently and repeatedly requested that the Applicant provide technical justification for why further operational noise reduction is impractical, in both	-

		cannot satisfy the tests for imposition of a requirement in NPS EN1 paragraph 4.1.7. Further, ESC's request for a limit does not engage with the scenario of what would happen if their limit was exceeded. It is not realistic that ESC would or should seek to stop the nuclear power station operating.	acoustical and engineering terms. To date the Applicant has not provided this, although ESC note that the Applicant's Deadline 7 submissions 'Written Submissions responding to ISH8' [REP7-071] does finally contain some more detail on this point. ESC have provided separate comments relating to that document. ESC are also expecting a meeting with the Applicant and one of their engineers in order to understand this point further and with the aim of reaching a consensus on this matter.	
	1.3.21	Operational Noise from the Power Station: *Mr Brownstone addressed the appropriate noise level if a limit on operational night-time noise from the main power station was to be imposed, without prejudice to the Applicant's position that no such limit was justified as a matter of principle. A limit of 45dB LAeq 1hr measured at dwelling facades between 11pm and 7am was imposed in the DCO for Hinkley Point C (requirement MS12). The Applicant considered that to be appropriate and it was achievable. Hinkley Point C is located in a broadly similar rural and coastal context to Sizewell C, and is the same design of power station, such that the level would be similarly appropriate. The*	ESC note that 1.3.21 states that a limit of *"45dB $L_{Aeq\ 1hr}$ measured at dwelling facades between 11pm and 7am"* would be considered appropriate by the Applicant, which appears to contradict the preceding paragraph which states that "a*n operational noise limit was not, however, appropriate for the main power station"*. These two statements appear to be contradictory. ESC have consistently maintained that an operational noise limit is appropriate, and whilst the aim should be to achieve the lowest possible noise levels, any	-

		Applicant had also discussed a figure of 40dB Lnight with the authorities, which was broadly equivalent.	operational noise limit must be practicable and achievable. ESC would also challenge the suggestion that "*Hinkley Point C is located in a broadly similar rural and coastal context to Sizewell C".* Sizewell C would be in a designated Area of Outstanding Natural Beauty (AONB), which HPC is not. This distinction cannot be understated, ESC's view. ESC also disagree that 40 dB L_{night} is equivalent to 45 dB $L_{Aeq,1hour}$ for the reasons discussed in detail in ISH8 and as per ESC's written submissions of oral case for ISH [REP7-112].	
Agenda item 3: the implications of the traffic noise from the Proposed Development during construction and operation				
a) The early years				
b) Traffic noise upon completion of the SLR and at the Park and Ride sites				
i. Effect of shift patterns and freight management strategy				
9-10	1.4.9	Additional mitigation for new roads: *Further work was also being undertaken to explore what could be done within the Order limits by way of landscaping which would attenuate noise, and the Applicant had written to certain stakeholders in the past week setting out potential options and describing for instance how landscaping and bunds could mitigate impacts around Farnham Hall, Mollett's Farm and on*	Where noise bunds or barriers are expected to have an impact in visual or landscaping terms, the expectation is that ESC will also be consulted, as the Local Planning Authority. It has now been agreed that Requirement 22A which relates to highway landscaping	

		the SLR and offering to work with stakeholders to work up that design. It is premature to fix these details at this stage because they need to be worked up with stakeholders before they can be submitted, post-consent for approval. That additional screening was not something relied on by the Applicant in the ES but it could be a benefit and the Applicant would work towards optimising the detailed design. The Applicant offered to provide that correspondence with stakeholders, which was not written confidentially, to the ExA which the ExA stated would be useful.	will be discharged by ESC and this is welcomed by ESC.	
Agenda item 4: night time rail noise				
a) Whether the operation of the rail freight as proposed is an appropriate mechanism for delivery of the proposed development				
10	1.5.4	Rail Noise Mitigation Strategy: *The RNMS [AS-258] contains a raft of measures to avoid SOAEL and mitigate and minimise between LOAEL and SOAEL, including track replacement on the branch line, altering the change arrangements at Saxmundham, speed limits, and the use of quieter locomotives. All this was secured and committed to via the RNMS and requirement 25 and because of that there was no question as to delivery of it – the Applicant is obliged to deliver the RNMS in order to deliver the project.*	ESC note the Applicant's clarification that DCO Requirement 25 means that the RNMS must be delivered before the Applicant can operate freight trains. ESC agree that this should ensure that an acceptable RNMS is delivered. This also reinforces the importance of appropriate wording for Requirement 25. Comments on the current wording of Requirement 25 are discussed elsewhere and it is expected that the next iteration of the dDCO will contain agreed amendments.	-
Agenda item 5: mitigation and controls				
a) The Code of Construction Practice (CoCP) b) Noise Monitoring and Management Plan (NMMP)				

c) Noise Mitigation Scheme d) Rail Noise Mitigation Strategy (RNMS) e) Working hours				
13	1.6.3	Section 61 Consents: *As to the relationship of the bespoke mitigation plan procedure proposed by the Applicant for the NMMP [REP6-029] with s.61 of the Control of Pollution Act 1974, the Applicant has already dealt with the merits of this above, but in response to further queries from ESC, the Applicant explained that in no way would the procedure cut down ESC's existing powers or represent an inferior process. ESC has power to impose conditions on a s.61 consent, but the bespoke mitigation plan would require ESC's agreement, which would enable plans to be settled with terms and conditions acceptable to ESC. Works exceeding the noise threshold could* *not be undertaken without that agreement, such that ESC would have no less control than under s.61 and could require the bespoke mitigation plan to be amended to their satisfaction in order to agree it. The Applicant made clear that it considered the proposed bespoke procedure to be an enhancement on what was otherwise available for the reasons already given. It is hoped that this might be agreed with ESC once ESC has had time to properly digest what has been proposed.*	ESC has issued comments on the draft NMMP elsewhere in this document. This includes suggested amendments to the wording of the document following discussions with the Applicant after ISH 8. The expectation is that ESC will be in a position to agree to the wording of the Draft NMMP once these changes have been made.	X
13 - 14	1.6.4	Saturday afternoon working on AD sites	ESC's expectation is that this matter would be addressed as part of the approval process for Bespoke	

		As to Saturday afternoon working at the Associated Development sites, the Applicant explained that the programme did not strictly necessitate or rely on Saturday afternoon working, and that the CoCP (Doc Ref. 8.11(D)) at Part C paragraph 1.1.6 provided that where possible noisy works would be avoided on Saturday afternoons between 13:00 and 19:00. However, flexibility was left for Saturday afternoon working so that on dry afternoons, particularly in the summer months, there would be the possibility to do some earthworks to accelerate the delivery of the Associated Development sites, as early delivery would be a benefit.	Mitigation Plans and where working is proposed on Saturday afternoons (or other more sensitive periods). The Applicant will be required to demonstrate to ESC that this is strictly necessary for the timely delivery of the project or otherwise of sufficient benefit to the wider community.	

Air Quality

Paragraph 1.7.4 The Applicant has committed in the Code of Construction Practice [REP7-038] that $PM_{2.5}$ monitoring will be undertaken at the same locations as PM_{10} in recognition of public concern, this decision is supported by ESC.

Paragraph 1.7.9, ESC are in agreement with the Applicant that ozone will not form in substantial concentrations from SZC Co. associated emission sources. Further to this, Defra's Air Quality Expert Group 2012 report stated: "*The Royal Society has also reported recently on ground level ozone (Royal Society, 2008). This report draws attention to relevant policy issues and especially the necessary geographical scale for effective control of ground level ozone, which has been shown to be a hemispheric scale environmental issue. Thus, regional or country-scale control measures have limited ability to regulate ground level ozone exposures within the control regions.*" This highlights that assessment and control of ozone is an international matter, and local-scale controls or measurements would not be effective or appropriate.

1.8 Agenda item 7: Dust mitigation – this refers to the oDMP – ESC suspects that this should be referring to the DMMP and as such requires clarification.

Paragraph 1.10.5, ESC maintains its position that clarity should be provided on triggers that will cause passive electric charging points to become active charging points. It is ESCs understanding that agreement is likely to be reached on this matter between the SCC and the Applicant and confirmed at Deadline 8.

[1] https://iaqm.co.uk/text/guidance/guidance_monitoring_dust_2018.pdf

9.85 Written Submissions Responding to Actions Arising from Issue Specific Hearing 10: Biodiversity, Ecology and HRA (27 August 2021) [REP7-073]

Introduction:

Presented in table form, this document constitutes ESC's review of the Written Submissions Responding to Actions Arising from ISH10: Biodiversity, Ecology and HRA submitted at Deadline 7.

The table comprises:

- First column: the relevant page number (document, not pdf page);
- Second column: a reference (section, figure or table number);
- Third column: relevant source document extract (text or Figure snapshot)
- Fourth column: our observations and concerns on the cited extract
- Fifth column: our requested action upon the Applicant.

All extracts from the Drawings, including page, section number, text and footnotes etc. are shown in *italics* in the first three columns, including references elsewhere as appropriate.

In Column 5 the requested action from the Applicant takes one of the following forms, or a combination thereof:

- Clarification
- Confirmation
- Further information.

- Explanation

Pg. No.	Section Ref.	*Relevant text / illustration*	Observations and concerns	Requested:
13	1.2.53 and 54	*Full Arboricultural Survey.*	ESC notes that the Arboricultural Survey discussed at ISH10 for submission at Deadline 8 may now be delayed until Deadline 9. This gives only Deadline 10 for ESC to provide final comments.	N/A
22	1.14.2	*SSSI Crossing Bailey Bridge.*	ESC notes that a note on the use of the proposed Bailey Bridge at the SSSI Crossing will be provided at Deadline 8. ESC will provide comments on this at the next appropriate Deadline.	N/A

9.88 Estate Wide Management Plan for the EDF Energy Estate (including Reptile Mitigation Strategy) [REP7-076]

Introduction

This table comprises ESC's comments on the Estate Wide Management Plan for the EDF Energy Estate (including Reptile Mitigation Strategy).

The table comprises:

- First column: the relevant page number (document, not pdf page);
- Second column: a reference (section, figure, or table number);

- Third column: relevant source document extract (text or Figure snapshot)
- Fourth column: our observations and concerns on the cited extract
- Fifth column: our requested action upon the Applicant

All extracts from the *Initial Statement of Common Ground*, including page, section number, text and footnotes etc. are shown in *italics* in the first three columns, including references elsewhere as appropriate.

Where a response is provided for comment only and no further advice is specifically requested, this is indicated using a hyphen (-).

Pg. No.	Section Ref.	*Relevant text / illustration*	Observations and concerns	Requested:
7	3.2	*Estate land outside the Order Limits.*	Despite commitments from the Applicant to secure the required additional bat foraging habitat creation and management on the Sizewell Estate as part of the Estate Wide Management Plan (mostly recently at ISH10 – para. 1.4.32 of [REP7-069]), this element appears to be missing from the Plan. The Applicant has proposed these additional habitat creation measures to help mitigate the significant adverse impacts on bats that have been identified and therefore it is essential that they are included in the EWMP and thus secured by the DCO. ESC understands that an	Include the required extra bat foraging habitat creation in the EWMP so that it is secured by the DCO.

			updated EWMP will be submitted at Deadline 8 to address this.	
9	5 and Figure 6	*Management Framework Summary.*	The Plan sets out the management plan framework for both the construction and operational phases of the development. Whilst the construction phase plans are clearly defined, the operational phase plans for the estate (outside of the MDS) appear to largely rely on existing plans, however there is no indication of when or how these will be updated to deliver the overall aspirations for the whole estate. A commitment to reviewing the operational phase estate management plans should be included to ensure that they are all aligned to deliver the identified vision for the whole estate.	Include a commitment within the EWMP to ensure that all operational phase management plans are reviewed and where necessary aligned to deliver the estate vision.
22	1.1.3	*Update of the Reptile Mitigation Strategy.*	The intention to update the presented Reptile Mitigation Strategy prior to any translocation or construction commencing is noted.	N/A
28	2.2.4	*Kenton Hills Reptile Receptor Site.*	It is noted that paragraph 2.2.4 highlights that the proposed Kenton Hills receptor site has already been colonised by populations of all four species of reptile. This will therefore reduce the	Ensure that existing reptile populations within receptor areas are accounted for when determining the numbers of

			carrying capacity of this receptor area and the numbers of animals translocated to this area will need to be adjusted accordingly.	animals which can be translocated to each area.
29	2.3.3	*St James Covert Receptor Site.*	It is noted that paragraph 2.3.3 highlights that the proposed St James Covert receptor site has already been colonised by populations of all four species of reptile. This will therefore reduce the carrying capacity of this receptor area and the numbers of animals translocated to this area will need to be adjusted accordingly.	Ensure that existing reptile populations within receptor areas are accounted for when determining the numbers of animals which can be translocated to each area.
30	2.4.8	*Studio Field Complex Receptor Site.*	It is noted that paragraph 2.4.8 highlights that the proposed Studio Field Complex receptor site has already been colonised by populations of all four species of reptile. This will therefore reduce the carrying capacity of this receptor area and the numbers of animals translocated to this area will need to be adjusted accordingly.	Ensure that existing reptile populations within receptor areas are accounted for when determining the numbers of animals which can be translocated to each area.
31	2.5.4	*Great Mount Walk Receptor Site.*	It is noted that paragraph 2.5.4 highlights that the proposed Studio Field Complex receptor site has already been colonised by populations of all four	Ensure that existing reptile populations within receptor areas are accounted for when determining the numbers of

			species of reptile. This will therefore reduce the carrying capacity of this receptor area and the numbers of animals translocated to this area will need to be adjusted accordingly.	animals which can be translocated to each area.
32	2.6.2	*Aldhurst Farm Receptor Site.*	It is noted that paragraph 2.6.2 highlights that the proposed Studio Field Complex receptor site has already been colonised by populations of three of the four species of reptile present in the area. This will therefore reduce the carrying capacity of this receptor area and the numbers of animals translocated to this area will need to be adjusted accordingly	Ensure that existing reptile populations within receptor areas are accounted for when determining the numbers of animals which can be translocated to each area.

9.92 Sizewell C Project Draft Bat Method Statement (Parts 1 to 6) [REP7-080 to REP7-085]

ESC notes that the primary purpose of the draft Bat Method Statement is to support an application to Natural England for a derogation licence to allow the development to breach legislation protecting bats. Whilst ESC has no role in the licensing process, parts of the assessment undertaken for the application and the mitigation secured by the licence cross over into areas of impacts on bats which we have commented on as part of the DCO Examination process. We therefore restrict the comments below to points which cover concerns which we have raised previously in our written and oral submissions to the Examination, particularly in relation to mitigation for the loss of roosting resource.

The table comprises:

- First column: the relevant page number (document, not pdf page);

- Second column: a reference (section, figure or table number);
- Third column: relevant source document extract (text or Figure snapshot)
- Fourth column: our observations and concerns on the cited extract
- Fifth column: our requested action upon the Applicant.

All extracts from the Drawings, including page, section number, text and footnotes etc. are shown in *italics* in the first three columns, including references elsewhere as appropriate.

In Column 5 the requested action from the Applicant takes one of the following forms, or a combination thereof:

- Clarification
- Confirmation
- Further information.
- Explanation

Pg. No.	Section Ref.	*Relevant text / illustration*	Observations and concerns	Requested:
3 and 78	A and E4.1	*Construction Environmental Management Plan (CEMP).*	Several references are made to a CEMP in the draft Method Statement; however, it is our understanding that no such document forms part of the DCO examination document library. We query whether these sections should refer to	Clarify whether references to a CEMP should be to the CoCP.

			the Construction Code of Practice (CoCP) rather than a CEMP	
8	B2.2	*Granted protected species licences.*	The list of granted bat licences does not appear to include the licence granted for the felling of a confirmed bat roost tree in Coronation Wood which is within the red line boundary. ESC also understands that a licence application is in preparation (and may now have been submitted) in relation to works to repair and re-roof the main barn at Upper Abbey Farm (also within the red line boundary). Dependent on the status of this licence application this may also need to be added to the list.	Add other identified granted licence(s) to the list in section B2.2.
15	C4	*Main Development Site – Trees.*	It is noted that there is still one area of woodland to be removed as part of the development which has not been surveyed for potential bat roosts. This is the area of wet woodland within the area of the SSSI Crossing. It is essential that this area is surveyed, and the required mitigation identified, prior to the granting of the licence.	Survey woodland within the SSSI Crossing area and identify required mitigation measures prior to granting of licence.

19	C5a	*Reference to Walkers Spinney.*	The third paragraph on page 19 includes the following sentence "*Although Walkers Spinney is a relatively small ancient woodland, these techniques are still considered to be proportionate and more appropriate than traditional techniques.*" ESC is not familiar with a part of the development site called Walkers Spinney and requests clarification on this from the Applicant.	Clarify the location of Walkers Spinney within the development site.
26	C5b	*Table B.*	The first row of Table B on page 26 makes reference to radio-tracking in June 2019. We are not aware of any radio-tracking having been undertaken in 2019 and query whether this should be June 2010 (duplicating the row below).	Clarify whether 2019 should read 2010 in the first row of Table B.
74	E3.3b	*Proposed ratios for roost resource mitigation and proposals for replacement features.*	The proposed ratios for roost resource mitigation and the types of features to be used are noted. ESC understands that these have been agreed with Natural England and therefore we have no further comment on them.	N/A

75	E3.3b	*Initial/short-term provision 0-15 years: 216 bat boxes.*	This section makes reference to the approximate locations of mitigation bat boxes being identified on Figure E4i. However, there does not appear to be a Figure E4i included as part of the submitted Method Statement (Parts 1 to 6) and it is not listed as a figure in Section I (page 84/85). It is therefore queried whether this important document has yet been submitted?	Clarify whether Figure E4i has been submitted yet.
75	E3.3b	*Medium/long-term provision 70+ years: 191 PRFs.*	E3.3b Table 1 sets out the calculations for the number of replacement potential roost features which are required to be delivered as part of the development, across the MDS and the AD sites. This gives a total requirement of 407 potential roost features to be provided, based on the ratios set out at the beginning of section E3.3b (page 74). However, the section on medium/long-term provision highlights that 191 of these features will not be available for bats to use until 70+ years into the life of the development, which is significantly after the loss of the original features will have occurred. There therefore appears to be a significant under provision of	Clarify why the proposed roost resource mitigation approach does not replace almost 50% of the lost potential roost features until almost the end of the operational lifetime of the power station.

			replacement potential roost features, with nearly 50% of those to be lost not replaced until near the end of the operational lifespan of the power station. This is a significant concern as it appears that the development will leave the potential roost resource in the area significantly depleted for the construction phase and most of the operational phase of the power station.	
75	E3.3b	*Bat boxes.*	At the start of section E3.3b (page 74) a number of potential roost feature replacement techniques are listed, including bat boxes, totems/monoliths, translocations of existing roost features and veteranisation of trees. However, only provision of bat boxes is then listed as the proposed mitigation in the Initial/short-term provision section. We query why the other identified measures are not proposed to be used, particularly given our concern (as set out above) about the late provision of the remainder of the required potential roost features.	Clarify whether potential roost features created from techniques other than the installation of bat boxes will be utilised as part of the mitigation package.

9.94 Statement on Recreational Disturbance Numbers [REP7-087]

ESC welcomes the clarification by the Applicant of the evidence base used to calculate the additional numbers of people that may visit European sites due to construction of the Sizewell C project including displaced visitors and construction workers. ESC does not disagree with the precautionary approach taken by the Applicant in working to the higher numbers detailed in Table 1.1.

9.10.12 Statement of Common Ground - East Suffolk Council and Suffolk County Council Appendix 11B: SZC Co.'s Second Set of LPA Request for Information Responses - Revision 1.0 [REP7-093]

Introduction

This table summarises ESC's comments on Appendix 11B to REP7-093.

The table comprises:

- First column: the relevant page number (document, not pdf page);
- Second column: a reference (section, figure, or table number);
- Third column: relevant source document extract (text or Figure snapshot)
- Fourth column: our observations and concerns on the cited extract
- Fifth column: our requested action upon the Applicant.

All extracts from the *Initial Statement of Common Ground*, including page, section number, text and footnotes etc. are shown in *italics* in the first three columns, including references elsewhere as appropriate.

In Column 5 where further action is requested from ESC this generally takes one of the following three forms, or a combination thereof:

- Clarification
- Confirmation

- Further information
- Explanation

Where a response is provided for comment only and no further advice is specifically requested, this is indicated using a hyphen (-).

Pg No.	Section Ref.	*Relevant Text / illustration*	Observations and Concerns	Requested:
2 – Technical Memorandum M006				
2.1 – Main Development Site				
a) Operation				
2	2.1.4	Operational noise mitigation for A&R receptors: *While the tranquillity in each instance is a relevant factor in the identified significant adverse effects, it is the cumulative combination of the changes that lead to the assessments of significant adverse effects, and no specific mitigation measures are proposed to address the change in tranquillity at these two receptor groups.*	ESC understands that it is not just the operational noise that leads to the predicted assessment of significant adverse effects, but operational noise in combination with visual, access and other impacts, and on this basis no noise-specific mitigation is proposed to protect A&R receptors. This seems reasonable and proportionate, and satisfactorily answers RFI 24.	-
2.2 – Park and Ride Sites				
b) Construction/Reinstatement				
3	2.2.1	Construction hours for the Northern Park and Ride: *The ExA has asked a similar question at NV.2.1 in its second set of questions [PD-036]. A full answer will be submitted at Deadline 7 in response to NV.2.1.*	As indicated by the Applicant, RFI 25 is similar to ExA question NV.2.1, for which a response was provided at D7. No answer is provided here so ESC will comment specifically in relation to the Applicant's response to NV.2.1, which is a separate submission.	-

4	2.22 - 2.25	Revised construction noise criteria for weekend working on AD sites in response to RFI 26: *(b) where the exceedance occurs only on a Saturday or Sunday, it is predicted to occur on 2 weekends, or part thereof, in any 15 consecutive days or on 6 weekends, or part thereof, in any 6 consecutive months.'*	ESC welcomes this amendment to the NMS criteria and is satisfied that this answers the question raised in RFI26.	
c) Operation				
4	2.2.6	Operational plant noise at the Park & Ride Sites: *The selection of appropriate plant at the two park and ride sites to achieve the stated target noise levels is secured through the Associated Developments Design Principles [REP2-041], which is itself secured through Requirement 20(3) of the draft DCO [REP5-029]. The relevant references can be found at:* *• Item 6 under 'Building Design Principles' in Table 3.1 for the northern park and ride site [REP2-041]; and* *• Item 6 under 'Building Design Principles' in Table 3.2 for the southern park and ride site [REP2-041].*	ESC thanks the Applicant for the clarification and having reviewed the *'Building Design Principles'* submitted at D7 are satisfied that this answers RFI 27. ESC is satisfied that the wording in Table 3.1 is explicit enough to provide security.	-
6	2.2.13	Operational P&R noise at Marlesford and Hacheston: *Should further measurements at the receptor locations be undertaken under the 'Noise Monitoring and Management Plan' that will be adopted for the works, and these further*	Notwithstanding outstanding concerns regarding the suitability of baseline monitoring positions at Marlesford and Hacheston, ESC appreciate the Applicant's response to RFI 28, and note that the point made in 2.2.13 is a good one. ESC understand that even if baseline ambient levels are lower than those set out in Table 4.15 by 3 dB or more,	-

		measurements demonstrate that the baseline ambient noise levels are lower than the values set out in Table 4.15 by 3dB or more, the assessment of construction noise set out in Table 4.16 and Table 4.17 of in Volume 4, Chapter 4 of the ES [APP-384] would find that the outcomes are minor adverse effects rather than negligible. In both instances, the effect is not significant in an EIA context.	that the assessment outcome would change from negligible to minor adverse, which would remain not significant in an EIA context. ESC therefore consider that this deals with the overarching concerns regarding these locations.	
7	2.2.14	Operational P&R noise at Marlesford: *The predicted levels at the closest receptor in Marlesford are expected to be similar to those at Receptor C, and consequently the effects would be either 'negligible' or 'minor', depending on ambient noise levels; in either case, the effects would not be significant in an EIA context.*	ESC welcome the clarification regarding the nearest receptor at Marlesford and that there would be no change in significance of effects by adopting The Ford Gatehouse as the closest receptor. ESC also note the Applicant's point about measures described in the CoCP being implemented where operational noise exceeds LOAEL and emphasises the importance of ensuring that the provisions of the CoCP are suitably robust, including (but not limited to) the construction noise thresholds.	-
8	2.2.18	Operational P&R noise at Marlesford: *It can be seen from Table 2.1 that the effects would be regarded as not significant in an EIA context. Since the predicted noise levels are likely to be above the LOAEL, which for construction noise is taken to be equal to the existing baseline sound levels, the measures described in the CoCP [REP5-078] will be implemented to mitigate and minimise the effects.*		
8	2.2.19	Operational noise mitigation at the Northern P&R:	ESC do not agree that RFI 30 implies that primary mitigation does not count towards meeting the policy	-

		The question may imply that primary mitigation does not count towards meeting the policy tests between LOAEL and SOAEL to mitigate and minimise adverse effects. However primary mitigation is mitigation and contributes to meeting the policy tests.	tests between LOAEL and SOAEL, it just asked what other mitigation was considered to meet the policy aim to *"mitigate and minimise"* above LOAEL.	
	2.2.20	Operational noise mitigation at the Northern P&R: *The mitigation proposed is considered commensurate with the low level of effects from the operation of the northern park and ride. For the single location where the LOAEL is predicted to be exceeded (Receptor B), the predicted noise level from the operation of the northern park and ride is expected to be comfortably below the existing ambient noise levels, as shown in Table 4.15 in Volume 3, Chapter 4 of the ES [APP-354]. In practice, a perceptible impact is unlikely to occur.* *GP – this, however, is a good point, but needs to be checked properly in a more detailed review.*	Notwithstanding the comments in relation to paragraph 2.2.19, ESC acknowledge the Applicant's clarification and justification for the mitigation offered and agree that a perceptible impact is unlikely if the noise levels are below existing ambient level. ESC therefore agree that the mitigation offered is commensurate with the relatively low level of operational noise from the Northern P&R. ESC therefore consider this to satisfactorily answer RFI 30.	-
Freight Management Facility				
d) Construction				
9	2.2.21	Construction noise LOAEL for the FMF: *Only the assessment of construction noise requires baseline information, and even then, only to distinguish between 'very low' and 'low' impacts, the distinction between the*	Whilst ESC welcomes the Applicant's technical response to RFI 31, it should be noted that this does not seem to directly answer the question as to how the LOAEL threshold (which should be based on the prevailing ambient noise level) was determined with no baseline	-

		two outcomes depending on whether the construction noise levels are above or below the ambient noise levels.	ambient noise measurements. Notwithstanding this, the Applicant's justification does seem reasonable, and ESC therefore consider the assessment of impacts to be appropriate.	
	2.2.22	Construction noise LOAEL for the FMF: *Paragraph 4.6.7 of Volume 8, Chapter 4 of the ES [APP-515] states that the outcomes were '… no more than a low magnitude of impact, irrespective of ambient level.'*		
	2.2.23	Construction noise LOAEL for the FMF: *Since the construction noise levels did reach the thresholds identified as a 'medium' impact, it was possible to conclude that the effects would be either 'negligible' or 'minor adverse', neither of which are considered significant in an EIA context.*		
	2.2.24	Construction noise LOAEL for the FMF: *It is considered acceptable to reach this conclusion without reference to ambient levels.*		
10	2.2.25	Exceedance of construction noise LOAEL at the FMF: *In the absence of baseline noise data, it is not possible to definitively state that the LOAEL would be exceeded, so the conclusion recognised that the LOAEL may be exceeded at times, and where that is the case, the measures set out in the Code of Construction Practice (CoCP) [REP5-078] will apply.*	RFI 32 asked how possible exceedance of the construction noise LOAEL at the FMF (and the appropriate mitigation response) were determined when no baseline monitoring was completed. While ESC acknowledge that the Applicant's assessment of impacts was reasonable despite the lack of baseline monitoring, it is clear that an understanding of the prevailing ambient noise levels will be required to ensure that the measures set out in the CoCP are applied where the LOAEL (which is tied to the ambient) is exceeded. ESC note that additional baseline monitoring is proposed under the NMMP and agree that	-
	2.2.26	Exceedance of construction noise LOAEL at the FMF:		

		Further baseline monitoring is proposed under the 'Noise Monitoring and Management Plans', which are enforceable through the CoCP.	these should be reproduced for the AD sites once the framework is agreed for the MDS. This emphasises the importance of ensuring that the NMMP is suitably robust, which remains under discussion.	
	2.2.27	Exceedance of construction noise LOAEL at the FMF: *An initial draft of the Noise Monitoring and Management Plan for the main development site [REP6-029] was submitted at Deadline 6. Once the general content of the initial document is agreed, it is anticipated that similar documents will follow for each Associated Development site, including the freight management facility.*		
2.3 Operation				
10		Operational plant noise from the FMF: *No details are available as to what plant might be included at the freight management facility, if any.*	RFI 33 queried why there was no assessment of operational plant noise from the FMF, or indeed assessment criteria for this, when it is likely that the facility will require mechanical plant. ESC acknowledge that no details of the required plant are yet available and that if it is, that this will be designed to achieve the same 35 dB $L_{Ar,T}$ limit specified elsewhere. ESC note that this has now been included in the latest *Associated Development Design Principles [REP2-041]* document, which is appreciated. This is considered to satisfactorily deal with RFI 33.	-
		Operational plant noise from the FMF: *Where plant is to be included at the freight management facility, the 'Building Design Principles' section of Table 3.3 of the Associated Development Design Principles [REP2-041] will be amended to refer to the selection of appropriate plant to achieve the same 35dB LAr,T limit specified elsewhere.*		
14	2.3.10	Operational traffic noise associated with the FMF:	RFI 34 queried whether there was potential for receptors on Felixstowe Road (the main vehicular access route to	-

		It can be seen from Tables 2.3 and 2.4 that the additional SZC traffic associated with the freight management facility will increase the noise levels at the three receptors on Felixstowe Road, but by less than +1dB in all instances. This would be regarded as a 'very low' magnitude impact when assessed against the short-term road traffic noise impact categories used in the submitted assessments of road traffic noise, which are shown, for example, in Table 4.5 of Volume 5, Chapter 6 of the ES [APP-415].	the FMF) to be affected by road traffic noise generated by the development. ESC appreciates the additional work carried out by the Applicant to respond to this query. The methodology and conclusions of this additional work seem reasonable, and ESC are satisfied that potential effects will be negligible, and therefore not significant in an EIA context. This satisfactorily deals with RFI 34.	
	2.3.11	Operational traffic noise associated with the FMF: *Combining the 'very low' magnitude impact with the 'medium' sensitivity adopted for residential dwellings, results in a negligible effect, which is not significant in an EIA context.*		
3. Technical Memorandum M007				
3.1 Code of Construction Practice				
a) Community Engagement				
15	3.1.1	Communications to local communities: *SZC Co. confirms that ESC will receive copies of any communications sent to local communities. It is highly likely that through the process outlined in the 'Noise Monitoring and Management Plans', that ESC will be aware of the need for any such communications, and of their content, in*	ESC welcomes these clarifications and consider the Applicant's responses to satisfactorily answer the points raised under RFI 35	

		advance of them being sent. A draft of the Noise Monitoring and Management Plan for the main development site [REP6-029] was submitted to the Examination at Deadline 6.	
15	3.1.2	Complaints logs: *Logs of complaints received by SZC Co. will be passed on to ESC on a regular basis, including details of actions arising. Details of complainants will be included in these complaint logs, subject to appropriate data protection controls.*	
15	3.1.3	Handling of complaints: *SZC Co. expects the handling of complaints to be reciprocal, and that ESC will provide details to SZC Co. of complaints they receive, subject to their own data protection arrangements.*	
16	3.1.5	Complaints handling procedure in CoCP: *SZC Co. confirms that the complaints handling procedure in section 3.1(i) in Part A of the CoCP [REP5-078] will be amended to reflect these points.*	
3.2 Noise Monitoring and Management Plan			
16	3.2.1	Complaints handling: *A draft of the Noise Monitoring and Management Plan for the main development site [REP6-029] was submitted to the Examination at Deadline 6, and does not seek to replicate the complaints handling*	ESC's comments on the draft Noise Monitoring and Mitigation Plan and Noise Mitigation Scheme were submitted to the Examination at Deadline 6 [REP6-032] and comments on the updated documents will be issued separately at Deadline 8.

		procedure contained in section 3.1(i) in Part A of the CoCP [REP5-078]	Notwithstanding the specific comments raised on the NMMP elsewhere, ESC welcome these clarifications and consider the Applicant's responses to satisfactorily answer the points raised under RFI 36.	
16	3.2.2	Noise Mitigation Scheme: *In discussion with ESC, SZC Co. has agreed to amend the Noise Mitigation Scheme [REP6-015] so that the review procedure set out in section 1.5 will include reference to complaints.*		
3.3 Noise Mitigation Scheme				
a) Application				
16	3.3.1	Application of Noise Mitigation Scheme across the study areas: *Yes, SZC Co. confirms that the Noise Mitigation Scheme will be a standalone document, not solely linked to the assessment of noise from the main development site. The current version can be found at [REP6-015].*	ESC welcome this clarification and consider the Applicant's responses to satisfactorily answer the point raised under RFI 37.	
c) Thresholds for operational noise				
17	3.3.2	Operational noise thresholds in the NMS: *Operational noise is referenced in the Noise Mitigation Scheme [REP6-015] in two areas: noise from fixed plant associated with either the operational power station or the Associated Development sites, and noise associated with activities undertaken in the use of the Associated Development site. Operational noise was included in the Noise Mitigation Scheme [REP6-015] to provide a comprehensive document, however, SZC Co.*	RFI 38 queried the circumstances in which the NMS thresholds for operational noise might be expected to be applied without operational noise limits having been breached. The Applicant has acknowledged that amendments could be made and that there is no need to provide insulation due to plant noise from AD sites because plant noise limits for these are secured through the Associated Developments Design Principles document [REP2-041], which is itself secured through Requirement 20(3) of the draft DCO. However, ESC note that the operational noise thresholds section of the	-

		agree that some amendments could usefully be made.	current draft of NMS submitted at D7 has not yet been amended in response to this discussion. While ESC do not consider this essential, because operational plant noise from either the AD sites will not be permitted to reach the thresholds in the NMS, questions remain as to why it was considered necessary to include this in the NMS. The practicality and enforceability of operational noise limits for the power station remains the subject of separate discussions.	
	3.3.3	Operational noise thresholds in the NMS: *Limits on noise from plant at Associated Development sites are secured through the Associated Developments Design Principles document [REP2-041], which is itself secured through Requirement 20(3) of the draft DCO. SZC Co. agrees that there is no need to provide for insulation for this element of the project, as noise will not be permitted to reach the specified eligibility criteria.*		
	3.3.4	Operational noise thresholds in the NMS: *As noted in SZC Co.'s response to RfI 57, it is suggested that a limit on operational noise from the power station is secured. Options include the Design Principles for the Main Development Site set out in the Design and Access Statement or through a DCO requirement.*		
	3.3.5	Operational noise thresholds in the NMS: *Subject to noise from the operational power station being secured in this manner, operational noise from the power station will not be permitted to reach the thresholds in the Noise Mitigation Scheme [REP6-015] and SZC Co. agrees that there is no need to provide for insulation for this element of the project.*		

17	3.3.6	Operational noise thresholds in the NMS: *The other element of operational noise covered by the Noise Mitigation Scheme [REP6-015] is that related to the use of the Associated Development sites, for example vehicle movements. SZC Co. is content that the Noise Mitigation Scheme is appropriate in this regard.*	ESC agree that the NMS is appropriate in terms of operational activity noise (e.g. vehicle movements) associated with AD sites. -
b) Revised Assessments			
18	3.3.9	Revised Assessments: *SZC Co. confirms that the refreshed assessments will be based on the worst-case road traffic noise outcomes, which will generally be the busiest day in 2028.*	This query was raised on behalf of SCC, who as the Highway Authority are statutory consultees on traffic noise. This clarification is welcomed by ESC.
18	3.3.10	Approval: *Approval of the refreshed assessments will sit with ESC and that approval process can include confirmation that the worst-case has been assessed if ESC wishes.*	Refreshed assessments under the NMS should be submitted to SCC as the Highway Authority for approval where road traffic is the primary noise source.
3.4 – Road Traffic Noise			
d) New Road Schemes			
18	3.4.1	Noise mitigation currently included: *The calculations of road traffic noise include the effects of bunds or cuttings proposed along the new roads. Noise was also a consideration in the alignment of the roads, although that is not included as mitigation, in the terms intended by RfI 41.*	SCC, as the Highway Authority are statutory consultees on traffic noise. These clarifications are welcomed by ESC.
19	3.4.2	*Additional noise mitigation:*	

		Further consideration is being given to the potential to include landscaped bunding along the two new roads, particularly for the two village bypass, as SZC Co. is seeking to maximise screening within the order limits. Any such landscaping will be secured and delivered through Requirement 22A of the draft DCO [REP6-006].	
e) Existing Roads			
19	3.4.6 & 3.4.7	Maintenance: *There is a B1122 maintenance fund under Schedule 16 of the draft Deed of Obligation [REP5-082], which provide sums of money pre- and postconstruction of the Sizewell link road to maintain the road in good condition, which will serve to mitigate and minimise* noise and vibration. *It is considered reasonable to offer this as the B1122 will carry the most SZC traffic in the early years, before the Sizewell link road is complete. The maintenance of other roads in the area will remain the responsibility of the highways authority.*	SCC, as the Highway Authority are statutory consultees on traffic noise. These clarifications are welcomed by ESC. SCC, as Highway Authority will comment on the specifics of quieter road surfacing on sections of the A12 discussed at ISH8, but ESC would welcome this as a mitigating measure.
20	3.4.8	Properties along B1122: *SZC Co. also proposes to offer insulation under the Noise Mitigation Scheme [REP6-015] to all properties fronting the B1122 between Yoxford and the site, irrespective of whether they meet the qualifying thresholds*	SCC, as the Highway Authority are statutory consultees on traffic noise. These clarifications are welcomed by ESC. The extended offer to provide insulation to all properties fronting the B1122 is welcomed by ESC. However, this offer has yet to be included within the revised Noise Mitigation Scheme [REP7-022]

		or not. This will be secured through the Noise Mitigation Scheme [REP6- 015].	
3.5 – Identification of Noise-Sensitive Commercial Receptors			
20	3.5.1 & 3.5.2	Screening of noise sensitive receptors *When predicting noise effects, sample locations were chosen to represent groups of potentially noise-sensitive premises within the study area and noise levels were reported for these. These receptors were occasionally individual premises, but often represented larger groups of receptors* *Since, in all cases, the receptor groups contained either dwellings alone (medium sensitivity) or dwellings and commercial premises, which could be* *medium or low sensitivity, the assessment of effects assumed the worstcase sensitivity within each group, i.e. medium sensitivity was assumed.*	ESC welcomes this clarification and consider the Applicant's response to satisfactorily answer the points raised under RFI 43.
3.6 – Rail – Groundborne Noise and Vibration			
f) Combined airborne and groundborne criteria			
20	3.6.1	Sources of Groundborne and airborne noise: *The mitigation measures required to control groundborne and airborne noise are not unrelated. The major cause of the measured noise inside the houses surveyed along the*	ESC raised this question on the basis of Paragraph 9.3.32 in the Environmental Statement Addendum Volume 1: Environmental Statement Addendum Chapters Chapter 9 Rail - Revision 1.0 [REP AS-188] that which states *"There is also a difference in how the peaks of airborne and groundborne noise are generated. For low speed freight trains, airborne LAmax values are likely to be caused by locomotive engines and exhausts, whereas groundborne noise is*

		Saxmundham to Leiston branch line in August 2020 was the passage of wheels over rail joints, and in the case of the East Suffolk line, the passage of wheels over aluminothermic welds. The impulses that are caused in this way result in large peaks in both the airborne and the groundborne noise time histories, and they are heard together as one phenomenon, accompanied by significant vibration in the case of the Leiston branch.	*generated by wheel/rail-excited rolling noise particularly where wheels pass over track joints."* Notwithstanding the apparent contradiction with the ES Addendum, ESC welcome the additional commentary and consider the Applicant's responses to satisfactorily answer the points raised under RFI 44.
g) Modelling Uncertainty			
22	3.6.8	Modelling validation: *"The Findwave model was used to model the insertion gain of resilient under-ballast mats. The insertion gain predicted is shown in Figure 8 of Appendix B of Appendix 9.3.A of the First ES Addendum [AS-257] and is consistent with published data on the performance of under ballast mats"*	ESC welcome this clarification and consider the Applicant's responses to satisfactorily answer the point raised under RFI 45.
h) Leiston and Saxmundham branch line and green rail route			
22	3.6.9	Rail Coasting *"This is not currently under consideration and is not relied upon in the draft Rail Noise Mitigation Strategy [AS-258]."*	This answers the question raised under RFI46.
22	3.6.10	Impacts in the early years	ESC welcome this clarification and consider the Applicant's responses to satisfactorily answer the point raised under RFI 47a.

		The Saxmundham to Leiston branch line will not be used until it is upgraded, so no properties will be subject to noise or vibration levels above LOAEL or SOAEL prior to it being upgraded. After it has been upgraded SOAEL will be avoided and impacts between LOAEL and SOAEL mitigated and minimised through the measures set out in the draft Rail Noise Mitigation Strategy [AS-258] and the Noise Mitigation Scheme [REP6-015].	
22	3.6.11	Rail Nosie Mitigation Strategy *It is not anticipated that any measures in the draft Rail Noise Mitigation Strategy [AS-258] cannot be implemented. The terms of Requirement 25 of the draft DCO [REP5-029] should provide comfort to the authorities in that respect.*	ESC welcome these clarifications and consider the Applicant's response to satisfactorily answer the points raised under RFI 47b.
22	3.6.12	Extent of impacts: *The number of properties that exceed LOAEL has not been confirmed at this time as the extent of noise or vibration levels above LOAEL has been identified in the form of a distance from the railway line.*	
i) East Suffolk Line			
23	3.6.13	Groundwater conditions:	ESC welcome this clarification and consider the Applicant's responses to satisfactorily answer the point raised under RFI 48.

		The variation observed was within a range of 5dB(A). If it were due solely to differences in groundwater levels or other propagation effects, the only effect that was not observed would be that of frozen ground. In locations in the world where frozen ground is common, such as northern China, the effect has been found to be an increase of 13% to 26% https://doi.org/10.1177%2F1077546318802980. In dB terms this is an increase of 2dB.	
23	3.6.14	*The occurrence of the climatic conditions of north China is very rare in East Suffolk, so no variation due to this is likely.*	
23	3.6.15	Track conditions on the East Suffolk Line: *The presence of resilient rail pads at Woodbridge has not been confirmed by Network Rail, and the assessment does assume that the track conditions at Woodbridge are representative of the whole line*.	ESC welcome this clarification and Network Rail's commitment to undertake a survey of the track conditions along the to undertake a survey of the track conditions along the lengths of ESL considered within the study area. ESC consider the Applicant's responses to satisfactorily answer the points raised under RFI 49 and 50.
23	3.6.16	*Since Network Rail has not confirmed the presence of rail pads at Woodbridge, part (c) is not applicable.*	
24	3.6.17	Extents of impacts: *As was stated in SZC Co.'s answer to the ExA's first questions at NV.1.12 [REP2-100], where there are properties that fall within the distance stated for SOAEL for the particular*	

		combination of train speed, track type and rail joint type that is relevant to them, the expectation is that the Noise Mitigation Scheme [REP6-015] will apply and a sufficient reduction in noise entering the property via the airborne path achieved so that the combined total of groundborne noise and low frequency airborne noise will be below SOAEL. Examples of where this outcome is expected are stated in paragraphs 9.3.81 to 9.3.83 in Volume 1, Chapter 9 of the ES Addendum [AS-188]. As the expectation is that SOAEL will be avoided even where properties are within the distances stated, SZC Co. does not consider that any properties will exceed SOAEL.	
	3.6.18	Track conditions on the East Suffolk Line *The number of properties likely to exceed LOAEL is not currently known; work is in progress to discover the exact locations of, for example, aluminothermic welds. When they are known the practicability of replacing them will be evaluated.*	
24	3.6.18	Rail speed limits: *If the speed limits were not imposed, the outcomes would be similar to those listed in Table 4.34 in Volume 9, Chapter 4 of the ES*	ESC welcome this clarification and consider the Applicant's responses to satisfactorily answer the point raised under RFI 51.

		[APP-545] prior to the application of mitigation."	
24	3.6.19	*However, the speed limits on both the Saxmundham to Leiston branch line and in the locations on the East Suffolk line specified in the draft Rail Noise Mitigation Strategy [AS-258] are enforceable. As stated in SZC Co.'s response to the ExA's first written questions at Cu.1.33(iii) [REP2-100], the Rail Noise Mitigation Strategy, including the speed limits, is secured by Requirement 25 of the draft DCO [REP5-029] and the restrictions will be enforced, on a practical level, through the contractual arrangement with the Freight Operating Company, who will in turn require their train drivers to adhere to the restrictions.*	
j) Selection of rolling stock			
25	3.6.21	Selection of rolling stock *As set out at NV.1.19 in SZC Co.'s Deadline 3 submission Comments on Responses to Examining Authority's First Written Questions (ExQ1) [REP3-046], Freight Track Access Contracts are the standard mechanism for specifying rolling stock. It is expected that faulty rolling stock will be replaced at the earliest opportunity as standard freight track access contracts impose obligations to maintain rolling stock.*	ESC welcome this clarification and consider the Applicant's responses to satisfactorily answer the point raised under RFI 52

k) Mitigation			
25	3.6.22	Mitigation: *The draft Rail Noise Mitigation Strategy [AS-258] sets out the proposed measures to mitigate and minimise railway noise and vibration, including groundborne noise and vibration. The measures are a mix of physical mitigation and operational controls, which provide benefits and can be secured by Requirement 25 of the draft DCO [REP5-029]*	ESC welcome these clarifications and Network Rail's commitment to undertake a survey of the track conditions along the to undertake a survey of the track conditions along the lengths of ESL considered within the study area. ESC consider the Applicant's responses to satisfactorily answer the points raised under RFI 53.
25	3.6.23	*In addition to the measures listed in the draft Rail Noise Mitigation Strategy, SZC Co. continues to liaise with Network Rail to secure the legal* *agreement necessary to secure surveys of the East Suffolk line, which will in turn assist in determining whether the existing track or joints would benefit from replacement and if they would, the practical implications of this.*	
l) Monitoring			
25	3.6.24	Monitoring: *At this time, an initial Noise Monitoring and Management Plan for the main development site [REP6-029] has been submitted to the Examination and to ESC/SCC for comment. Indicative monitoring regimes and protocols have been set out, with a view to agreeing the over-arching principles that can then be*	ESC welcome this clarification and consider the Applicant's responses to satisfactorily answer the point raised under RFI 54.

		incorporated into Noise Monitoring and Management Plans for the Associated Development sites.		
26	3.6.25	*The intention is to agree the detail of monitoring to be included in each Noise Monitoring and Management Plan, and if SZC Co. and ESC agree, groundborne noise and/or vibration can be included in that regime. Without wishing to prejudice those further discussions, SZC Co. considers such monitoring to be a sensible measure to include in circumstances where it would be helpful.*		
3.7 – Main Development Site – Operational Noise				
m) Health and safety constraints				
26	3.7.1	Constraints on operational noise reduction: *There are not specific reasons why health and safety considerations constrain noise control for the operational power station, rather the reference to health and safety in the Initial Statement of Common Ground was concerned with the overarching principle that each element of the power station is designed to perform a specific task and redesigning those components to reduce noise levels may alter their primary function in a way that is impractical for a nuclear power station.*	ESC acknowledge the principle that each element of the power station is designed to perform a specific task and redesigning those components to reduce noise may alter their primary function in a way that is impractical for a nuclear power station. Paragraph 3.7.2 states that *"to materially alter the overall noise levels from the operational power station would require noise from every component to be reduced by a similar amount, or for a large number of components to be made radically quieter."* The Applicant has provided some additional information to support this statement in Appendix C of the Written Submissions Responding to Actions Arising from ISH 8 [REP7-071].	Further information
	3.7.2	Constraints on operational noise reduction: *There is also a very large number of components that are known to each generate*		

		noise, combining to give the overall values set out in Volume 2, Chapter 11 of the ES [APP-202]. To materially alter the overall noise levels from the operational power station would require noise from every component to be reduced by a similar amount, or for a large number of components to be made radically quieter.	ESC welcome the provision of the report attached at Appendix C of [REP7-071]. Detailed comments on this appendix are provided later in relation to that document. However, ESC note that the report addresses only one receptor and that an expanded report covering multiple receptors (particularly where the highest operational noise levels are predicted) would have provided more robust assurance that the conclusions are reasonable. Notwithstanding this, ESC acknowledge that this additional information does appear to support the statement that *"to materially alter the overall noise levels from the operational power station would require noise from every component to be reduced by a similar amount."* ESC again acknowledge that it would not be appropriate to impose an operational noise limit that was not practicably achievable. ESC would also note that the additional information is focused on acoustics and does not seem to provide any details of the process undertaken by the Applicant to ensure this represents the quietest possible design. ESC request that the Applicant provide further information (at least in summary) to explain this. The Applicant has reasonably made the point that many individual sources would need to be mitigated to achieve an overall reduction of 1 dB or more. Whilst the significance of such a reduction is debatable, ESC are simply seeking reassurance of the process undertaken to ensure that this does represent the quietist possible design. If this is provided, then an operational noise limit based on what could practicably and reasonably be achieved, would be appropriate.	
	3.7.3	3.7.3 The design of the power station is based on that being constructed at Hinkley Point C, and altering that design to seek to achieve what is likely to be an insignificant reduction in sound is not considered cost-effective nor practicable.		

			ESC cannot currently agree that a potential reduction in operational noise would be *"insignificant"* because the aim should be to achieve the lowest noise levels possible, and the process undertaken to ensure this has not been fully explained. ESC does not consider that this being an established design (based as suggested on HPC) should exclude it from technical scrutiny.	
n) Comparison with operational HPC noise limit				
27	3.7.4	Suggested relationship between L_{night} and L_{Aeq}: The two indices stated in RfI 56 are a façade level of $L_{Aeq,1hr}$ and a free-field L_{night}. There are therefore two components to this, firstly the difference between a free-field and a façade value and secondly the difference between a night-time level averaged over a year and a level measured during any given one hour period at night.	RFI 56 requested that the Applicant explain the suggestion that 40 dB L_{night} and 45 dB $L_{Aeq,1hour}$ (the HPC operational noise limit) are equivalent. This is provided in paragraphs 3.7.4 to 3.7.8. However, ESC do not entirely agree with this explanation and remain uncertain why L_{night} was introduced in the first place, given that it is not normally used for assessing this type of noise, and is based on the effects of transportation noise on sleep. ESC acknowledge the relationship between façade and free-field levels (paragraphs 3.7.4 and 3.7.5), but while there is sense in the suggestion that seasonable variations might cause noise propagation to fluctuate slightly (paragraph 3.7.5), ESC are not aware that the effect that this might have on the relationship between L_{night} and $L_{Aeq,1hour}$ has been fully explored or explained in any relevant technical guidance, research or standard. ESC certainly is not aware of any technical basis for assuming that this would equate to a difference of 2 dB (paragraph 3.7.7).	Further information
	3.7.5	Suggested relationship between L_{night} and L_{Aeq}: On the first point, a value of 3dB is generally added to free-field values to account for façade reflections and hence a value of 45dB expressed as a façade value would be equivalent to 42dB, if expressed as a free-field value.		
	3.7.6	Suggested relationship between L_{night} and L_{Aeq}:		

		On the second point, noise propagation depends on meteorological conditions and this means that a noise source that produces steady, continuous levels throughout a year will fluctuate from one period to another at a given receptor. The Lnight parameter seeks to average levels over a year, accounting for these potential seasonal variations.	ESC consider that the discussion around suggested equivalence between 40 dB L_{night} and 45 dB $L_{Aeq,1hour}$ is unlikely to be resolved, and that it would be more helpful at this stage to focus on what a reasonable and practicable operational noise limit might be. The Applicant has suggested elsewhere in their D7 submissions, particularly in the *'Written submissions responding to ISH 8'* [REP7-071] that they believe any operational noise limit for the power station (should one be imposed) should be based on an $L_{Aeq,8hour}$ level at a residential façade. It is therefore the case that ESC are at least agreed that any operational noise limit should be based on L_{Aeq} levels (as predicted and reported in the ES), albeit that this should ideally be a rating level, set in accordance with BS 4142 to consider the likely distinctiveness of tonality. ESC's formal response to the *'Written submissions responding to ISH 8'* [REP7-071] is provided separately. ESC would also note that whilst the operational noise limit imposed on HPC is a valid consideration, any noise limit imposed in this case should be justifiable in terms of the local context.	
	3.7.7	Suggested relationship between L_{night} and L_{Aeq}: A $L_{Aeq,1hr}$ considers levels in any given hour that might occur. The inevitable fluctuations result in average levels at a receptor at night that are likely to be at least 2dB below levels that would occur in the noisiest hour at night during that year, even for relatively steady sources of noise.		
	3.7.8	Suggested relationship between L_{night} and L_{Aeq}: For these reasons, and as stated in paragraph 2.3.25 of Appendix 11A to the initial Statement of Common Ground between SZC Co. and ESC/SCC [REP3-031], an L_{night} level of 40dB is considered to be '*very similar in effect*' to an $L_{Aeq,1hr}$ of 45dB, as was used at Hinkley Point C		
o) Security of operational noise limits				
28	3.7.9	Security of operational noise limit: *Operational noise limits for the operational power station can be included in the Main*	RFI 57 queried how an operational noise limit for the power station could be secured. ESC considers that a DCO requirement would be preferable, as per HPC. This is not	-

		Development site Design Principles contained within the Design and Access Statement [REP5-070] or made the subject of a specific DCO requirement.	withstanding any outstanding disagreement about what any noise limit should actually be, although ESC acknowledges that an operational noise limit for the power station would only be reasonable and enforceable if it is practically achievable. ESC have consistently requested that the Applicant provide a complete technical justification for why further reductions in operational noise would not be possible, and it is possible that if this was provided then this might drive agreement towards an appropriate limit.	
3.8 – Noise Methodology Paper				
28	3.8.2	Potential offsetting of adverse effects: *SZC Co. was not stating that any effects were 'offset' in the way set out in RfI 58. The point that was being made in paragraph 2.5.4 of the Noise Assessment Methodology Paper [REP3-031] was that the EIA Regulations [Ref 3] set out a number of different options in response to a significant effect, which is broader than the responses permitted under planning policy to an exceedance of the significant observed adverse effect level (SOAEL).*	RFI 58 queried where, if at all, potential significant adverse effects are proposed to be *"offset"* in the Applicant's noise and vibration assessments. Whilst ESC note that the permitted responses to significant effects differ in EIA and policy terms, ESC also consider that this does not clearly or necessarily equate to a distinct difference in definition of significant adverse effects. ESC do, however note, that RFI 58 has in effect been answered.	-
	3.8.3	Potential offsetting of adverse effects: *The point was made in the context of demonstrating that 'significant adverse effects' are not equivalent between the EIA Regulations [Ref 3] and planning policy.*		
28	3.8.4	Offsetting of significant adverse effects:		-

		This is not explicit in the EIA Regulations [Ref 3], but the word 'offset' means that redress is provided through a means other than those that directly address the identified effect.	RFI 59 queried the nature of actual mitigation responses which might be considered to *"offset"* significant adverse effects. The Applicant has provided (in paragraph 3.8.5) examples of measures which could be used to "offset" noise impacts, derived from the Planning Practice Guidance (PPG) on noise. These include a relatively quiet façade; a quiet external amenity space for sole/shared use, or a tranquil space within 5-minute walk. ESC are not sure if or where any of these could reasonably apply in this case, although it is understood that they are not proposed to be used in this case, so no further discussion is necessary.	
	3.8.5	Offsetting of significant adverse effects: *Planning Practice Guide (PPG) on noise [Ref 4] provides examples of what is meant by 'offsetting' noise impacts:*		
29	3.8.6	Offsetting of significant adverse effects: *In these instances, the measure describes offsets the impact, without affecting the impact itself. SZC Co. considers this to exemplify what 'offset' means in the context of the EIA Regulations [Ref 3].*		
3.10 – High Sensitivity Receptors				
30	3.10.1	Sensitivity of the Pro Corda receptor at Leiston Abbey: *Pro Corda delivers chamber music training through residential courses for students aged 5 to 24 years old, runs courses for young people with special educational needs and disabilities (SEND) and hosts concerts and musical events within the historic buildings on the site, and in external courtyard areas.*	RFI 61 queried why Pro Corda has been classified as a *"high sensitivity"* receptor in comparison to "medium sensitivity" residential receptors. ESC welcome the explanation and agree that young people with SEND are often particularly sensitive to noise, and that this might justify "high sensitivity" classification. ESC also note that any predominantly commercial activities held on the site (e.g., concerts and musical events) do not necessarily justify such a classification in and of themselves, certainly when compared to the sensitivity of a typical residential receptor.	-
	3.10.2	Sensitivity of the Pro Corda receptor at Leiston Abbey: *Some of the individuals that Pro Corda caters for may be as sensitive to changes in the*		

		character of the acoustic environment as they are to absolute levels of noise, even when the individual may not have been exposed to the local acoustic environment for some time.	ESC do acknowledge, however, that the Applicant has now added a section in the Noise Mitigation Scheme, in paragraphs 1.8.4 and 1.8.5 of Revision 4.0 submitted at D7 [REP7-022], that allows for an offer of insulation works or temporary rehousing to be made (at the Applicant's discretion) *"where there is a proven medical, clinical or disability need involving a particular sensitivity to noise."* ESC welcome this addition to the NMS.	
	3.10.3	Sensitivity of the Pro Corda receptor at Leiston Abbey: *Given these sensitivities, it was considered that Pro Corda was likely to be a more sensitive receptor than a residential dwelling, and was treated accordingly in the submitted assessments.*		
3.11 – Draft DCO (June 2021)				
p) Leiston Sports Facilities				
31	3.11.2	Design responsibility for the sports facilities: *There is no contradiction between these two documents. Sections 2.1 and 2.2 of Schedule 10 to the Deed of Obligation [REP5-082] set out a process for the design and then subsequent construction of the Leiston Sports Facilities which involves input from both SZC Co. and ESC, with ESC preparing or procuring the design of the Leiston Sports Facilities Works, SZC Co. approving a proposal from ESC dealing with that design, and SZC Co. then submitting details of the layout, scale and external appearance of the Leiston* Sports Facilities to ESC for approval in accordance with Requirement 12A of the draft DCO [REP5-029].	RFI 63 queried the perceived contradiction between the draft DCO and Deed of Obligation in terms of who will ensure that the appropriate mitigation is included in the detailed design of the sports facilities. ESC appreciate the clarification and are satisfied that there will be scope to ensure that the mitigation is included.	-
	3.11.3	Design responsibility for the sports facilities:		

		The terms of the Deed of Obligation including Schedule 10 have been the subject of discussion between ESC and SZC Co.		
q) Rail noise				
31	3.11.5	Defined night-time hours on DCO Requirement 25: *For the purposes of the submitted assessments, night-time is defined as 23:00 to 07:00 hours. Similarly, and paragraph 3.2.2 of the draft Rail Noise Mitigation Strategy [AS-258] states the same hours.*	RFI 64 queried why the night-time hours in Requirement 25 differ from the night-time period defined in the assessment (23:00-07:00hrs). The clarification is noted but ESC considers that it would be helpful if the two definitions were aligned. The Applicant states that *"the hours in Requirement 25 can either be amended to match the adopted night-time period of 23:00 to 07:00 hours or removed entirely."* ESC request it is removed from the requirement as the most suitable solution.	Confirmation
	3.11.6	Defined night-time hours on DCO Requirement 25: *However, the purpose of Requirement 25 is to prohibit use of the Saxmundham to Leiston branch line until such time as a Rail Noise Mitigation Strategy is approved by ESC. The stated hours relate to time period when it is expected to be used by SZC Co., to coincide with the available pathing capacity on the East Suffolk line.*		
32	3.11.7	Defined night-time hours on DCO Requirement 25: *The hours in Requirement 25 can either be amended to match the adopted night-time period of 23:00 to 07:00 hours, or removed entirely.* *GP – good. Check with Mark what he would prefer (I would personally think they should be defined).*		

32	3.11.8	Works included in DCO Requirement 25: *The East Suffolk line is not within the DCO limits, so cannot be subject to a requirement. However, since the only purpose of using the East Suffolk line is to access the Saxmundham to Leiston branch line, prohibiting use of the branch line until the 'Rail Noise Mitigation Strategy' is approved by ESC has the effect of preventing the use of the East Suffolk line by SZC trains until that time as well.*	RFI 65 queried why Requirement 25 applies only to the branch line (work No.4) and not also to the East Suffolk Line. The clarification provided is welcomed and seems reasonable to ESC.	-
	3.11.9	Works included in DCO Requirement 25: *SZC Co. does not propose running trains along the East Suffolk line other than to access the Saxmundham to Leiston branch line.*		